



Identification Solutions

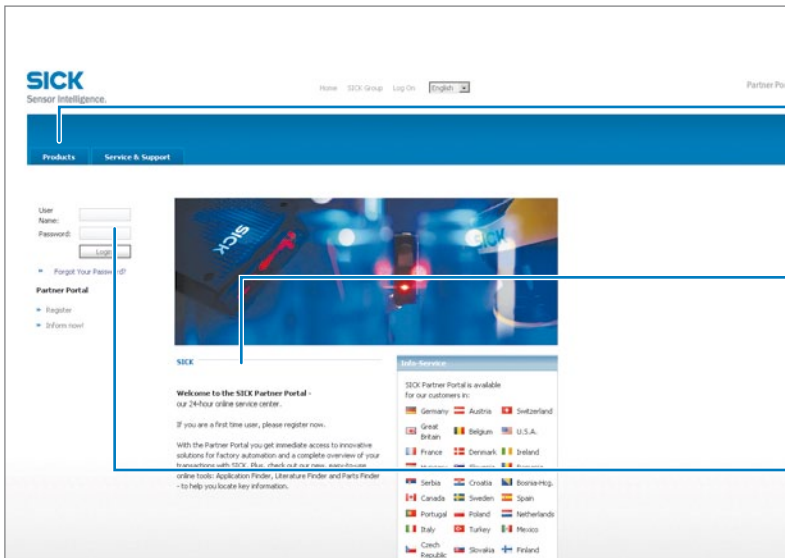
Bar code scanners, image-based code readers, hand-held scanners, RFID, system solutions, connectivity

Product family overview

Bar code scanners		Image-based code readers		RFID		System solutions	
CLV4 series		LECTOR®62x		RFI641		I-10	
CLV41x	F-8	LECTOR®62x	G-6	RFA3xx		I-12	
CLV42x	F-12	ICR80x	G-10	RFA6xx		I-14	
CLV43x	F-18	ICR840-2	G-14	System solutions			
CLV44x	F-24	ICR845-2	G-20	OPS400		J-6	
CLV45x	F-28	ICR84x-2 FlexLens	G-26	OPS (customized)		J-10	
CLV48x	F-32	ICR85x-2	G-32	ALIS		J-12	
CLV49x	F-36	ICR88x	J-14	ICR88x		J-14	
CLX49x	F-42	ICR89x	J-18	ICR89x		J-18	
CLV5 series		Hand-held scanners		VMS410/510			
CLV50x	F-46	IDM1xx	H-4	VMS420/520			
CLV6 series		IT3xxx	H-10	DWS Static			
CLV62x	F-50	IT4xxx	H-14	DWS Dynamic			
CLV63x	F-56	IT6xxx	H-18	Connectivity			
CLV64x	F-64	RFID		CDF (Connection Device Fieldbus)		K-6	
CLV65x	F-70	RFH62x	I-4	CDB (Connection Device Basic)		K-10	
		RFI341	I-8	CDM (Connection Device Modular)		K-14	

More information about our products is available online: www.mysick.com

Your sensor e-business Partner Portal.



User-friendly: you will find everything you need for solution planning under the menu items Products, Information and My Processes.

24-hour availability: regardless of where you are in the world or when you want to know something, everything is available within a click at www.mysick.com.

Secure: your data is password-protected and only visible to you. With individual user administration you define who may access what data and carry out which actions!

Product  **Finder**

www.mysick.com/Products

The Product Finder lets you search for the suitable device for your application using your specification – from a large number of products in all areas of factory and logistics automation.

Applications  **Finder**







www.mysick.com/Applications

You can select an application description for your particular task, market or product group with the Applications Finder.

Literature  **Finder**

www.mysick.com/Literature

You can access all publications in the Literature Finder, e.g. operating instructions, technical information, customer magazines and other literature about SICK products.

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Experience

SICK is a technological and market leader in sensor technology. With headquarters in Waldkirch, Germany and more than 5,000 employees in almost 50 subsidiaries, numerous representatives and holdings, SICK has a solution for your application no matter where you are in the world.

Innovation

SICK achieves product innovation by means of consistent development. It has five development sites in Germany and a total of seven other sites all over the world. SICK turns customers' needs into automation solutions that increase efficiency and reduce costs.

Independence

SICK is large enough to be independent – but still flexible enough to react quickly. As a result, we can concentrate on the development of products the market needs without interference.

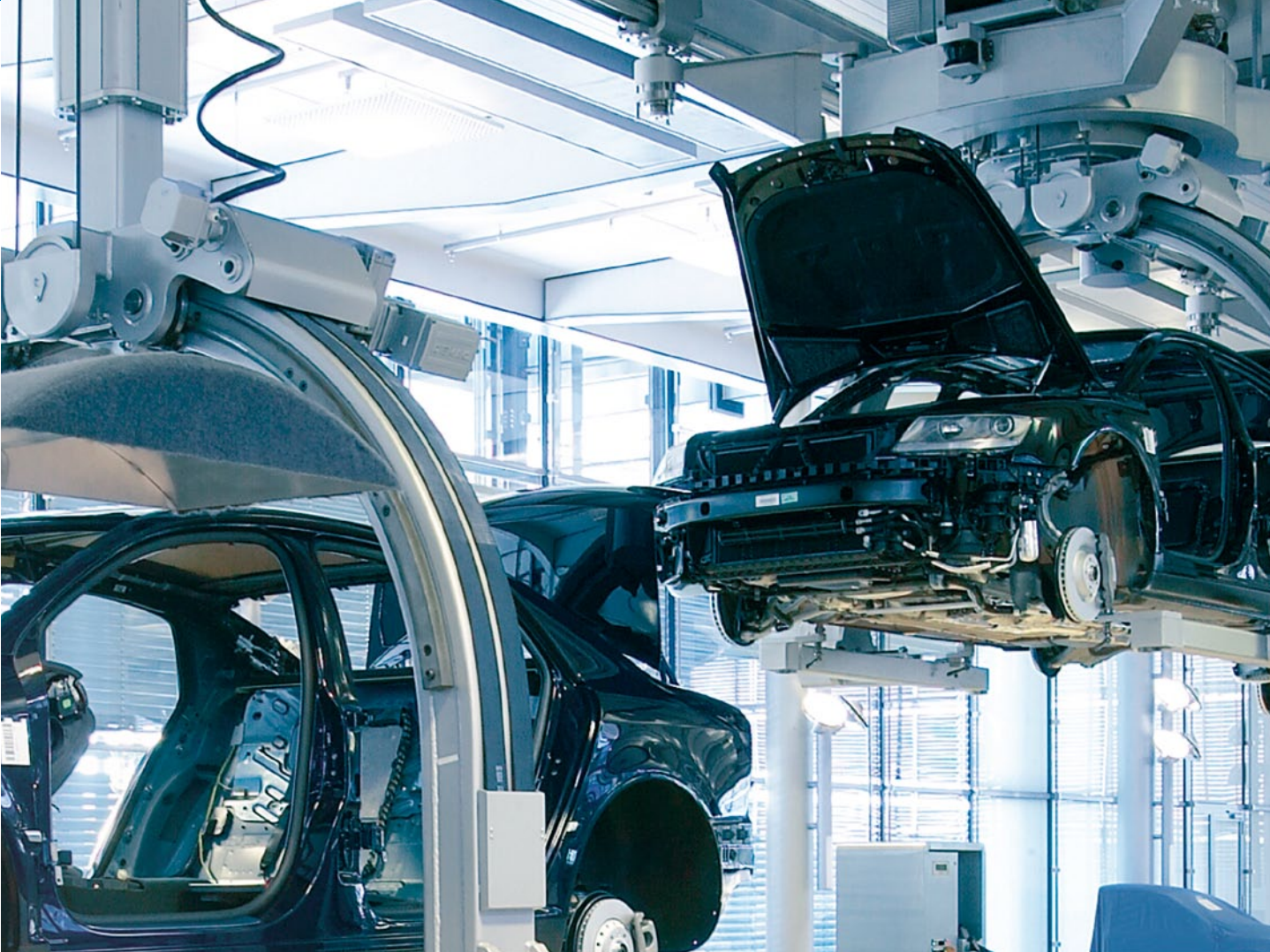


What you get from working with SICK

We help to increase your efficiency

As a leading manufacturer of automation solutions for industrial applications, we are familiar with the processes in our customers' organizations – and we are particularly familiar with their requirements for increased efficiency.





The focus and how you benefit from it

We provide safety

SICK concentrates strictly on the development and production of sensors for factory, logistics and process automation. The result is innovative, powerful products and systems that provide our customers the highest level of safety and increased quality.

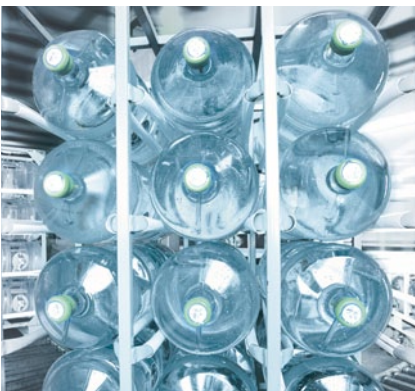


Openness

The secret behind our success:

All sensors in principle work in any automation scenario.

This level of openness provides our customers with maximum freedom and creates the best possible safety solution.



Factory automation

- Electro-sensitive detection, counting, classification and positioning of objects
- Detection of shape, position and surface differences
- Protection against accidents and protection of people with sensors, safety software and safety services



Logistics automation

- Automatic identification using bar code and RFID readers for sorting and destination control in industrial material flow
- Detection of volume, position and outline of objects and surroundings using laser measurement systems

Customers' markets and how we view them

We are familiar with your processes

Sensors from SICK are ideal for all automation in industry, regardless of the type of production processes used or which products are manufactured. For this reason in particular: as a development partner for industry, it is crucial for our success that we are fully familiar with the production steps in every market.

Versatility

With its specialized market expertise, SICK is your partner in the following markets:

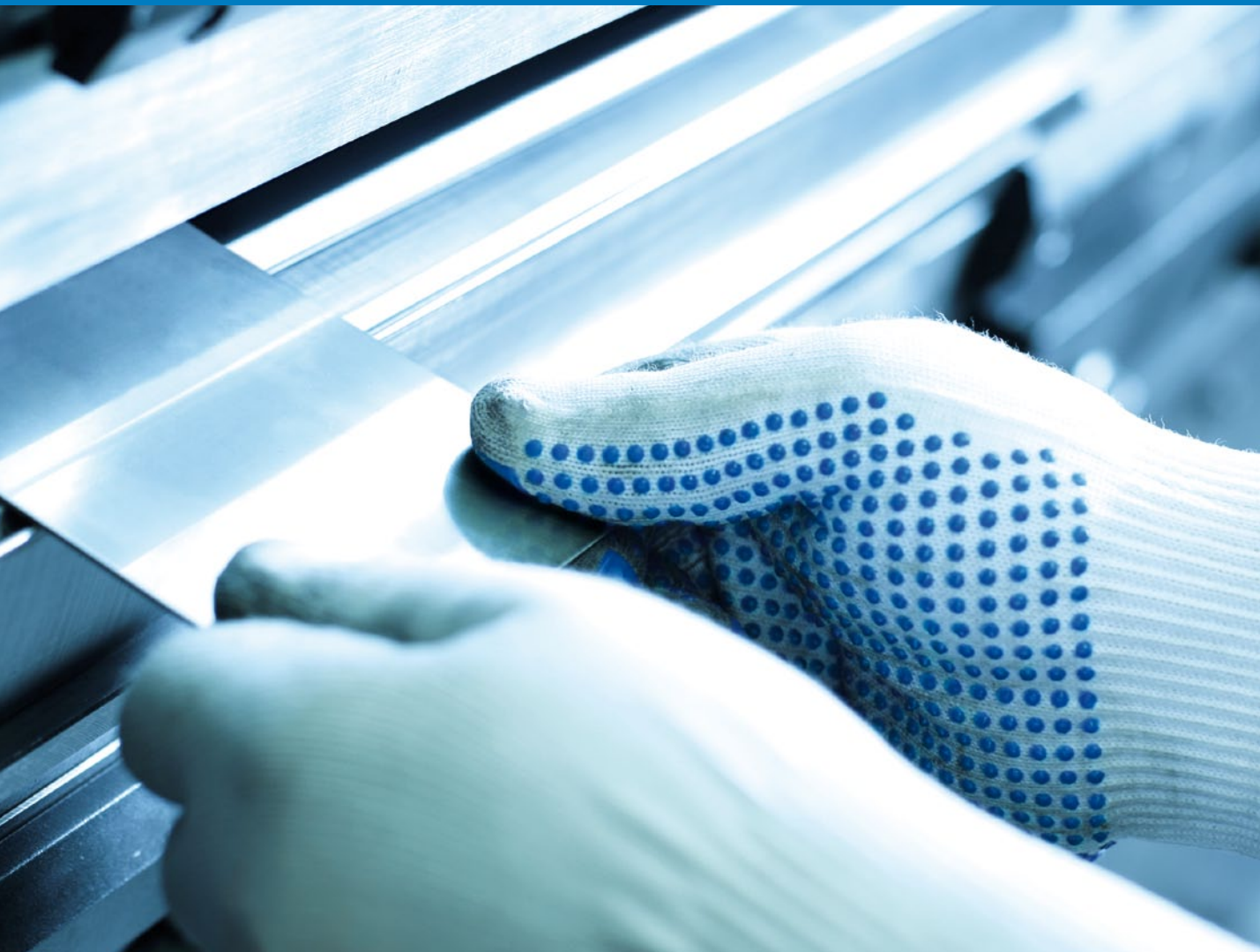
- Automotive
- Robotics
- Pharma & Cosmetics
- Consumer goods
- Food
- Beverage
- Machine tools
- Electronics & Solar
- Wood
- Print & Paper
- Textile
- Courier Express Parcel, Postal & Cargo
- Warehouse & Distribution
- Mobile vehicles
- Ports
- Traffic
- Airports
- Building automation



Automotive industry

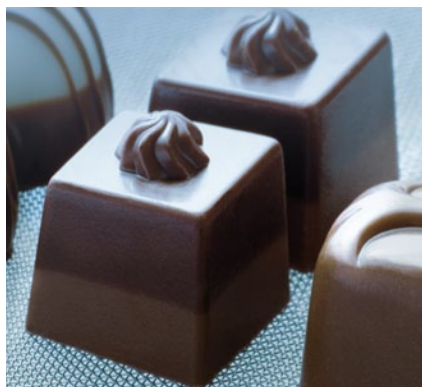
Our holistic view of optimization potential makes automated processes safer, faster and more transparent. The result is increased plant availability, while at the same time providing safety for workers and machines.





Food & beverage

With comprehensive knowledge, SICK understands every detail in automated production and handling. Perfectly matched sensors ensure plant safety and meet stringent hygienic requirements.



Logistics

In an increasingly global economy, the demands on logistics processes are growing steadily. With tailor-made solutions and products for control, identification, monitoring and measuring, SICK ensures customers have an efficient logistics chain.



A

Seeing details, understanding the big picture

SICK is a worldwide leading manufacturer of intelligent sensors and sensor solutions for all areas of factory, logistics and process automation. The company's comprehensive product portfolio is always oriented to delivering customer benefits. Years of practical experience and thousands upon thousands of application solutions go into creating precisely those products that will support your effort to design processes more efficiently and economically. SICK sensors take on tasks like measuring, detecting, safeguarding, identifying and positioning, for example. And they do the job in all areas of industrial production and logistics.

SICK sensors are almost everywhere: they detect production differences and quality deviations, and optimize workflows in all automated production processes. As part of accident prevention and personal protection, they safeguard access to robot stations and automatic conveyor sections, and they ensure the efficient flow of material in automatic identification systems.

Let's talk about the best solution to your automation tasks.

For more products see www.mysick.com

Industrial sensors



- Photoelectric sensors
- Inductive proximity sensors
- Capacitive proximity sensors
- Magnetic proximity sensors
- Magnetic cylinder sensors

Identification solutions



- Bar code scanners
- Image-based code readers
- Hand-held scanners
- RFID

Measuring and detection solutions



- Laser measurement technology
- Level sensors
- Pressure sensor

System solutions



- Volume measurement systems
- Code reading systems
- Dimension weighing scanning systems

Registration sensors



- Contrast sensors
- Color sensors
- Luminescence sensors
- Fork sensors
- Array sensors

Distance sensors



- Short range distance sensors (displacement)
- Mid range distance sensors
- Long range distance sensors
- Linear measurement sensors
- Ultrasonic sensors
- Optical data transmission
- Position finders

Automation light grids



- High end automation light grids
- Standard automation light grids
- Smart light grids

Vision



- Vision sensors
- Smart cameras
- 3D cameras
- Vision illuminations

Opto-electronic protective devices



- Safety laser scanners
- Safety camera systems
- Safety light curtains
- Multiple light beam safety devices
- Single-beam photoelectric safety switches
- Mirror and device columns
- Upgrade kits

Safety switches



- Electro-mechanical safety switches
- Non-contact safety switches
- Safety command devices

sens:Control – safe control solutions



- Safety relays
- Safety controllers
- Network solutions

Encoders



- Motor feedback systems
- Positioning encoders

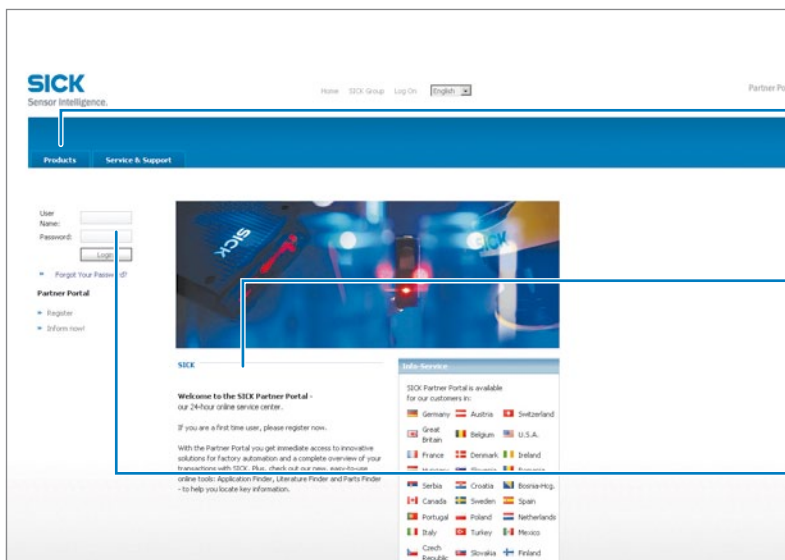
A

www.mysick.com – Your sensor e-business Partner Portal.

An online portal is essential when efficient and fast processing of every detail is required!

You will find comprehensive e-commerce tools and information for your sensor planning at www.mysick.com: complete order administration – from a product availability check, through offers and order conditions, to order placement and status. The SICK Partner Portal supports your workflow with the individual provision of user rights. Moreover, simple online access to application examples and technical data, drawings and graphics will effectively accelerate your product selection.

Plan your product solution online – at SICK's Partner Portal.



User-friendly: you will find everything you need for solution planning under the menu items Products, Information and My Processes.

24-hour availability: regardless of where you are in the world or when you want to know something, everything is available within a click at www.mysick.com.

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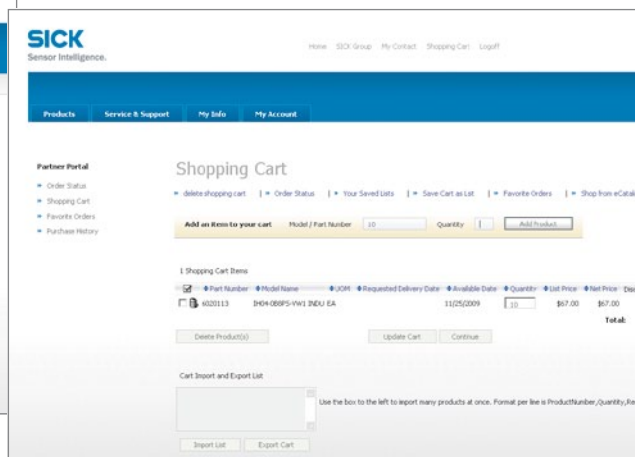
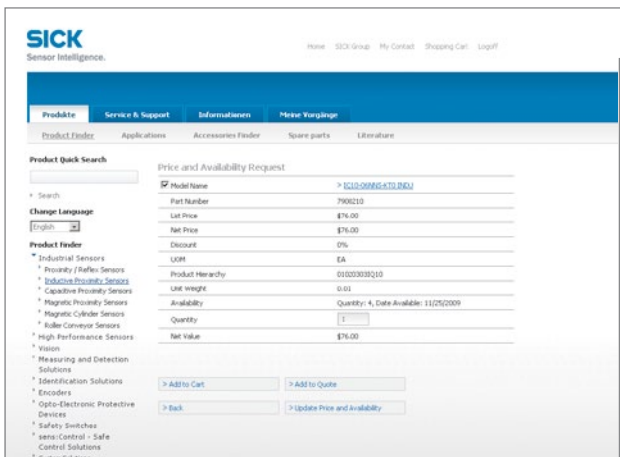


www.mysick.com/Literature
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The advantages of using in SICK's Partner Portal

- Work more efficiently online
- User administration supports your workflow
- Product availability is immediately displayed
- All processes are sped up, saving you time. For example, price inquiries, quotes, orders
- Find products, applications, circuits and accessories even quicker
- Products and additional information are linked, ensuring comprehensive search results
- All processes available at a glance: product searches, quotes, order status, etc.
- Exclusive downloadable content: technical data, drawings, graphics, etc.

Order online now!



Request price and availability:

Find the price and delivery date of the desired products easily and quickly.

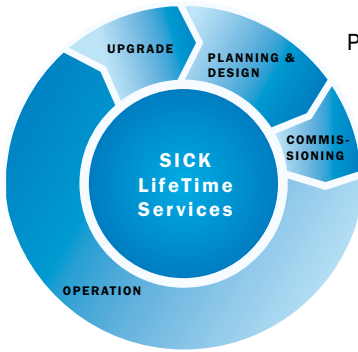
Request for a quote:

You can enter a reference number for a quote. The quote is available online. Each quote is confirmed via e-mail.

Online orders:

You can carry out the order process in just a few steps.

SICK LifeTime Services – a good decision for every phase of a machine's life



Protective devices, identification systems and measuring systems report information relevant to the system control and protect man and machine. When optimally integrated and maintained, these components and systems offer great potential for safe processes, consistent product quality and protecting people and the environment.



The complete concept from SICK

From the first meeting and for many years to come, SICK LifeTime Services offer the right level of service to meet customers' needs. Place your trust in SICK from the beginning. Our practical experience and extensive knowledge of the industry make us highly-qualified partners. SICK service contracts are designed to be convenient. They include guaranteed hotline availability for quick help in solving the problem yourself as well as guaranteed reaction times for on-site call-outs – for all types of production, anywhere in the world.



Machine and system services

Service contracts for SICK LifeTime Services[®]:

- Inspection contracts for assessing the current system status with recommendations for optimization
- Maintenance contracts for carrying out preventative measures and optimizations
- Service contracts as tailor-made service packages, from reaction time agreements to support availability





Consulting & Design

For the ideal fusion of product, application and industry expertise to form the perfect solution.



Upgrade & Retrofits

For integration of powerful and innovative SICK systems and sensors into existing systems to maintain or increase efficiency.



Product & System Support

For rapid reaction and reliable support for inquiries about integration and the function of SICK systems and sensors. Experienced specialists deal with your problems professionally and provide practical solutions.



Training & Education

For well-trained staff and optimum use of SICK systems and sensors. SICK seminars and user training courses increase the confidence of design engineers and supervisors.



Verification & Optimization

For optimum use and smooth operation of SICK systems and sensors. Use SICK's experience for optimum system efficiency.



B



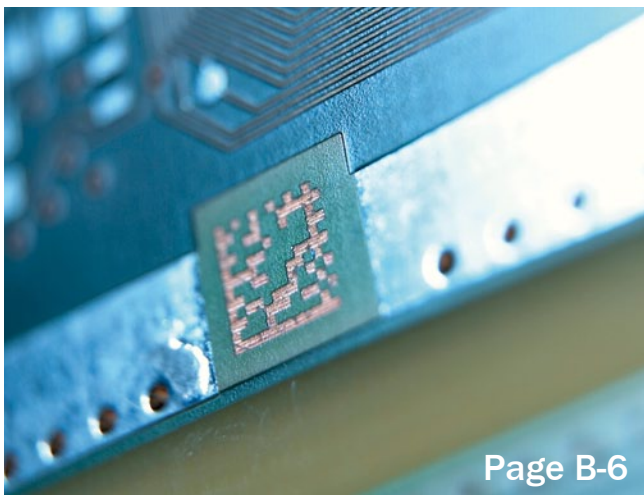
Page B-2

1D codes, also known as bar codes, are a data encoding technology. With the help of a suitable reader, the information within a bar code can be decoded and assigned to a specific object.



The right identification technology for your application

SICK offers three different identification technologies and can help you select the right one for your application. On the following pages, you will find basic information about the technologies to support you in reaching a decision.



Page B-6

Readers based on camera technology are used to read codes. There are two different types of image-based readers, which include line scan cameras and matrix cameras.



Page B-9

RFID is becoming an increasingly popular automatic identification technology in applications where process reliability is the main priority. RFID, which is used to identify and track products, is ideal for providing more transparent information in complex process flows.

1D codes (bar codes)

B



How it works

The encryption of the information contained in the bar code is based on the binary principle (0 or 1), which uses the information contained in the gaps (typically a reflective element) and the bars (typically an absorbent element). To read the bar code, you use a reader that emits red light (laser) onto the codes and converts the light reflected off the bars and gaps into a binary signal. A processor inside the reader digitizes the analog signal it receives, decodes it and sends the information to the host in a suitable format.

Although laser-based readers are often used to read 1D codes, camera-based technologies can also be used to read these codes. Unlike the laser scanner, the information is not evaluated from the binary signal but from an image.

Components of a bar code

The basic components of a bar code are the “quiet zone,” “start character,” “information,” “check digit” and “stop character.”

The information is encoded by arranging the bars and gaps in a specific order (see below). There are two types of bar codes: discrete codes, in which only the bars contain information, and continuous codes, in which both the bars and gaps contain information. The quiet zones are the white zones before and after the code. These zones are necessary to start and stop the reading operation. They must be at least ten times larger than the smallest bar or the smallest gap in the code.

The start and stop characters contain information about the type of code and enable reading in either direction. The information part contains data for identifying either the product or some of its features. Each symbol is represented by a corresponding sequence of gaps and bars. Some code types only represent numerical sequences, while others represent alphanumeric ones. Depending on which type of code is used to encode the information, each section of the code can be represented by a different number of bars and gaps, which makes it possible to influence the density of the bar code.



Effect of a bar code's print quality on the received signal

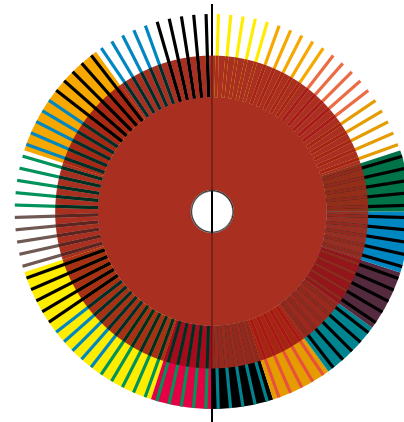
Bar codes that are printed in sub-standard quality create false signals that could be interpreted incorrectly or not at all. The print quality of a bar code is determined by the PCS (print contrast signal).

This is calculated as follows:

$$\frac{\text{background reflection} - \text{bar reflection}}{\text{background reflection}}$$

To ensure reliable reading, the PCS should be $\geq 75\%$.

In the bar contrast chart below, you can see bar elements of a high PCS on the left, and on the right, it shows a low PCS. The red surface simulates the reader's laser light. Image-based code readers using white-light illumination can be used to identify red bar codes.



Common 1D bar code types

There are many types of 1D codes. The following four code types are the most common.

Code 2/5 Interleaved



Continuous code is primarily used in industrial environments. **Only numerical characters** are accepted. An information digit consists of five elements (two wide and five narrow) and enables information-dense codes. This is an all numeric bar code that has to be printed in small space.

Code 128/EAN 128



Continuous code, mainly used in industrial environments (EAN 128), enables the **complete encoding of the ASCII character set**. The major advantage of this code is the ability to manage large variety and density of information.

Code 39



Discrete code is mainly used in industrial environments. **Alphanumeric characters** are accepted. An information digit consists of nine elements (three wide bars and six narrow ones) and therefore possesses a lower density of information.

Code EAN/UPC



Continuous code is mainly used for the consumer market (UPC codes primarily used in America). Only **numerical characters** are accepted, with a specified length (8 or 13 digits for EAN and 6 or 12 digits for UPC).

B

Possible alignments of the bar code

There are various options for arranging the encoded objects based on the direction of movement. Depending on the application and the installation situation, a suitable scanner can be used.

Ladder orientation = bar code element parallel to the direction of movement

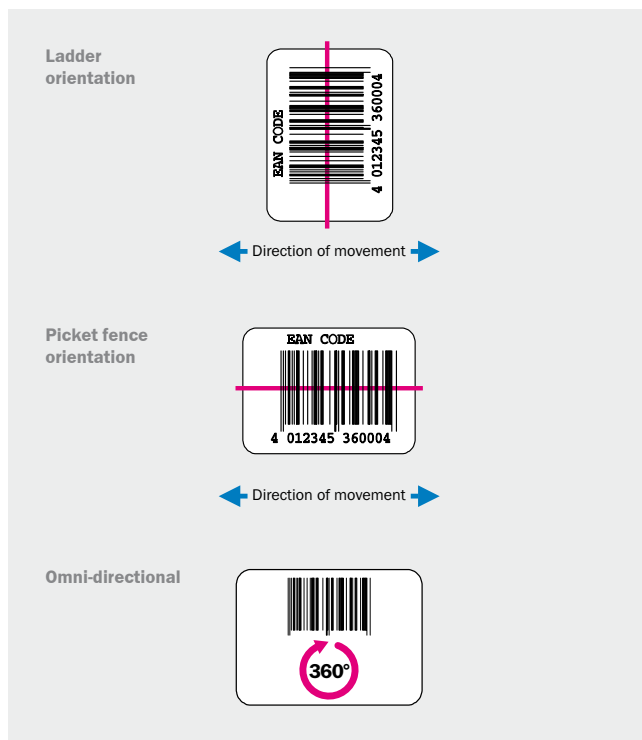
For this type of application, a line scanner is normally used. The line scanner uses the movement of the scanned object to read the code.

Picket fence orientation = bar code element perpendicular to the direction of movement

To satisfy a variety of reading situations, you can select from three different scanner types, including **line scanner**, **raster scanner** and **scanner with oscillating mirror**.

Omni-directional = all rotational orientations

If the alignment of the bar code varies in the application, multiple laser scanners can be used to create an “X” pattern or an image-based code reader can be used to read bar codes independent of orientation.

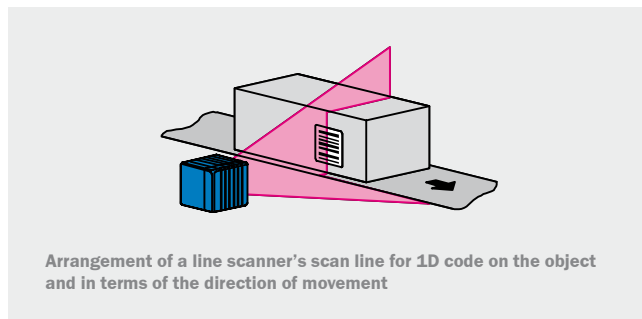


Scanning methods

Laser scanners

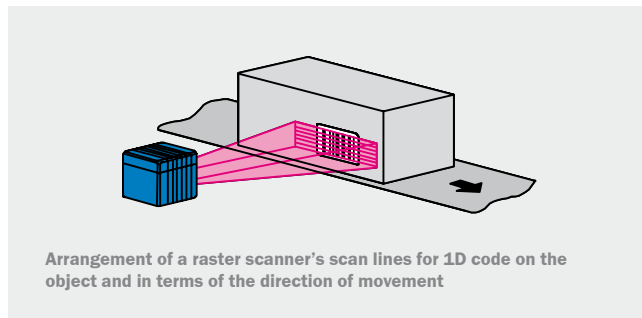
Line scanners

Line scanners, which emit a single scan line, use the movement of the bar code to read it. The scanners can be placed at right angles to the bar code or tilted by a few degrees, depending on the alignment of the bar code and the decoding type supported by the reader.



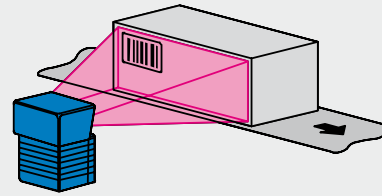
Raster scanners

Raster scanners emit multiple parallel scan lines. They are used for the “picket fence orientation” described above and provide a high degree of redundancy if a code has stains or faulty areas on it.



Scanners with oscillating mirror

Scanners with oscillating mirrors have an oscillating scan line. They make it possible to read codes if the bar code position is not firmly defined or multiple codes have to be recorded within the scanned area.



Arrangement of a line scanner with oscillating mirror's scan lines for 1D code on the object and in terms of the direction of movement

B

Image-based code readers

Image-based code readers offer a high degree of flexibility in terms of code types that can be used, print quality and color, and code orientation. They can identify both 1D bar codes and 2D codes.

Image-based code readers allow you to record images for downstream tasks such as OCR reading, image storing and video coding

For details about the camera technology, see page B-6.



Code reading systems

If the application requirements are challenging, a network of multiple code readers technologies can solve almost any task.

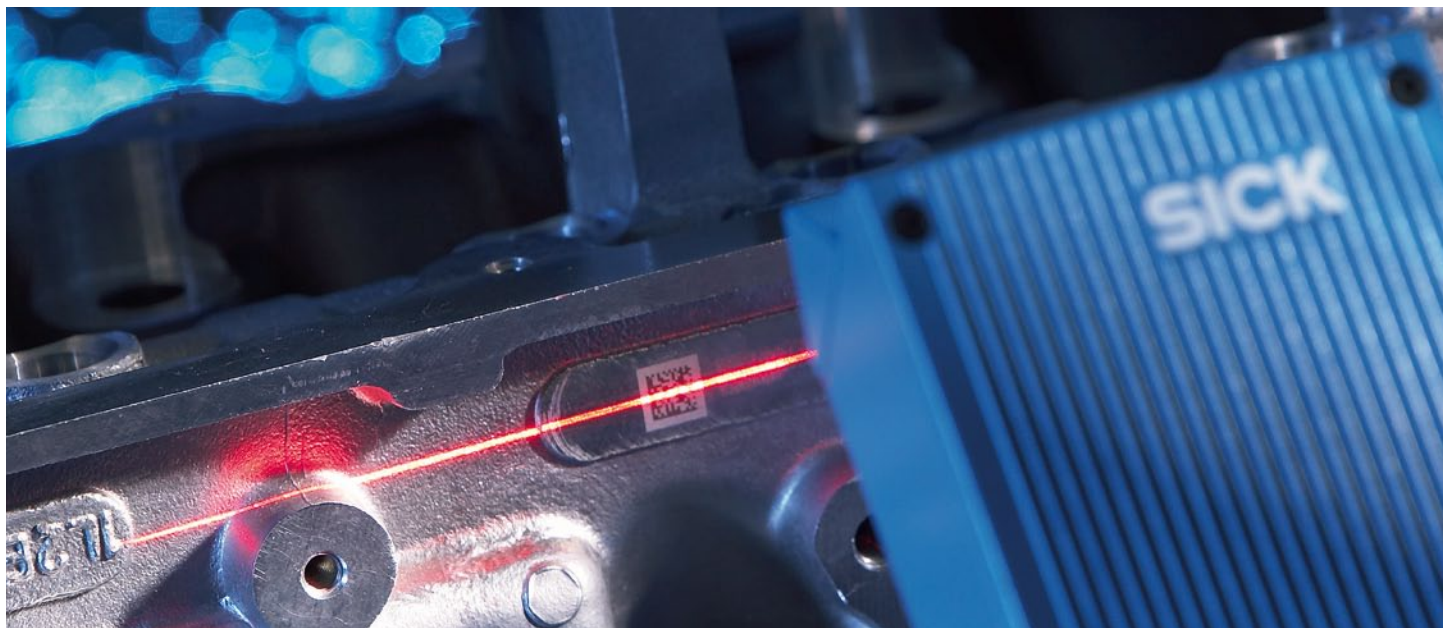
- Codes read independent of orientation
- Individual adjustment of the systems to meet your needs
- Multiple sides of an object can be scanned
- Record images for downstream tasks such as OCR reading, image storing and video coding

For details about our individual system solutions, see page E-1



2D codes

B



Advantages of 2D codes

The recent popularity of 2D codes is due to its high density of information and minimal space requirements. It is the code of choice for secure identification and verification, seamless parts tracking and reliable variant production control. 2D symbologies are preferred technologies for direct part marking (DPM) applications.

Worldwide, the most frequently used 2D code is the Data Matrix code.

The best features of Data Matrix codes:

- Minimal space requirements with large data capacity (e.g., up to 3,116 numerical characters)
- High degree of scanning reliability due to the error correction algorithm (Reed-Solomon algorithm)
- Large data redundancy, meaning a code can be read even if 30 % of it is destroyed
- Globally standardized communication through international standards

Typical features of the "Data Matrix ECC200" 2D code



Increased flexibility provided by 2D codes

Multiple options for marking and reading 2D codes allow added flexibility.

B

Marking method



Direct part marking

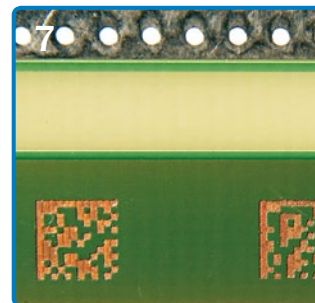
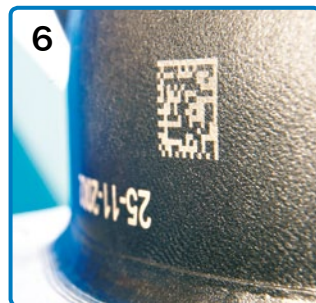
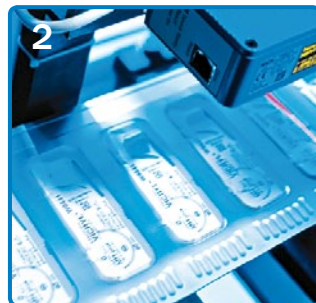
The option of direct part marking (DPM) is a special feature of the 2D code. The code is applied directly to the object, without the use of a carrier material. This makes the object clearly identifiable throughout its product life. Depending on the application and object material, different methods are used:

- Laser
- Inkjet
- Dot peening
- Electrochemical etching

Indirect marking

Indirect marking is applied by attaching a label printed with the 2D code to the object.

Marking method: (1) Laser on metal, (2) Laser on foil, (3) Label on plastic, (4) Laser on metal, (5) Dot peening on metal, (6) Laser on convex plastic, (7) Laser on circuit board, (8) Inkjet on paper.



2D codes scanning methods

The image-based code readers described here are also suitable for reading 1D bar codes.

B



The line scan camera

The line scan camera reads 2D code information line by line. This information is then converted by software algorithms back into a two-dimensional image. The camera sensors read the individual lines at a very high frequency (e.g., 45 kHz), enabling them to complete identification tasks at very high conveyor speeds. With a large reading range the code can be flexibly positioned and oriented. The triggering takes place on the moving object.

- High resolution
- Identification at very high speeds is possible
- Triggering on object
- Distortion-free reading, even on curved objects

The matrix camera

A matrix camera works like a traditional digital camera where a two-dimensional image is recorded. With an image refresh rate of 25-200 Hz, objects can be identified when standing still or moving at high speeds. With this method, larger depth of field can be achieved. Additionally, it is easy to operate and has flexible lighting options. External LED lights and LED lights integrated into the device can be used to record an optimum image of the bar code for reading.

- Large depth of field
- Flexible lighting
- Reading stationary and moving codes
- Simple commissioning



RFID (radio frequency identification)

**B**

Applications

The use of “intelligent” RFID technology offers major opportunities for optimizing and controlling capacities, such as traceability and reliability. Identification via radio frequency opens up a new dimension of automated data capture. Maximum reliability, high speeds and above-average industrial compatibility are some of the benefits that make this technology ideal for a variety of new applications. This

technique has been in widespread use for years to identify small animals and livestock, for immobilizers in automobiles and for admission control in buildings. Due to international standards, it is now possible to use RFID technology in open applications, as a logistics solutions.

How it works

B

RFID describes a broad range of technologies that use radio-based identification. The decisive components in an RFID system are the recording/reading unit, also known as an interrogator, and the mobile data carriers, referred to as transponders. The interrogator and transponders communicate via what is known as an air interface.

We differentiate between active and passive technology, and the various radio frequencies used for transmission.

In active systems, transponders have an independent power supply (battery), whereas in passive systems the transponders' electrical supply comes only through the air interface. In industrial automation, passive transponders in the high frequency (HF) range (13.56 MHz) and ultra-high frequency (UHF) range (between 860 MHz and 960 MHz) are most commonly used. This is mainly due to established industrial standards (ISO 18000) and the cost-effectiveness of passive transponders.

In **HF systems**, data transmission takes place within the interrogator antenna's near field. The magnetic alternating field supplies the transponders with energy and implements the data transfer between the recording/reading unit and the transponders. The ranges for recording and reading in the HF range are up to 0.5 m and vary according to the system layout (antenna size, sender power, transponders, metallic surroundings).

UHF systems work in the far field and are suitable for ranges of up to 6 m. The ranges that are possible depend on the sender power, transponders and external variants such as air humidity and metallic surroundings. Due to the physical properties (particularly "field obliteration" by reflections), UHF applications are used with moving objects.

	HF	UHF
Frequency	13.56 MHz	860 ... 960 MHz
Important standards	ISO 15693, ISO 18000-3 M1	ISO 18000-6C, EPC Gen2 Class 1
Transmission principle	Load modulation (inductive coupling)	Backscattering (capacitive coupling)
Max. range	0.5 m	6 m
Liquids	Unproblematic	Absorbent (strong influence on the maximum range)
Metal	Detuning of the resonance frequency	
	Reduced range due to damping	Uncontrolled fields of view due to reflections

Process optimization with RFID

- Up-to-date and reliable information**
 By combining the material flow with the information flow, the information systems constantly map the current flow of goods. The information in the system is therefore more precise and up-to-date.
- Avoiding posting errors**
 Typical errors during receiving and issuing of goods, such as incorrectly recorded quantities, incorrectly posted products or forgotten postings, are now avoided.
- Reducing search times**
 With RFID, postings are automated for transfers. This not only eliminates any manual labor, but also prevents manual errors and reduces costs.
- Avoiding production downtime**
 Precise mapping of material movements in the information system leads to greater inventory accuracy and better delivery reliability.
- Optimizing production planning**
 Since each material flow is immediately mapped in the information system, production planning can be scheduled more precisely due to more up-to-date information.
- Lower capital commitment**
 Increased transparency and improved planning make it possible to reduce excess capacities in containers and release tied-up capital.
- Remote process control**
 Since data is managed directly on the object, processes can also be controlled without direct access to databases (e.g., ERP systems). This increases plant availability and reduces costs for plant extensions.

B



Advantages of RFID

- Larger data quantities can be stored on the transponder
- New data can be rewritten to the transponders
- No visual contact required
- Bulk-compatibility, i.e., multiple transponders read simultaneously
- Dirt-resistant and maintenance-free system
- Reusable transponders
- Fully automated data capture possible with little effort

C



A single source for all your technology needs

All you can read

C

Ensure your investment over the long term

IDpro represents SICK's expertise in all three automatic identification technologies: **laser scanner, camera and RFID.**

All IDpro devices are compatible and interchangeable via our standardized IDpro platform. To help you choose the ideal identification technology, we will provide you with comprehensive information to determine the best technology choice.

As the market leader with the largest number of worldwide installations, we have the experience and widest range of solutions that provide maximum uptime and reduced costs.

The benefits of IDpro devices

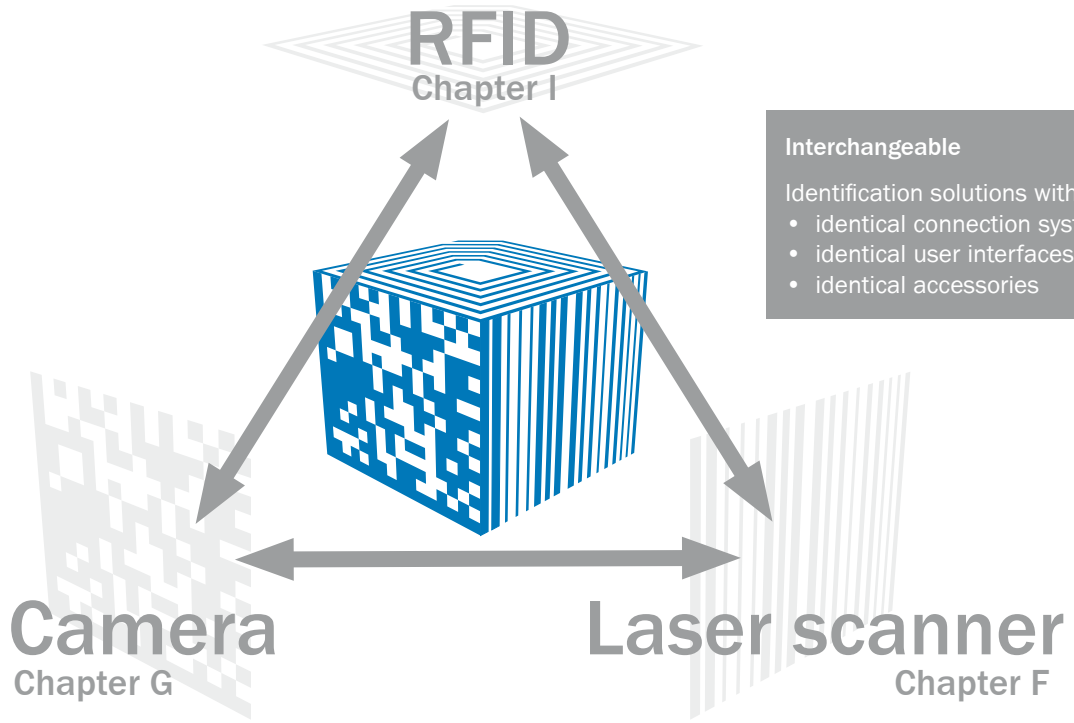
- **Reduced integration effort**
thanks to standardized IDpro platform
- **Simple commissioning**
even with cross-technology applications
- **Maximum process reliability**
through the use of common industry standards in the connection systems
- **Fast and flexible exchanging**
due to standardized connection systems
- **Low-cost maintenance**
- **Fast training in the three identification technologies**
thanks to the standardized operating concept with a single operation software
- **Investment security**
due to the ability to easily switch between technologies with the same connection systems
- **Low storage effort, low storage costs**
due to fewer components and accessories
- **Information from a single source**
cross-technology and comprehensive

C



Benefits

- Data can be read and recorded
- Bulk recording option: simultaneous identification of various objects in a single read operation



Interchangeable

- Identification solutions with
- identical connection systems
 - identical user interfaces
 - identical accessories

Benefits

- Improved code reading flexibility: the camera technology can identify both 1D and 2D codes
- Due to omni-directional 360° identification, objects can be read in any orientation
- Image processing improves performance and provides higher read rates for poor-quality codes

Benefits

- Greater flexibility in the object distance, due to greater depth of field
- Complete coverage of the conveyor system due to wide scanning field
- Laser technology enables flexible mounting, regardless of ambient light



Connection

Rotatable plug units, flexible mounting

- The practical, rotatable plug unit makes it possible to fit and connect IDpro devices in difficult-to-reach locations
- Convenient network configuration, fast plug connection and flexible mounting for all devices

Ethernet on-board

- No additional Ethernet gateway is needed, reducing costs
- Secure investment: future industrial Ethernet protocols can be imported via software

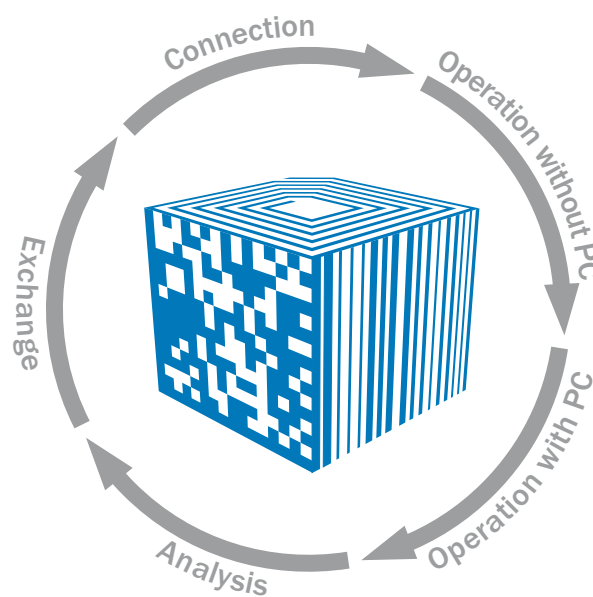
Same modular connection systems for all devices

- All IDpro devices function with the same modular connection systems. And, since it is easy to switch between technologies, you'll benefit from simplified ordering, reduced integration effort, and investment security
- Flexible fieldbus connection via connection modules

Exchange

Cloning function

- Simple and fast exchange – without reconfiguration – using a PC, due to parameter cloning via optional **micro SD card** or **cloning module**



Operation without PC

Function keys and LED display on the device

- Two function keys, e.g., for starting the auto setup and teaching a match code
- LED bar graph for checking the read rate
- Auto setup for automatic configuration of the device

Analysis

Standardized diagnostic function

- An event monitor enables rapid analysis of the IDpro device's inputs and outputs. A diagnostic monitor instantly visualizes the effects of parameter changes

Operation with PC

Same user interface for all devices

- SOPAS-ET provides greater flexibility – the cross-platform tool for all SICK devices
- Standardized IDpro data output format with innovative data handling: the sorter, filter and output formatter transfer the data to the controller in the desired format



All you can read

Typical applications

In this chapter, we present typical applications that use our identification solutions. In the detailed descriptions of the **application, task, implementation** and **customer benefit**, you will find **product recommendations** suitable for each application.

The order of the descriptions in the catalog is organized into the following sectors:

- Automotive industry
- Document processing
- Electronics industry
- Food and beverage industry
- Logistics
- Office
- Pharmaceutical/medical technology
- Storage/conveying technology



D

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Automotive industry

- Identifying assemblies and vehicle components D-3
- Identifying unfinished bodies D-4
- Identifying Data Matrix codes on engine blocks D-5

Document processing

- Identifying letters in envelopes D-6

Electronics industry

- Identifying printed circuit boards D-7

Food and beverage industry

- Packaging validation in the food sector D-8

Logistics

- Automatically identifying commissioned container goods D-9
- Inventory management D-10

Office

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Pharmaceutical/medical technology

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- Identifying pharmaceutical folding boxes D-13

Storage/conveying technology

- Recording packages and pallets with RFID technology . D-14
- Mobile bar code reading on pallets D-15

Recommended products for solving the applications

D

	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV49x	CLV49x	CLV50x	CLV62x	CLV63x	CLV64x	CLV65x	LECTOR®62x	ICR80x	ICR840-2	ICR845-2	ICR84x-2L FlexLens	ICR85x-2	IDM1Lx	IT3xxx	IT4xxx	IT6xxx	RFH62x	RFI/RF341	RFI/RF641
Automotive industry																										
Identifying assemblies/ vehicle components					■								■	■	■	■	■	■		■	■	■	■			
Identifying unfinished bodies					■	■	■						■					■								
Identifying Data Matrix codes on engine blocks														■		■	■	■								
Document processing																										
Identifying letters in envelopes										■				■			■		■							
Electronics industry																										
Identifying printed circuit boards	■	■		■					■	■		■		■	■	■	■		■							
Food and beverage industry																										
Packaging validation in the food sector		■	■							■	■			■			■		■							
Logistics																										
Identifying commissioned container goods																								■	■	
Inventory management	■	■	■	■	■	■	■	■		■	■	■	■								■	■				
Office																										
Office automation																					■	■	■			
Pharmaceutical/ medical technology																										
Clinical analysis	■	■		■	■				■	■		■	■	■	■											
Identifying pharmaceutical folding boxes	■	■	■						■	■	■			■			■		■							
Storage/conveying technology																										
Recording packages/pallets																										■
Mobile bar code reading on pallets						■	■	■					■						■							
From page	F-8	F-12	F-18	F-24	F-28	F-32	F-36	F-42	F-46	F-50	F-56	F-64	F-70	G-6	G-10	G-14	G-20	G-26	G-32	H-4	H-10	H-14	H-18	I-4	I-8	I-10

Identifying assemblies and vehicle components



Applications Finder

- For up-to-date example solutions to applications, visit SICK's web site (www.sick.com).
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Areas of application

- Assembly

Task

In production and assembly applications, individual components and assemblies are identified by bar code. After the data is read, it is transferred to the host system's database. The production data is processed, checked and stored for

traceability. Although most bar codes are printed on paper labels, directly marked codes (e.g., lasered or dot peened) are becoming increasingly common.

Implementation

Assemblies and vehicle components are mainly identified using portable hand-held scanners or stationary code readers based on camera technology. To identify

the DPM (direct part marking) codes, which are frequently low-contrast or very small, the scanning devices require special lighting and decoding algorithms.

Customer benefits

The code readers are not only intuitive and easy to use, but they are also simple to install and configure. Even

poorly printed, low-contrast bar codes can be quickly scanned, which increases productivity.

Recommended products

IDM1xx	.....	H-4
IT3xxx	.....	H-10
IT4xxx	.....	H-14
IT6xxx	.....	H-18
CLV45x	.....	F-28
CLV65x	.....	F-70
LECTOR®62x	.....	G-6
ICR80x	G-10
ICR840-2	G-14
ICR845-2	G-20
ICR84x-2 FlexLens	G-26

D



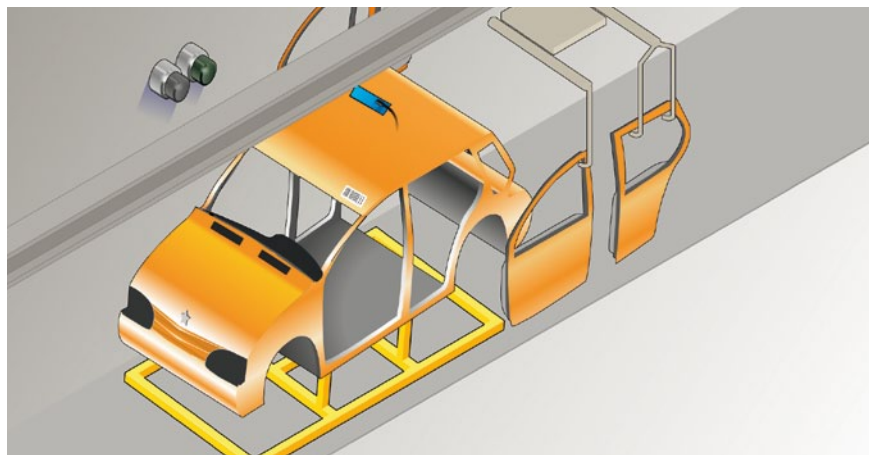
Applications Finder

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Recommended products

CLV45x.....	F-28
CLV48x.....	F-32
CLV49x.....	F-36
CLV65x.....	F-70
ICR84x-2 FlexLens	G-26

Identifying unfinished bodies



Areas of application

- Automotive plant

Task

In an automotive plant, car bodies have to be identified uniquely so that additional body parts can be correctly assigned in the assembly line. As different

models with varying vehicle heights are produced in the assembly lines, a code reader with a large reading distance and variable focal position is needed.

Implementation

Codes can be read as the conveyor is moving by a scanner/camera mounted above the assembly line. Since the code reader has a reading distance of 1.2 m and more, it can be mounted beyond the projecting edges. The SMART code reconstruction algorithm or the use of Data Matrix codes enable a high degree of scanning reliability – even with poor-quality codes. Additionally, the bar code

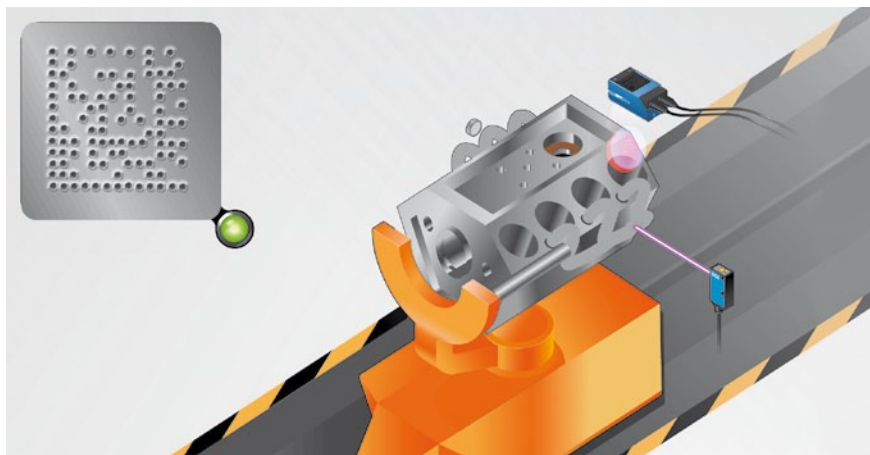
scanner has dynamic/auto focusing, so the scanner can be set to different reading distances based on the vehicle type. When the bar code is inside the scanner/camera's reading window, the read information is transferred to the central computer.

Customer benefits

The long reading distance and large depths of field (due to the dynamic/auto focus) and the SMART code recon-

struction algorithm enable secure and trouble-free identification of unfinished car bodies.

Identifying Data Matrix codes on engine blocks



Areas of application

- Automotive plant

Task

To ensure the engine is matched to the correct car body and chassis frame, the engine has to be uniquely identified during transportation. As a result, a dot peened Data Matrix code is directly marked into the engine block. During

final assembly, the image-based code reader identifies the code to ensure the appropriate engine blocks are transported to the various car bodies and chassis frames.

Implementation

A image-based code reader is used for this type of application. Mounted vertically above the conveyor system, the code reader is triggered by a photoelectric sensor. Once triggered, the device is able to identify the dot-peened code – either while the conveyor is moving or during a very short stop of the transport

rack. The acquired data is then transmitted to the mainframe computer. The code reader is commissioned by means of the easy-to-use setup software. A live image and automatic configuration during auto setup make it easy to quickly configure the device.

Customer benefits

Using a image-based code reader, it is possible to trace the engine block throughout its entire service life. Easy commissioning, large scanning ranges, a sturdy design, adjustable focus,

comprehensive lighting solutions and a user-friendly interface allow the sensor to be quickly adjusted to the application requirements.



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Recommended products

LECTOR®62x	G-6
ICR840-2	G-14
ICR845-2	G-20
ICR84x-2 FlexLens	G-26

D



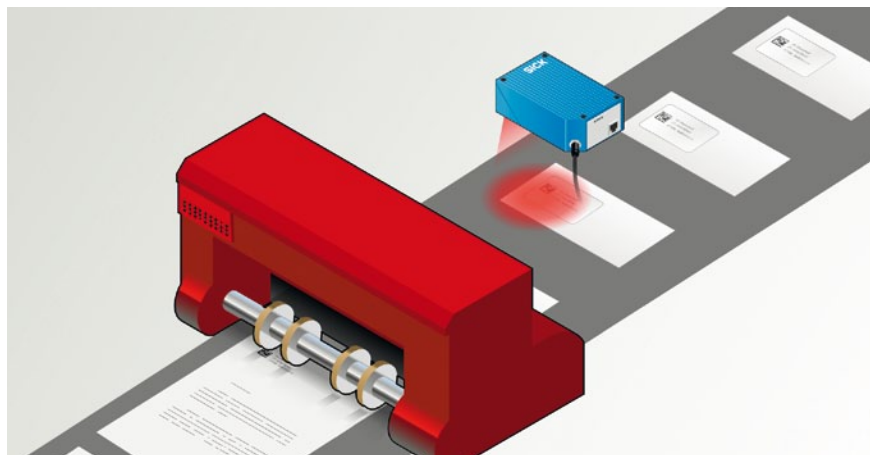
Applications Finder

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Recommended products

CLV62x.....	F-50
LECTOR®62x	G-6
ICR845-2.....	G-20
ICR85x-2	G-32

Identifying letters in envelopes



Areas of application

- Enveloping machine

Task

Form letters, which are prepared in an enveloping machine, include a bar code that contains specific information, such as the recipient's address. In the enveloping machine, each individual letter is recorded through the window

and documented – making it easy for the mail carrier to deliver. For this application, object frequencies of up to 25 Hz and bar code speeds of up to 6 m/s are required during the identification process.

Implementation

Since there are only a few milliseconds available to identify letters, it is often difficult for code readers to quickly and sequentially identify line or 2D codes in enveloping machines. Due to the large

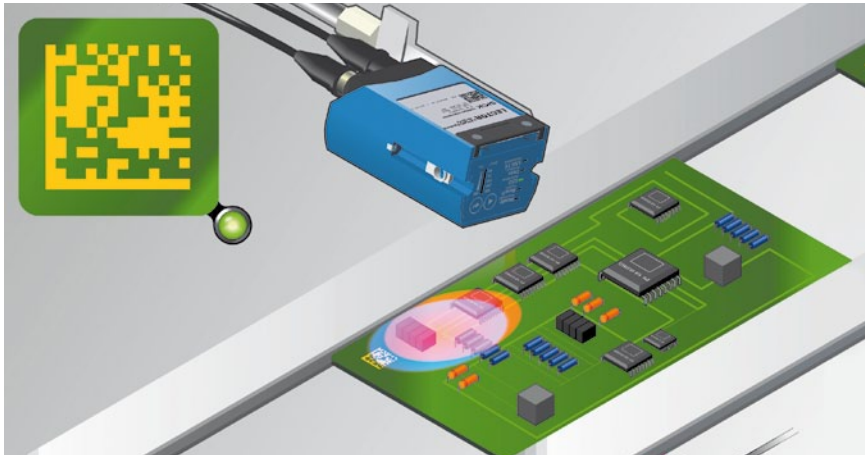
throughput each hour, a stable read rate close to 100 % is necessary. As a result, high device reliability is the maximum priority.

Customer benefits

Once the bar code records the letter, the stored data is automatically documented. With this data, mail delivery information is automatically sent to the postal

service, saving time and costs. Plus, secure identification at very high transport speeds enables a high machine throughput, making it very efficient.

Identifying printed circuit boards



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Areas of application

- Pick and place machine and handling systems

Task

When printed circuit boards are assembled, the circuit boards receive a bar code or a Data Matrix code with a serial number. These serial numbers are read at each machining step throughout the production process, making it possible to track products throughout the entire product life cycle. After the numbers are read, they are transferred to the host

system's database. The production data is then stored for both further processing and future repairs and returns. The codes are often applied using laser markings and have to be identified at an average transport speed of 0.3 m/s. Since DPM codes are often low contrast, it can be difficult to accurately identify these codes.

Implementation

Using code identification devices, which are based on laser scanner or camera technology, printed circuit boards can be easily identified. As electronic devices continue to get smaller, the space avail-

able for the bar codes is becoming more and more restricted. These readers, therefore, have special optics that securely identify codes with minimum dimensions.

Customer benefits

Since the readers are able to scan large image sections, the device does not need to be retrofitted when the board layout is changed. Simple networking via CAN also enables reliable identification

of moving circuit boards, even if the bar codes are of poor, low-contrast quality.

Recommended products

CLV41x.....	F-8
CLV42x.....	F-12
CLV44x.....	F-24
CLV50x.....	F-46
CLV62x.....	F-50
CLV64x.....	F-64
LECTOR®62x	G-6
ICR80x	G-10
ICR840-2	G-14
ICR845-2	G-20
ICR85x-2	G-32

D



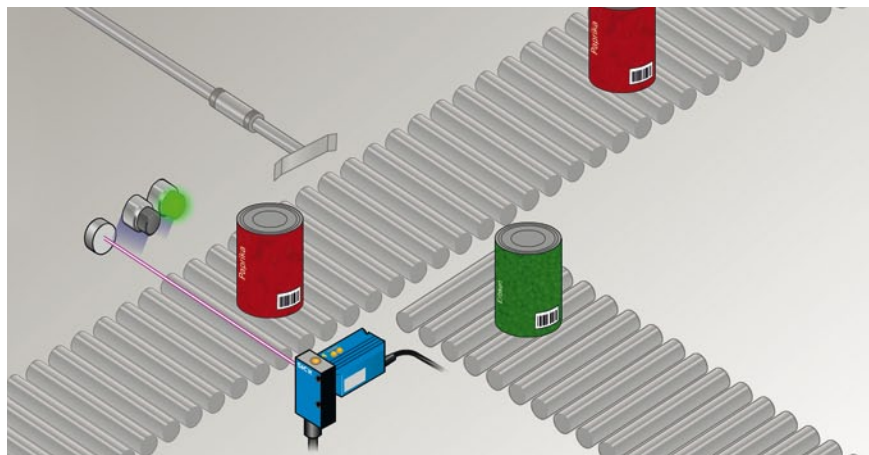
Applications Finder

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Recommended products

CLV42x.....	F-12
CLV43x.....	F-18
CLV62x.....	F-50
CLV63x.....	F-56
LECTOR®62x	G-6
ICR845-2.....	G-20
ICR85x-2	G-32

Packaging validation in the food industry



Areas of application

- Ejector

Task

In a packaging system used to package different food products, bar code labels are checked to ensure they are present,

correct and legible. An all-in-one system that can be taught the code and can visualize possible errors is required.

Implementation

The solution is an all-in-one system based on at least one bar code scanner/camera system. The code reader must be compact and suitable for fast conveyor speeds. Its ability to be taught a matchcode via its optics is a major advantage when products or batches change frequently. When a batch is changed, a new matchcode is taught via the bar code scanner. During the product verification process, the device checks

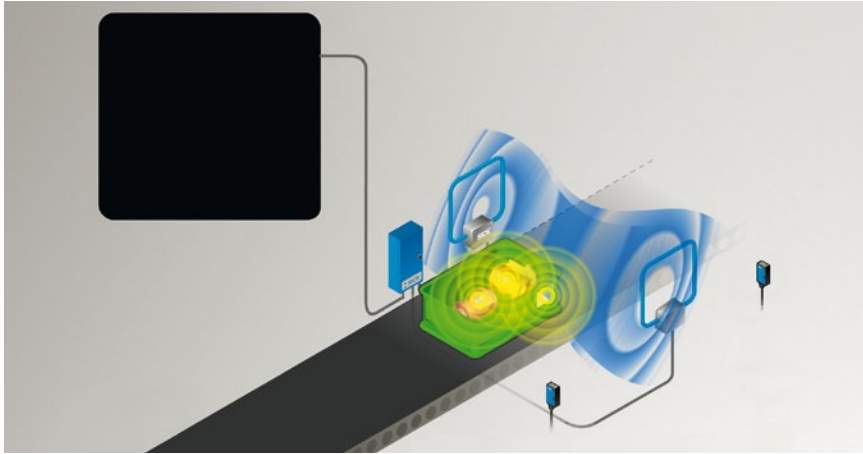
that the product was given the correct label. If the label is not correct, a digital output on the code reader is applied, triggering the ejection mechanism. If the code is not read, a second digital output on the device is applied, meaning the product does not have a label. This output can be linked to a signal lamp, for example, that indicates to the machine operator that the label container has to be refilled.

Customer benefits

The all-in-one system is an easy-to-install, user-friendly solution that is highly flexible. It is easy to teach new codes and switch to different packaging. Errors are indicated quickly and clearly.

Depending on the task, other bar code scanners can be added, for example to read labels on more than one side.

Automatically identifying commissioned container goods



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Areas of application

- Conveyor system

Task

Commissioned container boxes have to be controlled remotely as they pass

along a conveyor system to the fulfillment area.

Implementation

The manually commissioned containers are equipped with RFID transponders. The interrogator is triggered by SICK photoelectric switches, which identify the containers through an antenna gate. The interrogator's digital switching

output controls the conveyor system. The interrogator in this application works completely self-sufficiently and its control system does not require a PLC or any type of integration into a complex host environment.

Customer benefits

Customers will reduce costs due to a self-sufficient system without integration into the host environment. In addition,

reliable identification without visual contact and reduced processing times benefit customers.

Recommended products

RFH62x	I-4
RFI/RFA341	I-8

D



Applications Finder

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Recommended products

CLV41x.....	F-8
CLV42x.....	F-12
CLV43x.....	F-18
CLV44x.....	F-24
CLV45x.....	F-28
CLV48x.....	F-32
CLV49x.....	F-36
CLX49x.....	F-42
CLV62x.....	F-50
CLV63x.....	F-56
CLV64x.....	F-64
CLV65x.....	F-70
IDM1xx.....	H-4
IT3xxx.....	H-10

Inventory management



Areas of application

- Warehouse

Task

The demand for ever faster material flows requires efficient control mechanisms. Whether in a manual small parts warehouse or in an automated logis-

tics center, inventory must always be identified precisely.

Implementation

Universal identification solutions are created by combining scanners that are fixed and automated, and scanners that are flexible and mobile. Cabled or radio-

based devices ensure that applications are constantly monitored.

Customer benefits

SICK scanners flexibly and quickly identify a variety of bar codes, even poorly printed codes. These scanners ensure

that goods are constantly tracked, stocks are optimized and storage costs are reduced.

Office automation



Areas of application

- Office

Task

In many work flows, important documents, such as delivery information, have to be recorded and processed.

To ensure data is quickly recorded and processed, bar codes are used in these types of applications.

Implementation

Office automation applications are often solved using hand-held scanners that are connected to PCs via a USB or PS/2 connection. The bar code data is sent as a keypad input to the relevant input

mask, e.g., Microsoft Excel. The scanners can also transfer the code data in the required form across multiple input fields.

Customer benefits

The scanner and software are optimally coordinated, which speeds up work flows

and prevents incorrect entries.



Applications Finder

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D

Recommended products

IDM1xx.....	H-4
IT3xxx.....	H-10
IT4xxx.....	H-14

D



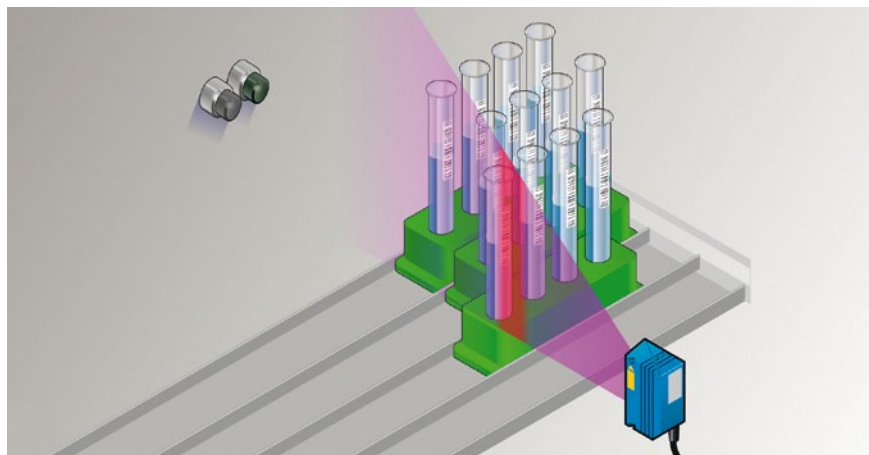
Applications Finder

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Recommended products

CLV41x.....	F-8
CLV42x.....	F-12
CLV44x.....	F-24
CLV45x.....	F-28
CLV50x.....	F-46
CLV62x.....	F-50
CLV64x.....	F-64
CLV65x.....	F-70
LECTOR®62x	G-6
ICR80x.....	G-10

Clinical analysis



Areas of application

- Clinical automatic analyzer

Task

In a large laboratory, automatic analyzers are used to analyze blood samples. The blood samples are in test tubes with a bar code on them. Since the blood sample tubes are delivered from different medical facilities, the quality of the codes varies extensively. Multiple blood sample tubes are inserted into special racks with the bar codes (approximately 0.15 to 0.25 mm in width) visible on the side. When all the racks have been

filled, they are inserted into the automatic analyzers by hand, at a relatively high insertion speed of approx. 0.5 m/s. Because many racks can be positioned next to each other, a scanner with a large depth of field is required to correctly read the bar codes both on the sample tubes and the racks.

Implementation

A bar code scanner with dynamic focus control or auto focus is the ideal solution for this application. These features give the scanner the necessary depths of field to accurately read bar codes at various distances. Due to the integrated

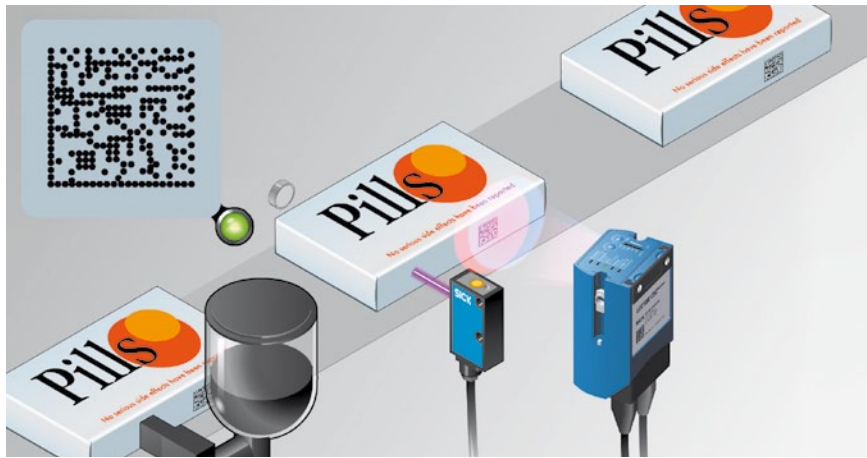
SMART code reconstruction algorithm, the bar code scanner can also identify unclear, partially damaged or upside-down bar codes.

Customer benefits

Instead of one scanner for each rack, the dynamic focus control and auto focus function make it possible to use only one scanner for each automatic analyzer/rack unit.

These features make it possible to insert the racks quickly, one after the other, and still identify the bar codes reliably.

Identifying pharmaceutical folding boxes



Applications Finder

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Areas of application

- Packaging system

Task

Pharmaceutical preparations must be traceable, uniquely identifiable and assignable. Although this is currently achieved using a linear code, Data Matrix codes will be used in the future. The codes contain important information, such as the serial number, central pharmaceutical number for identifying the preparation, production key figures,

packaging and expiration date. In the future, codes will be used to identify counterfeit preparations, guaranteeing patient safety. The Data Matrix code is particularly well suited for this application since it can hold a large amount of information contained in the code and, therefore, the packaging.

Implementation

To solve this task, code readers with very short evaluation times are used, since multiple packages have to be identified each second. Depending on the code

type, either a bar code scanner or an image-based code reader can be used to accurately identify the codes.

Customer benefits

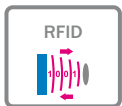
Reliably identifying these codes provides high traceability while ensuring quality medical fulfillment. The high-performance readers not only accurately iden-

tify multiple packages per second, but they also control rejection of incorrect medication during manufacturing and counterfeit goods during distribution.

Recommended products

CLV41x.....	F-8
CLV42x.....	F-12
CLV43x.....	F-18
CLV50x.....	F-46
CLV62x.....	F-50
CLV63x.....	F-56
LECTOR®62x	G-6
ICR845-2	G-20
ICR85x-2	G-32

D



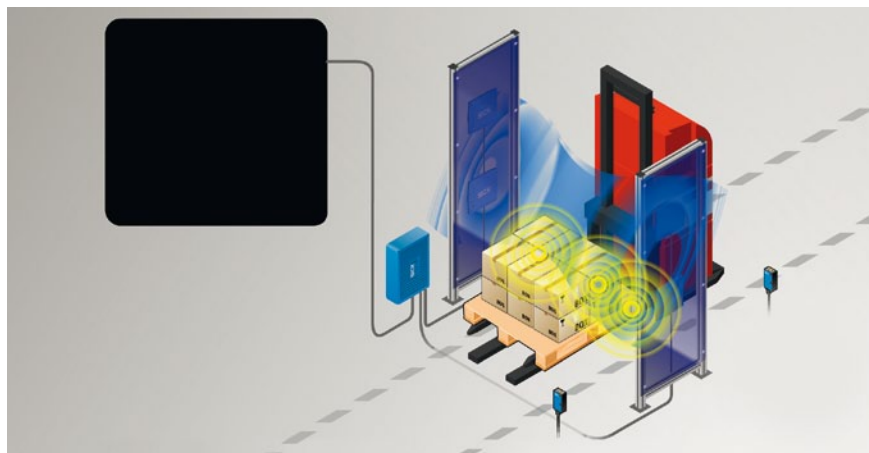
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Recommended products

RFI/RFA641..... I-10

Recording packages and pallets with RFID technology



Areas of application

- Pallets, transfer points (e.g., goods receipt and issue)

Task

The movement of goods has to be recorded at fixed scanning points. These fixed points could be transfer points to external logistics providers or for use in intralogistical processes. A UHF transponder attached to the pallets or

goods sends data to a PC or PLC, which then communicates with an ERP system. These scanning points are usually portals, e.g., positioned on a loading ramp.

Implementation

In a scanning portal, the good or pallet is appropriately identified and the direction of movement is detected. The transponders are identified by means of the UHF interrogator with up to 4 antennas in the

read gate. All data that is collected is made available to a higher-level system and can be represented visually and acoustically.

Customer benefits

This solution automatically and securely records large quantities of data in real time.

Mobile bar code reading on pallets



Applications Finder

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Areas of application

- Warehouse

Task

In a pallet warehouse, pallets are transported with a forklift truck. A bar code attached to the palletized goods contains information about where the pallets have to be taken. Since various standards specify that the driver must have both hands on the steering wheel, identification using a hand-held scanner is not possible without the driver getting

out of the truck. The bar code could be located on various places on the palletized goods. Furthermore, depending on the size of the forklift truck, it might be possible to transport multiple pallets at once by extending the forks and using additional bar code scanners.

Implementation

Depending on how many pallets need to be transported at once, one or more dynamic/auto focus bar code scanners can solve this application. The scanner is normally mounted to the forklift truck's lifting mast, angled at a 45° downward slant. When the forklift truck approaches the pallets, the scanner beam moves

across the entire height of the loaded pallet(s), from bottom to top. During the operation, the bar code is read and the bar code data is sent to a radio terminal. From there, the data is sent to a host that, among other things, informs the driver whether he is picking up the correct pallet and where he should take it.

Customer benefits

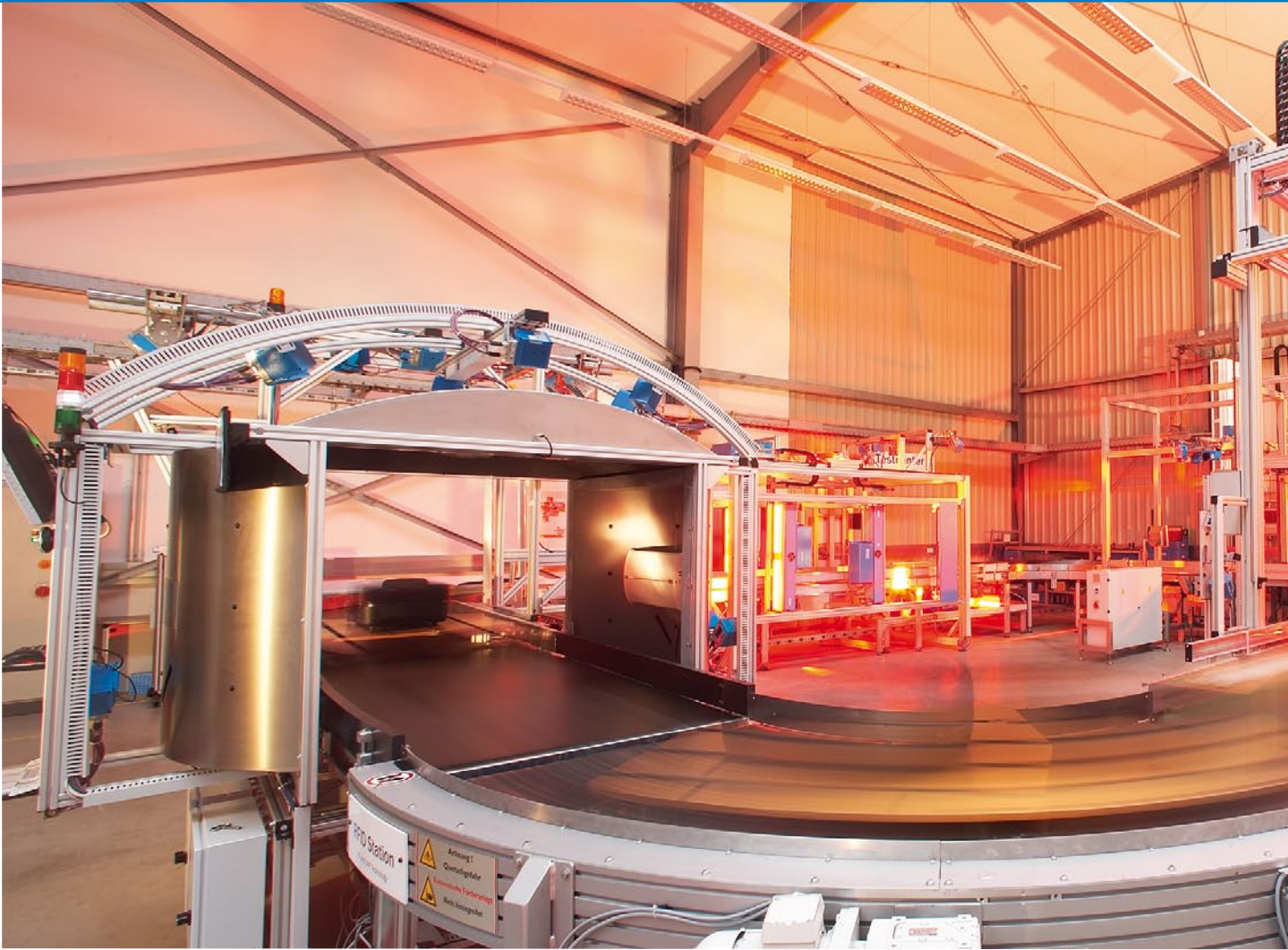
With the bar code scanner, the driver does not have to exit the vehicle and can keep both hands on the wheel, saving time and increasing safety. The scanner not only has a durable housing,

but also has a heated version for use in cold stores. Special holders with shock absorbers reduce the mechanical strain on the device.

Recommended products

CLV48x.....	F-32
CLV49x.....	F-36
CLX49x.....	F-42
CLV65x.....	F-70
ICR84x-2 FlexLens	G-26

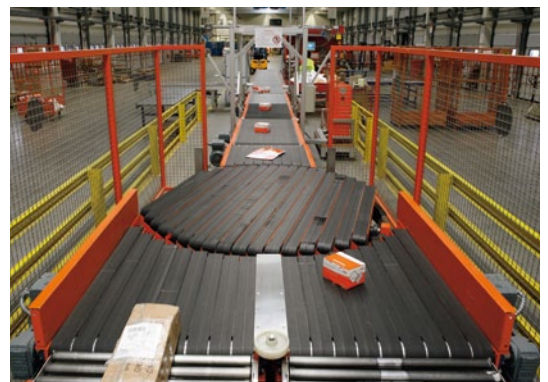
E

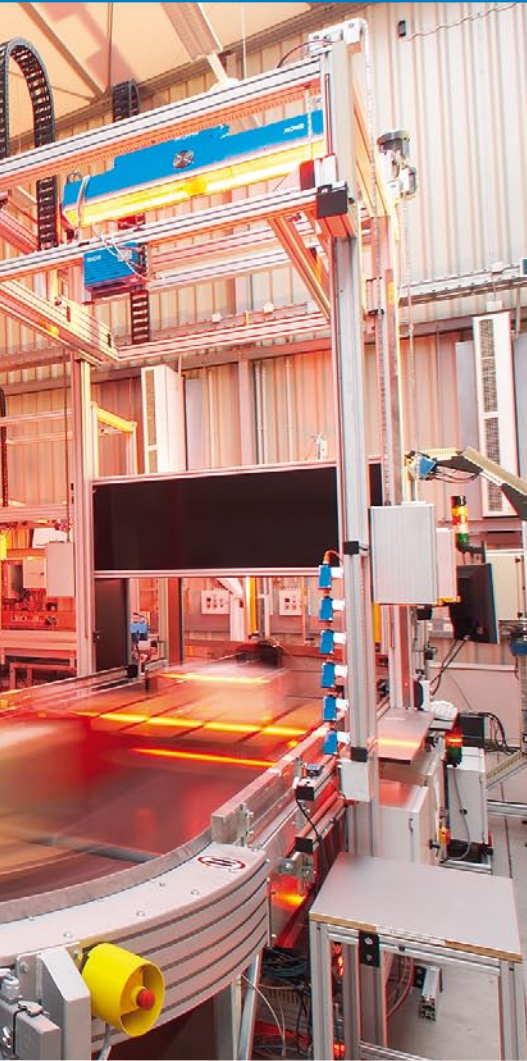


Secure – flexible – quick

We use cutting-edge technology in our components when implementing SICK system solutions for logistics automation. Our range of services covers everything from ideas and consulting, to implementation and on-site after-sales service – around the world.

Our system solutions are backed by years of experience and many successfully installed systems – from simple to combined scanning stations that simultaneously record both product dimension and weight.





SICK has the solution for your application

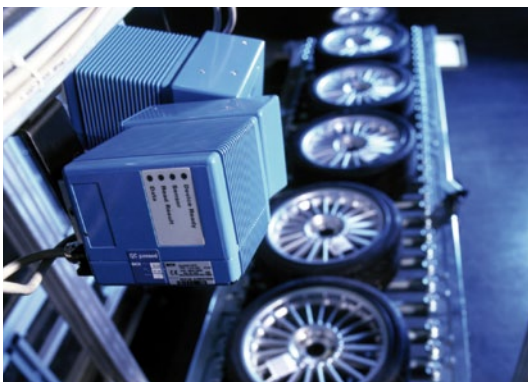
Our strengths are your benefits

- Individual system design, project planning and implementation
- Comprised of high-performance components
- On-site supervision by our worldwide Service & Support network
- Recommended by well-known and respected companies from around the world

E

SICK's dedicated experts are able to provide the right, high-quality solution – even for the most challenging applications. Our universal solutions enable us to provide our customers with significant added value and a fast return on investment.

We ensure that product flows are accurately recorded so that each product reaches its intended destination quickly and efficiently. Customers will benefit from our experience in designing and implementing customized systems.



Solutions

Code reading systems

ALIS (see page J-12)



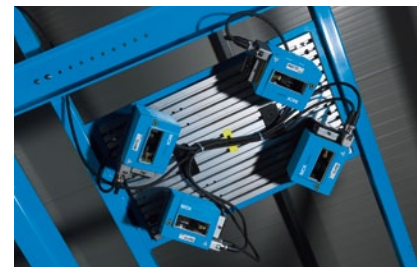
SICK provides reliable, high-performance solutions for modern baggage handling applications. The ALIS (Airport Luggage Identification System) was specially developed for reading IATA bar codes on flight baggage – even under the most difficult conditions.

ICR88x/ICR89x (see page J-14)



The ICR88x/89x camera system provides the maximum bar code read rates – even at high speeds. The camera provides high resolution images that can be used for OCR and video coding applications. When combined with SVP, use the camera image for vendor label compliance, package condition verification and much more!

OPS (see page J-10)



The omni-directional code reading system from SICK is a customizable, all-in-one system for identifying bar codes on goods and products. The OPS (omni-portal system) bar code reading system meets the latest logistical requirements.

E

Volume measurement systems

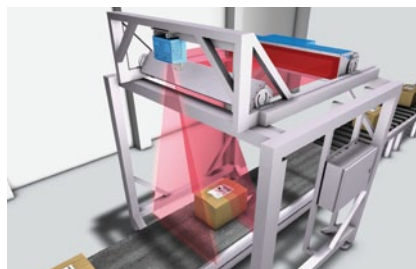
VMS (see page J-22)



Volume measurement systems (VMS) from SICK are the right solution for quickly and precisely measuring packages. These systems are also used to optimize the use of space in transport vehicles or to quickly determine the right storage location when stocking product. The system also provides volume data, which is used to determine proper freight charges to ship a carton.

Dimensioning weighing scanning systems

DWS Dynamic (see page J-28)



Dimensioning weighing scanning systems (DWS) determine the weight and volume of packages and identify them by scanning 1D or 2D codes. These systems can be easily integrated into an existing conveyor layout. They can also be used for applications where OIML, MID or NTEP requirements are needed at conveyor speeds of up to 2.9 m/s.

DWS Static (see page J-26)



The DWS510 Static volume measurement and weighing system was specially designed for small- to medium-sized throughputs of up to 500 packages per hour. With the touch of a button, the DWS510 provides all the relevant data for calculating freight charges or creating freight documents. It consists of the industry-tested VMS510 volume measurement system, rugged static scales, and a handheld scanner for recording the code information. All of the components are integrated into a stable mechanical system.



E

Application areas

SICK system solutions for logistics automation record dimensions, weights and/or objective identification data – for everything from shipping packages, to baggage to parcels. Due to the system's modular structure, the right solution for any specific requirement can be selected quickly and simply. Combined devices for simultaneous recording of all three types of data (dimension, weight, ID) are also available.

When you need to optimize efficiency and costs, intelligent systems based on SICK's RFID readers, scanners and cameras are the right choice.

SICK supplies solutions for the following areas

- Airports
- Courier, express, and parcel services
- Retail
- Intralogistics
- Recording and measuring baggage and shipping packages for sorting and secure transportation
- Optimizing transport and storage capacities
- Identifying (air) freight charges
- Capturing and collecting dimension, ID and/or weight data



F

Intelligent solutions for logistics and automation

SICK bar code scanners accelerate logistics and automation processes. Their excellent reading performance ensures continuous process flow - even with poor quality or damaged bar codes. A high scanning frequency permits high process speeds, and simple networking improves operational efficiency. Plus, compact connection devices save space and reduce costs. The SICK bar code product portfolio offers the right solution for nearly any task.














Your benefits

- Meets nearly any read requirement due to a large portfolio of products
- Intelligent auto setup function saves time during commissioning
- Integrated code reconstruction technology permits high read rates even if the bar codes are damaged, contaminated or partially covered
- High scanning frequencies make it possible to use in high-speed applications up to 6 m/s
- Less programming time required for the control system, since data can be transmitted to the control system in the desired format
- External parameter cloning enables fast scanner exchange
- Easy machine mounting due to compact connector technology and easy-to-use accessories
- Integrated diagnostic functions simplify system monitoring







F

Bar code scanners

<p>Product family overview F-2 Reading field overview F-6</p>	
 <p>CLV41x F-8 Small size – reliable operation</p>	 <p>CLX49x F-42 The all-in-one solution for omni-directional scanning</p>
 <p>CLV42x F-12 Small in size, big in user friendliness</p>	 <p>CLV50x F-46 The mini line – small, simple, reliable</p>
 <p>CLV43x F-18 Proven partner for logistics and automation</p>	 <p>CLV62x F-50 Powerful scanner – flexible use</p>
 <p>CLV44x F-24 Well proven – dynamic range – multi-functional</p>	 <p>CLV63x F-56 Intelligent scanning solution for logistics and automation</p>
 <p>CLV45x F-28 Wider range – SMART performance</p>	 <p>CLV64x F-64 Dynamic, multi-functional</p>
 <p>CLV48x F-32 High tilt for a large range of applications</p>	 <p>CLV65x F-70 Always in auto focus</p>
 <p>CLV49x F-36 Auto focus meets high speed</p>	







Product family overview

				
	CLV41x	CLV42x	CLV43x	CLV44x
	Small size – reliable operation	Small in size, big in user friendliness	Proven partner for logistics and automation	Well proven – dynamic range – multi-functional

Technical data overview

Focus	Fixed focus	Fixed focus	Fixed focus	Dynamic focus control
Field of view	≤ 60° / ≤ 50°	≤ 50°	≤ 50°	≤ 50°
Scanning frequency	200 Hz ... 800 Hz	400 Hz ... 1,200 Hz	300 Hz ... 800 Hz	300 Hz ... 800 Hz
Code resolution	0.1 mm ... 1 mm	0.15 mm ... 1 mm	0.2 mm ... 0.5 mm	0.15 mm ... 1 mm
Reading distance	42 mm ... 380 mm	55 mm ... 730 mm	45 mm ... 580 mm	30 mm ... 840 mm
Serial (RS-232, RS-422/485)	✓, AUX (only RS-232)	✓, AUX (only RS-232)	✓, AUX (only RS-232)	✓, AUX (only RS-232)
Ethernet	-	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
CAN bus	-	✓	✓	✓
PROFIBUS	-	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
DeviceNet	-	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
Weight	250 g / 320 g	250 g / 320 g	420 g ... 620 g	480 g / 620 g

At a glance

			 	 
	<ul style="list-style-type: none"> • Available as line and raster scanners • Easy to configure • Reliable operation • Profile programming included • Beeper provides audible confirmation of good read • Auto setup • Adjustable scanning frequency up to 800 scans per second 	<ul style="list-style-type: none"> • Easy to configure • Small housing • Standard, long-range and high-density versions available • Front or side reading window versions • CAN bus compatible • High scanning frequency of up to 1,200 Hz • Compatible with optional fieldbus gateways 	<ul style="list-style-type: none"> • Reliable code recognition in real time using SMART technology • Immune to ambient light • Auto setup ensures automatic optimizing of reading performance • Reflector polling provides automatic triggering • Profile programming included • Adjustable scanning frequency up to 800 scans per second 	<ul style="list-style-type: none"> • Dynamic focus control in real time • Reliable code recognition in real time using SMART technology • Immune to ambient light • Auto setup ensures automatic optimizing of reading performance • Reflector polling provides automatic triggering • Profile programming included • Adjustable scanning frequency up to 800 scans per second

Detailed information	→ F-8	→ F-12	→ F-18	→ F-24
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CLV45x

Wider range – SMART performance



CLV48x

High tilt for a large range of applications



CLV49x

Auto focus meets high speed





CLX49x

The all-in-one solution for omni-directional scanning






	Dynamic focus control ≤ 50°	Dynamic focus control ≤ 60° / ≤ 50°	Auto focus ≤ 60° / ≤ 50°	Auto focus ≤ 60°
	400 Hz ... 1,000 Hz	600 Hz ... 1,200 Hz	600 Hz ... 1,200 Hz	600 Hz ... 1,200 Hz
	0.25 mm ... 1 mm	0.25 mm ... 1 mm	0.17 mm ... 1.2 mm	0.3 mm ... 1 mm
	125 mm ... 1,600 mm	225 mm ... 2,050 mm	400 mm ... 2,200 mm	500 mm ... 1,750 mm
	✓, AUX (only RS-232)	✓, AUX (only RS-232)	✓, AUX (only RS-232)	✓, AUX (only RS-232)
	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
	✓	✓	✓	✓
	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
	530 g / 700 g	1,500 g / 2,200 g	1,500 g / 2,200 g	2,000 g
	<ul style="list-style-type: none"> • Dynamic focus control in real time • Immune to ambient light • Large reading distance of up to 1.6 m • Auto setup ensures automatic optimizing of reading performance • CAN bus compatible • High read rates, even with damaged, rotated, or dirty bar codes • Adjustable scanning frequency up to 1,000 scans per second 	<ul style="list-style-type: none"> • Dynamic focus control in real time • Label tilt from -45° to +45° • Optimized reading on thermal paper • Immune to ambient light • CAN bus compatible for external interfacing and for omni-directional tracking mode • High scanning reliability of short bar code heights • Optional remote diagnostics • Large reading distance up to 2 m 	<ul style="list-style-type: none"> • Real-time auto focus function • Different versions ensure coverage for a variety of module widths • Label tilt from -45° to +45° • Smallest housing with auto focus and reading range up to 2.2 m • External parameter cloning plug • An oscillating mirror scanner is also available to cover larger reading areas • Optional internal heater • High scanning frequency of up to 1,200 Hz 	<ul style="list-style-type: none"> • Real-time auto focus function • Independent of tilt (omni-directional bar code reading) • Reliable code detection in real time due to SMART technology • Smallest housing with auto focus and reading range up to 2.2 m • External parameter cloning plug • High scanning frequency of up to 1,200 Hz • Large depth of field • Optional internal heater
	→ F-28	→ F-32	→ F-36	→ F-42

F

Product family overview





























 <p>CLV50x</p> <p>The mini line – small, simple, reliable</p>	 <p>CLV62x</p> <p>Powerful scanner – flexible use</p>
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Technical data overview			
Focus	Fixed focus	Fixed focus	
Field of view	≤ 44° / ≤ 40°	≤ 50°	
Scanning frequency	≤ 1,000 Hz	400 Hz ... 1,200 Hz	
Code resolution	0.15 mm ... 1 mm	0.15 mm ... 1 mm	
Reading distance	50 mm ... 630 mm	55 mm ... 730 mm	
Serial (RS-232)	✓ / -	-	
Serial (RS-232, RS-422/485)	-	✓, AUX (only RS-232)	
USB	- / ✓	-	
Ethernet	-	✓ / -	
CAN bus	-	✓	
PROFIBUS	-	- , optional via external connection module (CDF)	
DeviceNet	-	- , optional via external connection module (CDM + CMF)	
Weight	18.5 g / 30 g	205 g ... 250 g	

At a glance			
			
		  	
	<ul style="list-style-type: none"> Extremely compact Lightweight Easy commissioning Fast and reliable decoding even on poorly printed or partly damaged codes Available in RS-232 version with flying leads and USB version Pushbutton trigger Discrete trigger input and good read/no read outputs (flying lead variant only) CLV505 available in raster version 	<ul style="list-style-type: none"> CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant) SMART620 code reconstruction technology Flexible sorting, filtering, and logical functions Advanced, easy-to-use SOPAS configuration software High scanning frequency of up to 1,200 Hz Small housing Advanced remote diagnostics and network monitoring capabilities available over Ethernet IP 65 rated 	

Detailed information	→ F-46	→ F-50
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F

 <p>CLV63x</p>	 <p>CLV64x</p>	 <p>CLV65x</p>
<p>Intelligent scanning solution for logistics and automation</p>	<p>Dynamic, multi-functional</p>	<p>Always in auto focus</p>
<p>Fixed focus ≤ 50° 400 Hz ... 1,200 Hz 0.2 mm ... 1 mm 44 mm ... 735 mm - ✓, AUX (only RS-232) - -, optional via external connection module (CDM + CMF) / ✓ ✓ -, optional via external connection module (CDF) -, optional via external connection module (CDM + CMF) 250 g ... 420 g</p>	<p>Dynamic focus control ≤ 50° 400 Hz ... 1,200 Hz 0.15 mm ... 1 mm 30 mm ... 840 mm - ✓, AUX (only RS-232) - -, optional via external connection module (CDM + CMF) / ✓ ✓ -, optional via external connection module (CDF) -, optional via external connection module (CDM + CMF) 250 g ... 420 g</p>	<p>Auto focus ≤ 50° 600 Hz ... 1,000 Hz 0.25 mm ... 1 mm 125 mm ... 1,625 mm - ✓, AUX (only RS-232) - -, optional via external connection module (CDM + CMF) / ✓ ✓ -, optional via external connection module (CDF) -, optional via external connection module (CDM + CMF) 320 g / 250 g</p>
 <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Fixed Focus </div> <div style="text-align: center;">  SMART </div> <div style="text-align: center;">  Micro SD Card </div> <div style="text-align: center;">  Intelligent Auto Setup </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  2 x Button </div> <div style="text-align: center;">  LED Bar Graph </div> <div style="text-align: center;">  Oscillating Mirror </div> </div>	 <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Dyn. Focus </div> <div style="text-align: center;">  SMART </div> <div style="text-align: center;">  Micro SD Card </div> <div style="text-align: center;">  Intelligent Auto Setup </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  2 x Button </div> <div style="text-align: center;">  LED Bar Graph </div> <div style="text-align: center;">  Oscillating Mirror </div> </div>	 <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Auto Focus </div> <div style="text-align: center;">  SMART </div> <div style="text-align: center;">  Micro SD Card </div> <div style="text-align: center;">  Intelligent Auto Setup </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  2 x Button </div> <div style="text-align: center;">  Distance Measuring </div> <div style="text-align: center;">  LED Bar Graph </div> <div style="text-align: center;">  Oscillating Mirror </div> </div>
<ul style="list-style-type: none"> • Integrated pushbuttons for auto setup and reading diagnostics • Integrated LED bar graph • CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant) • Enhanced SMART code reconstruction technology • Flexible sorting, filtering, and logical functions • Advanced, easy-to-use SOPAS configuration software • High scanning frequency of up to 1,200 Hz • Advanced remote diagnostics and network monitoring capabilities available over Ethernet 	<ul style="list-style-type: none"> • Dynamic focus adjustment enables extended depth of field • Integrated pushbuttons for auto setup and reading diagnostics • CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant) • Enhanced SMART code reconstruction technology • Flexible sorting, filtering, and logical functions • Advanced, easy-to-use SOPAS configuration software • Integrated LED bar graph • Advanced remote diagnostics and network monitoring capabilities available over Ethernet 	<ul style="list-style-type: none"> • Huge depth of field due to auto focus • Integrated pushbuttons for auto setup and reading diagnostics • CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant) • Enhanced SMART code reconstruction technology • Flexible sorting, filtering, and logical functions • Integrated web server provides remote diagnostics and monitoring • Advanced, easy-to-use SOPAS configuration software • Integrated LED bar graph
<p>→ F-56</p>	<p>→ F-64</p>	<p>→ F-70</p>

F

Reading field overview

Reading field selector CLV4 series


Product family		Reading distance ¹⁾																	
		100 mm 3.93 in	200 mm 7.87 in	300 mm 11.81 in	400 mm 15.75 in	500 mm 19.69 in	600 mm 23.62 in	700 mm 27.56 in	800 mm 31.50 in	900 mm 35.43 in	1000 mm 39.37 in	1250 mm 49.21 in	1500 mm 59.06 in	2000 mm 78.74 in					
CLV41x → F-8	CLV410 Standard Range		0.35 mm (13.8 mil)															Fixed focus	
			0.5 mm (19.7 mil)																
	CLV412 High Density	0.15 mm (5.9 mil)																	
	CLV414 Short Range	0.2 mm (7.9 mil)																	
CLV42x → F-12	CLV420 Standard Range		0.35 mm (13.8 mil)																
	CLV421 Long Range			0.35 mm (13.8 mil)															
	CLV422 High Density				0.5 mm (19.7 mil)														
CLV43x → F-18	CLV430 Long Range			0.35 mm (13.8 mil)															
	CLV431 Mid Range				0.5 mm (19.7 mil)														
	CLV432 Short Range		0.2 mm (7.9 mil)		0.5 mm (19.7 mil)														
CLV44x → F-24	CLV440 Standard Range				0.5 mm (19.7 mil)														Dynamic focus control
	CLV442 High Density		0.25 mm (9.8 mil)																
CLV45x → F-28	CLV450 Standard Density				0.35 mm (13.8 mil)														
	CLV451 Low Density				0.5 mm (19.7 mil)														
CLV48x → F-32	CLV480 Standard Density				0.35 mm (13.8 mil)														
CLV49x → F-36	CLV490-0/1 Standard Density								0.35 mm (13.8 mil)									Auto focus	
									0.5 mm (19.7 mil)										
	CLV490-2/3 High Density							0.2 mm (7.9 mil)											
CLV490-6/7 Low Density								0.3 mm (11.8 mil)											
CLX49x → F-42	CLX490 Standard Density								0.5 mm (19.7 mil)										
									0.3 mm (11.8 mil)										

¹⁾ Exemplary reading distance and depth of field for front reading field.

Code resolution

F

Reading field selector CLV5 and CLV6 series

Reading distance ¹⁾		100 mm	3.93 in	200 mm	7.87 in	300 mm	11.81 in	400 mm	15.75 in	500 mm	19.69 in	600 mm	23.62 in	700 mm	27.56 in	800 mm	31.50 in	900 mm	35.43 in	1000 mm	39.37 in	1250 mm	49.21 in	1500 mm	59.06 in	2000 mm	78.74 in																											
		Product family																																																				
CLV5 series																																																						
CLV50x → F-46	CLV503 Standard Range	0.25 mm (9.8 mil)																								0.5 mm (19.7 mil)																								Fixed focus				
	CLV505 Standard Range	0.25 mm (9.8 mil)																								0.5 mm (19.7 mil)																												
CLV6 series																																																						
																																																						
CLV62x → F-50	CLV620 Mid Range	0.35 mm (13.8 mil)																								0.5 mm (19.7 mil)																										Dyn. focus		
	CLV621 Long Range	0.35 mm (13.8 mil)																								0.5 mm (19.7 mil)																												
	CLV622 Short Range	0.2 mm (7.9 mil)																								0.5 mm (19.7 mil)																												
CLV63x → F-56	CLV630 Long Range	0.35 mm (13.8 mil)																								0.5 mm (19.7 mil)																												Auto focus
	CLV631 Mid Range	0.35 mm (13.8 mil)																								0.5 mm (19.7 mil)																												
	CLV632 Short Range	0.2 mm (7.9 mil)																								0.5 mm (19.7 mil)																												
CLV64x → F-64	CLV640 Standard Density	0.5 mm (19.7 mil)																																																		Auto focus		
	CLV642 High Density	0.15 mm (5.9 mil)																																																				
CLV65x → F-70	CLV650 Standard Density	0.35 mm (13.8 mil)																								0.5 mm (19.7 mil)																										Auto focus		
	CLV651 Low Density	0.5 mm (19.7 mil)																																																				

¹⁾ Exemplary reading distance and depth of field for front reading field.

Code resolution



Small size – reliable operation



Product description

The CLV41x series of bar code readers is user-friendly and can easily be integrated into your bar code applications. The scanners' compact design makes them ideal for applications where space is lim-

ited and real-time decoding ensures high throughput. They also provide reliable read rates, even under strong ambient light conditions and large reading distances for small module widths.

At a glance

- Available as line and raster scanners
- Easy to configure
- Reliable operation
- Profile programming included
- Beeper provides audible confirmation of good read
- Auto setup
- Adjustable scanning frequency up to 800 scans per second

Your benefits

- Readily adaptable to your application
- Small size and simple setup enables fast installation, even in compact machines
- Short commissioning time
- Excellent price/performance ratio



Additional information

Detailed technical data F-9
 Ordering information F-10
 Reading field diagrams F-11
 Recommended accessories F-10
 Dimensional drawings M-2

F

Detailed technical data

Features

	CLV410 Standard Range	CLV412 High Density	CLV414 Short Range
Light source	Visible red light (Laser, 670 nm)		
MTBF	20,000 h		
Laser class	2 (DIN EN 60825-1)		
Field of view	≤ 60° / ≤ 50° (depending on type)		
Scanning frequency	200 Hz ... 800 Hz		
Code resolution	0.2 mm ... 1 mm	0.1 mm ... 0.2 mm	≥ 0.2 mm
Reading distance (at code resolution)	50 mm ... 380 mm (1 mm)	45 mm ... 92 mm (0.2 mm)	42 mm ... 97 mm (0.2 mm)
Raster height, number of lines, at distance	15 mm, 8, 200 mm 15 mm, 8, 185 mm (depending on type)		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 3
No. of codes per reading interval	1 ... 10
No. of characters per reading interval	100
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	✓, AUX (only RS-232)
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Switching inputs	2 ("Sensor 1", "Sensor 2")
Switching outputs	3 ("Result 1", "Result 2", "Result 3")
Reading pulse	Reflector polling, "Sensor 1" switching input, non-powered, serial interface
Optical indicators	4 LEDs (function indicator)
Acoustic indicators	Beeper/buzzer (can be switched off, can be allocated as a result status indication function)

Mechanics/electronics

Electrical connection	1 15-pin D-Sub HD plug (0.9 m)
Operating voltage	5 V DC ... 30 V DC ¹⁾
Power consumption	3 W
Housing	Zinc diecast, does not contain paint wetting impairment substances
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050)
Protection class	III (IEC 1010-1)
Weight	250 g, with connecting cable 320 g, with connecting cable (depending on type)
Dimensions	Front 59 mm x 62.7 mm x 35.2 mm Side 72 mm x 62.7 mm x 35.2 mm

¹⁾ UL certified for use with a Class 2 main supply unit (checked to UL 1310).

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-3 / EN 61000-6-2
Vibration resistance	IEC 68-2-6 Test FC
Shock resistance	IEC 68-2-27 Test EA
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

Ordering information



- Focus: Fixed focus
- Connection type: Standard

Type	Reading field	Scanner design	Model name	Part no.
CLV410 Standard Range	Front	Line scanner	CLV410-0010	1015421
		Raster scanner	CLV410-1010	1015427
	Side (105°)	Line scanner	CLV410-2010	1017534
		Raster scanner	CLV410-3010	1017536
CLV412 High Density	Front	Line scanner	CLV412-0010	1017527
		Raster scanner	CLV412-1010	1017528
	Side (105°)	Line scanner	CLV412-2010	1017538
		Raster scanner	CLV412-3010	1017540
CLV414 Short Range	Front	Line scanner	CLV414-0010	1017368
		Raster scanner	CLV414-1010	1016767
	Side (105°)	Line scanner	CLV414-2010	1017396
		Raster scanner	CLV414-3010	1016831


F

Recommended accessories


Modules

	Brief description	Model name	Part no.
	Small connection module for one CLV41x	CDB410-001	1023813
	Modular connection module for one CLV41x	CDM410-0001	1025361

Mounting brackets/plates

	Brief description	Part no.
	Small mounting bracket, with mounting material (2 M4 x 8 screws, 2 x A4.3 washers, 2 x B4 spring rings)	2020077

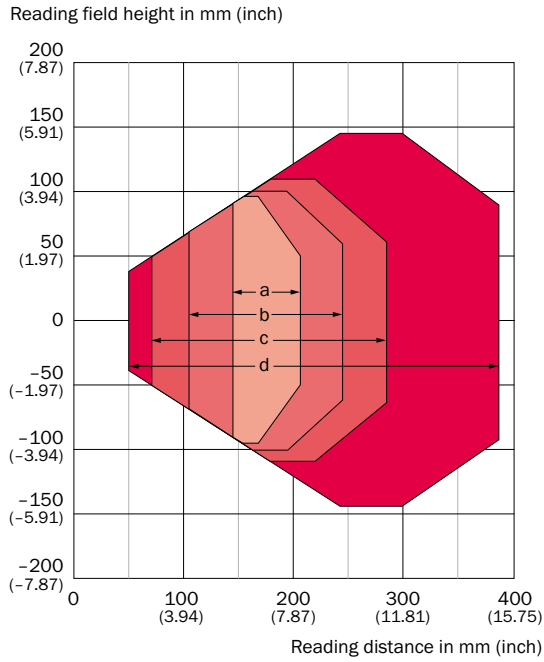
Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

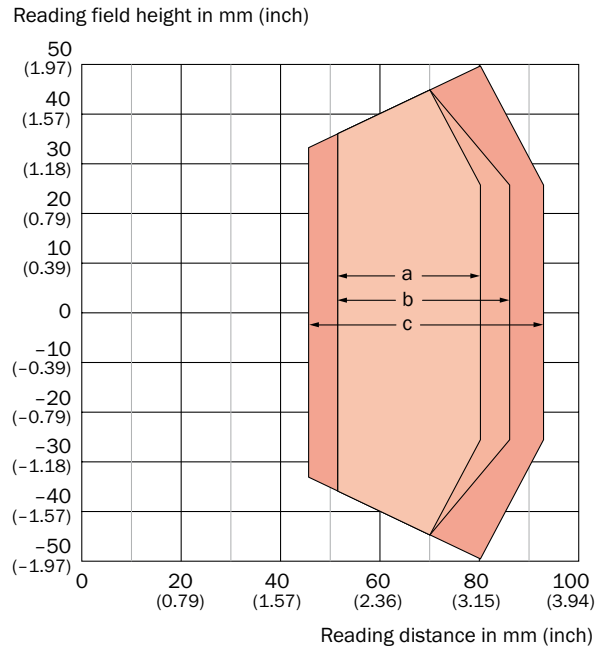
For additional accessories, please see page L-2

Reading field diagrams

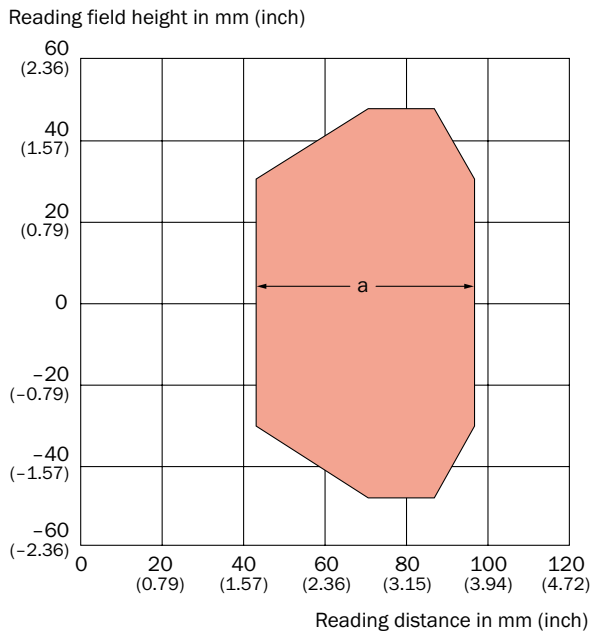
CLV410 Standard Range



CLV412 High Density



CLV414 Short Range



Small in size, big in user friendliness



F

Product description

The CLV42x series is a fixed focus bar code reader used in applications requiring large depth of field. The CLV42x's compact design makes it ideal for applications where space is limited, without sacrificing speed or dependability. With read rates up to 1200 scans per second, this bar code scanner has excellent

reading performance even at high transport speeds. The scanners' integrated CAN bus makes multi scanner Master/ Slave networks possible. The auxiliary diagnostic interface, together with SICK's CLV Setup software, make them easy to setup and user friendly.

At a glance

- Easy to configure
- Small housing
- Standard, long-range and high-density versions available
- Front or side reading window versions
- CAN bus compatible
- High scanning frequency of up to 1,200 Hz
- Compatible with optional fieldbus gateways

Your benefits

- Accurate code identification even at high speeds
- Easily integrated into a variety of networks, providing flexibility
- Small size and simple setup enables fast installation, even in compact machines
- A variety of diagnostic options ensures easy access for configuration and troubleshooting
- Excellent price/performance ratio
- Parameter cloning plug ensures very short MTTR



Additional information

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 Ordering information F-14
 Reading field diagrams F-15
 Recommended accessories F-16
 Dimensional drawings M-2

Detailed technical data

Features

	CLV420 Standard Range	CLV421 Long Range	CLV422 High Density
Light source	Visible red light		
MTBF	20,000 h		
Laser class	2 (DIN EN 60825-1)		
Field of view	≤ 50°		
Scanning frequency	400 Hz ... 1,200 Hz		
Code resolution	0.2 mm ... 1 mm	0.35 mm ... 1 mm	0.15 mm ... 0.5 mm
Reading distance (at code resolution)	60 mm ... 365 mm (1 mm)	60 mm ... 730 mm (1 mm)	55 mm ... 200 mm (0.5 mm)
Raster height, number of lines, at distance	15 mm, 8, 200 mm 15 mm, 8, 185 mm (depending on type)		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 3
No. of codes per reading interval	1 ... 10 (auto-discriminating)
No. of characters per reading interval	100
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet		-, optional via external connection module (CDM + CMF)
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDM + CMF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs		2 ("Sensor 1", "Sensor 2")
Switching outputs		2 ("Result 1", "Result 2")
Reading pulse		Reflector polling, "Sensor 1" switching input, non-powered, serial interface
Optical indicators		4 LEDs (function indicator)
Acoustic indicators		Beeper/buzzer (can be switched off, can be allocated as a result status indication function)

F

Mechanics/electronics

Electrical connection	1 15-pin D-Sub HD plug (0.9 m)
Operating voltage	10 V DC ... 30 V DC ¹⁾
Power consumption	3.5 W
Housing	Zinc diecast, does not contain paint wetting impairment substances
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050)
Protection class	III (VDE 0106, IEC 1010-1)
Weight	250 g, with connecting cable / 320 g, with connecting cable (depending on type)
Dimensions	Front 59 mm x 62.7 mm x 35.2 mm
	Side 72 mm x 62.7 mm x 35.2 mm

¹⁾ UL certified for use with a Class 2 main supply unit (checked to UL 1310).

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 55011
Vibration resistance	IEC 68-2-6 Test FC
Shock resistance	IEC 68-2-27 Test EA
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

F

Ordering information

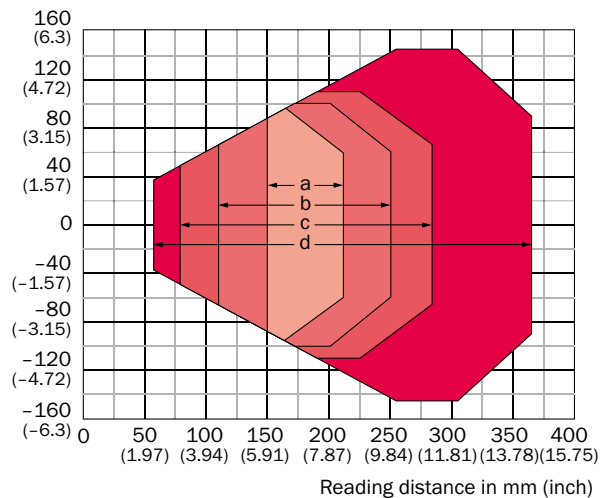
- **Focus:** Fixed focus
- **Connection type:** Standard

Type	Reading field	Scanner design	Model name	Part no.
CLV420 Standard Range	Front	Line scanner	CLV420-0010	1022031
		Raster scanner	CLV420-1010	1022032
	Side (105°)	Line scanner	CLV420-2010	1022033
		Raster scanner	CLV420-3010	1022034
CLV421 Long Range	Front	Line scanner	CLV421-0010	1022547
		Raster scanner	CLV421-1010	1022616
	Side (105°)	Line scanner	CLV421-2010	1022617
		Raster scanner	CLV421-3010	1022618
CLV422 High Density	Front	Line scanner	CLV422-0010	1022548
		Raster scanner	CLV422-1010	1022619
	Side (105°)	Line scanner	CLV422-2010	1022620
		Raster scanner	CLV422-3010	1022621

Reading field diagrams

CLV420 Standard Range

Reading field height in mm (inch)

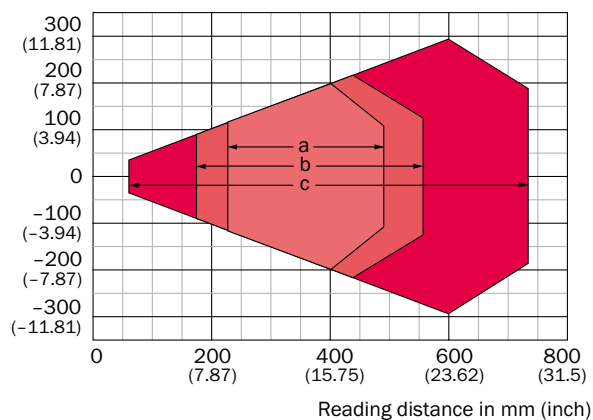


Resolution

- a: 0.20 mm (7.9 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

CLV421 Long Range

Reading field height in mm (inch)

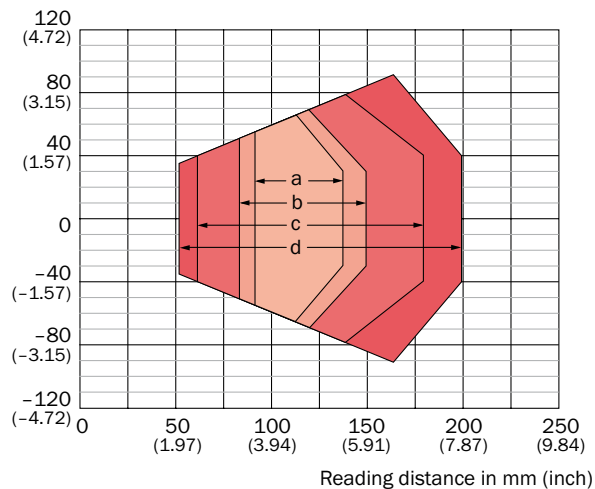


Resolution

- a: 0.35 mm (13.8 mil)
- b: 0.50 mm (19.7 mil)
- c: 1.00 mm (39.4 mil)

CLV422 High Density

Reading field height in mm (inch)





Resolution

- a: 0.15 mm (5.9 mil)
- b: 0.20 mm (7.9 mil)
- c: 0.35 mm (13.8 mil)
- d: 0.50 mm (19.7 mil)




Recommended accessories


Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Small mounting bracket, with mounting material (2 M4 x 8 screws, 2 x A4.3 washers, 2 x B4 spring rings)	2020077

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-2

F

F

Proven partner for logistics and automation



F

Product description

The CLV430, CLV431 and CLV432 series of bar code scanners offer fixed focus optics, long reading distances and great depth of field in a compact, IP 65-rated housing. The CLV43x series was designed to optimize throughput by incorporating innovative features into a compact housing. SMART code reconstruction technology ensures damaged

or poorly printed codes can be read. It is available with an oscillating mirror for applications where the bar code label position varies. The oscillating mirror version can also be used in static applications where the bar code location is poorly defined. The reflector polling feature eliminates the need for additional photoelectric triggering sensors.

At a glance

- Reliable code recognition in real time using SMART technology
- Immune to ambient light
- Auto setup ensures automatic optimizing of reading performance
- Reflector polling provides automatic triggering
- Profile programming included
- Adjustable scanning frequency up to 800 scans per second

Your benefits

- SMART-enhanced read rates enable better performance with damaged or poorly printed codes
- Reliably reads bar codes with up to 30 degrees of tilt, increasing throughput
- No additional trigger light switch necessary due to the reflector polling function, reducing costs
- Extremely easy to configure, shortening commissioning time
- Reliable operation
- Small size and simple setup enables fast installation, even in compact machines
- Parameter cloning plug ensures very short MTTR



Additional information

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 Dimensional drawings M-3

Detailed technical data

Features

	CLV430 Long Range	CLV431 Mid Range	CLV432 Short Range
Light source	Visible red light (650 nm)		
MTBF	20,000 h		
Laser class	2 (DIN EN 60825-1)		
Field of view	≤ 50°		
Scanning frequency	300 Hz ... 800 Hz		
Code resolution	0.35 mm ... 0.5 mm	0.25 mm ... 0.5 mm	0.2 mm ... 0.5 mm
Reading distance (at code resolution)			
Front	170 mm ... 580 mm (0.5 mm)	90 mm ... 430 mm (0.5 mm)	60 mm ... 260 mm (0.5 mm)
Oscillating mirror	160 mm ... 440 mm (0.5 mm)	75 mm ... 340 mm (0.5 mm)	45 mm ... 210 mm (0.5 mm)
Side	-	75 mm ... 370 mm (0.5 mm)	45 mm ... 220 mm (0.5 mm)
Raster height, number of lines, at distance	15 mm, 8, 200 mm		
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot		
Oscillation frequency	0.5 Hz ... 4 Hz		
Angle of deflection	-20° ... 20° (can be adjusted via software)		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	500
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	✓, AUX (only RS-232)
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	-, optional via external connection module (CDM + CMF)
CAN bus	✓
Function	CAN sensor network (Master/Slave, Multiplexer)
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	2 ("Sensor 1", "Sensor 2")
Switching outputs	2 ("Result 1", "Result 2")
Reading pulse	Reflector polling, "Sensor 1" switching input, non-powered, serial interface
Optical indicators	4 LEDs (function indicator)
Acoustic indicators	Beeper/buzzer (can be switched off, can be allocated as a result status indication function)

Mechanics/electronics

	CLV430 Long Range	CLV431 Mid Range	CLV432 Short Range
Electrical connection	1 15-pin D-Sub HD plug (0.9 m)		
Operating voltage	10 V DC ... 30 V DC ¹⁾		
Power consumption	4 W / 6.15 W (depending on type)		
Housing	Zinc diecast, does not contain paint wetting impairment substances		
Housing color	Light blue (RAL 5012)		
Enclosure rating	IP 65 (EN 60529 (1991-10), A1 (2002-02))		
Protection class	III (EN 61140 (2002-03))		
Weight	420 g, with connecting cable 620 g, with connecting cable (depending on type)	420 g, with connecting cable 450 g, with connecting cable 620 g, with connecting cable (depending on type)	
Dimensions	Front 90 mm x 60 mm x 35.7 mm Oscillating mirror 99.8 mm x 92.2 mm x 37.8 mm Side 90 mm x 80 mm x 35.7 mm		

¹⁾ UL certified for use with a Class 2 main supply unit (checked to UL 1310).

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-4 (2001-10)
Vibration resistance	IEC 60068-2-27 (1993)
Shock resistance	IEC 60068-2-6 (1995)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

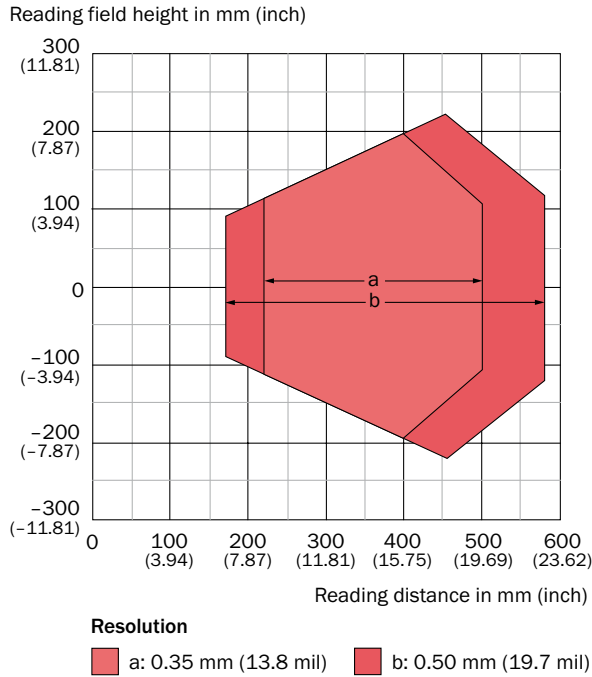
Ordering information

- Focus: Fixed focus
- Connection type: Standard

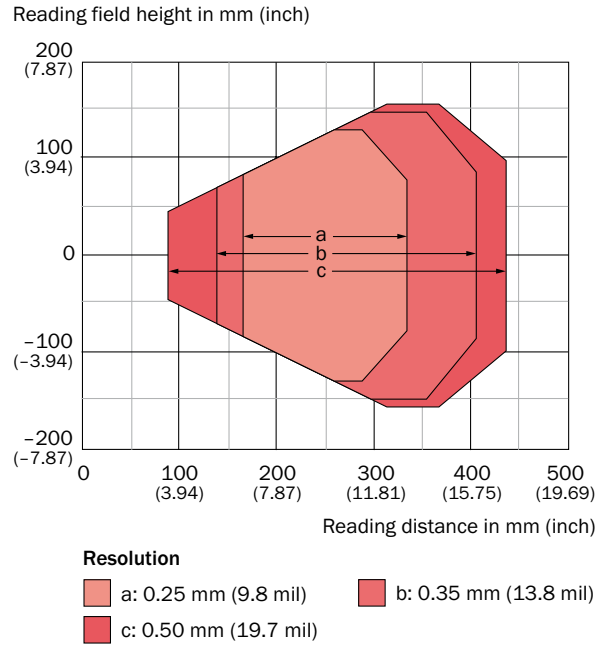
Type	Reading field	Scanner design	Model name	Part no.
CLV430 Long Range	Front	Line scanner	CLV430-0010	1017585
		Raster scanner	CLV430-1010	1016705
	Oscillating mirror	Line scanner	CLV430-6010	1017981
CLV431 Mid Range	Front	Line scanner	CLV431-0010	1017622
		Raster scanner	CLV431-1010	1016679
	Side (105°)	Line scanner	CLV431-2010	1016746
		Raster scanner	CLV431-3010	1016747
	Oscillating mirror	Line scanner	CLV431-6010	1017982
CLV432 Short Range	Front	Line scanner	CLV432-0010	1017623
		Raster scanner	CLV432-1010	1016680
	Side (105°)	Line scanner	CLV432-2010	1016748
		Raster scanner	CLV432-3010	1016749
	Oscillating mirror	Line scanner	CLV432-6010	1017983

Reading field diagrams

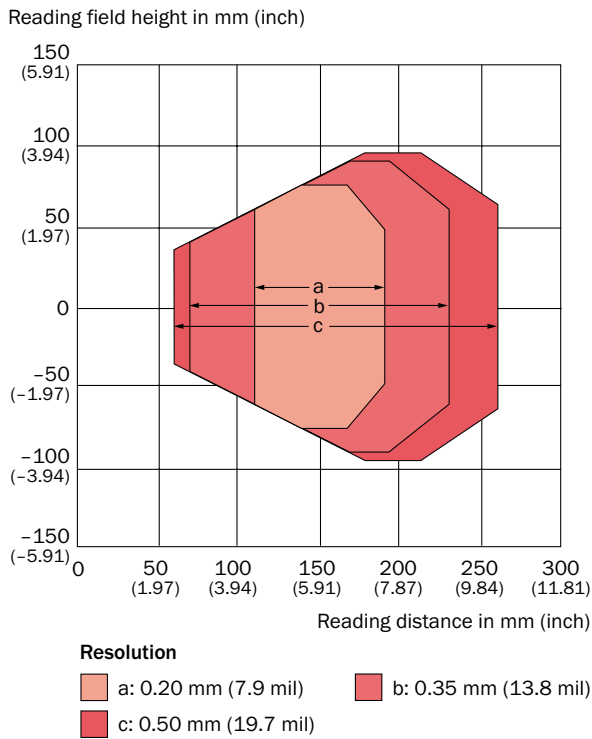
CLV430 Long Range front



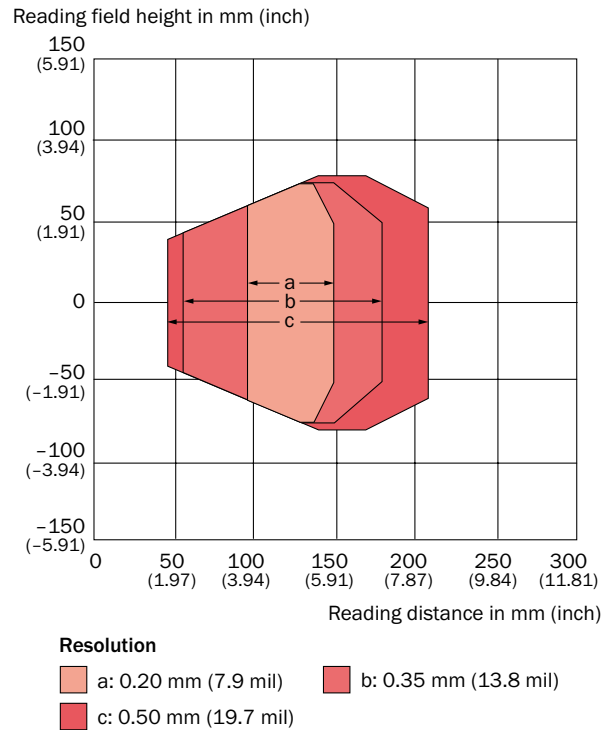
CLV431 Mid Range front



CLV432 Short Range front





CLV432 Short Range oscillating mirror




F

Recommended accessories


Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	U-shaped mounting bracket, with mounting material (3 self-locking M5 x 8 screws, 3 x A5 washers, 2 M5 x 12 screws, 2 x A5.3 washers)	2022564

Plug connectors and cables

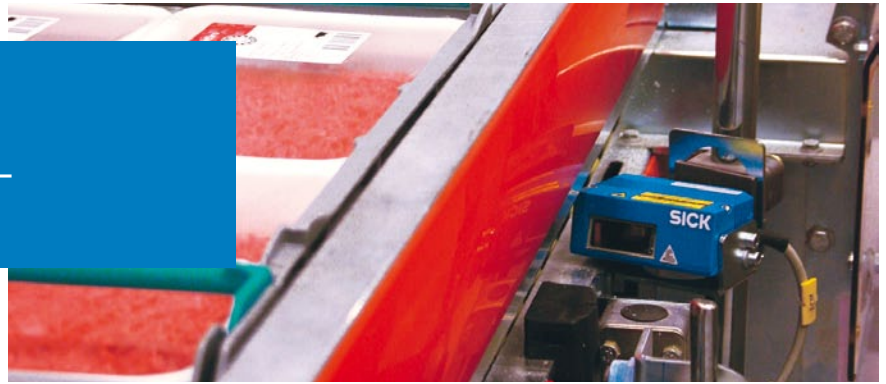
	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-2

F

F

Well proven – dynamic range – multi-functional



Product description

The CLV44x series of bar code scanners offer dynamic focus control, long reading distances and great depth of field. This compact IP 65-rated bar code scanner series offers SMART code recognition technology ensuring accurate read rates, even with damaged or poorly printed codes. The reflector polling feature eliminates the need for additional triggering sensors. And, the dynamic focus

control feature allows the CLV44x series to accommodate a large depth of field by dynamically adjusting its focus position to the object distance. It is available in an oscillating mirror version for applications where the bar code label position varies. The oscillating mirror version can also be used in static applications where the bar code location is poorly defined.

At a glance

- Dynamic focus control in real time
- Reliable code recognition in real time using SMART technology
- Immune to ambient light
- Auto setup ensures automatic optimizing of reading performance
- Reflector polling provides automatic triggering
- Profile programming included
- Adjustable scanning frequency up to 800 scans per second

Your benefits

- SMART-enhanced read rates enable better performance with damaged or poorly printed codes
- Reliably reads bar codes with up to 30 degrees of tilt, increasing throughput
- Dynamic focus control allows the scanner to accommodate a large depth of field by dynamically adjusting the focus to the object distance
- No additional trigger light switch necessary due to the reflector polling function, reducing costs
- Easy to configure
- Short commissioning time
- Reliable operation
- Small size and simple setup enables fast installation, even in compact machines
- Parameter cloning plug ensures very short MTTR



Additional information

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 Recommended accessories F-27
 Dimensional drawings M-3

F

Detailed technical data

Features

	CLV440 Standard Density	CLV442 High Density
No. of distance configurations	8	
Focus adjustment time	≤ 50 ms	
Focus trigger source	Switching input "Sensor 2", serial interface, timer	
Light source	Visible red light (650 nm)	
MTBF	20,000 h	
Laser class	2 (DIN EN 60825-1)	
Field of view	≤ 50°	
Scanning frequency	300 Hz ... 800 Hz	
Code resolution	0.2 mm ... 1 mm	0.15 mm ... 0.25 mm
Reading distance (at code resolution)		
Front	150 mm ... 840 mm (1 mm)	30 mm ... 335 mm (0.25 mm)
Oscillating mirror	40 mm ... 510 mm (0.5 mm)	–
Raster height, number of lines, at distance	15 mm, 8, 200 mm	
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot	
Oscillation frequency	0.5 Hz ... 4 Hz	
Angle of deflection	–20° ... 20° (can be adjusted via software)	

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	500
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet		–, optional via external connection module (CDM + CMF)
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		–, optional via external connection module (CDM + CMF)
DeviceNet		–, optional via external connection module (CDM + CMF)
Switching inputs		2 ("Sensor 1", "Sensor 2")
Switching outputs		2 ("Result 1", "Result 2")
Reading pulse		Reflector polling, "Sensor 1" switching input, non-powered, serial interface
Optical indicators		4 LEDs (function indicator)
Acoustic indicators		Beeper/buzzer (can be switched off, can be allocated as a result status indication function)

Mechanics/electronics

	CLV440 Standard Density	CLV442 High Density
Electrical connection	1 15-pin D-Sub HD plug (0.9 m)	
Operating voltage	10 V DC ... 30 V DC ¹⁾	
Power consumption	5 W / 6.15 W (depending on type)	5 W
Housing	Zinc diecast, does not contain paint wetting impairment substances	
Housing color	Light blue (RAL 5012)	
Enclosure rating	IP 65 (EN 60529 (1991-10), A1 (2002-02))	
Protection class	III (EN 61140 (2002-03))	
Weight	480 g, with connecting cable 620 g, with connecting cable (depending on type)	480 g, with connecting cable
Dimensions	Front	90 mm x 60 mm x 35.7 mm
	Oscillating mirror	99.8 mm x 92.2 mm x 35.7 mm
		90 mm x 60 mm x 35.7 mm -

¹⁾ UL certified for use with a Class 2 main supply unit (checked to UL 1310).

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-4 (2001-10)
Vibration resistance	IEC 60068-2-27 (1993)
Shock resistance	IEC 600682-6 (1995)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

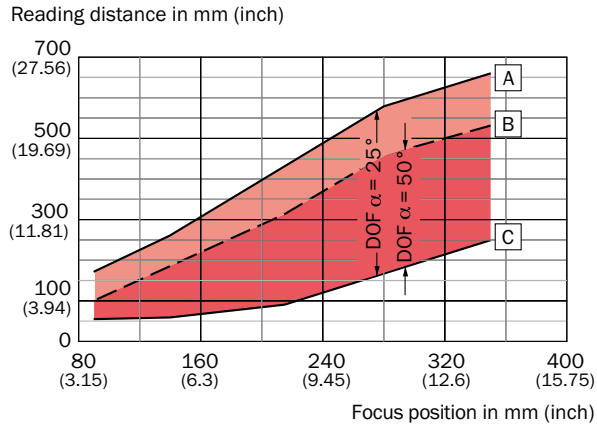
Ordering information

- **Focus:** Dynamic focus control
- **Connection type:** Standard

Type	Reading field	Scanner design	Model name	Part no.
CLV440 Standard Density	Front	Raster scanner	CLV440-1010	1019093
		Line scanner	CLV440-0010	1017588
	Oscillating mirror	Line scanner	CLV440-6010	1017984
CLV442 High Density	Front	Line scanner	CLV442-0010	1017595

Reading field diagrams

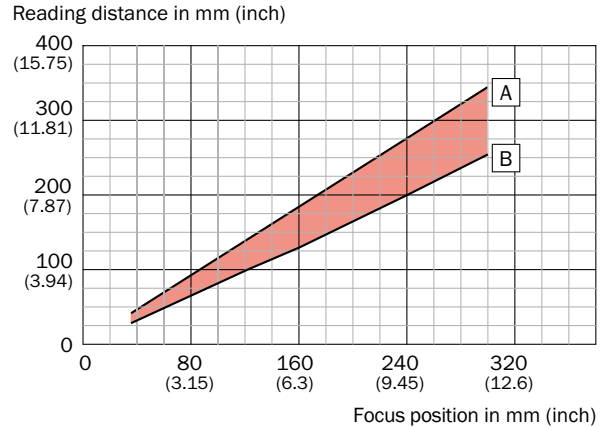
CLV440 Standard Density front



Resolution 0.5 mm (19.7 mil)

- A** max. reading distance (aperture angle 25°)
- B** max. reading distance (aperture angle 50°)
- C** min. reading distance

CLV442 High Density front





Resolution 0.25 mm (9.8 mil)


- A** max. reading distance (aperture angle 25°)
- B** min. reading distance (aperture angle 25°)

Recommended accessories


Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	U-shaped mounting bracket, with mounting material (3 self-locking M5 x 8 screws, 3 x A5 washers, 2 M5 x 12 screws, 2 x A5.3 washers)	2022564

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-2

Wider range – SMART performance



F



Product description

The CLV45x series of bar code scanners offers dynamic focus control and a large depth of field. This scanner can read bar codes at distances of up to 1.6 m (63 inches). SMART, SICK's advanced code recognition technology, ensures accurate read rates, even with damaged or poorly printed codes. In addition, the profile programming function enables you to configure device parameters without the need for additional tools. The CLV45x series

comes in a compact, IP 65-rated housing made of cast aluminum. It is available with an oscillating mirror for applications where the bar code label position varies. The oscillating mirror version can also be used in static applications where the bar code location is poorly defined. Thanks to its outstanding features, the CLV45x can provide a simple and cost-effective solution for applications in material handling and warehousing systems.

At a glance

- Dynamic focus control in real time
- Immune to ambient light
- Large reading distance of up to 1.6 m
- Auto setup ensures automatic optimizing of reading performance
- CAN bus compatible
- High read rates, even with damaged, rotated, or dirty bar codes
- Adjustable scanning frequency up to 1,000 scans per second

Your benefits

- Reliable bar code identification across large reading distances
- Dynamic focus control allows the scanner to accommodate a large depth of field by dynamically adjusting the focus to the object distance
- Small size and simple setup enables fast installation, even in compact machines
- Extremely easy to configure, shortening commissioning time
- Short commissioning time
- Reliable operation
- Parameter cloning plug ensures very short MTTR



Additional information

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Ordering information F-30

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Recommended accessories F-31

Dimensional drawings M-3

Detailed technical data

Features

	CLV450 Standard Density	CLV451 Low Density
No. of distance configurations	8	
Focus adjustment time	≤ 50 ms	
Focus trigger source	Switching input "Sensor 2", serial interface, timer	
Light source	Visible red light (650 nm)	
MTBF	20,000 h	
Laser class	2 (DIN EN 60825-1)	
Field of view	≤ 50°	
Scanning frequency	400 Hz ... 1,000 Hz	
Code resolution	0.25 mm ... 1 mm	0.5 mm
Reading distance (at code resolution)		
Front	125 mm ... 1,600 mm (1 mm)	150 mm ... 950 mm (0.5 mm)
Oscillating mirror	125 mm ... 1,510 mm (1 mm)	150 mm ... 780 mm (0.5 mm)
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot	
Oscillation frequency	0.5 Hz ... 4 Hz	
Angle of deflection	-20° ... 20° (can be adjusted via software)	

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	500
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	✓, AUX (only RS-232)
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	-, optional via external connection module (CDM + CMF)
CAN bus	✓
Function	CAN sensor network (Master/Slave, Multiplexer)
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	2 ("Sensor 1", "Sensor 2")
Switching outputs	2 ("Result 1", "Result 2")
Reading pulse	"Sensor 1" switching input, non-powered, serial interface
Optical indicators	4 LEDs (function indicator)
Acoustic indicators	Beeper/buzzer (can be switched off, can be allocated as a result status indication function)

Mechanics/electronics

Electrical connection	1 15-pin D-Sub HD plug (0.9 m)
Operating voltage	10 V DC ... 30 V DC ¹⁾
Power consumption	6 W / 7.2 W (depending on type)
Housing	Zinc diecast, does not contain paint wetting impairment substances
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050)
Protection class	III (VDE 0106, IEC 1010-1)
Weight	530 g, with connecting cable 700 g, with connecting cable (depending on type)
Dimensions	Front 90 mm x 60 mm x 35.7 mm Oscillating mirror 99.8 mm x 90 mm x 37.8 mm

¹⁾ UL certified for use with a Class 2 main supply unit (checked to UL 1310).

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-4 / EN 61000-6-2
Vibration resistance	IEC 68-2-6 Test FC
Shock resistance	IEC 68-2-27 Test EA
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

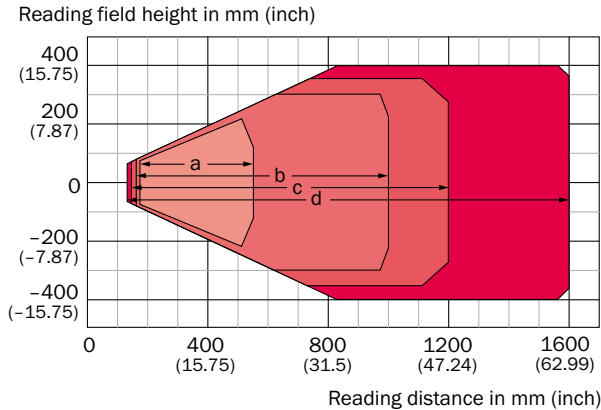
Ordering information

- **Focus:** Dynamic focus control
- **Connection type:** Standard
- **Scanner design:** Line scanner

Type	Reading field	Model name	Part no.
CLV450 Standard Density	Front	CLV450-0010	1018556
	Oscillating mirror	CLV450-6010	1019218
CLV451 Low Density	Front	CLV451-0010	1019522
	Oscillating mirror	CLV451-6010	1019524

Reading field diagrams

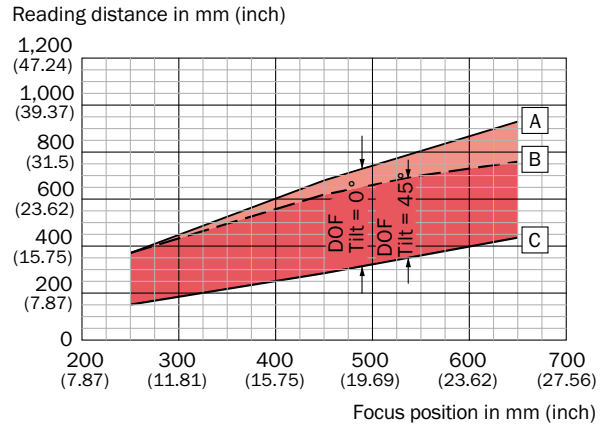
CLV450 Standard Density front



Resolution

- a: 0.25 mm (9.8 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

CLV451 Low Density front





Resolution 0.5 mm (19.7 mil)/aperture angle: 25°

- A max. reading distance (Tilt 0°)
- B max. reading distance (Tilt 45°)
- C min. reading distance


Depth of field (DOF) = max. reading distance minus min. reading distance

Recommended accessories


Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	U-shaped mounting bracket, with mounting material (3 self-locking M5 x 8 screws, 3 x A5 washers, 2 M5 x 12 screws, 2 x A5.3 washers)	2022564

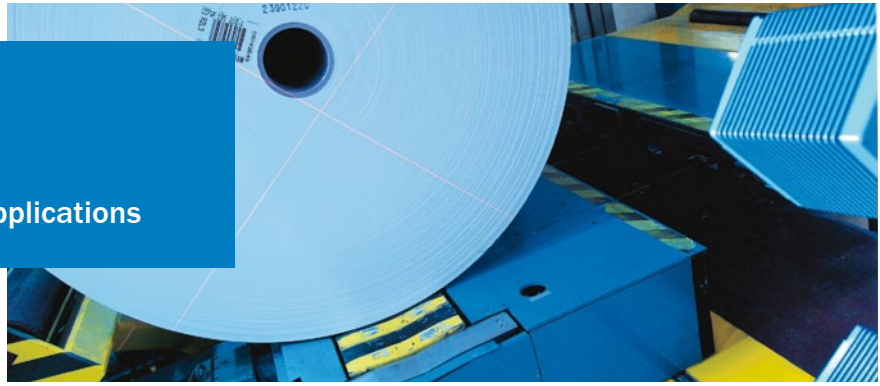
Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-2



High tilt for a large range of applications



F

Product description

The CLV480, with dynamic focus control, enables bar codes to be read over long distances. An optional integrated heater easily handles low-temperature applications. In addition, even poorly printed bar codes can be read by SMART code

recognition technology. It is available with an oscillating mirror for applications where the bar code label position varies. The oscillating mirror version can also be used in static applications where the bar code location is poorly defined.

At a glance

- Dynamic focus control in real time
- Label tilt from -45° to +45°
- Optimized reading on thermal paper
- Immune to ambient light
- CAN bus compatible for external interfacing and for omni-directional tracking mode
- High scanning reliability of short bar code heights
- Optional remote diagnostics
- Large reading distance up to 2 m

Your benefits

- High read rates even with short bar code heights, distorted, dirty and partly damaged bar codes, ensuring reliability
- Large aperture angle saves space
- Suitable for low-temperature applications with optional heater – saving costs
- External parameter cloning plug ensures very short MTTR



Additional information

Detailed technical data F-33
 Ordering information F-34
 Reading field diagrams F-35
 Recommended accessories F-35
 Dimensional drawings M-4

Detailed technical data

Features

Type	Standard Density
No. of distance configurations	8
Focus adjustment time	≤ 20 ms
Focus trigger source	Switching inputs "IN 0 ... IN 4", data interface, timer
Light source	Visible red light (650 nm)
MTBF	80,000 h
Laser class	2 (DIN EN 60825-1)
Field of view	≤ 60° / ≤ 50° (depending on type)
Scanning frequency	600 Hz ... 1,200 Hz
Code resolution	0.25 mm ... 1 mm
Reading distance (at code resolution)	
Front	260 mm ... 2,050 mm (1 mm)
Oscillating mirror	225 mm ... 1,925 mm (1 mm)
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot
Oscillation frequency	0.5 Hz ... 4 Hz
Angle of deflection	-20° ... 20° (can be adjusted via software)
Switch on delay	35 ... 40 min at -35 °C and 24 V DC

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 12 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	600
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	✓, AUX (only RS-232)
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	-, optional via external connection module (CDM + CMF)
CAN bus	✓
Function	CAN sensor network (Master/Slave, Multiplexer)
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	6 (Sensor, IN 0 ... IN 4)
Switching outputs	4 ("Result 1", "Result 2", "Result 3", "Result 4")
Reading pulse	"Sensor 4" switching input (+ "IN 4"), non-powered, data interface, OTS (Omni tracking)
Optical indicators	4 LEDs (function indicator)



Mechanics/electronics

Electrical connection	1 x 15-pin D-Sub HD device plug 1 x 15-pin D-Sub HD device socket
Operating voltage	18 V DC ... 30 V DC ≤ 24 V DC , ≥ 20 % , ≤ -10 % (depending on type)
Power consumption	16 W ... 100 W (depending on type)
Housing	Die-cast aluminum, no materials containing silicone on outside
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050)
Protection class	III (VDE 0106, IEC 1010-1)
Weight	1,500 g / 2,200 g (depending on type)
Dimensions	
	Front 117 mm x 117 mm x 94 mm
	Oscillating mirror 183 mm x 127.5 mm x 97.5 mm

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-3 (2001-10) / EN 61000-6-3/A11 (2004-07)
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	-35 °C ... +40 °C (depending on type)
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

Ordering information

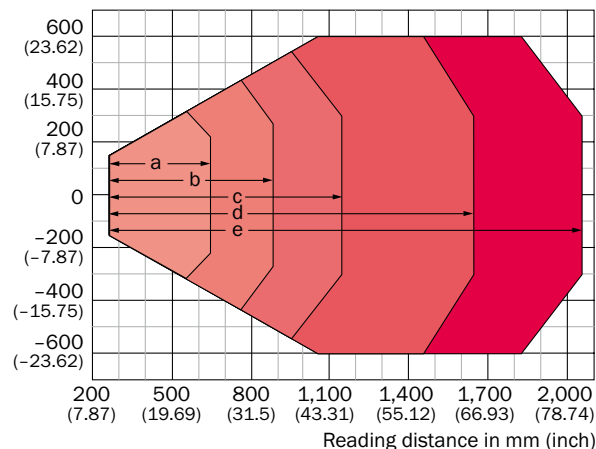
- **Focus:** Dynamic focus control
- **Type:** CLV480 Standard Density
- **Connection type:** Standard
- **Scanner design:** Line scanner

Reading field	Heating	Model name	Part no.
Front	-	CLV480-0010	1024065
	Yes	CLV480-0011	1024067
Oscillating mirror	-	CLV480-1010	1024066
	Yes	CLV480-1011	1024068

Reading field diagrams

CLV480 Standard Density front

Reading field height in mm (inch)

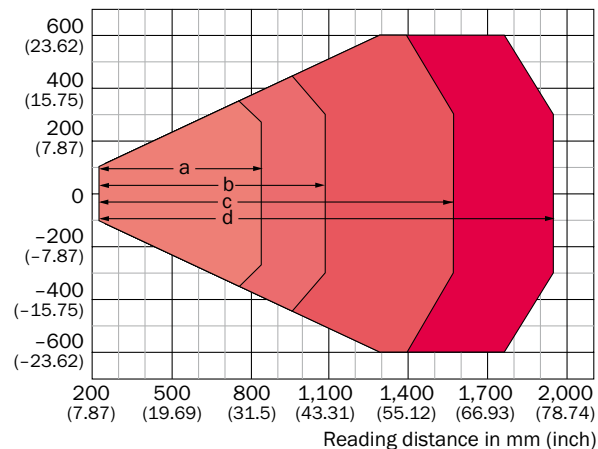


Resolution

- a: 0.25 mm (9.8 mil)
- b: 0.30 mm (11.8 mil)
- c: 0.35 mm (13.8 mil)
- d: 0.50 mm (19.7 mil)
- e: 1.00 mm (39.4 mil)

CLV480 Standard Density oscillating mirror

Reading field height in mm (inch)





Resolution

- a: 0.30 mm (11.8 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)


Recommended accessories






Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM490-0001	1025363

Mounting brackets/plates

	Brief description	Part no.
	Single angle bracket, with 2 x self-locking screw M6 x 10	2013824

Plug connectors and cables

	Brief description	Part no.
	Connection cable to CDB620, 3 m, with EEPROM parameter store	2030023
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2020307

For additional accessories, please see page L-2

Auto focus meets high speed



Product description

The CLV490 series is ideal for the most demanding applications. It serves as the basis for OPS and ALIS systems and meets the highest industrial standards for a wide range of applications. The CLV490 ensures maximum read rates independent of tilt, even with small code

heights. The scanner's real-time auto focus function takes focusing to the next level. Because the focus position is automatically readjusted to varying distances over a large depth of field up to 32 inches, optimum reading results are achieved.

At a glance

- Real-time auto focus function
- Different versions ensure coverage for a variety of module widths
- Label tilt from -45° to +45°
- Smallest housing with auto focus and reading range up to 2.2 m
- External parameter cloning plug
- An oscillating mirror scanner is also available to cover larger reading areas
- Optional internal heater
- High scanning frequency of up to 1,200 Hz

Your benefits

- No supplementary components necessary for changing focus position, reducing costs
- Real-time auto focus provides the best coverage of applications with a large depth of field – even for small code heights
- External parameter cloning plug ensures very short MTTR
- SMART-enhanced read rates enable better performance with damaged or poorly printed codes



Additional information

Detailed technical data F-37
 Ordering information F-38
 Reading field diagrams F-39
 Recommended accessories F-40
 Dimensional drawings M-4

F

Detailed technical data

Features

	CLV490-0/1 Standard Density	CLV490-2/3 High Density	CLV490-6/7 Low Density
No. of distance configurations	8		
Focus adjustment time	≤ 20 ms		
Focus trigger source	Switching inputs "IN 0 ... IN 4", data interface, timer		
Light source	Visible red light (650 nm)		
MTBF	80,000 h		
Laser class	2 (DIN EN 60825-1)		
Field of view	≤ 60° / ≤ 50° (depending on type)		
Scanning frequency	600 Hz ... 1,200 Hz		
Code resolution	0.25 mm ... 1 mm	0.17 mm ... 0.4 mm	0.5 mm ... 1.2 mm
Reading distance (at code resolution)	500 mm ... 2,100 mm (0.5 mm)	400 mm ... 1,600 mm (0.3 mm)	500 mm ... 2,200 mm (0.5 mm)
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot		
Oscillation frequency	0.5 Hz ... 4 Hz		
Angle of deflection	-20° ... 20° (can be adjusted via software)		
Switch on delay	35 ... 40 min at -35 °C and 24 V DC		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 12 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	600
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	<ul style="list-style-type: none"> ✓, AUX (only RS-232) Function: Host, AUX Data transmission rate: 300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	-, optional via external connection module (CDM + CMF)
CAN bus	<ul style="list-style-type: none"> ✓ Function: CAN sensor network (Master/Slave, Multiplexer) Data transmission rate: 10 kbit/s ... 1 Mbit/s Protocol: CANopen, CSN (SICK CAN sensor network)
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	6 (Sensor, IN 0 ... IN 4)
Switching outputs	4 ("Result 1" ... "Result 4")
Reading pulse	"Sensor 4" switching input (+ "IN 4"), non-powered, data interface, OTS (Omni tracking)
Optical indicators	4 LEDs (function indicator)

Mechanics/electronics

Electrical connection	1 x 15-pin D-Sub HD device plug 1 x 15-pin D-Sub HD device socket
Operating voltage	18 V DC ... 30 V DC (depending on type)
Power consumption	16 W ... 100 W (depending on type)
Housing	Die-cast aluminum, no materials containing silicone on outside
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050)
Protection class	III (VDE 0106)
Weight	1,500 g / 2,200 g (depending on type)
Dimensions	
	Front 117 mm x 117 mm x 94 mm
	Oscillating mirror 183 mm x 127.5 mm x 97.5 mm

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-3 (2001-10) / EN 61000-6-3/A11 (2004-07)
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	-35 °C ... +40 °C (depending on type)
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

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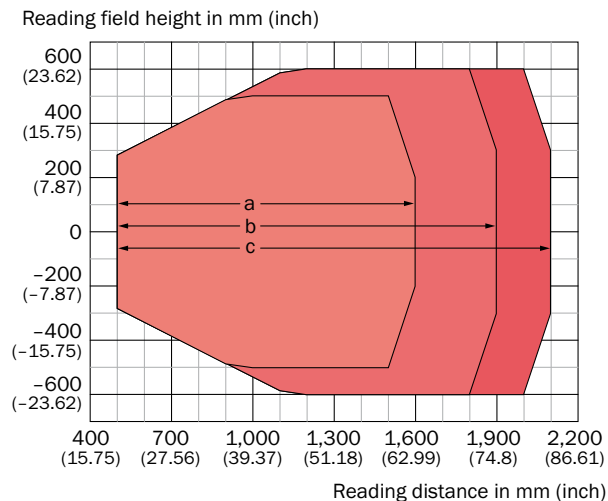
Ordering information

- **Focus:** Auto focus
- **Connection type:** Standard
- **Scanner design:** Line scanner

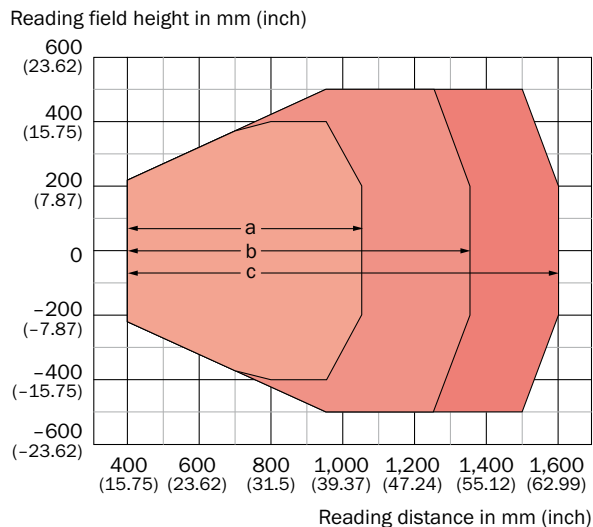
Type	Reading field	Heating	Model name	Part no.
CLV490-0/1 Standard Density	Front	-	CLV490-0010	1016958
		Yes	CLV490-0011	1016960
	Oscillating mirror	-	CLV490-1010	1016959
		Yes	CLV490-1011	1016961
CLV490-2/3 High Density	Front	-	CLV490-2010	1019311
		Yes	CLV490-2011	1019312
	Oscillating mirror	-	CLV490-3010	1019313
		Yes	CLV490-3011	1019314
CLV490-6/7 Low Density	Front	-	CLV490-6010	1018872
		Yes	CLV490-6011	1019095
	Oscillating mirror	-	CLV490-7010	1019094
		Yes	CLV490-7011	1019096

Reading field diagrams

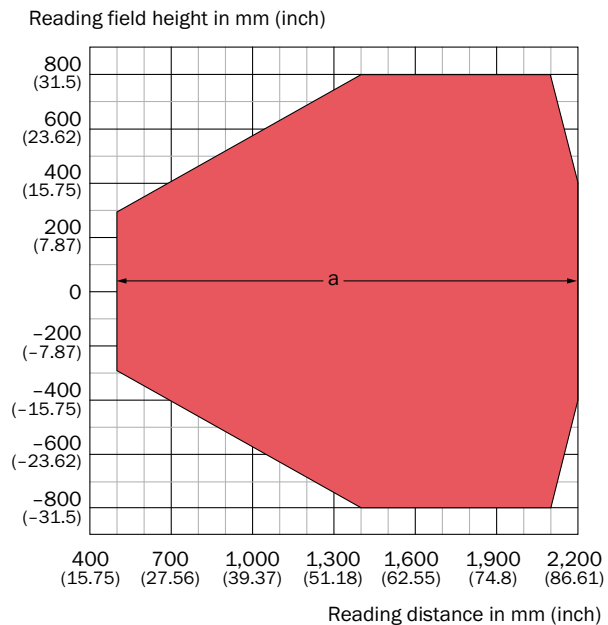
CLV490-0/1 Standard Density front



CLV490-2/3 High Density front





CLV490-6/7 Low Density front




F

Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM490-0001	1025363

Mounting brackets/plates

	Brief description	Part no.
	Single angle bracket, with 2 x self-locking screw M6 x 10	2013824

Plug connectors and cables

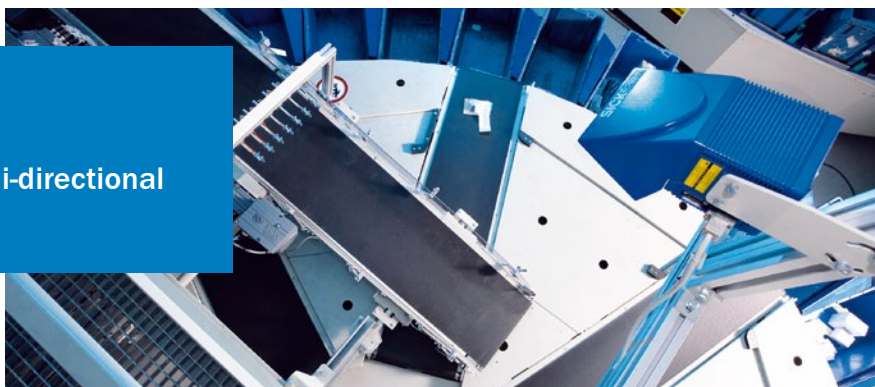
	Brief description	Part no.
	Connection cable to CDB620, 3 m, with EEPROM parameter store	2030023
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2020307

For additional accessories, please see page L-2

F

F

The all-in-one solution for omni-directional scanning



F



Product description

Optimize your logistics processes using the CLX490. It is a compact, industrial omni-directional scanner. It incorporates automatic focus, SMART code reading technology, a high scan rate and package tracking into one unit. The CLX490 allows small object spacing through

its integrated tracking function. And, the scanner's automatic focus control feature provides a large depth of field up to 800 mm (32 inches). SICK's CLX490 ensures that your logistics processes will keep up with future market demands.

At a glance

- Real-time auto focus function
- Independent of tilt (omni-directional bar code reading)
- Reliable code detection in real time due to SMART technology
- Smallest housing with auto focus and reading range up to 2.2 m
- External parameter cloning plug
- High scanning frequency of up to 1,200 Hz
- Large depth of field
- Optional internal heater

Your benefits

- No additional controller needed in stand-alone applications to cover small object gaps, reducing costs
- No supplementary components necessary for changing focus position, reducing costs
- Can be used in omni portal systems as additional side scanners
- SMART-enhanced read rates enable better performance with damaged or poorly printed codes
- External parameter cloning plug ensures very short MTTR



Additional information

Detailed technical data..... F-43
 Ordering information..... F-44
 Reading field diagrams..... F-45
 Recommended accessories..... F-45

Detailed technical data

Features

Type	Standard Density
No. of distance configurations	8
Focus adjustment time	≤ 20 ms
Focus trigger source	Switching inputs "IN 0 ... IN 4", data interface, timer
Light source	Visible red light (650 nm)
MTBF	80,000 h
Laser class	2 (DIN EN 60825-1)
Field of view	≤ 60°
Scanning frequency	600 Hz ... 1,200 Hz
Code resolution	0.3 mm ... 1 mm
Reading distance (at code resolution)	500 mm ... 1,750 mm (0.5 mm)
Switch on delay	35 ... 40 min at -35 °C and 24 V DC

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 12 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	600
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232)
	Data transmission rate	Host, AUX 300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet		-, optional via external connection module (CDM + CMF)
CAN bus	Function	✓
	Data transmission rate	CAN sensor network (Master/Slave, Multiplexer) 10 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDM + CMF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs		6 (Sensor, IN 0 ... IN 4)
Switching outputs		4 ("Result 1" ... "Result 4")
Reading pulse		"Sensor 4" switching input (+ "IN 4"), non-powered, data interface, OTS (Omni tracking)
Optical indicators		4 LEDs (function indicator)

F

Mechanics/electronics

Electrical connection	1 x 15-pin D-Sub HD device plug 1 x 15-pin D-Sub HD device socket
Operating voltage	18 V DC ... 30 V DC, ± 10 % (depending on type)
Power consumption	16 W / 90 W (depending on type)
Housing	Die-cast aluminum, no materials containing silicone on outside
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (EN 60529 (1991-10))
Protection class	III (EN 61140 (2002-03))
Weight	2,000 g
Dimensions	208 mm x 152.6 mm x 175.5 mm

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-3 (2001-10) / EN 61000-6-3/A11 (2004-07)
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	-30 °C ... +40 °C (depending on type)
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

F

Ordering information

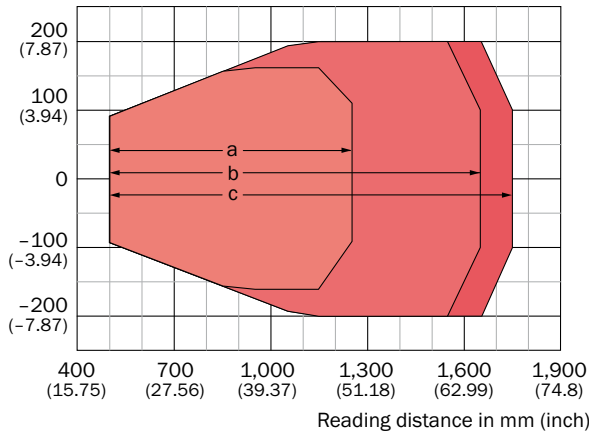
- **Focus:** Auto focus
- **Type:** CLX490 Standard Density
- **Connection type:** Standard
- **Reading field:** Front
- **Scanner design:** X scanner

Heating	Model name	Part no.
-	CLX490-0010	1019318
Yes	CLX490-0011	1019319

Reading field diagrams

CLX490 Standard Density front

Reading field height in mm (inch)





Resolution


- a: 0.30 mm (11.8 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)

Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM490-0001	1025363

Mounting brackets/plates

	Brief description	Part no.
	Mounting angle, with 2 x screws M6 x 12, self-locking	2022996

Plug connectors and cables

	Brief description	Part no.
	Connection cable to CDB620, 3 m, with EEPROM parameter store	2030023
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2020307

For additional accessories, please see page L-2

The mini line – small, simple, reliable



F

Product description

SICK’s miniature line of bar code scanners are barely larger than a USB plug and can easily be installed where space is extremely limited. The CLV50x series is also easy to configure via its online tool and configuration bar codes. These mini bar code scanners boast excellent decoding performance, with a large depth of field that allows for flexibility in your application. This ultra-compact series is ideal for applications in the

OEM and machine builder marketplace, such as packaging systems, circuit board processing, clinical analyzers, robotic inspection, etc. The CLV503 is ideal for slow moving applications – with a scanning frequency of 100 Hz. The CLV505 offers a high scanning frequency of 1,000 Hz and is suitable for conveyor speeds of up to 5 m/s, depending on the application.

At a glance

- Extremely compact
- Lightweight
- Easy commissioning
- Fast and reliable decoding even on poorly printed or partly damaged codes
- Available in RS-232 version with flying leads and USB version
- Pushbutton trigger
- Discrete trigger input and good read/no read outputs (flying lead variant only)
- CLV505 available in raster version

Your benefits

- Small size and simple setup enables fast installation, even in compact machines
- Fast and easy commissioning using configuration bar codes (shipped with each scanner) and the online tool
- Excellent reading performance – even with poorly printed codes – ensures high throughput
- Pushbutton trigger, onboard LED, and audible beep simplify setup and troubleshooting



Additional information

Detailed technical data F-47

Ordering information F-48

Reading field diagrams F-48

Recommended accessories F-48

Dimensional drawings M-5

Detailed technical data

Features

	CLV503 Standard Range	CLV505 Standard Range
Light source	Visible red light (650 nm)	
MTBF	10,000 h	
Laser class	2	
Field of view	≤ 44°	≤ 40°
Scanning frequency	≤ 100 Hz	≤ 1,000 Hz
Code resolution	0.15 mm ... 1 mm	
Reading distance (at code resolution)	50 mm ... 630 mm (1 mm)	60 mm ... 330 mm (1 mm)

Performance

Bar code types	Code 11, Code 39, Code 128, Code 93, Codabar, EAN, JAN, UPC, Interleaved 2 of 5, 2/5 Industrial, Matrix 2 of 5, China Post, GS1 DataBar (Expanded, Limited, Truncated, 14 Stacked, Expanded Stacked, Stacked, with Composite A/B), IATA, ISBN-ISMN-ISSN, Korea Post, MSI/Plessey, UK/Plessey, S-Code, Telepen, Trioptic, MicroPDF417, PDF417
----------------	--

Interfaces

Serial (RS-232)	✓ / – (depending on type)
Data transmission rate	≤ 115,200 Baud
USB	– / ✓ (depending on type)
Switching inputs	
Standard	1 (reading pulse trigger)
Switching outputs	
Standard	2 (“Good Read” / “No Read”)
Reading pulse	Button at housing, serial command, switching input / Button at housing, serial command (depending on type)
Optical indicators	1 LED
Acoustic indicators	Beeper/buzzer

Mechanics/electronics

	CLV503 Standard Range	CLV505 Standard Range
Electrical connection		
Standard	1 open cable end	
USB	1 USB	
Operating voltage	5 V DC, ±10 %	
Housing color	Light blue (RAL 5012)	
Enclosure rating	IP 45	IP 54
Protection class	III	
Weight	18.5 g, without cable	30 g, without cable
Dimensions	30 mm x 43.3 mm x 20 mm	29 mm x 34.5 mm x 17 mm

Ambient data

	CLV503 Standard Range	CLV505 Standard Range
Electromagnetic compatibility (EMC)	EN 61000-6-3:2007-01 ¹⁾	EN 61000-6-3:2007-01 ²⁾
Ambient operating temperature	–10 °C ... +45 °C	0 °C ... +45 °C
Permissible relative humidity	85 %, non-condensing	90 %, non-condensing
Ambient light safety	2,000 lx	
Bar code print contrast (PCS)	≥ 45 %	

¹⁾ For ESD safe installation and cable length ≤ 3 m.

²⁾ For ESD safe installation.

Ordering information

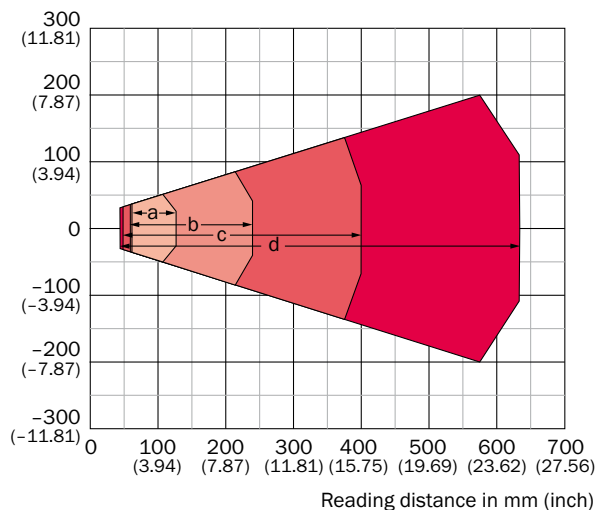
- **Focus:** Fixed focus
- **Reading field:** Front

Type	Connection type	Scanner design	Model name	Part no.
CLV503 Standard Range	Standard	Line scanner	CLV503-0000	1046315
	USB	Line scanner	CLV503-0110	1046316
CLV505 Standard Range	Standard	Line scanner	CLV505-0000	1046317
	USB	Line scanner	CLV505-0110	1046318
	Standard	Raster scanner	CLV505-1000	1046319
	USB	Raster scanner	CLV505-1110	1046320

Reading field diagrams

CLV503 Standard Range front

Reading field height in mm (inch)

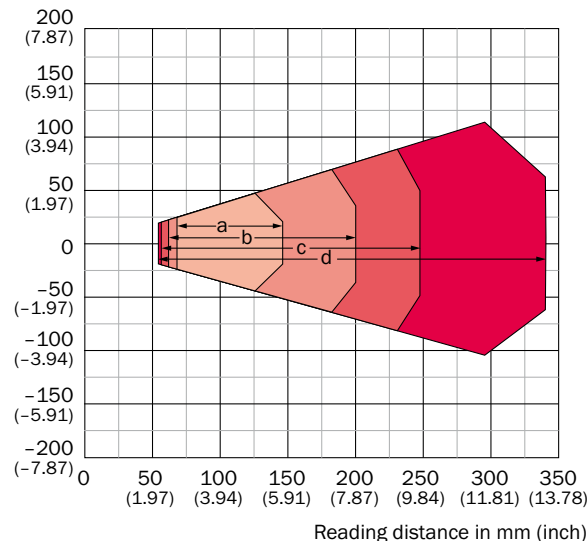


Resolution

- a: 0.15 mm (5.9 mil)
- b: 0.25 mm (9.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

CLV505 Standard Range front

Reading field height in mm (inch)





Resolution

- a: 0.15 mm (5.9 mil)
- b: 0.25 mm (9.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

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Recommended accessories

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket for CLV503	2050021
	Mounting bracket for CLV505	2050022

For additional accessories, please see page L-6



Powerful scanner – flexible use



Product description

The CLV62x series of bar code scanners are compact, powerful tools for a wide range of logistics applications. Speed, power, flexibility and ease of use are the features that define the CLV62x family. The CLV62x combines high reading performance with the SMART620 code reconstruction system, a reading algorithm that can accurately detect bar codes even if they are damaged or

partially covered. These scanners are available with the standard serial or embedded Ethernet, including EtherNet/IP communications. Other advanced features, like an embedded web server for remote diagnostics and reading performance statistics give the CLV62x family the kind of high-end performance and flexibility usually expected in more costly scanners.

At a glance

- CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- SMART620 code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Advanced, easy-to-use SOPAS configuration software
- High scanning frequency of up to 1,200 Hz
- Small housing
- Advanced remote diagnostics and network monitoring capabilities available over Ethernet
- IP 65 rated

Your benefits

- High read rate on damaged and obscured codes using SMART620 code recognition technology
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- No supplementary Ethernet gateway required with Ethernet models – lowers costs
- The CLV62x scanner can be used as a multiplexer in any CAN scanner network from SICK – no supplementary multiplexer necessary
- Real-time decoding at very high speeds
- Small size and simple setup enables fast installation, even in compact machines



Additional information

Detailed technical data F-51
 Ordering information F-53
 Reading field diagrams F-54
 Recommended accessories F-55
 Dimensional drawings M-6

F

Detailed technical data

Features

	CLV620 Mid Range	CLV621 Long Range	CLV622 Short Range
Light source	Visible red light (655 nm)		
MTBF	40,000 h		
Laser class	2 (EN 60825-1 (A2:2001-03), IEC 60825-1 : 2007-03, Ed. 2.0)		
Field of view	≤ 50°		
Scanning frequency	400 Hz ... 1,200 Hz		
Code resolution	0.2 mm ... 1 mm	0.35 mm ... 1 mm	0.15 mm ... 0.5 mm
Reading distance (at code resolution)	60 mm ... 365 mm (1 mm)	60 mm ... 730 mm (1 mm)	55 mm ... 200 mm (0.5 mm)
Raster height, number of lines, at distance	15 mm, 8, 200 mm 15 mm, 8, 185 mm (depending on type)		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode, GS1 DataBar
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART620)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	5,000 500 (for multiplexer function in CAN operation)
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	2,400 Baud ... 115 kBaud, AUX: 57.6 kBaud
Ethernet	Function	- / ✓ (depending on type) Host, AUX
	Data transmission rate	10/100 Mbit/s
	Protocol	TCP/IP, EtherNet/IP, half/full-duplex
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs	Standard	2 ("Sensor 1", "Sensor 2", 2 additional inputs via CMC600 in CDB620)
	Ethernet	1 ("Sensor 1", 2 additional inputs via CMC600 in CDB620)
Switching outputs	Standard	2 ("Result 1", "Result 2", 2 additional outputs via CMC600 in CDB620)
	Ethernet	0 (2 outputs via CMC600 in CDB620)
Reading pulse		Switching inputs, non-powered, serial interface, auto pulse
Optical indicators		6 LEDs (Ready, Result, Laser, Data, CAN, LNK TX)
Acoustic indicators		Beeper/buzzer (can be switched off, can be allocated as a result status indication function)
Connector	Standard	Fix
	Ethernet	Pivotable

Mechanics/electronics

Electrical connection	Standard	1 15-pin D-Sub HD plug (0.9 m)
	Ethernet	2 M12 cylindrical connectors (12-pin plug, 4-pin socket) on pivotable connector unit
Operating voltage		10 V DC ... 30 V DC
Power consumption		4.5 W
Housing		Die-cast aluminum
Housing color		Light blue (RAL 5012)
Enclosure rating		IP 65 (DIN 40 050)
Protection class		III (VDE 0106/IEC 1010-1)
Weight		205 g ... 250 g (depending on type)
Dimensions	Front	61 mm x 66 mm x 38 mm ¹⁾
	Side	80 mm x 66 mm x 38 mm ¹⁾

¹⁾ Pivotable connector unit is 15 mm longer with Ethernet model.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-3 (2001-10) / EN 61000-6-2:2005
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

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Ordering information

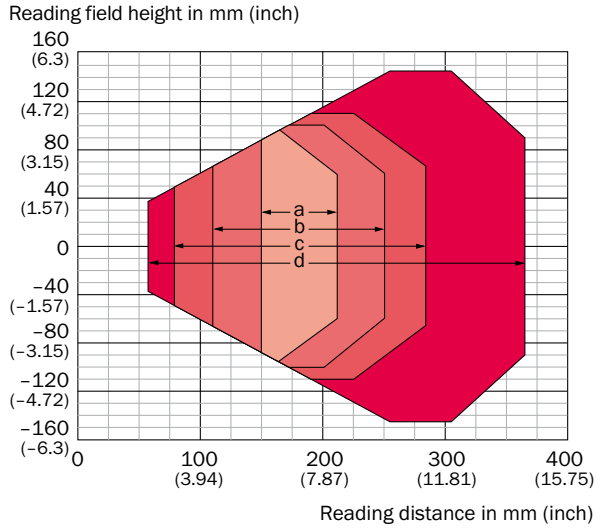
- **Focus:** Fixed focus

Type	Connection type	Reading field	Scanner design	Model name	Part no.
CLV620 Mid Range	Standard	Front	Line scanner	CLV620-0000	1040288
			Raster scanner	CLV620-1000	1041548
		Side (105°)	Line scanner	CLV620-2000	1041550
			Raster scanner	CLV620-3000	1041552
	Ethernet	Front	Line scanner	CLV620-0120	1041547
			Raster scanner	CLV620-1120	1041549
		Side (105°)	Line scanner	CLV620-2120	1041551
			Raster scanner	CLV620-3120	1041553
CLV621 Long Range	Standard	Front	Line scanner	CLV621-0000	1041784
			Raster scanner	CLV621-1000	1041786
		Side (105°)	Line scanner	CLV621-2000	1041788
			Raster scanner	CLV621-3000	1041790
	Ethernet	Front	Line scanner	CLV621-0120	1041785
			Raster scanner	CLV621-1120	1041787
		Side (105°)	Line scanner	CLV621-2120	1041789
			Raster scanner	CLV621-3120	1041791
CLV622 Short Range	Standard	Front	Line scanner	CLV622-0000	1041792
			Raster scanner	CLV622-1000	1041794
		Side (105°)	Line scanner	CLV622-2000	1041796
			Raster scanner	CLV622-3000	1041798
	Ethernet	Front	Line scanner	CLV622-0120	1041793
			Raster scanner	CLV622-1120	1041795
		Side (105°)	Line scanner	CLV622-2120	1041797
			Raster scanner	CLV622-3120	1041799

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Reading field diagrams

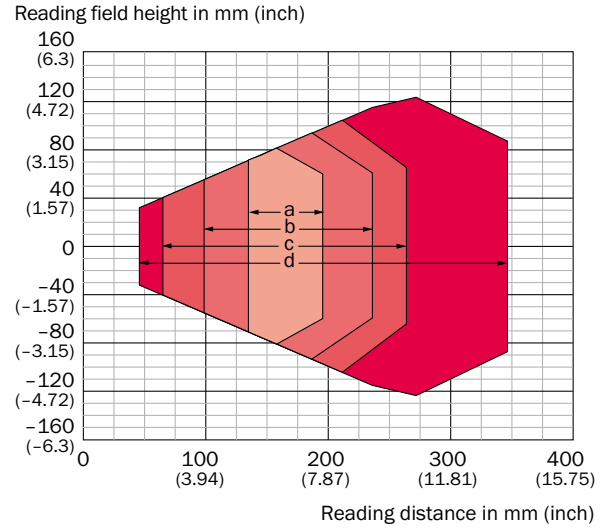
CLV620 Mid Range front



Resolution

 a: 0.2 mm (7.9 mil)	 b: 0.35 mm (13.8 mil)
 c: 0.50 mm (19.7 mil)	 d: 1.00 mm (39.4 mil)

CLV620 Mid Range side

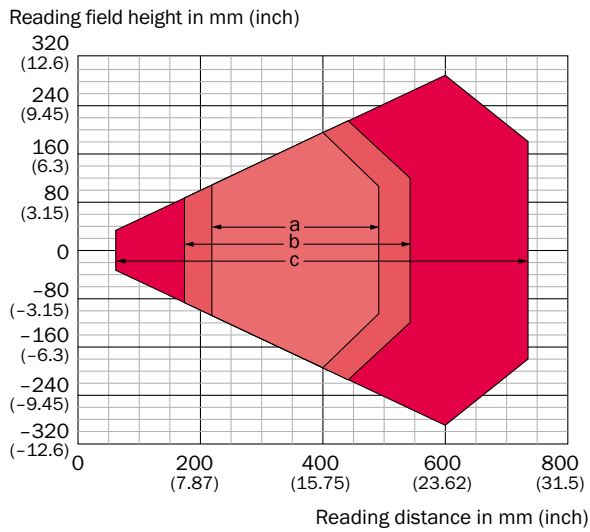


Resolution

 a: 0.2 mm (7.9 mil)	 b: 0.35 mm (13.8 mil)
 c: 0.50 mm (19.7 mil)	 d: 1.00 mm (39.4 mil)

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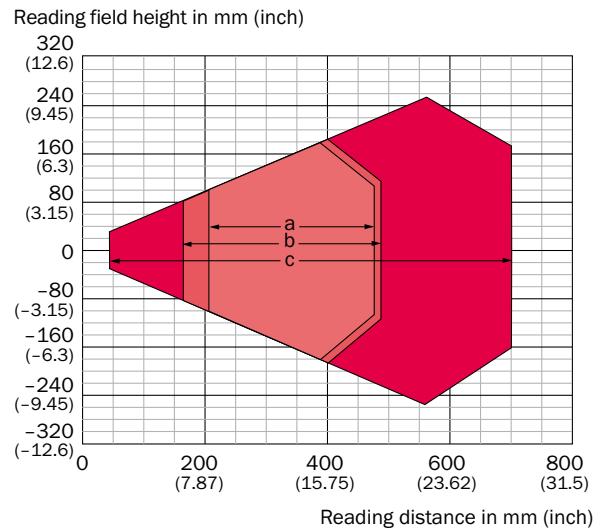
CLV621 Long Range front



Resolution

 a: 0.35 mm (13.8 mil)	 b: 0.50 mm (19.7 mil)
 c: 1.00 mm (39.4 mil)	

CLV621 Long Range side

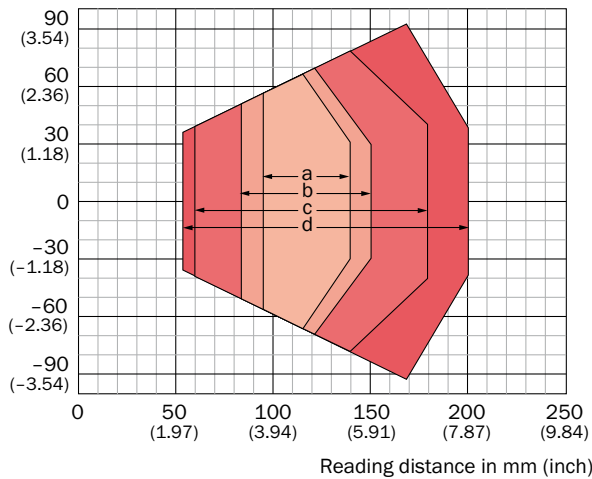


Resolution

 a: 0.35 mm (13.8 mil)	 b: 0.50 mm (19.7 mil)
 c: 1.00 mm (39.4 mil)	

CLV622 Short Range front

Reading field height in mm (inch)

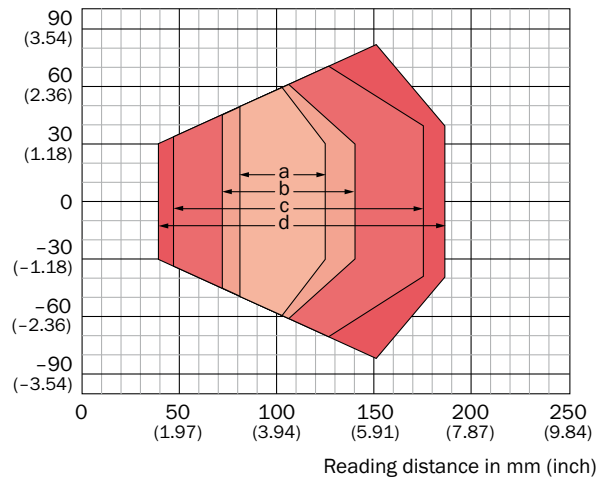


Resolution

- a: 0.15 mm (5.9 mil)
- b: 0.2 mm (7.9 mil)
- c: 0.35 mm (13.8 mil)
- d: 0.50 mm (19.7 mil)

CLV622 Short Range side

Reading field height in mm (inch)






Resolution


- a: 0.15 mm (5.9 mil)
- b: 0.2 mm (7.9 mil)
- c: 0.35 mm (13.8 mil)
- d: 0.50 mm (19.7 mil)

Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Bracket with adapter board	2042902

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle ¹⁾	2014054
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-Sub, 2 m (socket/plug) ²⁾	2041834
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug) ²⁾	6034414

¹⁾ Applicable for standard models.

²⁾ Applicable for Ethernet models.

For additional accessories, please see page L-7



Intelligent scanning solution for logistics and automation



Fixed Focus	SMART	Micro SD Card	Intelligent Auto Setup
2 x Button	LED Bar Graph	Oscillating Mirror	



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Product description

The CLV63x series of bar code scanners are compact, powerful tools satisfying the needs of a wide range of applications and industries. Newly improved SMART algorithms in the CLV63x are superior when reading damaged and tilted codes. In addition, pushbuttons on the CLV63x and above allow for quick bar code setup without using a computer. Match code teach-in and diagnostic triggering are

also possible. In addition to the LED bar graph, the CLV63x has other LED indicators on its body that show communication and scanner performance. The SD memory card slot allows users to easily clone scanner parameters. Variants include line, raster, side reading window and oscillating mirror versions; available with Ethernet.

At a glance

- Integrated pushbuttons for auto setup and reading diagnostics
- Integrated LED bar graph
- CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- Enhanced SMART code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Advanced, easy-to-use SOPAS configuration software
- High scanning frequency of up to 1,200 Hz
- Advanced remote diagnostics and network monitoring capabilities available over Ethernet

Your benefits

- Intelligent auto setup and multi-function pushbuttons save time during commissioning
- Teach-in of match code possible via the pushbuttons
- Easily execute firmware updates using the SD memory card: no need for a PC
- No supplementary Ethernet gateway required with Ethernet models – lowers costs
- Enhanced SMART technology reads damaged and partially obscured codes, increasing read rates
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- Real-time decoding at very high speeds
- Increased reading reliability due to high-performance computing power and a high scanning frequency



Additional information

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 Ordering information F-58
 Reading field diagrams F-59
 Recommended accessories F-62
 Dimensional drawings M-8

Detailed technical data

Features

	CLV630 Long Range	CLV631 Mid Range	CLV632 Short Range
Light source	Visible red light (655 nm)		
MTBF	40,000 h		
Laser class	2 (EN 60825-1 (A2:2001-03), IEC 60825-1 : 2007-03, Ed. 2.0)		
Field of view	≤ 50°		
Scanning frequency	400 Hz ... 1,200 Hz		
Code resolution	0.35 mm ... 1 mm	0.25 mm ... 0.5 mm	0.2 mm ... 0.5 mm
Reading distance (at code resolution)			
Front	60 mm ... 735 mm (1 mm)	90 mm ... 450 mm (0.5 mm)	60 mm ... 285 mm (0.5 mm)
Side	44 mm ... 683 mm (1 mm)	74 mm ... 412 mm (0.5 mm)	44 mm ... 256 mm (0.5 mm)
Oscillating mirror	45 mm ... 659 mm (1 mm)	78 mm ... 397 mm (0.5 mm)	45 mm ... 245 mm (0.5 mm)
Raster height, number of lines, at distance	15 mm, 8, 200 mm 15 mm, 8, 185 mm (depending on type)		
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot		
Oscillation frequency	0.5 Hz ... 6.25 Hz		
Angle of deflection	-20° ... 20°		

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode, GS1 DataBar
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	5,000 500 (for multiplexer function in CAN operation)
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	2,400 Baud ... 115 kBaud, AUX: 57.6 kBaud
Ethernet	Function	-, optional via external connection module (CDM + CMF) / ✓ (depending on type) Host, AUX
	Data transmission rate	10/100 Mbit/s
	Protocol	TCP/IP, EtherNet/IP, half/full-duplex
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs	Standard	2 ("Sensor 1", "Sensor 2", 2 additional inputs via CMC600 in CDB620)
	Ethernet	1 ("Sensor 1", 2 additional inputs via CMC600 in CDB620)
Switching outputs	Standard	2 ("Result 1", "Result 2", 2 additional outputs via CMC600 in CDB620)
	Ethernet	0 (2 outputs via CMC600 in CDB620)
Reading pulse		"Sensor 1" switching input, non-powered, serial interface, auto pulse
Optical indicators		6 LEDs (Ready, Result, Laser, Data, CAN, LNK TX, Bar graph for displaying the reading rate percentage (10 LEDs))

Acoustic indicators	Beeper/buzzer (can be switched off, can be allocated as a result status indication function)	
Control elements	2 buttons (choose and start/stop functions)	
Connector	Standard	Fix
	Ethernet	Pivotable
Memory card	Micro SD card (flash card) 512 MB, optional	

Mechanics/electronics

		CLV630 Long Range	CLV631 Mid Range	CLV632 Short Range
Electrical connection	Standard	1 15-pin D-Sub HD plug (0.9 m)		
	Ethernet	2 M12 cylindrical connectors (12-pin plug, 4-pin socket) on pivotable connector unit		
Operating voltage	18 V DC ... 30 V DC			
Power consumption	5 W / 6 W (depending on type)			
Housing	Die-cast aluminum			
Housing color	Light blue (RAL 5012)			
Enclosure rating	IP 65 (EN 60529)			
Protection class	III (EN 61140)			
Weight	250 g ... 420 g (depending on type)			
Dimensions	Front	61 mm x 96 mm x 38 mm ¹⁾		
	Side	80 mm x 96 mm x 38 mm ¹⁾		
	Oscillating mirror	95 mm x 96 mm x 41 mm ¹⁾		

¹⁾ Pivotable connector unit is 15 mm longer with Ethernet model.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-3 (2001-10) / EN 61000-6-2:2005
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

Ordering information

- **Focus:** Fixed focus
- **Heating:** optional

Type	Connection type	Reading field	Scanner design	Model name	Part no.
CLV630 Long Range	Standard	Front	Line scanner	CLV630-0000	1040706
			Raster scanner	CLV630-1000	1041970
		Side (105°)	Line scanner	CLV630-2000	1041972
			Raster scanner	CLV630-3000	1041974
		Oscillating mirror	Line scanner	CLV630-6000	1041976
		Ethernet	Front	Line scanner	CLV630-0120	1041969
	Raster scanner			CLV630-1120	1041971
	Side (105°)		Line scanner	CLV630-2120	1041973
			Raster scanner	CLV630-3120	1041975
	Oscillating mirror	Line scanner	CLV630-6120	1041977	

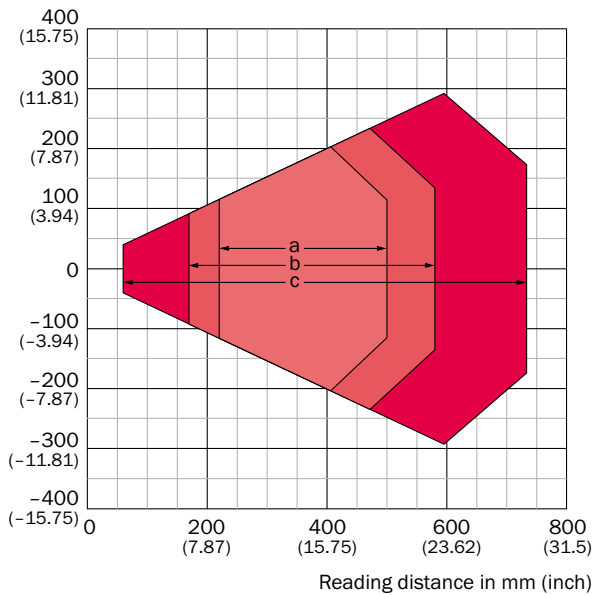
Type	Connection type	Reading field	Scanner design	Model name	Part no.
CLV631 Mid Range	Standard	Front	Line scanner	CLV631-0000	1041978
			Raster scanner	CLV631-1000	1041980
		Side (105°)	Line scanner	CLV631-2000	1041982
			Raster scanner	CLV631-3000	1041984
		Oscillating mirror	Line scanner	CLV631-6000	1041986
		Ethernet	Front	Line scanner	CLV631-0120	1041979
	Raster scanner			CLV631-1120	1041981
	Side (105°)		Line scanner	CLV631-2120	1041983
	Raster scanner	CLV631-3120	1041985		
Oscillating mirror	Line scanner	CLV631-6120	1041987		
CLV632 Short Range	Standard	Front	Line scanner	CLV632-0000	1041988
			Raster scanner	CLV632-1000	1041990
		Side (105°)	Line scanner	CLV632-2000	1041992
			Raster scanner	CLV632-3000	1041994
		Oscillating mirror	Line scanner	CLV632-6000	1041996
		Ethernet	Front	Line scanner	CLV632-0120	1041989
	Raster scanner			CLV632-1120	1041991
	Side (105°)		Line scanner	CLV632-2120	1041993
			Raster scanner	CLV632-3120	1041995
	Oscillating mirror		Line scanner	CLV632-6120	1041997



Reading field diagrams

CLV630 Long Range front

Reading field height in mm (inch)

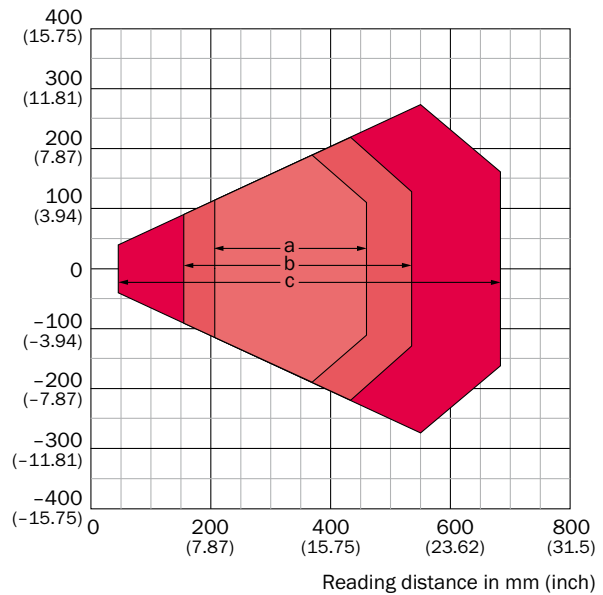


Resolution

- a: 0.35 mm (13.8 mil)
- b: 0.50 mm (19.7 mil)
- c: 1.0 mm (39.4 mil)

CLV630 Long Range side

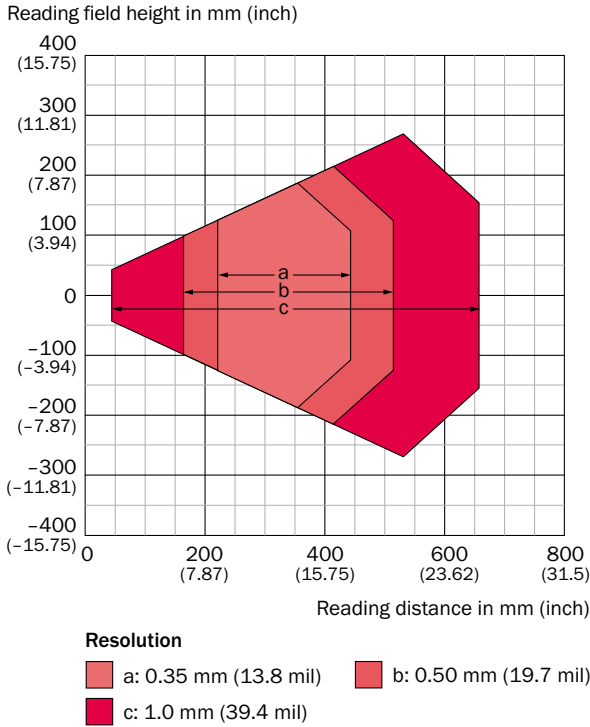
Reading field height in mm (inch)



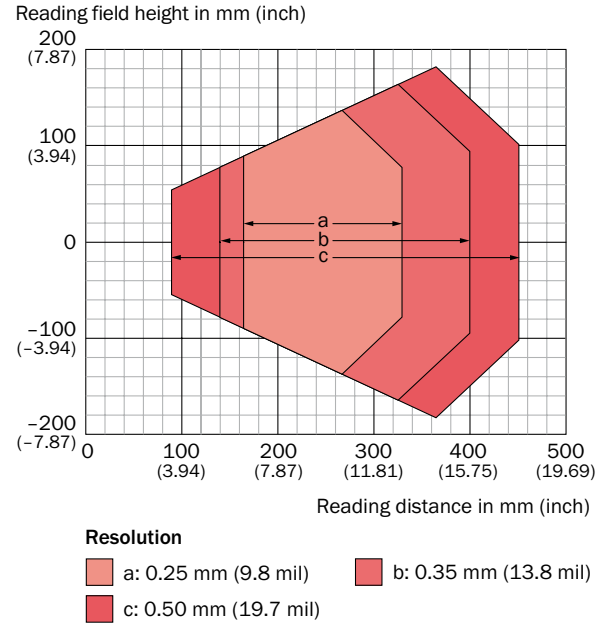
Resolution

- a: 0.35 mm (13.8 mil)
- b: 0.50 mm (19.7 mil)
- c: 1.0 mm (39.4 mil)

CLV630 Long Range oscillating mirror

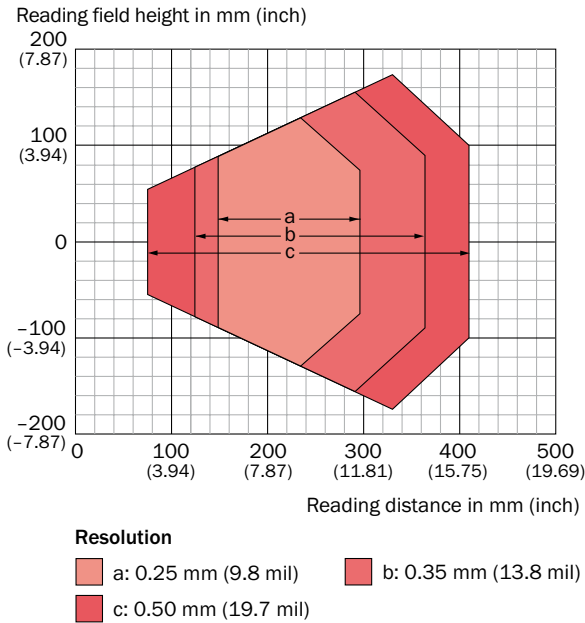


CLV631 Mid Range front

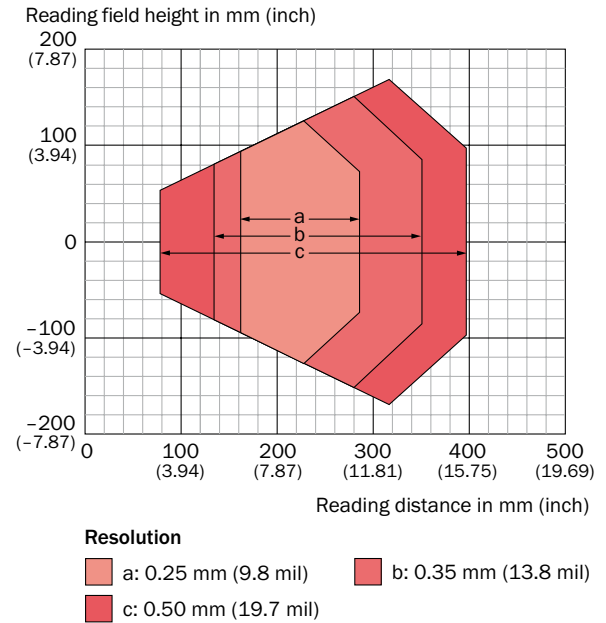


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CLV631 Mid Range side

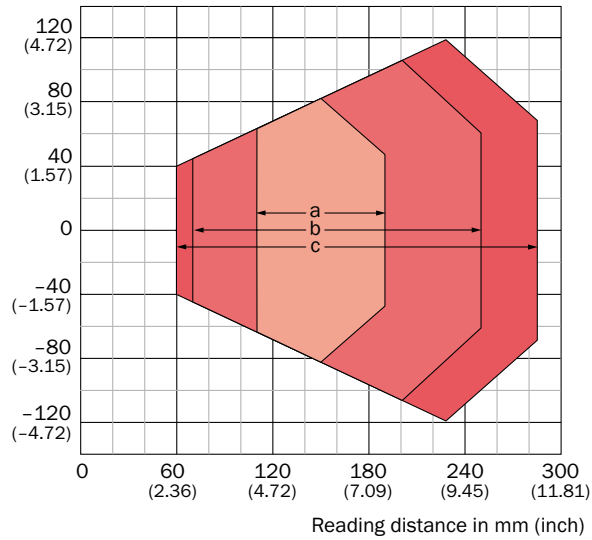


CLV631 Mid Range oscillating mirror



CLV632 Short Range front

Reading field height in mm (inch)

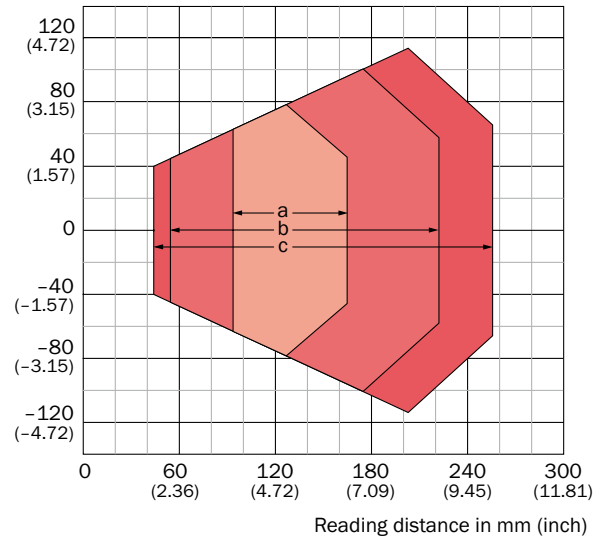


Resolution

- a: 0.20 mm (7.9 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)

CLV632 Short Range side

Reading field height in mm (inch)

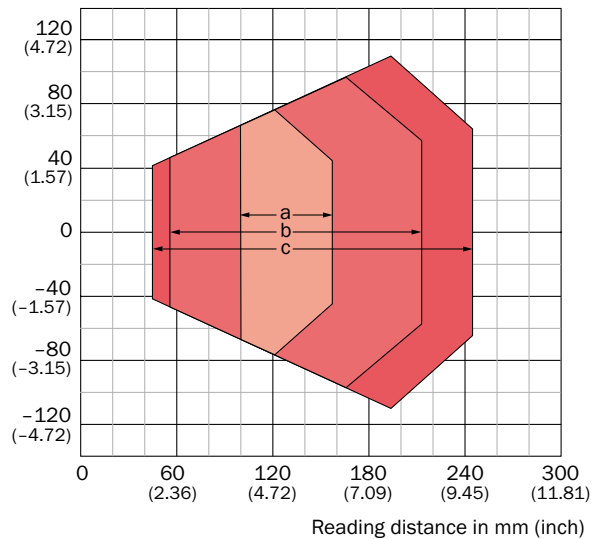


Resolution

- a: 0.20 mm (7.9 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)

CLV632 Short Range oscillating mirror

Reading field height in mm (inch)






Resolution

- a: 0.20 mm (7.9 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)




Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket, including installation material	2042800

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle ¹⁾	2014054
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-Sub, 2 m (socket/plug) ²⁾	2041834
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug) ²⁾	6034414

¹⁾ Applicable for standard models.

²⁾ Applicable for Ethernet models.

For additional accessories, please see page L-7

F

F

Dynamic, multi-functional



F

Dyn. Focus 	SMART 	Micro SD Card 	Intelligent Auto Setup
2 x Button 	LED Bar Graph 	Oscillating Mirror 	



Additional information

Detailed technical data F-65
 Ordering information F-67
 Reading field diagrams F-67
 Recommended accessories F-68
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Product description

The CLV64x bar code scanners offer dynamic focus adjustment extending the range of the scanner for those applications where fixed focus comes up short but auto focus is outside the budget. Newly improved SMART algorithms in the CLV64x are superior when reading damaged and tilted codes.

Combine single line, raster, oscillating mirror, high density and low contrast variants with exceptional reading performance and flexible data handling capabilities, and you have all the ingredients for solving high-performance applications in the material handling and logistics markets. Variants include line, raster, side reading window and oscillating mirror versions; available with Ethernet.

At a glance

- Dynamic focus adjustment enables extended depth of field
- Integrated pushbuttons for auto setup and reading diagnostics
- CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- Enhanced SMART code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Advanced, easy-to-use SOPAS configuration software
- Integrated LED bar graph
- Advanced remote diagnostics and network monitoring capabilities available over Ethernet

Your benefits

- Economical, as only one CLV64x is required for all focus positions
- Intelligent auto setup and multi-function pushbuttons save time during commissioning
- Teach-in of match code possible via the pushbuttons
- Easily execute firmware updates using the SD memory card: no need for a PC
- No supplementary Ethernet gateway required with Ethernet models – lowers costs
- Enhanced SMART technology reads damaged and partially obscured codes, increasing read rates
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- Real-time decoding at very high speeds

Detailed technical data

Features

	CLV640 Standard Density	CLV642 High Density
Light source	Visible red light (655 nm)	
MTBF	40,000 h	
Laser class	2 (EN 60825-1 (A2:2001-03), IEC 60825-1 : 2007-03, Ed. 2.0)	
Field of view	≤ 50°	
Scanning frequency	400 Hz ... 1,200 Hz	
Code resolution	0.2 mm ... 1 mm	0.15 mm ... 0.25 mm
Reading distance (at code resolution)		
Front	60 mm ... 840 mm (1 mm)	30 mm ... 345 mm (0.25 mm)
Side	44 mm ... 738 mm (1 mm)	-
Oscillating mirror	45 mm ... 755 mm (1 mm)	-
Raster height, number of lines, at distance	15 mm, 8, 200 mm 15 mm, 8, 185 mm (depending on type)	
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot	
Oscillation frequency	0.5 Hz ... 6.25 Hz	
Angle of deflection	-20° ... 20°	

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode, GS1 DataBar
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	5,000 500 (for multiplexer function in CAN operation)
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	2,400 Baud ... 115 kBaud, AUX: 57.6 kBaud
Ethernet	Function	-, optional via external connection module (CDM + CMF) / ✓ (depending on type) Host, AUX
	Data transmission rate	10/100 Mbit/s
	Protocol	TCP/IP, EtherNet/IP, half/full-duplex
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs	Standard	2 ("Sensor 1", "Sensor 2", 2 additional inputs via CMC600 in CDB620)
	Ethernet	1 ("Sensor 1", 2 additional inputs via CMC600 in CDB620)
Switching outputs	Standard	2 ("Result 1", "Result 2", 2 additional outputs via CMC600 in CDB620)
	Ethernet	0 (2 outputs via CMC600 in CDB620)
Reading pulse		"Sensor 1" switching input, non-powered, serial interface, auto pulse
Optical indicators		6 LEDs (Ready, Result, Laser, Data, CAN, LNK TX, Bar graph for displaying the reading rate percentage (10 LEDs))

Acoustic indicators	Beeper/buzzer (can be switched off, can be allocated as a result status indication function)	
Control elements	2 buttons (choose and start/stop functions)	
Connector	Standard Ethernet	Fix Pivotable
Memory card	Micro SD card (flash card) 512 MB, optional	

Mechanics/electronics

		CLV640 Standard Density	CLV642 High Density
Electrical connection	Standard Ethernet	1 15-pin D-Sub HD plug (0.9 m) 2 M12 cylindrical connectors (12-pin plug, 4-pin socket) on pivotable connector unit	
Operating voltage	18 V DC ... 30 V DC		
Power consumption	5.5 W / 6.5 W (depending on type)		5.5 W
Housing	Die-cast aluminum		
Housing color	Light blue (RAL 5012)		
Enclosure rating	IP 65 (EN 60529)		
Protection class	III (EN 61140)		
Weight	250 g ... 420 g (depending on type)		
Dimensions	Front Side Oscillating mirror	61 mm x 96 mm x 38 mm ¹⁾ 80 mm x 96 mm x 38 mm ¹⁾ 95 mm x 96 mm x 41 mm ¹⁾	

¹⁾ Pivotable connector unit is 15 mm longer with Ethernet model.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-3 (2001-10) / EN 61000-6-2:2005
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

F

Ordering information

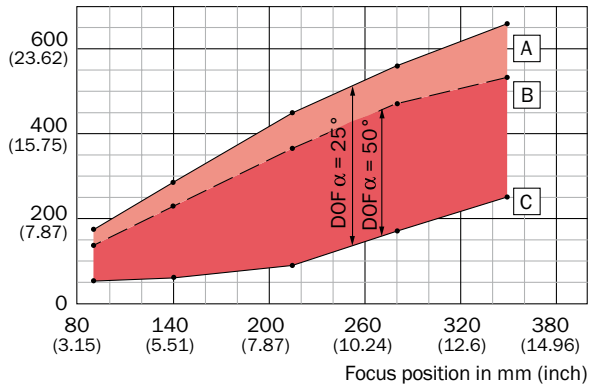
- **Focus:** Dynamic focus control
- **Heating:** optional

Type	Connection type	Reading field	Scanner design	Model name	Part no.
CLV640 Standard Density	Standard	Front	Raster scanner	CLV640-1000	1042016
			Line scanner	CLV640-0000	1042014
		Side (105°)	Line scanner	CLV640-2000	1042018
			Raster scanner	CLV640-3000	1042020
		Oscillating mirror	Line scanner	CLV640-6000	1042022
	Ethernet	Front	Raster scanner	CLV640-1120	1042017
			Line scanner	CLV640-0120	1042015
		Side (105°)	Line scanner	CLV640-2120	1042019
			Raster scanner	CLV640-3120	1042021
		Oscillating mirror	Line scanner	CLV640-6120	1042023
CLV642 High Density	Standard	Front	Line scanner	CLV642-0000	1044873
	Ethernet	Front	Line scanner	CLV642-0120	1044874

Reading field diagrams

CLV640 Standard Density front

Reading distance in mm (inch)

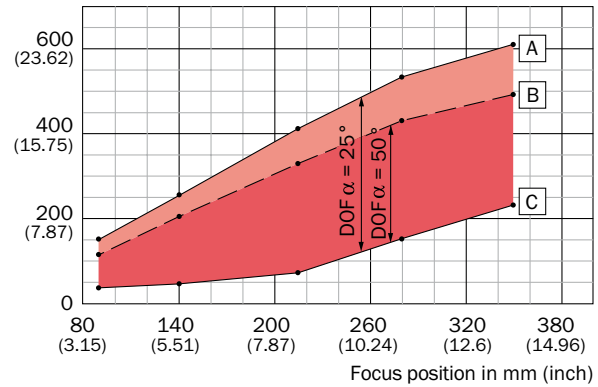


Resolution 0.5 mm (19.7 mil)

- A** max. reading distance (aperture angle 25°)
- B** max. reading distance (aperture angle 50°)
- C** min. reading distance

CLV640 Standard Density side

Reading distance in mm (inch)



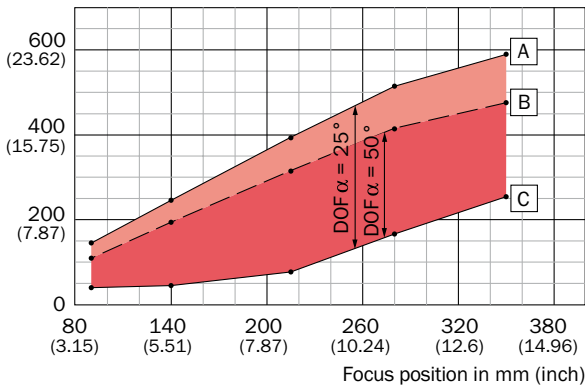
Resolution 0.5 mm (19.7 mil)

- A** max. reading distance (aperture angle 25°)
- B** max. reading distance (aperture angle 50°)
- C** min. reading distance

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CLV640 Standard Density oscillating mirror

Reading distance in mm (inch)

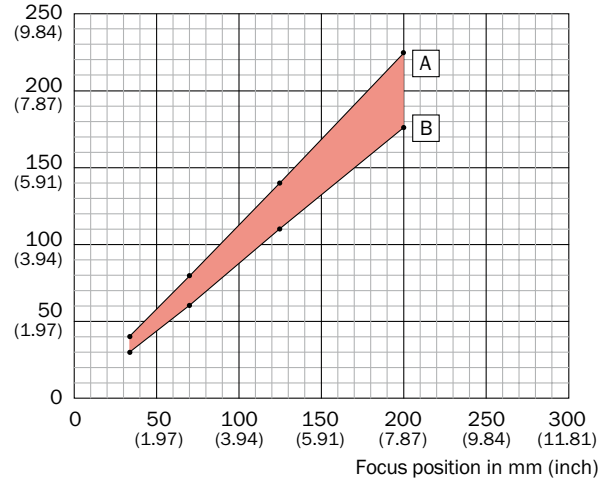


Resolution 0.5 mm (19.7 mil)

- A** max. reading distance (aperture angle 25°)
- B** max. reading distance (aperture angle 50°)
- C** min. reading distance

CLV642 High Density

Reading distance in mm (inch)






Resolution 0.15 mm (5.9 mil)

- A** max. reading distance (aperture angle 25°)
- B** min. reading distance


Recommended accessories

F




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket, including installation material	2042800

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle ¹⁾	2014054
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-Sub, 2 m (socket/plug) ²⁾	2041834
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug) ²⁾	6034414

¹⁾ Applicable for standard models.

²⁾ Applicable for Ethernet models.

For additional accessories, please see page L-7

F

Always in auto focus



F

Auto Focus 	SMART 	Micro SD Card 	Intelligent Auto Setup
2 x Button 	Distance Measuring 	LED Bar Graph 	Oscillating Mirror



Additional information

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Ordering information.....	F-72
Reading field diagrams.....	F-73
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Product description

The CLV65x series of bar code scanners use proprietary distance measurement and auto focus technology combined with SMART code reconstruction algorithms and high-performance microprocessor, enabling them to outperform the competition by reading damaged and dirty codes in challenging applications where a large depth of field is required. Reading distances of up to 1,625 mm for a 1 mm module width can be achieved. The CLV65x's auto focus feature, distance measurement technology, and

expertly engineered optics give it a competitive advantage in applications where space is limited and a large depth of field is required.

Other advanced features, like an embedded web server for remote diagnostics and reading performance statistics, enhance the performance of the CLV65x family.

Variants include line, side reading window and oscillating mirror versions; available with Ethernet.

At a glance

- Huge depth of field due to auto focus
- Integrated pushbuttons for auto setup and reading diagnostics
- CAN, Ethernet TCP/IP, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- Enhanced SMART code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Integrated web server provides remote diagnostics and monitoring
- Advanced, easy-to-use SOPAS configuration software
- Integrated LED bar graph

Your benefits

- Economical, as auto focus means no versions or additional light barriers are required for focus adjustment
- Intelligent auto setup and multi-function pushbuttons save time during commissioning
- Teach-in of match code possible via the pushbuttons
- Easily execute firmware updates using the SD memory card: no need for a PC
- No supplementary Ethernet gateway required with Ethernet models – lowers costs
- Enhanced SMART technology reads damaged and partially obscured codes, increasing read rates
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- Integrated web server provides remote diagnostics and monitoring, no additional software required

Detailed technical data

Features

	CLV650 Standard Density	CLV651 Low Density
Light source	Visible red light (658 nm)	
MTBF	40,000 h	
Laser class	2 (EN 60825-1 (A2:2001-03), IEC 60825-1 : 2007-03, Ed. 2.0)	
Field of view	≤ 50°	
Scanning frequency	600 Hz ... 1,000 Hz	
Code resolution	0.25 mm ... 1 mm	0.5 mm
Reading distance (at code resolution)		
Front	140 mm ... 1,625 mm (1 mm)	170 mm ... 930 mm (0.5 mm)
Oscillating mirror	125 mm ... 1,570 mm (1 mm)	155 mm ... 880 mm (0.5 mm)
Oscillating mirror functions	Fixed (adjustable position), oscillating (variable or fixed amplitude), one shot	
Oscillation frequency	0.5 Hz ... 6.25 Hz	
Angle of deflection	-20° ... 20°	

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5, Pharmacode, GS1 DataBar
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 20 (Standard decoder, SMART decoder)
No. of codes per reading interval	1 ... 50 (auto-discriminating)
No. of characters per reading interval	5,000 500 (for multiplexer function in CAN operation)
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	Function	✓, AUX (only RS-232) Host, AUX
	Data transmission rate	2,400 Baud ... 115 kBaud, AUX: 57.6 kBaud
Ethernet	Function	-, optional via external connection module (CDM + CMF) / ✓ (depending on type) Host, AUX
	Data transmission rate	10/100 Mbit/s
	Protocol	TCP/IP, EtherNet/IP, half/full-duplex
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs	Standard	2 ("Sensor 1", "Sensor 2", 2 additional inputs via CMC600 in CDB620)
	Ethernet	1 ("Sensor 1", 2 additional inputs via CMC600 in CDB620)
Switching outputs	Standard	2 ("Result 1", "Result 2", 2 additional outputs via CMC600 in CDB620)
	Ethernet	0 (2 outputs via CMC600 in CDB620)
Reading pulse		"Sensor 1" switching input, non-powered, serial interface, auto pulse
Optical indicators		6 LEDs (Ready, Result, Laser, Data, CAN, LNK TX, Bar graph for displaying the reading rate percentage (10 LEDs))
Acoustic indicators		Beeper/buzzer (can be switched off, can be allocated as a result status indication function)
Control elements		2 buttons (choose and start/stop functions)

Connector	Standard	Fix
	Ethernet	Pivotable
Memory card	Micro SD card (flash card) 512 MB, optional	

Mechanics/electronics

Electrical connection	Standard	1 15-pin D-Sub HD plug (0.9 m)
	Ethernet	2 M12 cylindrical connectors (12-pin plug, 4-pin socket) on pivotable connector unit
Operating voltage	18 V DC ... 30 V DC	
Power consumption	8.5 W / 9.5 W (depending on type)	
Housing	Die-cast aluminum	
Housing color	Light blue (RAL 5012)	
Enclosure rating	IP 65 (EN 60529)	
Protection class	III (EN 61140)	
Weight	250 g ... 320 g (depending on type)	
Dimensions	Front	61 mm x 96 mm x 38 mm ¹⁾
	Oscillating mirror	95 mm x 96 mm x 41 mm ¹⁾

¹⁾ Pivotable connector unit is 15 mm longer with Ethernet model.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-3 (2001-10) / EN 61000-6-2:2005
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

Ordering information

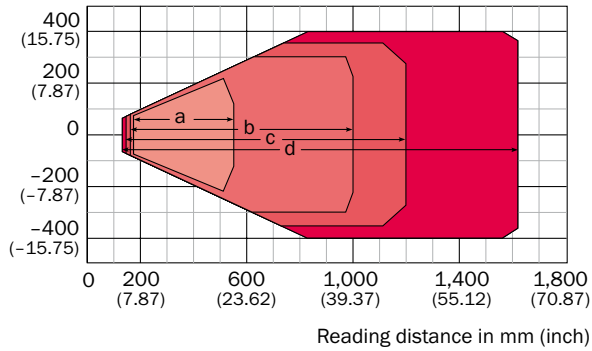
- **Focus:** Auto focus
- **Scanner design:** Line scanner
- **Heating:** optional

Type	Connection type	Reading field	Model name	Part no.
CLV650 Standard Density	Standard	Front	CLV650-0000	1041290
		Oscillating mirror	CLV650-6000	1042124
	Ethernet	Front	CLV650-0120	1042121
		Oscillating mirror	CLV650-6120	1042125
CLV651 Low Density	Standard	Front	CLV651-0000	1046557
		Oscillating mirror	CLV651-6000	1046559
	Ethernet	Front	CLV651-0120	1046558
		Oscillating mirror	CLV651-6120	1046560

Reading field diagrams

CLV650 Standard Density front

Reading field height in mm (inch)

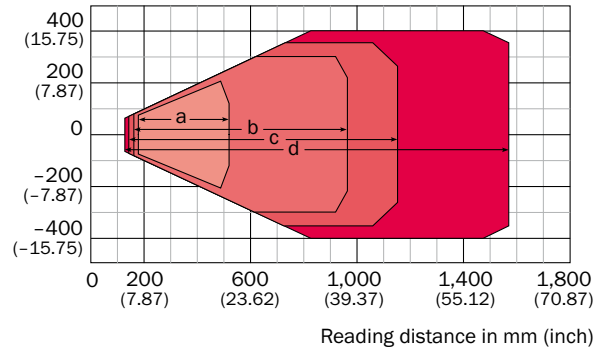


Resolution

- a: 0.25 mm (9.8 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

CLV650 Standard Density oscillating mirror

Reading field height in mm (inch)

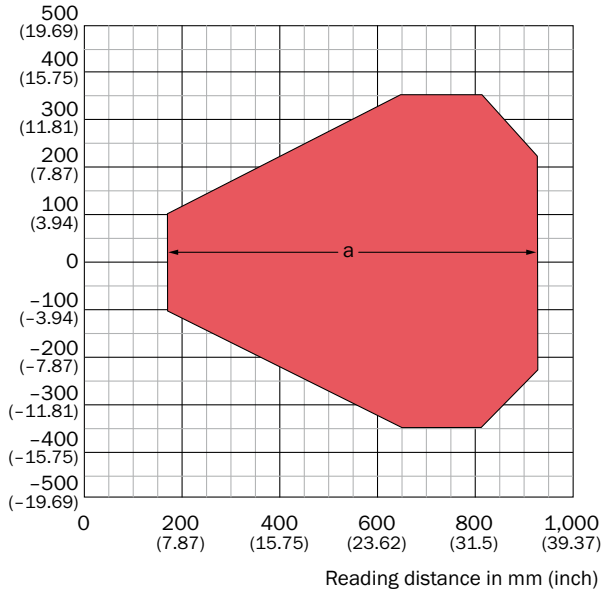


Resolution

- a: 0.25 mm (9.8 mil)
- b: 0.35 mm (13.8 mil)
- c: 0.50 mm (19.7 mil)
- d: 1.00 mm (39.4 mil)

CLV651 Low Density front

Reading field height in mm (inch)

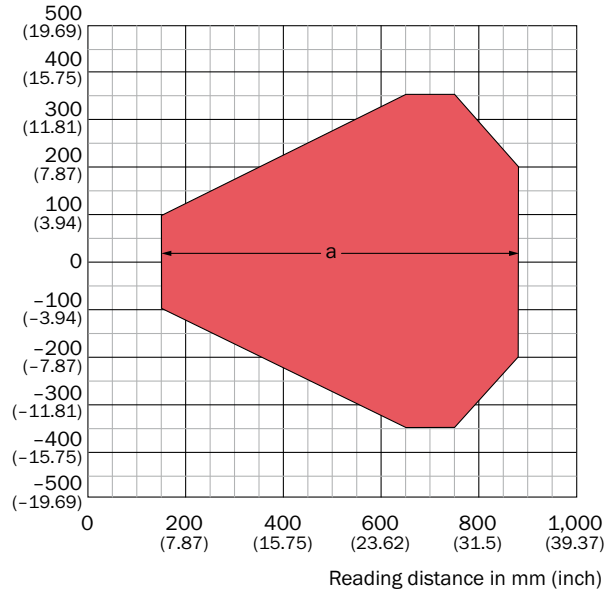


Resolution

- a: 0.50 mm (19.7 mil)

CLV651 Low Density oscillating mirror

Reading field height in mm (inch)






Resolution

- a: 0.50 mm (19.7 mil)


F

Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket, including installation material	2042800

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle ¹⁾	2014054
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-Sub, 2 m (socket/plug) ²⁾	2041834
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug) ²⁾	6034414

¹⁾ Applicable for standard models.

²⁾ Applicable for Ethernet models.

For additional accessories, please see page L-7

F

F



G

Versatile, high-performance, straightforward

Image-based code readers provide flexibility, high performance, convenience and simplicity. Even at fast conveyor speeds, SICK image code readers can reliably detect and evaluate 1D, 2D, DPM (direct part marking), and partially damaged codes. These readers identify markings on nearly any surface, including metal, glass, plastic or paper. Plus, different models, interfaces, and networking capabilities provide application flexibility.

Your benefits





- Robust, omni-directional scanning of 1D and 2D codes easily identifies mis-aligned components
- Suitable for a wide range of applications due to different resolutions and reading distances
- Fast, reliable decoding of low-contrast, directly marked codes improves productivity
- Straightforward, simple operation due to image download capabilities and analysis and operating tools
- Expandable for the future – able to change from 1D to 2D or stacked codes and other new code types within the same system







Image-based code readers

G

Product family overview	G-2
Performance overview	G-4

	LECTOR®62x G-6 Clever. Simple. Industrial.
	ICR80x G-10 Easy, small and light
	ICR840-2 G-14 High resolution, powerful decoding
	ICR845-2 G-20 Maximum performance when stationary and moving

	ICR84x-2 FlexLens G-26 By far the best solution
	ICR85x-2 G-32 Improved traceability for 1D and 2D codes
	ICR88x J-14 Compact and powerful line-scan camera system
	ICR89x J-18 The next generation high-end camera system


Product family overview

		
LECTOR®62x	ICR80x	ICR840-2
Clever. Simple. Industrial.	Easy, small and light	High resolution, powerful decoding

Technical data overview

Focus	Auto focus (during teach-in)	Fixed focus	Fixed focus
Focal position	Variable	115 mm / 180 mm	50 mm ... 145 mm
Scanning frequency	60 Hz, WVGA resolution	-	25 Hz, at 1.3 Mpx
Code resolution	≥ 0.1 mm	≥ 0.19 mm	≥ 0.1 mm
Reading distance	25 mm ... 500 mm	50 mm ... 330 mm	43 mm ... 335 mm
Reading field (at distance)	Variable	110 mm x 70 mm (150 mm)	26 mm x 21 mm (50 mm) 43 mm x 34 mm (80 mm) 62 mm x 50 mm (115 mm) 81 mm x 65 mm (145 mm)
Serial (RS-232)	✓	✓ / -	✓
Ethernet	✓	- , optional via external connection module (CDM + CMF)	✓
CAN bus	✓	- , optional via external connection module (CAN232)	✓
PROFIBUS	- , optional via external connection module (CDF)	- , optional via external connection module (CDF)	- , optional via external connection module (CDM + CMF)
DeviceNet	-	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)
USB	✓ (Aux interface) ¹⁾	- / ✓	-
Weight	170 g	37 g	900 g

At a glance

	<ul style="list-style-type: none"> Decoding of most popular code types: 1D, 2D, direct part marking Automatic focus teach-in for quick setup Easy integration with industrial networks: serial, Ethernet, PROFINET, PROFIBUS and CAN Auto setup with function button and aiming laser – does not require PC Compact design and industrial housing with swivel connector Analysis tools include live image capturing, code verification and read rate view 	<ul style="list-style-type: none"> Omni-directional code reading Optical alignment Extremely compact Lightweight USB and RS-232 versions RoHS and WEEE compliant Triggering via button, presentation mode, serial commands or hardware trigger via SICK connection technology 	<ul style="list-style-type: none"> Easy to configure with live image and auto setup Omni-directional reading of direct marked 1D and 2D codes Rapid image and data transfer via Ethernet Reliable code reading on stationary objects even with very small codes High resolution – 1.3 mega-pixels
Detailed information	→ G-6	→ G-10	→ G-14

¹⁾ Available second quarter 2011.



ICR845-2

Maximum performance when stationary and moving



ICR84x-2 FlexLens

By far the best solution



ICR85x-2

Improved traceability for 1D and 2D codes



ICR88x / ICR89x

High-end camera systems

	Fixed focus	Variable (per interchangeable lens)	Fixed focus	Dynamic focus control
	50 mm ... 175 mm	Variable	60 mm ... 110 mm	Variable
	60 Hz, for WVGA resolution	60 Hz, for WVGA resolution	13 Hz ... 15 kHz 113 Hz ... 45 kHz	19,100 Hz
	≥ 0.1 mm	≥ 0.1 mm	≥ 0.1 mm	≥ 0.15 mm
	30 mm ... 325 mm	0.1 m ... 3 m	53 mm ... 121 mm	0.8 m ... 3.3 m
	28 mm x 18 mm (50 mm) 43 mm x 27 mm (115 mm) 65 mm x 41 mm (175 mm)	Variable	80 mm (110 mm) 80 mm (100 mm) 40 mm (70 mm) 40 mm (60 mm)	Variable
	✓	✓	✓	✓
	✓	✓	✓	✓ (3)
	✓	✓	✓	✓ (2)
	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	✓ , via MSC800 controller
	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	-
	-	-	-	-
	900 g	900 g	900 g	28.5 kg / 37 kg
	<ul style="list-style-type: none"> • Easy to configure with live image and auto setup • Omni-directional reading of direct marked 1D and 2D codes • Rapid image and data transfer via Ethernet • Reliable reading of codes on stationary and on fast-moving objects guarantee secure identification and flexible use 	<ul style="list-style-type: none"> • Easy to configure with live image and auto setup • Omni-directional reading of direct marked 1D and 2D codes • Rapid image and data transfer via Ethernet • Reliable reading of codes on stationary and on fast-moving objects guarantee secure identification and flexible use • Identification from near to far distances due to flexible use of c-mount lenses and illumination 	<ul style="list-style-type: none"> • Omni-directional identification of up to 50 codes, e.g., circuit board with multiple codes • Easy trigger handling, codes are identified on-the-fly • Large reading field • High-speed reader • High resolution 	<ul style="list-style-type: none"> • Large reading field for conveyor coverage up to 3,000 mm • High-end CCD sensor (8,192 pixel) • Integrated real-time focus control • Integrated high-performance decoder board • Integrated digital zoom function • OCR compatible picture quality • Online status monitoring of all system components • Constant resolution over the entire DOF
	→ G-20	→ G-26	→ G-32	→ J-14 / J-18



Performance overview

Reading field selector

Product family		Reading distance ¹⁾													
		20 mm 0.79 in	40 mm 1.57 in	60 mm 2.36 in	80 mm 3.15 in	100 mm 3.94 in	120 mm 4.72 in	140 mm 5.51 in	160 mm 6.30 in	180 mm 7.09 in	200 mm 7.87 in	250 mm 9.84 in	300 mm 11.81 in	350 mm 13.78 in	
LECTOR®62x → G-6	LECTOR®620 ID ^{pro}	Code resolution: 0.9 mm (35.4 mil), reading distance up to 500 mm (19.7 in)													
	ICR80x → G-10	ICR803-A Smart Focus				0.21 mm (8.3 mil)									
	ICR803-B Standard Range					0.38 mm (15 mil)									
ICR840-2 → G-14	ICR840-2A High Density		0.1 mm (3.9 mil)												
	ICR840-2B Standard Range			0.1 mm (3.9 mil)		0.5 mm (19.7 mil)									
	ICR840-2C Mid Range						0.15 mm (5.9 mil)								
	ICR840-2D Long Range							0.2 mm (7.9 mil)							
ICR845-2 → G-20	ICR845-2A High Density		0.1 mm (3.9 mil)			0.35 mm (13.8 mil)									
	ICR845-2C Mid Range						0.15 mm (5.9 mil)								
	ICR845-2E Extended Long Range								0.25 mm (9.8 mil)						
ICR84x-2L → G-26	ICR845-2L FlexLens														
ICR85x-2 → G-32	ICR850-2B Standard Range						0.25 mm (9.8 mil)								
	ICR852-2A High Density			0.1 mm (3.9 mil) ²⁾		0.25 mm (9.8 mil) ²⁾									
	ICR855-2A High Speed				0.35 mm (13.8 mil) ²⁾	0.5 mm (19.7 mil) ²⁾									
ICR88x ICR89x → J-14/J-18	ICR880 ICR890														
		Code resolution min. 0.15 mm (5.9 mil) Reading distance from 800 mm (31.5 in) to 3,300 mm (129.9 in)													










































































¹⁾ Exemplary code resolution, reading distance and accordingly depth of field for Data Matrix codes. Detailed reading field diagrams see product pages.

²⁾ Valid for side reading field.

Code resolution

Feature overview

	 LECTOR®62x	 ICR80x	 ICR840-2 ICR845-2	 ICR84x-2 FlexLens	 ICR85x-2
Reading stationary / in motion	 		  ¹⁾	 	
Marking method	  		  	  	 
Code types	  	    <small>Best before 2009-04-30</small>	  	  	  
Code orientation					
Live image, image processing	 		 	 	
Integrated illumination				 ²⁾	
More features	      ³⁾		 	 	
Detailed information	→ G-6	→ G-10	→ G-14 / G-20	→ G-26	→ G-32

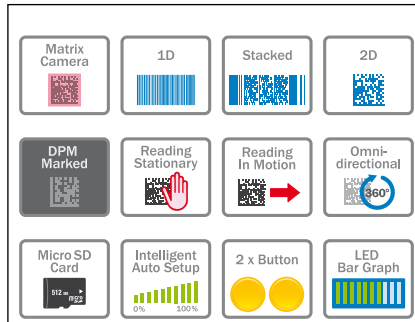
¹⁾ Reading in motion only valid for ICR845-2.

²⁾ Pre-mounted kit available with included illumination.

³⁾ Auto focus function during teach-in.



Clever. Simple. Industrial.



Product description

The LECTOR®620 is an industrial, compact image-based code reader with highly reliable identification of 1D, 2D and direct part mark (DPM) codes. Whether in motion or stationary, it can read even the poorest quality codes. The on-board aiming laser, automatic focus teach-in, function button and auto setup make the LECTOR®620 quick and intuitive to set

up. Its compact housing and pivot swivel mount ensures flexible integration in reduced spaces. On-board Ethernet and multiple fieldbus connection modules allow for universal network integration and fast data transfer speeds. Image capturing tools provide easy analysis for optimal performance.

At a glance

- Decoding of most popular code types: 1D, 2D, direct part marking
- Automatic focus teach-in for quick setup
- Easy integration with industrial networks: serial, Ethernet, PROFINET, PROFIBUS and CAN
- Auto setup with function button and aiming laser – does not require PC
- Compact design and industrial housing with swivel connector
- Analysis tools include live image capturing, code verification and read rate view

Your benefits

- Intelligent decoding algorithms provide reliable reading performance for improved read rates and throughput
- IDpro facilitates integration with most popular industrial networks
- Intuitive setup with function button, auto setup and aiming laser reduces training and installation time and costs
- Compact design and flexible swivel-mount make it easy to install in reduced spaces
- Quick analysis of read rate performance and code quality allows for efficient control
- Cloning back-up systems ensure low machine downtime in the event of unexpected incidents
- SICK LifeTime Services gives you peace of mind

 ID^{pro}



Additional information

Detailed technical data.....	G-7
Ordering information.....	G-8
Reading field diagrams.....	G-8
Recommended accessories.....	G-9

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Detailed technical data

Features

Focus	Auto focus (during teach-in)
Sensor	CMOS matrix sensor, gray scale values
Sensor resolution	752 px x 480 px (WVGA)
Light source	Lighting LEDs: visible red light (wave length 617 ± 15 nm), visible blue light (wave length 470 ± 15 nm) Feedback spot: visible green light (wave length 525 ± 15 nm) Aiming laser: visible red light (wave length 630 ... 680 nm)
MTBF	75,000 h
LED class	1, radiance $L_B < 10 \text{ kW}/(\text{m}^2\text{sr})$ within 100 s $L_R < 28/\alpha \text{ kW}/(\text{m}^2\text{sr})$ within 10 s at distance > 200 mm (IEC 62471 (2006-07) / EN 62471 (2008-09))
Laser class	1, complies with CFR 1040.10 except for the tolerance according to Laser Notice No. 50 from June 24, 2007 (IEC 60825-1 (2007-3))
Scanning frequency	60 Hz, WVGA resolution
Code resolution	≥ 0.1 mm ¹⁾
Reading distance (at code resolution)	25 mm ... 500 mm (0.9 mm) ¹⁾

¹⁾ Valid for Data Matrix, PDF417 and 1D codes with good printing quality.

Performance

Bar code types	EAN 128, UPC, Interleaved 2 of 5, Pharmacode, EAN, Code 39, Code 128, Codabar, Code 32, Code 93
2D code types	Data Matrix ECC200, GS1 DataMatrix, PDF417
No. of codes per reading interval	1 ... 50
No. of characters per reading interval	500 (for multiplexer function in CAN operation)

Interfaces

Serial (RS-232, RS-422)	Function	✓ Host, AUX
	Data transmission rate	300 Baud ... 115.2 kBaud, AUX: 57.6 kBaud (RS-232)
Ethernet	Function	✓ Host, AUX, image transmission
	Data transmission rate	10 Mbit/s ... 100 Mbit/s
	Protocol	TCP/IP, FTP
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	20 kbit/s ... 1 Mbit/s
	Protocol	CSN (SICK CAN Sensor Network)
PROFIBUS		-, optional via external connection module (CDF)
Switching inputs		2 ("Sensor 1", "Sensor 2", 2 additional inputs via CMC600 in CDB620)
Switching outputs		4
Reading pulse		Switching inputs, non-powered, serial interface, Ethernet, CAN
Optical indicators		16 LEDs (5 x status display, 10 x LED bar graph, 1 green feedback spot)
Acoustic indicators		Beeper/buzzer (can be switched off, can be assigned a function to signal the result status)
Control elements		2 buttons (choose and start/stop functions)
Memory card		Micro SD card (flash card) max. 32 GB, optional



Mechanics/electronics

Electrical connection	1 x M12, 17-pin plug 1 x M12, 4-pin socket Ethernet Cylindrical connectors
Operating voltage	10 V DC ... 30 V DC
Power consumption	Typ. 3 W
Housing	Die-cast aluminum
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
Protection class	III
Weight	170 g
Dimensions	71 mm x 43 mm x 35.6 mm ¹⁾

¹⁾ Pivotal connector unit is 17.8 mm longer.

Ambient data

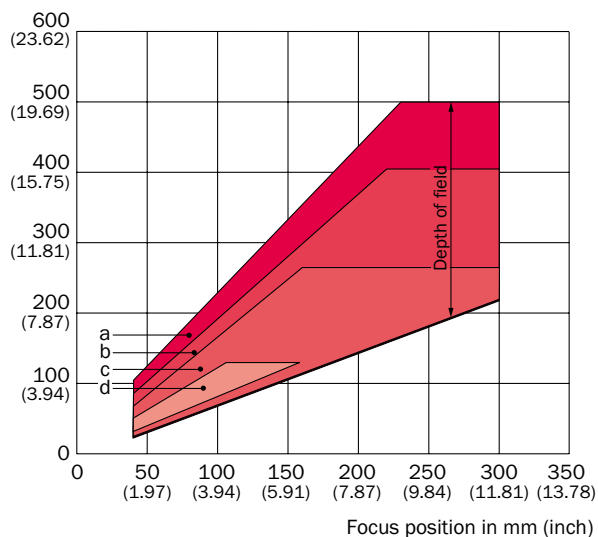
Electromagnetic compatibility (EMC)	EN 61000-6-2 (2006-03) / EN 61000-6-3 (2007-09)
Vibration resistance	EN 60068-2-6 (2008-02)
Shock resistance	EN 60068-2-27 (2009-05)
Electrical safety	EN 60950-1 (2006-04), EN 60950-1/A11 (2009-03)
Ambient operating temperature	0 °C ... +50 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on code

Ordering information

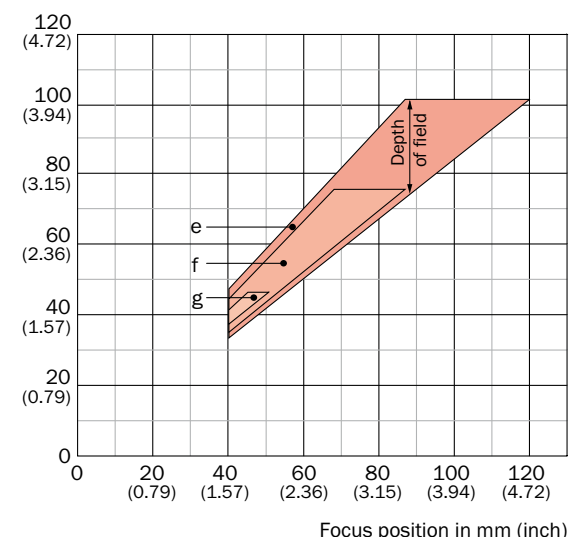
Type	Reading field	Model name	Part no.
LECTOR®620	Side	ICR620S-T11503	1050589

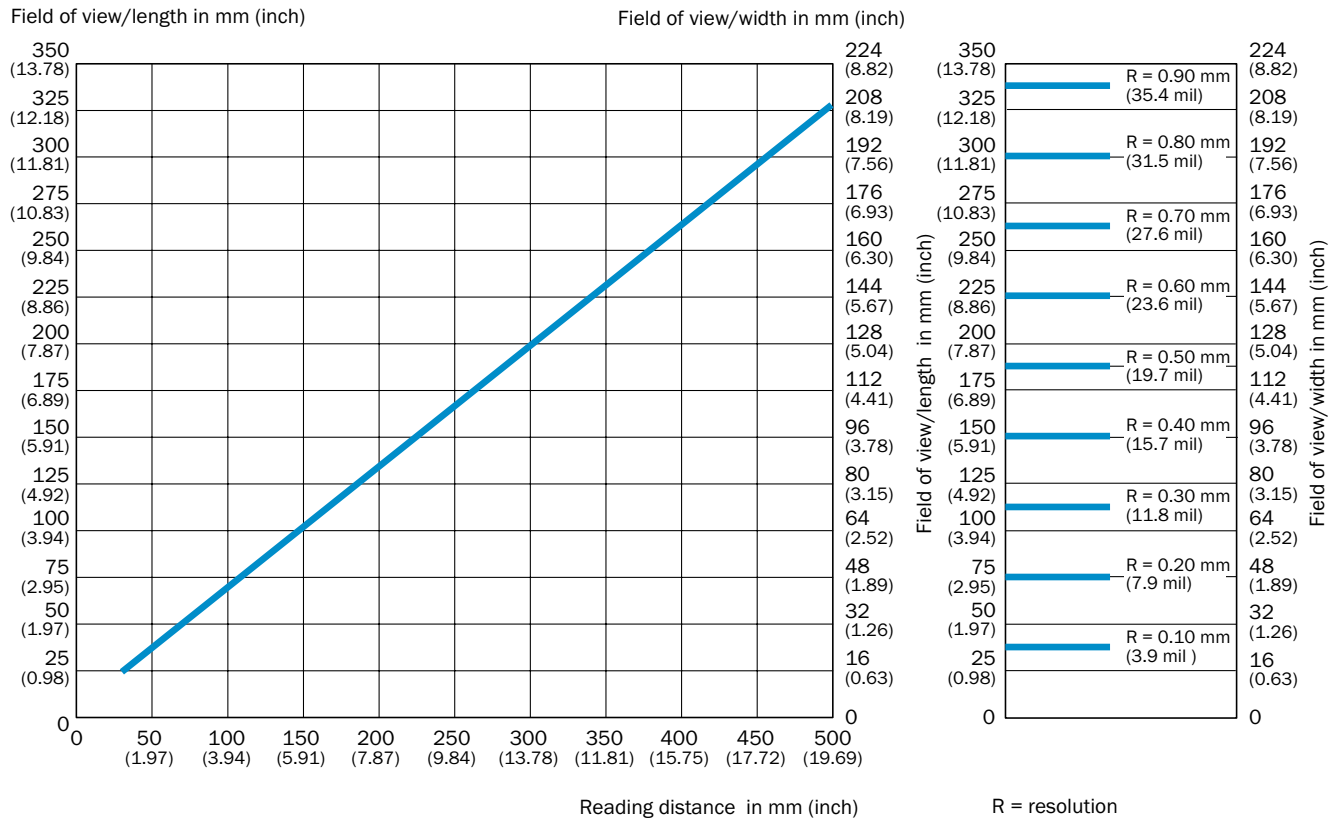
Reading field diagrams

Reading distance in mm (inch)





Reading distance in mm (inch)






Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket with 2 x self-locking screw M5 x 8	2020410

Plug connectors and cables

	Brief description	Part no.
	Cable, M12 4-pin, Ethernet to Host M12, 2 m (plug/plug)	6034420
	Cable, M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	2055419
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)	6034414

For additional accessories, please see page L-11



Easy, small and light



Matrix Camera 	1D 	Stacked 	2D
OCR Best before 2009-04-30	Reading Stationary 	Omni-directional 	



Product description

The ICR803 is an image code reader family for 1D and 2D codes. It includes LED illumination, imaging technology, and a RS-232 or USB interface in a compact housing. It can read all popular linear, stacked, 2D, and GS1 (RSS) codes, as well as image acquisition – the ICR803 can read codes in any orientation. Because of its omni-directional

capabilities, a defined code adjustment is not necessary. The ICR803 series can be integrated in different devices, such as robot systems, access controls and point-of-sale terminals. The ICR803 can be triggered manually, using “presentation mode,” or be controlled via serial commands.

At a glance

- Omni-directional code reading
- Optical alignment
- Extremely compact
- Lightweight
- USB and RS-232 versions
- RoHS and WEEE compliant
- Triggering via button, presentation mode, serial commands or hardware trigger via SICK connection technology

Your benefits

- Fast and reliable 1D and 2D code identification
- Read multiple code types with one device, accommodating future code changes
- Easy and fast installation and configuration
- No moving parts and a large reading field reduce adjustments
- Small size makes it easy to integrate in limited spaces



Additional information

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Ordering information G-12

Reading field diagrams G-12

Recommended accessories G-12

Dimensional drawings M-12

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Detailed technical data

Features

	ICR803-A Smart Focus	ICR803-B Standard Range
Focus	Fixed focus	
Focal position	115 mm	180 mm
Sensor	752 px x 480 px	
Light source	Visible red light (LED lighting, 630 nm) Visible green light (LED aiming line, 530 nm)	
Code resolution	≥ 0.19 mm ¹⁾ ≥ 0.25 mm ²⁾	≥ 0.21 mm ¹⁾ ≥ 0.38 mm ²⁾
Reading distance (at code resolution)	60 mm ... 160 mm (0.19 mm) ¹⁾	50 mm ... 330 mm (0.33 mm) ¹⁾
Reading field (at distance)	110 mm x 70 mm (150 mm)	

¹⁾ 1D code.

²⁾ 2D code.

Performance

Bar code types	Codabar, Code 39, Interleaved 2 of 5, Code 93, Code 128, UPC, EAN, RSS, Codablock F, Post (only SR/SF): Postnet, Planet Code, Royal Mail, Canada Post (PostBar), Japan Post, KIX (Royal Dutch TPG Post)
2D code types	PDF417, MicroPDF417, MaxiCode, Data Matrix, QR code, Aztec, Aztec Mesas, Code 49 and EAN • UCC Composite
OCR fonts	OCR-A, OCR-B
Image capture	BMP, JPEG, TIFF

Interfaces

Serial (RS-232)	Function	✓ / - (depending on type) RS-232 TTL
Ethernet		-, optional via external connection module (CDM + CMF)
CAN bus		-, optional via external connection module (CAN232)
PROFIBUS		-, optional via external connection module (CDF)
DeviceNet		-, optional via external connection module (CDM + CMF)
USB	Function	- / ✓ (depending on type) Keyboard wedge, COM-Port emulation
Acoustic indicators		Beeper (can be switched off, to confirm reading)

Mechanics/electronics

Operating voltage	≤ 5 V DC
Housing	Plastic
Housing color	Light blue (RAL 5012)
Weight	37 g
Dimensions	49 mm x 40 mm x 25 mm

Ambient data

Ambient operating temperature	0 °C ... +50 °C
Storage temperature	-20 °C ... +60 °C



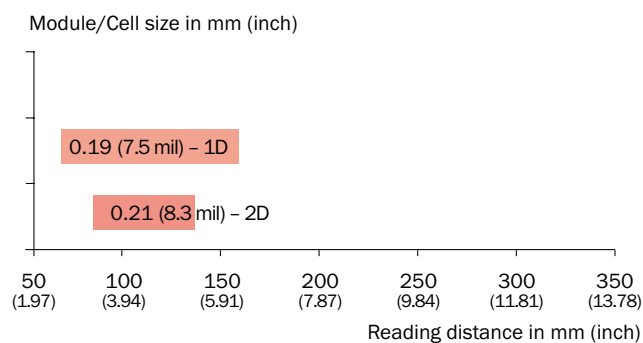
Ordering information

- Reading field: front

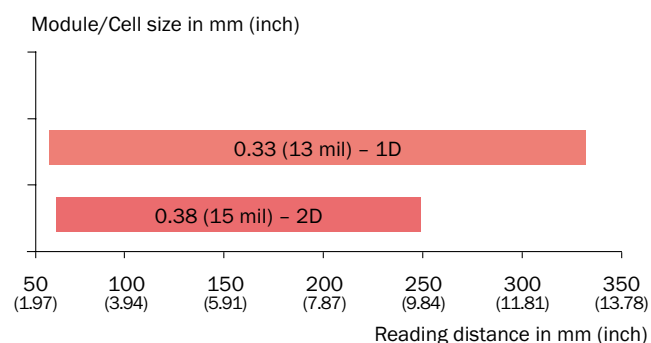
Type	Connection type	Model name	Part no.
ICR803-A Smart Focus	Serial	ICR803-A0201	6034210
	USB	ICR803-A0271	6034212
ICR803-B Standard Range	Serial	ICR803-B0201	6034211
	USB	ICR803-B0271	6034213

Reading field diagrams

ICR803-A Smart Focus front




ICR803-B Standard Range front




Recommended accessories



Modules

	Brief description	Model name	Part no.
	Small connection module for 5 V hand-held scanner, CLV50x and ICR80x	CDB405-001	1027093


Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket for ICR803	2050023

Plug connectors and cables

	Brief description	Part no.
	Straight RS-232 TTL cable, 2.4 m length, external power supply necessary	6033047
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232

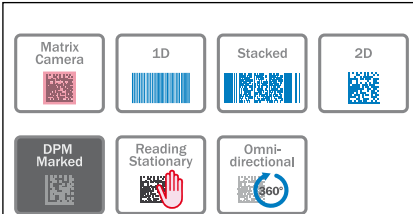
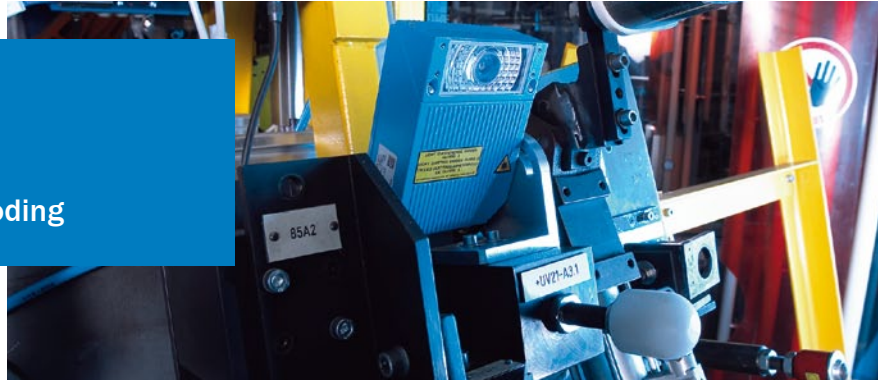
Power supply units

	Brief description	Model name	Part no.
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with European plug	PS5U-42E	6034941

For additional accessories, please see page L-11



High resolution, powerful decoding



Product description

The ICR840-2 Image Code Reader series reads stationary, linear, Data Matrix, PDF 417 and QR codes. The ICR840-2 series is ideal for directly marked part identification applications, enabling better traceability. Industry-compatible IP 65 housings, integrated illumination, user-friendly image display and archiving,

and decoding with rapid image and data output via standardized interfaces allow for quick implementation. The ICR840-2 series reads 1D and 2D codes even with weak contrasts, poor markings and in dirty surroundings. A large number of device variants offer the right solution for your application.

At a glance

- Easy to configure with live image and auto setup
- Omni-directional reading of direct marked 1D and 2D codes
- Rapid image and data transfer via Ethernet
- Reliable code reading on stationary objects even with very small codes
- High resolution – 1.3 mega-pixels

Your benefits

- Fast, cost-effective commissioning via easy user interface with live image and auto setup configuration
- Rapid, reliable decoding of low contrast, direct part marked codes ensures high productivity
- Dynamic parameter switching makes decoding different code qualities possible with just one setting
- Omni-directional identification of 1D and 2D codes makes it possible to identify objects that are not aligned
- A wide variety of resolutions and reading distances provide a solution for any application
- Industrial IP 65 housing for rough environmental conditions
- Flexible use with integrated, controllable LED illumination
- Automated configuration for batch changes



Additional information

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 Dimensional drawings M-12

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Detailed technical data

Features

	ICR840-2A High Density	ICR840-2B Standard Range	ICR840-2C Mid Range	ICR840-2D Long Range
Focus	Fixed focus			
Focal position	50 mm	80 mm	115 mm	145 mm
Sensor	CMOS matrix sensor			
Sensor resolution	1,280 px x 1,024 px (1.3 Mpx)			
Light source	Visible red light (lighting LEDs, 617 nm, ± 15 nm)			
MTBF	75,000 h			
Laser class	1 (EN 60825-1, IEC 60825-1)			
Scanning frequency	25 Hz, at 1.3 Mpx			
Code resolution	≥ 0.1 mm ¹⁾		≥ 0.15 mm ¹⁾	≥ 0.2 mm ¹⁾
Reading distance (at code resolution)	43 mm ... 62 mm (0.2 mm) ¹⁾	50 mm ... 130 mm (0.5 mm) ¹⁾	70 mm ... 210 mm (0.75 mm) ¹⁾	80 mm ... 335 mm (1 mm) ¹⁾
Reading field (at distance)	26 mm x 21 mm (50 mm)	43 mm x 34 mm (80 mm)	62 mm x 50 mm (115 mm)	81 mm x 65 mm (145 mm)

¹⁾ Valid for Data Matrix, PDF417 and 1D codes with good printing quality.

Performance

Bar code types	EAN 128, UPC, Interleaved 2 of 5, Pharmacode, EAN, Code 39, Code 128, Codabar
2D code types	Data Matrix ECC200, GS1 DataMatrix, QR code, PDF417
No. of codes per scan	1 ... 50
No. of codes per reading interval	1 ... 50
No. of characters per reading interval	4,000

Interfaces

Serial (RS-232)	Function	✓ Host, AUX
	Data transmission rate	300 Baud ... 57,600 Baud , AUX: 9,600 Baud
Ethernet	Function	✓ Host, AUX
	Data transmission rate	10 Mbit/s ... 100 Mbit/s
	Protocol	TCP/IP, FTP
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDM + CMF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs		2
Switching outputs		2 (Result 1 NPN, Result 2 PNP)
Reading pulse		Switching inputs, non-powered, serial interface
Optical indicators		6 LEDs (status displays)
Acoustic indicators		Beeper/buzzer (can be switched off, can be assigned a function to signal the result status)



Mechanics/electronics

	ICR840-2A High Density	ICR840-2B Standard Range	ICR840-2C Mid Range	ICR840-2D Long Range
Electrical connection	1 RJ45 socket on device, cables with 15-pin D-Sub-HD plug (0.9 m, ± 5 %) ¹⁾			
Operating voltage	15 V DC ... 30 V DC			
Power consumption	13 W			
Housing	Die-cast zinc			
Housing color	Light blue (RAL 5012)			
Enclosure rating	IP 65 (EN 60529) ²⁾ IP 30 ³⁾			
Protection class	III (EN 61140)			
Weight	900 g, with connecting cable			900 g / 1,000 g (depending on type)
Dimensions	112 mm x 80 mm x 39 mm ⁴⁾			
ATEX marking				ATEX II 3D Ex tD A22 IP65 T100 °C ⁵⁾

¹⁾ For ICR840-2D0920S01 ATEX: 1 RJ45 Ethernet cable (5 m), 1 cable with 15-pin D-Sub-HD plug (5 m).

²⁾ For installed adapter frame and IP 65 Ethernet cable or for installed adapter frame and IP 65 cover.

³⁾ Without covered Ethernet connection or with standard Ethernet cable.

⁴⁾ For ICR840-2D0920S01 ATEX: IP 65 Ethernet plug is pre-mounted and overlaps.

⁵⁾ Only for ICR840-2D0920S01 ATEX.

Ambient data

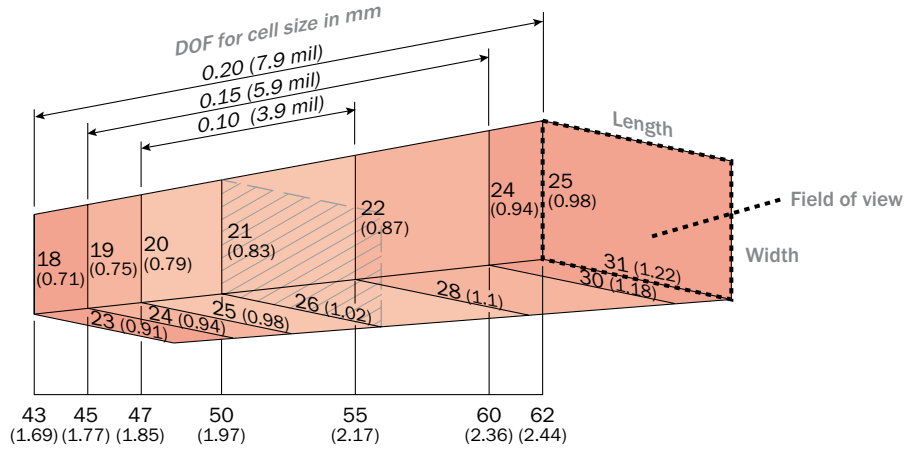
Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	EN 60068-2-6
Shock resistance	EN 60068-2-27
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

Ordering information

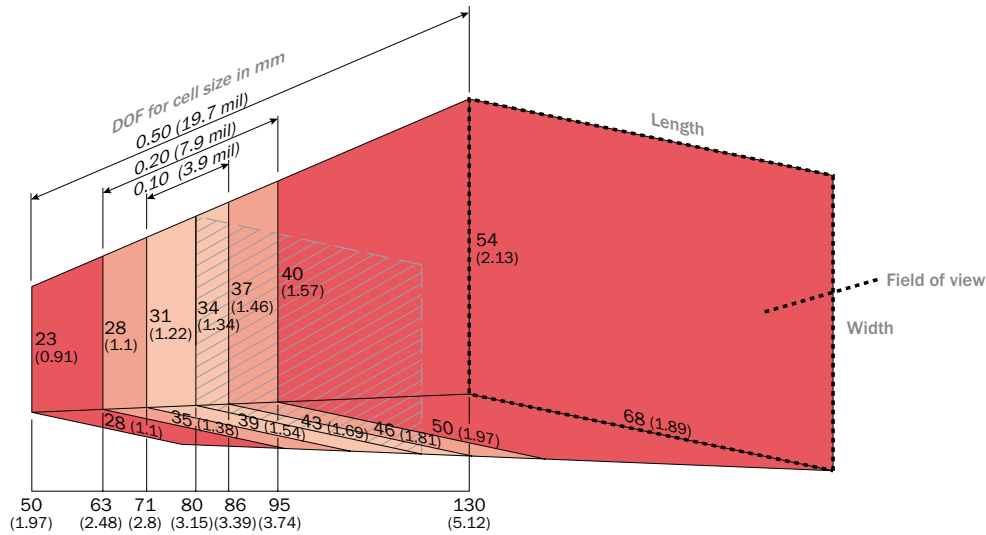
Type	Reading field	Model name	Part no.
ICR840-2A High Density	Front	ICR840-2A0020	1042896
	Side	ICR840-2A1020	1042897
ICR840-2B Standard Range	Front	ICR840-2B0020	1042277
	Side	ICR840-2B1020	1042338
ICR840-2C Mid Range	Front	ICR840-2C0020	1042279
	Side	ICR840-2C1020	1042885
ICR840-2D Long Range	Front	ICR840-2D0020	1043547
	Side	ICR840-2D1020	1043546
	Front	ICR840-2D0920S01 ATEX	1047906

Reading field diagrams

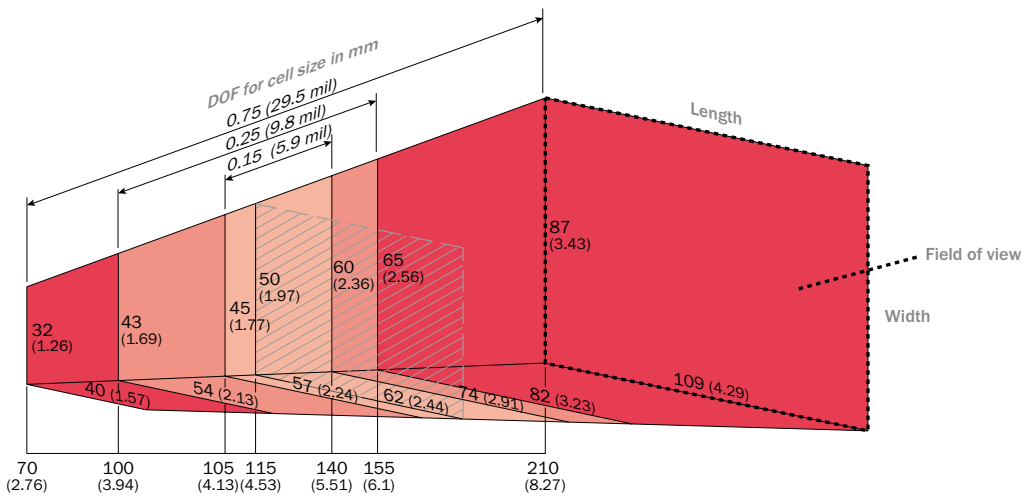
ICR840-2A High Density



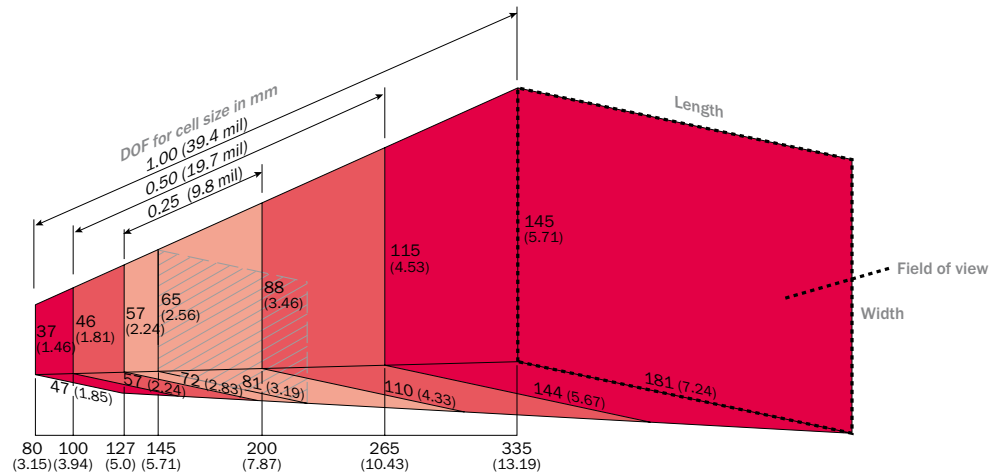
ICR840-2B Standard Range



ICR840-2C Mid Range





ICR840-2D Long Range




Recommended accessories

Modules




	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

G

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket with adjustable skew angle, incl. mounting material (2 self-locking M5 x 16 screws)	2039465

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Ethernet crossover cable 2 x RJ45	6026084
	IP 65 Ethernet patch cable with adapter frame, IP 65 secure, Ethernet connection possible	2039986

For additional accessories, please see page L-11



Maximum performance when stationary and moving



Matrix Camera 	1D 	Stacked 	2D
DPM Marked 	Reading Stationary 	Reading In Motion 	Omni-directional



Product description

Whether an object is stationary or in fast motion, the ICR845-2 offers reliable decoding, ensuring greater machine throughput that doesn't interfere with production lines. The latest technology allows for rapid computing performance combined with high-quality matrix sensors for reliability. It is ideal for direct part marked applications, allowing for improved traceability. Industry-compatible IP 65 housings, integrated illumina-

tion, user-friendly image recording, and decoding with rapid image and data output via standardized interfaces allow for quick implementation. The ICR845-2 series reads 1D and 2D codes in any orientation – even with low contrast, poor markings, damaged codes and dusty surroundings. Optimum adjustment for the application can be achieved in just a few steps by using the comfortable live image and auto setup function.

At a glance

- Easy to configure with live image and auto setup
- Omni-directional reading of direct marked 1D and 2D codes
- Rapid image and data transfer via Ethernet
- Reliable reading of codes on stationary and on fast-moving objects guarantee secure identification and flexible use

Your benefits

- Robust code identification even at very high transport speeds and speed variances simplify commissioning and increase operational flexibility
- Fast, cost-effective commissioning via easy user interface with live image and auto setup configuration
- Rapid, reliable decoding of low contrast, direct part marked codes ensures high productivity
- Dynamic parameter switching makes decoding different code qualities possible with just one setting
- Omni-directional identification of 1D and 2D codes makes it possible to identify objects that are not aligned
- Industrial IP 65 housing for rough environmental conditions
- Flexible use with integrated, controllable LED illumination



Additional information

Detailed technical data G-21
 Ordering information G-22
 Reading field diagrams G-23
 Recommended accessories G-24
 Dimensional drawings M-12

G

Detailed technical data

Features

	ICR845-2A High Density	ICR845-2C Mid Range	ICR845-2E Extended Long Range
Focus	Fixed focus		
Focal position	50 mm	115 mm	175 mm
Sensor	CMOS matrix sensor		
Sensor resolution	752 px x 480 px (WVGA)		
Light source	Visible red light (lighting LEDs, 617 nm, ± 15 nm)		
MTBF	75,000 h		
Laser class	1 (EN 60825-1, IEC 60825-1)		
Scanning frequency	60 Hz, for WVGA resolution	60 Hz, WVGA resolution	
Code resolution	≥ 0.1 mm ¹⁾	≥ 0.15 mm ¹⁾	≥ 0.25 mm ¹⁾
Reading distance (at code resolution)	30 mm ... 78 mm (0.35 mm) ¹⁾	85 mm ... 170 mm (0.75 mm) ¹⁾	115 mm ... 325 mm (1 mm) ¹⁾
Reading field (at distance)	28 mm x 18 mm (50 mm)	43 mm x 27 mm (115 mm)	65 mm x 41 mm (175 mm)

¹⁾ Valid for Data Matrix, PDF417 and 1D codes with good printing quality.

Performance

Bar code types	EAN 128, UPC, Interleaved 2 of 5, Pharmacode, EAN, Code 39, Code 128, Codabar
2D code types	Data Matrix ECC200, GS1 DataMatrix, QR code, PDF417
No. of codes per scan	1 ... 50
No. of codes per reading interval	1 ... 50
No. of characters per reading interval	4,000

Interfaces

Serial (RS-232)	✓
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	✓
Function	Host, AUX
Data transmission rate	10 Mbit/s ... 100 Mbit/s
Protocol	TCP/IP, FTP
CAN bus	✓
Function	CAN sensor network (Master/Slave, Multiplexer)
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	2
Switching outputs	2 (Result 1 NPN, Result 2 PNP)
Reading pulse	Switching inputs, non-powered, serial interface
Optical indicators	6 LEDs (status displays)
Acoustic indicators	Beeper/buzzer (can be switched off, can be assigned a function to signal the result status)



Mechanics/electronics

Electrical connection	1 RJ45 socket on device, cables with 15-pin D-Sub-HD plug (0.9 m, ± 5 %)
Operating voltage	15 V DC ... 30 V DC
Power consumption	13 W
Housing	Die-cast zinc
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (EN 60529) ¹⁾ IP 30 ²⁾
Protection class	III (EN 61140)
Weight	900 g, with connecting cable
Dimensions	112 mm x 80 mm x 39 mm

¹⁾ For installed adapter frame and IP 65 Ethernet cable or for installed adapter frame and IP 65 cover.

²⁾ Without covered Ethernet connection or with standard Ethernet cable.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	EN 60068-2-6
Shock resistance	EN 60068-2-27
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

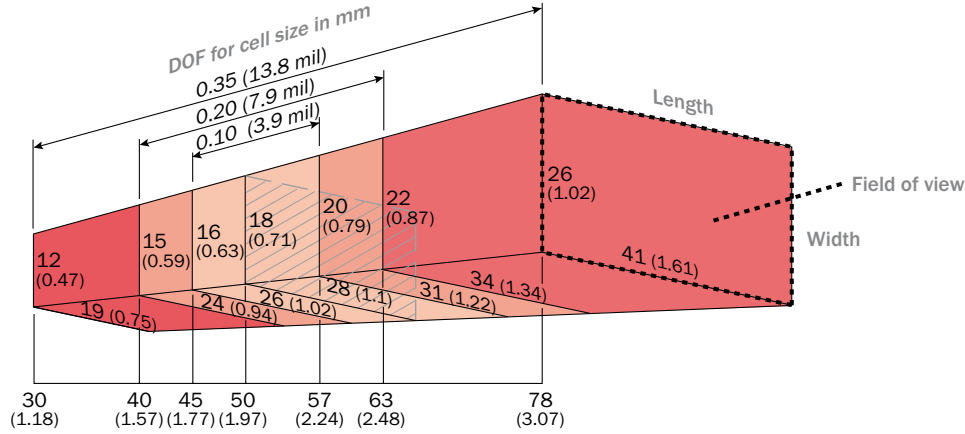
Ordering information

Type	Reading field	Model name	Part no.
ICR845-2A High Density	Front	ICR845-2A0020	1044617
	Side	ICR845-2A1020	1044616
ICR845-2C Mid Range	Front	ICR845-2C0020	1043740
	Side	ICR845-2C1020	1043739
ICR845-2E Extended Long Range	Front	ICR845-2E0020	1047749
	Side	ICR845-2E1020	1047750

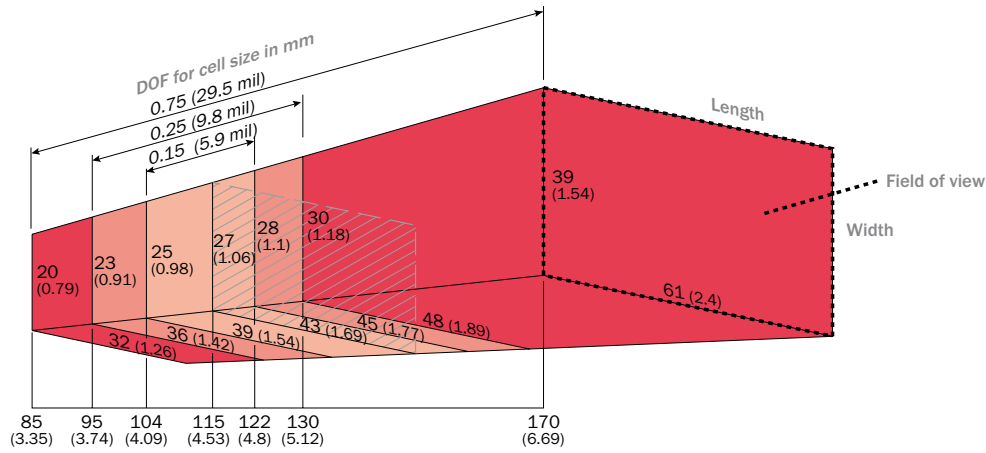


Reading field diagrams

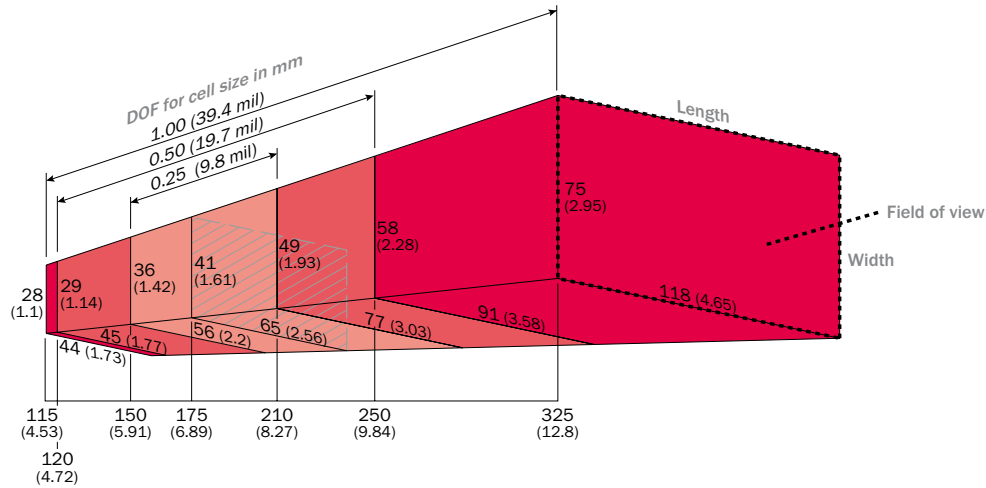
ICR845-2A High Density



ICR845-2C Mid Range





ICR845-2E Extended Long Range




Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket with adjustable skew angle, incl. mounting material (2 self-locking M5 x 16 screws)	2039465

Plug connectors and cables

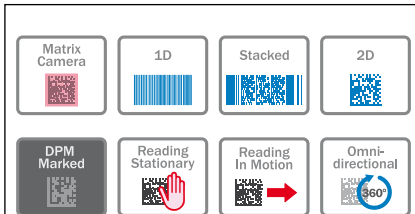
	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Ethernet crossover cable 2 x RJ45	6026084
	IP 65 Ethernet patch cable with adapter frame, IP 65 secure, Ethernet connection possible	2039986



For additional accessories, please see page L-11



By far the best solution



Product description

Flexibility in reading distance, field of view, resolution and depth of field are characteristics that make the ICR84x-2L FlexLens stand out, making it a versatile solution for many different applications. With standardized c-mount lenses together with variable lighting options, this image-based code reader can reliably identify a wide range of code types, whether stationary or moving. This ap-

plies not only to printed codes, but also to directly-marked (DPM), low-contrast or damaged codes. With added accessories, the ICR845-2L FlexLens is rated IP 65, making it suitable working in dusty and damp conditions. The integrated live image and auto setup ensures simple operation and automatic teach-in of settings.

At a glance

- Easy to configure with live image and auto setup
- Omni-directional reading of direct marked 1D and 2D codes
- Rapid image and data transfer via Ethernet
- Reliable reading of codes on stationary and on fast-moving objects guarantee secure identification and flexible use
- Identification from near to far distances due to flexible use of c-mount lenses and illumination
- Industrial IP 65 housing (with optional hood and cap) for rough environmental conditions

Your benefits

- Robust code identification even at very high transport speeds and speed variances simplify commissioning and increase operational flexibility
- Fast, cost-effective commissioning via easy user interface with live image and auto setup configuration
- High-speed, reliable decoding of low contrast, direct part marked codes, even on moving objects
- Dynamic parameter switching makes decoding different code qualities possible with just one setting
- Omni-directional identification of 1D and 2D codes makes it possible to identify objects that are not aligned
- Different c-mount lens options and illumination types and colors make it ideal for a wide range of applications



Additional information

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 Ordering information G-28
 Reading field diagrams G-29
 Recommended accessories G-30
 Dimensional drawings M-13

G

Detailed technical data

Features

Type	FlexLens
Focus	Variable (per interchangeable lens)
Sensor	CMOS matrix sensor
Sensor resolution	752 px x 480 px (WVGA)
Light source	External illumination External illumination (applicable with infrared illumination ICL300-F202S01) (depending on type)
MTBF	75,000 h
Lighting	Ring illuminations available
Scanning frequency	60 Hz, for WVGA resolution
Code resolution	≥ 0.1 mm ¹⁾
Reading distance (at code resolution)	0.1 m ... 3 m ¹⁾
Lens	C-mount, pre-mounted 25 mm lens, pre-mounted 75 mm lens (depending on type)

¹⁾ Depends on lens used; valid for Data Matrix, PDF417 and 1D codes with good printing quality.

Performance

Bar code types	EAN 128, UPC, Interleaved 2 of 5, Pharmacode, EAN, Code 39, Code 128, Codabar
2D code types	Data Matrix ECC200, GS1 DataMatrix, QR code, PDF417
No. of codes per scan	1 ... 50
No. of codes per reading interval	1 ... 50
No. of characters per reading interval	4,000

Interfaces

Serial (RS-232)	Function	✓ Host, AUX
	Data transmission rate	300 Baud ... 57,600 Baud , AUX: 9,600 Baud
Ethernet	Function	✓ Host, AUX
	Data transmission rate	10 Mbit/s ... 100 Mbit/s
	Protocol	TCP/IP, FTP
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDM + CMF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs		2
Switching outputs		2 (Result 2: High side switch)
Reading pulse		Switching inputs, non-powered, serial interface
Optical indicators		6 LEDs (status displays)
Acoustic indicators		Beeper/buzzer (can be switched off, can be assigned a function to signal the result status)



Mechanics/electronics

Electrical connection	1 RJ45 socket on device, cables with 15-pin D-Sub-HD plug (0.9 m, ± 5 %)
Operating voltage	15 V DC ... 30 V DC
Power consumption	8 W
Housing	Die-cast zinc
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (EN 60529) ¹⁾ IP 30 ²⁾
Protection class	III (EN 61140)
Weight	900 g, with connecting cable
Dimensions	123.3 mm x 80 mm x 39 mm

¹⁾ For installed adapter frame, IP 65 Ethernet cable and IP 65 lens cover or for installed adapter frame, IP 65 cover and IP 65 lens cover.

²⁾ Without covered Ethernet connection or with standard Ethernet cable.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	EN 60068-2-6
Shock resistance	EN 60068-2-27
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

Ordering information

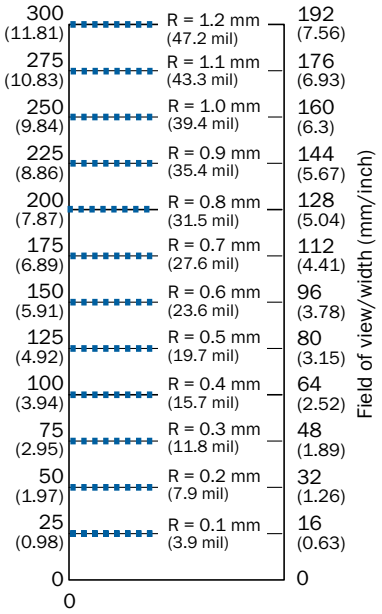
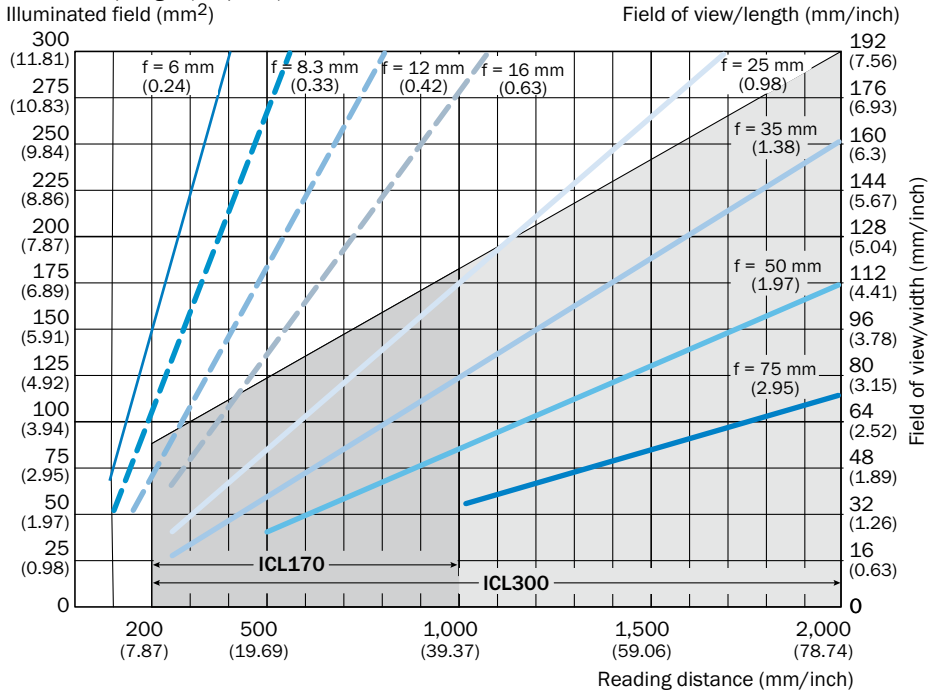
- **Type:** ICR845-2L FlexLens
- **Reading field:** front

Items supplied	Model name	Part no.
Only code reader	ICR845-2L0020 FlexLens	1046574
Pre-mounted kit incl. ICR845-2L0020, ICL300-F222 (red), 25 mm lens, IP 65 hood, c-mount filter (red), mounting bracket, screws and connection cable (2 m) for ring illumination, Ethernet crossover cable, ICR mounting bracket	ICR845-2L0020P01 FlexLens Kit	1047431
Pre-mounted kit incl. ICR845-2L0020, ICL300-F222 (red), 75 mm lens, IP 65 hood, c-mount filter (red), mounting bracket, screws and connection cable (2 m) for ring illumination, Ethernet crossover cable, ICR mounting bracket	ICR845-2L0020P02 FlexLens Kit	1047432
Only code reader, applicable with infrared illumination ICL300-F202S01	ICR845-2L0020S01 FlexLens	1047956

Reading field diagrams

ICR845-2L FlexLens

Field of view/length (mm/inch)
Illuminated field (mm²)





Independent from reading distance
R = resolution

- Illuminated field ICL300-F222, ICL300-F202S01
- Illuminated field ICL170-F222




Recommended accessories

Lens and accessories



	Brief description	Model name	Part no.
	Lens hood to reach IP 65 classification	IP 65 lens cover	2049130
 Illustration may differ	C-mount lens f = 8 mm	OBJ-C00814A	5314041
	C-mount lens f = 12 mm	OBJ-C01214A	5314042
	C-mount lens f = 16 mm	OBJ-C01614A	5315114
	C-mount lens f = 25 mm	OBJ-C02514A	5314043
	C-mount lens f = 50 mm	OBJ-C05023A	5319456
	C-mount lens f = 75 mm	OBJ-C07528A	5319457

Lightings


	Brief description	Model name	Part no.
 Illustration may differ	Ring illumination set ICL170-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 1 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL170-F222-Set01- (red)	1048476
	Ring illumination set ICL260-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 1.5 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL260-F222-Set01- (red)	1053193
	Ring illumination set ICL300-F202S01, bright field for ICR845-2L0020S01, infrared illumination, distance 200 mm to 2 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL300-F202S01-Set01- (infrared)	1047994
	Ring illumination set ICL300-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 2 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL300-F222-Set01- (red)	1047879

G




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

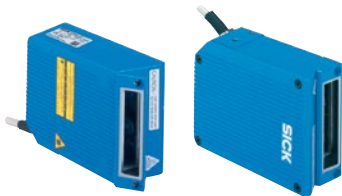
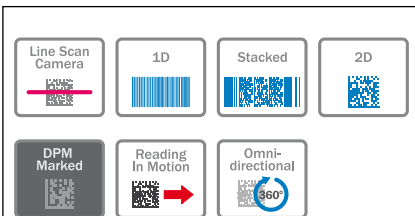
	Brief description	Part no.
	Mounting bracket with adjustable skew angle, incl. mounting material (2 self-locking M5 x 16 screws)	2039465

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Ethernet crossover cable 2 x RJ45	6026084
	IP 65 Ethernet patch cable with adapter frame, IP 65 secure, Ethernet connection possible	2039986

For additional accessories, please see page L-11.

Improved traceability for 1D and 2D codes



Product description

The ICR850-2 image code reader family has a large field of view, making it easier to capture multiple codes at the same time. This helps ensure higher throughput and better traceability of 1D and 2D codes. Its high-resolution chip enables the scanner to read smaller codes – up to 3 mils. It has omni-directional reading

and integrated illumination ideal for detecting low contrast, laser etched codes on printed circuit boards and high-speed document handling. Three model variants offer an ideal solution for different types of applications where the product is moving, such as electronics (PCB), document handling, and packaging.

At a glance

- Omni-directional identification of up to 50 codes, e.g., circuit board with multiple codes
- Easy trigger handling, codes are identified on-the-fly
- Large reading field
- High-speed reader
- High resolution

Your benefits

- Large field of view captures codes in different positions without having to adjust the mounting of the reader
- High-speed, reliable decoding of low contrast, direct part marked codes, even on moving objects
- Reads codes in real-time without stopping the conveyor, increasing throughput
- Industrial IP 65 housing for rough environmental conditions
- Easy configuration via graphical user interface, saves time
- Omni-directional identification of 1D and 2D codes makes it possible to identify objects that are not aligned
- A wide variety of resolutions and reading distances provide a solution for any application



Additional information

Detailed technical data G-33
 Ordering information G-34
 Reading field diagrams G-35
 Recommended accessories G-36
 Dimensional drawings M-13

G

Detailed technical data

Features

	ICR850-2B Standard Range	ICR852-2A High Density	ICR855-2A High Speed
Focus	Fixed focus		
Focal position	110 mm / 100 mm (depending on type)	70 mm / 60 mm (depending on type)	
Sensor	CCD line camera		
Sensor resolution	2,048 px	512 px	
Light source	Laser diode (visible red light, 650 nm)		
MTBF	20,000 h		
Laser class	2 (EN 60825-1, IEC 60825-1)		
Scanning frequency	13 Hz ... 15 kHz		113 Hz ... 45 kHz
Code resolution	≥ 0.2 mm ¹⁾	≥ 0.1 mm ¹⁾	≥ 0.35 mm ¹⁾
Reading distance (at code resolution)	Front	99 mm ... 121 mm (0.5 mm) ¹⁾	67.5 mm ... 73.5 mm (0.25 mm) ¹⁾
	Side	89 mm ... 111 mm (0.5 mm) ¹⁾	57.5 mm ... 63.5 mm (0.25 mm) ¹⁾
Reading field (at distance)		80 mm (110 mm)	40 mm (70 mm)
		80 mm (100 mm)	40 mm (60 mm)
		(depending on type)	(depending on type)

¹⁾ Valid for Data Matrix, PDF417 and 1D codes with good printing quality.

Performance

Bar code types	EAN 128, UPC, Interleaved 2 of 5, Pharmacode, EAN, Code 39, Code 128, Codabar
2D code types	Data Matrix ECC200, PDF417, QR code, GS1 DataMatrix
No. of codes per scan	1 ... 50
No. of codes per reading interval	1 ... 50
No. of characters per reading interval	4,000

Interfaces

Serial (RS-232)	Function	✓ Host, AUX
	Data transmission rate	300 Baud ... 57,600 Baud , AUX: 9,600 Baud
Ethernet	Function	✓ Host, AUX
	Data transmission rate	10 Mbit/s ... 100 Mbit/s
	Protocol	TCP/IP, FTP
CAN bus	Function	✓ CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
	Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS		-, optional via external connection module (CDM + CMF)
DeviceNet		-, optional via external connection module (CDM + CMF)
Switching inputs		2 ("Sensor 1", "Sensor 2")
Switching outputs		2 ("Result 1", "Result 2")
Reading pulse		Switching inputs, non-powered, serial interface
Optical indicators		4 LEDs (status displays)
Acoustic indicators		Beeper/buzzer (can be switched off, can be assigned functions to signal the result status 0.25 ... 2 mm)



Mechanics/electronics

Electrical connection	1 RJ45 socket on device, cables with 15-pin D-Sub-HD plug (0.9 m, ± 5 %)
Operating voltage	10 V DC ... 30 V DC
Power consumption	11 W
Housing	Die-cast zinc
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (EN 60529) ¹⁾ IP 30 ²⁾
Protection class	III (EN 61140)
Weight	900 g, with connecting cable
Dimensions	114.6 mm x 80 mm x 39 mm

¹⁾ For installed adapter frame and IP 65 Ethernet cable or for installed adapter frame and IP 65 cover.

²⁾ Without covered Ethernet connection or with standard Ethernet cable.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	EN 60068-2-6
Shock resistance	EN 60068-2-27
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code

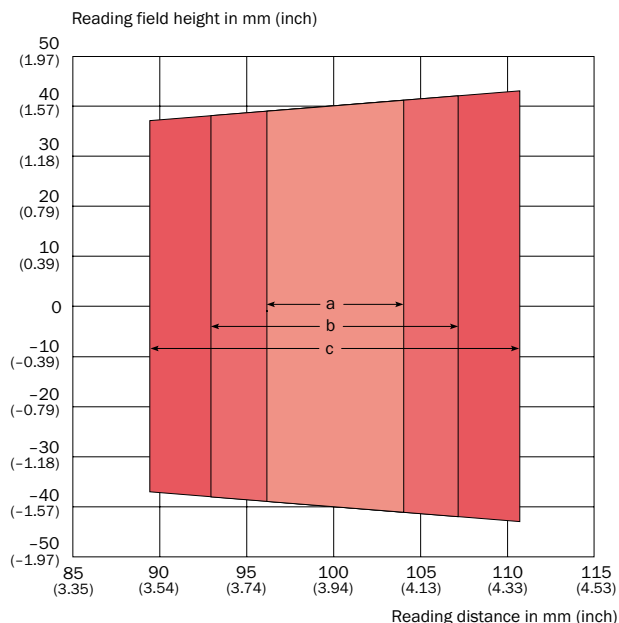
Ordering information

Type	Reading field	Model name	Part no.
ICR850-2B Standard Range	Front	ICR850-2B0020	1042280
	Side	ICR850-2B1020	1042341
ICR852-2A High Density	Front	ICR852-2A0020	1042899
	Side	ICR852-2A1020	1042900
ICR855-2A High Speed	Front	ICR855-2A0020	1042898
	Side	ICR855-2A1020	1042281



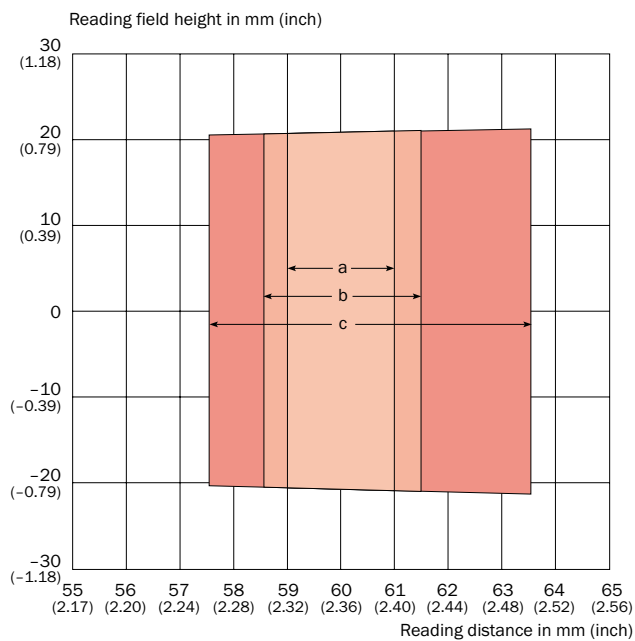
Reading field diagrams

ICR850-2B Standard Range side



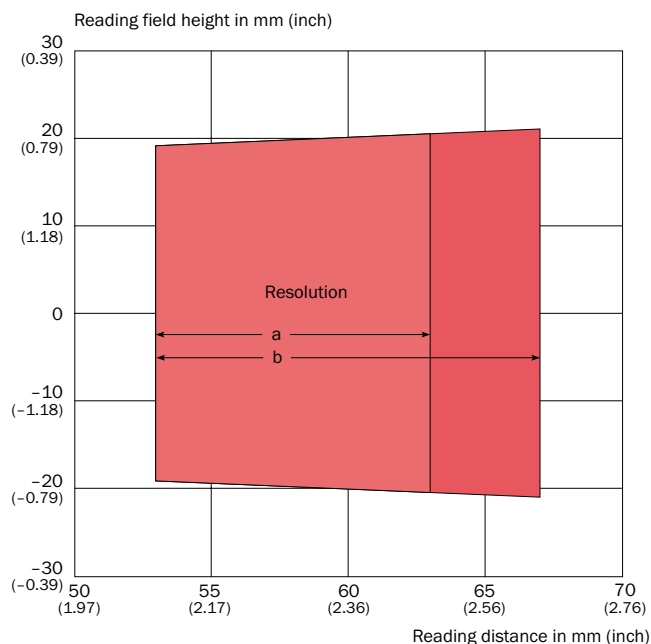
- Resolution:**
- a: 0.25 mm (9.8 mil)
 - b: 0.35 mm (13.8 mil)
 - c: 0.50 mm (19.7 mil)

ICR852-2A High Density side



- Resolution:**
- a: 0.10 mm (3.9 mil)
 - b: 0.15 mm (5.9 mil)
 - c: 0.25 mm (9.8 mil)

ICR855-2A High Speed side





- Resolution:**
- a: 0.35 mm (13.8 mil)
 - b: 0.50 mm (19.7 mil)

Note: The reading field diagrams for the models with front reading field are shifted 10 mm backwards.




Recommended accessories




Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362

Mounting brackets/plates

	Brief description	Part no.
	Mounting bracket with adjustable skew angle, incl. mounting material (2 self-locking M5 x 16 screws)	2039465

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054
	Ethernet crossover cable 2 x RJ45	6026084
	IP 65 Ethernet patch cable with adapter frame, IP 65 secure, Ethernet connection possible	2039986



For additional accessories, please see page L-11





Mobile, fast and flexible

H

Hand-held scanners from SICK provide fast, flexible code reading capabilities for a wide range of applications. Unlike manual solutions, hand-held scanners make it possible to automatically detect data at high speeds – with nearly no errors. They are ergonomically designed, speed up processes and help eliminate sources of error.





Your benefits

- High productivity thanks to fast and reliable code recognition – no manual repeat entry
- Simple operation thanks to automatic decoding of different codes
- Lightweight, ergonomic housing design makes it easy to use
- Rugged design and reinforced housing (in industrial variants) provides long service life
- Application flexibility due to availability of both wired and wireless device variants
- System solutions form a single source thanks to networking ability with other SICK identification solutions





Hand-held scanners







H

	Product family overview	H-2
	IDM1xx Reliable identification of bar codes for a wide range of general purpose applications	H-4
	IT3xxx General purpose and industrial versions solve a wide range of applications	H-10
	IT4xxx Hand-held scanning solutions for the second dimension	H-14
	IT6xxx Reliable identification of direct part marked codes	H-18

Product family overview

	 <p style="text-align: center;">IDM1xx</p>	 <p style="text-align: center;">IT3xxx</p>	
	<p>Reliable identification of bar codes for a wide range of general purpose applications</p>	<p>General purpose and industrial versions solve a wide range of applications</p>	

Technical data overview			
Scanner design	Linear hand-held image scanner	Linear hand-held image scanner	
Scanning frequency	200 Hz / 500 Hz	270 Hz	
Sensor	-	-	
Code resolution	≥ 0.076 mm	≥ 0.076 mm	
Reading distance	0 mm ... 600 mm	10 mm ... 2,080 mm	
Supported code type	1D, Stacked	1D, Stacked	
Serial	✓/ -	✓	
Ethernet	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	
CAN bus	- , optional via external connection module (CAN232)	- , optional via external connection module (CAN232)	
PROFIBUS	- , optional via external connection module (CDF)	- , optional via external connection module (CDF)	
DeviceNet	- , optional via external connection module (CDM + CMF)	- , optional via external connection module (CDM + CMF)	
PS/2	✓/ -	✓/ -	
USB	✓/ -	✓/ -	
Bluetooth	✓/ -	✓/ -	
WLAN	✓/ -	-	

At a glance			
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid gray; padding: 2px; text-align: center;">1D </div> <div style="border: 1px solid gray; padding: 2px; text-align: center;">Stacked </div> <div style="border: 1px solid gray; padding: 2px; text-align: center;">Wireless </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid gray; padding: 2px; text-align: center;">1D </div> <div style="border: 1px solid gray; padding: 2px; text-align: center;">Stacked </div> <div style="border: 1px solid gray; padding: 2px; text-align: center;">Wireless </div> </div>	
	<ul style="list-style-type: none"> • Identifies all common 1D and stacked codes • Scan rate up to 500 scans/second • Identification of codes with 0.076 mm module width 	<ul style="list-style-type: none"> • Fast and reliable decoding even on poorly printed or partly damaged codes • Scan rate up to 270 scans/second • Reading distance up to 2 m depending on model • Depending on version, up to IP 54 enclosure rating 	

Detailed information	→ H-4	→ H-10	
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H



IT4xxx

Hand-held scanning solutions for the second dimension



IT6xxx

Reliable identification of direct part marked codes

2D code hand-held scanner

2D DPM hand-held scanner

752 x 480 px
≥ 0.13 mm

1.280 x 960 px
≥ 0.13 mm

50 mm ... 330 mm

0 mm ... 150 mm

1D, 2D, Stacked

1D, 2D, DPM, Stacked



- , optional via external connection module (CDM + CMF)

- , optional via external connection module (CDM + CMF)

- , optional via external connection module (CAN232)

- , optional via external connection module (CAN232)

- , optional via external connection module (CDF)

- , optional via external connection module (CDF)

- , optional via external connection module (CDM + CMF)

- , optional via external connection module (CDM + CMF)

✓ / -



✓ / -

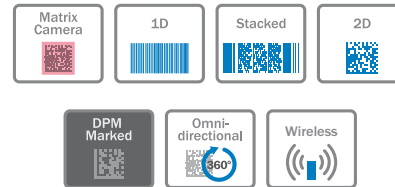


✓ / -

✓ / -

-

-



- Reads 1D, stacked and 2D codes as well as OCR-A and OCR-B
- Reading distances up to 330 mm
- Withstands 50 drops from 2 m
- LED aiming line
- Depending on version, up to IP 54 enclosure rating

- Illumination adjustable to application
- Decoding algorithms ideal for direct part marked codes
- USB, RS-232, PS/2 interfaces
- IP 54 enclosure rating

→ H-14

→ H-18

Reliable identification of bar codes for a wide range of general purpose applications



Product description

The IDM series of hand-held bar code scanners are high-performance, light-weight scanners that read all popular 1D bar codes. Their good price/performance ratio and ergonomic design make them ideal for general purpose applications

within office, factory, warehouse and logistics environments. 1D codes can be scanned at a rate of 500 scans per second, increasing throughput. The IDM hand-held scanners are ergonomically designed for comfort and ease of use.

At a glance

- Identifies all common 1D and stacked codes
- Scan rate up to 500 scans/second
- Identification of codes with 0.076 mm module width

Your benefits

- Increased productivity thanks to high scan rate
- Reliable identification reduces the need to manually input data
- Lightweight, ergonomic design ensures user comfort
- Cordless version provides flexibility



Additional information

Detailed technical data..... H-5
 Ordering information..... H-6
 Reading field diagrams..... H-8
 Recommended accessories..... H-8

H

Detailed technical data

Features

	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN
Scanner design	Linear hand-held image scanner			
Light source	Visible red light (660 nm)	Visible red light (630 nm)		
Scanning frequency	≤ 200 Hz	≤ 500 Hz		
Code resolution	≥ 0.1 mm	≥ 0.076 mm		
Reading distance (at code resolution)	0 mm ... 150 mm (0.5 mm)	50 mm ... 600 mm (0.5 mm)		
Reading field (at distance)	120 mm (150 mm)	150 mm (200 mm)		

Performance

	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN
Supported code type	1D	1D / Stacked (depending on type)		
Bar code types	Code 39, Code 32, HIBC, Code 93, Code 11, Codabar, Code 128, UCC/EAN-128, UPC-A, UPC-E, MSI/Plessey, UK/Plessey, IATA, Standard and Industrial 2 of 5, Matrix 2 of 5, Interleaved 2 of 5, Mainland China Postal Code, German ITF Postal Code, Telepen, Limited/Expanded GS1 DataBar (depending on type, PDF417 and others are available)			
Battery power	Over 45,000 scans with full battery			
Batch function			5000 Codes (EAN)	-

Interfaces

	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN
Serial	✓			-
Function	RS-232 TTL			
Ethernet	-, optional via external connection module (CDM + CMF)			-
CAN bus	-, optional via external connection module (CAN232)			-
PROFIBUS	-, optional via external connection module (CDF)			-
DeviceNet	-, optional via external connection module (CDM + CMF)			-
PS/2	✓			-
Function	Keyboard wedge			
USB	✓	✓		-
Function	Keyboard wedge	Keyboard wedge, COM-Port emulation		
Bluetooth			✓	-
Function			Wireless operating range up to 30 m (free view), batch function for expansion of the wireless radius	
Protocol			Bluetooth™ V2.1 EDR, 2.4 ... 2.4835 GHz	
WLAN				✓
Protocol				IEEE 802.11 b/g
Optical indicators	2 LEDs (operational status, good read)		2 LEDs (good read, charge of battery, radio connection status)	2 LED, display
Acoustic indicators	Beeper, disengageable (good read)			

Mechanics/electronics

	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN
Operating voltage	5 V DC, ± 5 %			
Housing color	Black	Black/gray		
Enclosure rating	IP 41			
Weight	130 g, without cable	160 g, without cable	230 g, incl. rechargeable battery	
Dimensions	230 mm x 170 mm x 100 mm	97.8 mm x 70.5 mm x 156.2 mm		

Ambient data

	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN
Shock resistance	25 drops from 1.5 m height on concrete	25 drops from 1.8 m height on concrete		
Ambient operating temperature	0 °C ... +50 °C			
Storage temperature	-20 °C ... +60 °C	-40 °C ... +70 °C		
Permissible relative humidity	95 %, non-condensing			
Ambient light safety	10,000 lx	100,000 lx		

Ordering information

Sub product family	Field of application	Type	Items supplied	Model name	Part no.	
IDM120	General purpose	Short Range	Single scanner	Hand-held scanner, quick start guide	IDM120-01B	6036716
			Kit	PS/2 kit: contains hand-held scanner, 2 m straight PS/2 keyboard wedge cable and quick start guide	IDM120-01B K01	6036713
				USB keyboard kit: contains hand-held scanner, 1.8 m straight USB cable and quick start guide	IDM120-01B K02	6036714
				RS-232 kit: contains hand-held scanner, 1.8 m straight RS-232 TTL cable and quick start guide	IDM120-01B K03	6036715
				PS/2 and holder combi kit: contains hand-held scanner, 2 m straight PS/2 keyboard wedge cable, holder and quick start guide	IDM120 PS/2 plus Holder Combi Kit	6037547
				RS-232 power supply kit: contains hand-held scanner, 1.8 m straight RS-232 TTL cable, power supply and quick start guide	IDM120 RS-232 Power Supply Kit	1046549
				RS-232 power supply and table holder combi kit: contains hand-held scanner, 1.8 m straight RS-232 TTL cable, power supply and quick start guide	IDM120 RS-232 Power Supply plus Holder Combi Kit	6037549
				USB keyboard and holder combi kit: contains hand-held scanner, 1.8 m straight USB cable, holder and quick start guide	IDM120 USB plus Holder Combi Kit	6037548

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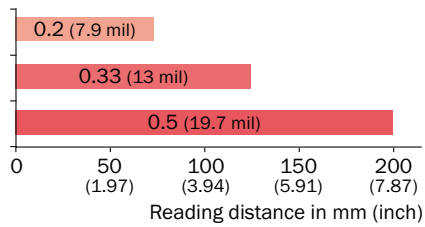
Sub product family	Field of application	Type	Items supplied		Model name	Part no.
IDM140-2	General purpose	Mid Range	Single scanner	Hand-held scanner, quick start guide	IDM140-201D	6040985
					IDM140-2PDF01D	6040989
			Kit	PS/2 kit: contains hand-held scanner, 2 m straight PS/2 keyboard wedge cable and quick start guide	IDM140-2 PS/2 Kit	6040982
				RS-232 power supply kit: contains hand-held scanner, 1.8 m straight RS-232 TTL cable, power supply and quick start guide	IDM140-2 RS-232 Kit	6041017
				USB keyboard kit: contains hand-held scanner, 1.8 m straight USB cable and quick start guide	IDM140-2 USB Kit	6040983
				PS/2 kit: contains hand-held scanner, 2 m straight PS/2 keyboard wedge cable and quick start guide	IDM140-2PDF PS/2 Kit	6040986
				RS-232 power supply kit: contains hand-held scanner, 1.8 m straight RS-232 TTL cable, power supply and quick start guide	IDM140-2PDF RS-232 Kit	6041018
				USB keyboard kit: contains hand-held scanner, 1.8 m straight USB cable and quick start guide	IDM140-2PDF USB Kit	6040987
IDM140-2 Bluetooth	General purpose, cordless	Mid Range	Single scanner	Cordless scanner, battery, charging station and a power supply is included in delivery	IDM140-2BT	6040993
					IDM140-2PDFBT	6040997
			Kit	Kit contains cordless scanner, battery, base station, interface cable, power supply and quick start guide	IDM140-2BT PS/2 Kit	6040990
					IDM140-2BT RS-232 Kit	6040992
					IDM140-2BT USB Kit	6040991
					IDM140-2PDFBT PS/2 Kit	6040994
					IDM140-2PDFBT RS-232 Kit	6040996
					IDM140-2PDFBT USB Kit	6040995
IDM140-2 WLAN	General purpose, cordless	Mid Range	Kit	Kit contains WLAN cordless scanner, battery, charging station, USB cable, power supply and quick start guide	IDM140-2 WLAN Kit	6043431
					IDM140-2PDF WLAN Kit	6043432



Reading field diagrams

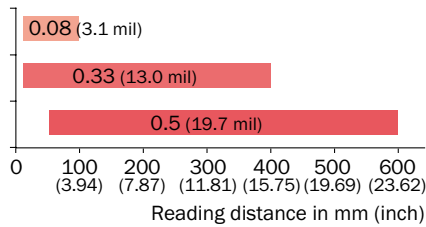
IDM120 Short Range

Code resolution in mm (mil)





IDM140-2 Mid Range

Code resolution in mm (mil)




Recommended accessories


Other mounting accessories

	Brief description	Part no.
	Countertop stand	6036724
	Desk holder	6036723

Plug connectors and cables

	Brief description	Part no.
	Straightened USB cable, 1.8 m	6036728

Power supply units

	Brief description	Part no.
	Power supply kit: includes 5 V power supply and EU, UK, USA and ROW adapters	6036722

For additional accessories, please see page L-18



General purpose and industrial versions solve a wide range of applications



Product description

The IT38xx series of linear hand-held bar code scanners use the latest imaging technology available, which can decode all standard 1D codes. They are built to withstand drops, vibration and extreme

temperatures. High durability, plus excellent ergonomics and aggressive reading performance, make the IT38xx linear series the ideal choice for customers who appreciate best-in-class value.

At a glance

- Fast and reliable decoding even on poorly printed or partly damaged codes
- Scan rate up to 270 scans/second
- Reading distance up to 2 m, depending on model
- Depending on version, up to IP 54 enclosure rating

Your benefits

- Reliable identification reduces the need to manually input data
- High scanning speeds and aggressive reading performance increase productivity
- Highly dependable thanks to rugged housing and non-moving parts
- Its ergonomic design makes handling convenient and comfortable
- A range of versions provide flexibility for use in varied applications



Additional information

Detailed technical data.....H-11
 Ordering information.....H-12
 Reading field diagrams.....H-13
 Recommended accessories.....H-13

H

Detailed technical data

Features

	IT3800g	IT3800i	IT3820	IT3820i
Scanner design	Linear hand-held image scanner			
Light source	Visible red light (630 nm)			
Scanning frequency	≤ 270 Hz			
Code resolution	≥ 0.076 mm	≥ 0.19 mm	≥ 0.127 mm	
Reading distance (at code resolution)	10 mm ... 660 mm (0.5 mm) (depending on type)	40 mm ... 2,080 mm (1.4 mm)	64 mm ... 1,110 mm (1.4 mm)	
Reading field (at distance)	100 mm (130 mm) 200 mm (300 mm) (depending on type)	250 mm (380 mm)	250 mm (400 mm)	

Performance

	IT3800g	IT3800i	IT3820	IT3820i
Supported code type	1D, Stacked (depending on type)	1D		
Bar code types	RSS, Codabar, Code 39 including PARAF, Interleaved 2 of 5, Code 2 of 5, Matrix 2 of 5, Code 11, Code 93, Code 128, UPC, EAN/JAN, China Postal Code (depending on type, PDF417 and others are available)			
Battery power				1,800 mAh, max. 57,000 scans, max. 20 h (standby), max. 16 h (continuous operation), max. 4 h charging time
Batch function	500 Codes (UPC) at 12 characters			

Interfaces

	IT3800g	IT3800i	IT3820	IT3820i
Serial	✓	✓	✓	
Function	RS-232 TTL	RS-232 TRUE RS-232 TTL (depending on type)	RS-232 TTL	
Ethernet	-, optional via external connection module (CDM + CMF)			
CAN bus	-, optional via external connection module (CAN232)			
PROFIBUS	-, optional via external connection module (CDF)			
DeviceNet	-, optional via external connection module (CDM + CMF)			
PS/2	✓	- / ✓	✓	
Function	Keyboard wedge	Keyboard wedge	Keyboard wedge	
USB	✓	- / ✓	✓	
Function	Keyboard wedge, COM-Port emulation	Keyboard wedge, COM-Port emulation	Keyboard wedge, COM-Port emulation	
Bluetooth			✓	
Function	-			Wireless operating range up to 10 m, batch function for expansion of the wireless radius
Protocol	-			Bluetooth™ V1.2, Class 2, 2.4 ... 2.4835 GHz
Optical indicators	1 LED (good read)		1 LED (good read, charge of battery, radio connection status)	
Acoustic indicators	Beeper, disengageable (to confirm reading)			

Mechanics/electronics

	IT3800g	IT3800i	IT3820	IT3820i
Operating voltage	5 V DC ... 12 V DC (depending on type)	4.5 V DC ... 14 V DC	3.6 V DC ¹⁾	
Enclosure rating	IP 41	IP 54	IP 41	IP 54
Weight	160 g, without cable	213 g	260 g, incl. rechargeable battery	272 g, incl. rechargeable battery
Dimensions	110 mm x 150 mm x 80 mm	163 mm x 135 mm x 81 mm	157 mm x 135 mm x 81 mm	163 mm x 135 mm x 81 mm

¹⁾ Rechargeable battery operation.

Ambient data

	IT3800g	IT3800i	IT3820	IT3820i
Shock resistance	50 drops from 1.5 m height on concrete	50 drops from 2 m height on concrete	50 drops from 1.8 m height on concrete	
Ambient operating temperature	0 °C ... +50 °C			
Storage temperature	-40 °C ... +60 °C			
Permissible relative humidity	95 %, non-condensing			
Ambient light safety	70,000 lx, on bar code			
Bar code print contrast (PCS)	≥ 37 % / ≥ 20 % (depending on type)	≥ 20 %		

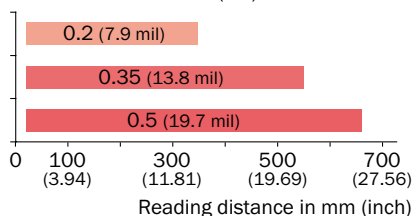
Ordering information

Sub product family	Field of application	Type	Items supplied	Model name	Part no.	
IT3800g	General purpose	PDF	Single scanner –	IT3800g PDF04E	6037320	
		High Density	Single scanner –	IT3800g HD24E	6037321	
		Standard Range	Single scanner	–	IT3800g 14E	6034326
				–	IT3800g 15E	6033410
			Kit	RS-232 EU power supply kit: contains hand-held scanner, 2.4 m straight RS-232 TTL cable, EU power supply and quick start guide	IT3800g 14-SERKIT2E	6034073
				RS-232 UK power supply kit: contains hand-held scanner, 2.4 m straight RS-232 TTL cable, UK power supply and quick start guide	IT3800g 14-SERKIT3E	6034074
IT3800i	Industrial	Mid Range	Single scanner –	IT3800i SR 030E	6028179	
				IT3800i SR 050E	6028181	
IT3820	Cordless	Standard Range	Single scanner –	IT3820 SR 0C0BE	6029311	
				Kit	EU kit: contains cordless scanner, base station, power supply with European power cord and user guide on CD-ROM	IT3820 SR EU KIT	6033971
			UK kit: contains cordless scanner, base station, power supply with United Kingdom power cord and user guide on CD-ROM		IT3820 SR UK KIT	6033972
IT3820i	Industrial, cordless	Standard Range	Single scanner –	IT3820i SRE	6037212	
				Kit	EU RS-232 kit: contains cordless scanner, base station, straight RS-232 TTL cable, power supply with European power cord and quick start guide	IT3820i SR-SERKITBE	6037210
			EU USB kit: contains cordless scanner, base station, straight USB cable, power supply with European power cord and quick start guide		IT3820i SR-USB-KITBE	6037211

Reading field diagrams

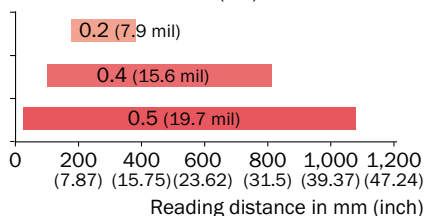
IT3800g Standard Range

Code resolution in mm (mil)



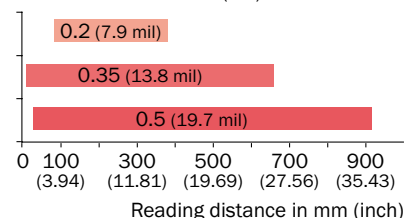
IT3800i Mid Range

Code resolution in mm (mil)







IT3820 Standard Range

Code resolution in mm (mil)






Recommended accessories

Plug connectors and cables


	Brief description	Part no.
	Spiral cord 2.8 m, 6-pin Mini DIN male (42206132-02)	6012110
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-04E)	6010819
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232

Power supply units

	Brief description	Model name	Part no.
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including AC line with North American plug ¹⁾	PS5U-41E	6034790
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with European plug ¹⁾	PS5U-42E	6034941
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with United Kingdom plug ¹⁾	PS5U-43E	6034942

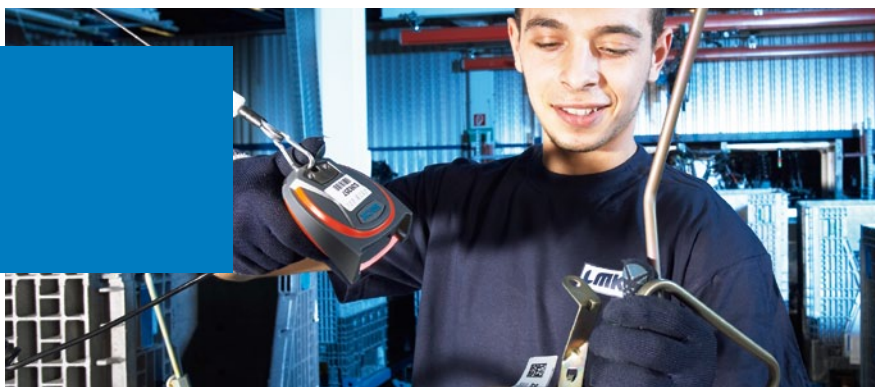
¹⁾ only for wired hand-held scanners.

Rechargeable batteries and battery chargers

	Brief description	Model name	Part no.
	Radio base and charging station for IT2020-5BE Bluetooth	IT2020-5BE	6029312

For additional accessories, please see page L-18

Hand-held scanning solutions for the second dimension



Matrix Camera 	1D 	Stacked 	2D
OCR Best before 2009-04-30	Omnidirectional 	Wireless 	



Product description

The IT4xxx series of hand-held scanners delivers reliability and durability in addition to enhanced functionality and value that only 1D and 2D imagers can provide. These powerful devices can read all popular linear, stacked, 2D bar codes,

and OCR fonts. They have the ability to capture digital images for electronic signature capture and similar applications. The IT4000 series offers a wide range of solutions with exceptional versatility.

At a glance

- Reads 1D, stacked and 2D codes as well as OCR-A and OCR-B
- Reading distances up to 330 mm
- Withstands 50 drops from 2 m
- LED aiming line
- Depending on version, up to IP 54 enclosure rating

Your benefits

- Reliable identification of 1D, stacked, 2D codes, OCR-A, OCR-B and image capture
- High productivity thanks to quick decoding and easy handling
- Highly dependable thanks to rugged housing and non-moving parts
- Intuitive scanning thanks to omnidirectional code capture
- Lightweight, ergonomic design ensures user comfort
- Corded and cordless versions provide greater flexibility



Additional information

Detailed technical data.....H-15

Ordering information.....H-16

Reading field diagrams.....H-17

Recommended accessories.....H-17

H

Detailed technical data

Features

	IT4600g	IT4800i	IT4820	IT4820i
Scanner design	2D code hand-held scanner			
Sensor	752 x 480 px			
Light source	Visible red light (630 nm) Visible green light (530 nm, Aiming LED)			
Code resolution	≥ 0.13 mm ¹⁾ ≥ 0.17 mm ²⁾ (depending on type)	≥ 0.19 mm ¹⁾ ≥ 0.25 mm ²⁾ (depending on type)		
Reading distance (at code resolution)	50 mm ... 330 mm (0.33 mm) (depending on type)			
Reading field (at distance)	110 mm x 70 mm (150 mm)			

¹⁾ 1D codes.

²⁾ 2D codes.

Performance

	IT4600g	IT4800i	IT4820	IT4820i
Supported code type	1D, 2D, Stacked			
Bar code types	Codabar, Code 39, Interleaved 2 of 5, Code 93, Code 128, UPC, EAN, RSS (depending on type, also reads other codes)			
2D code types	PDF417, MicroPDF417, MaxiCode, Data Matrix, QR code, Aztec, Aztec Mesas, Code 49 (depending on type, also reads other codes)			
OCR fonts	OCR-A, OCR-B			
Code alignment	Omni-directional			
Horizontal motion tolerance	≤ 50 cm/s			
Battery power				1,600 mAh, max. 57,000 scans, max. 12 h (continuous operation), max. 4 h charging time
Batch function				500 Codes (UPC) at 12 characters

Interfaces

	IT4600g	IT4800i	IT4820	IT4820i
Serial	Function	✓	✓	✓
		RS-232 TTL RS-232 TRUE (depending on type)	RS-232 TRUE RS-232 TTL (depending on type)	RS-232 TTL
Ethernet	-, optional via external connection module (CDM + CMF)			
CAN bus	-, optional via external connection module (CAN232)			
PROFIBUS	-, optional via external connection module (CDF)			
DeviceNet	-, optional via external connection module (CDM + CMF)			
PS/2	Function	✓ / -	- / ✓	✓
		Keyboard wedge	Keyboard wedge	Keyboard wedge
USB	Function	✓ / -	- / ✓	✓
		Keyboard wedge, COM-Port emulation	Keyboard wedge, COM-Port emulation	Keyboard wedge, COM-Port emulation
Bluetooth	Function	-	-	✓
	Protocol	-	-	Wireless operating range up to 10 m, batch function for expansion of the wireless radius Bluetooth™ V1.2, Class 2, 2.4 ... 2.4835 GHz
Optical indicators	1 LED (good read)		1 LED (good read, charge of battery, radio connection status)	
Acoustic indicators	Beeper, disengageable (good read)		Beeper, disengageable (good read, radio connection status)	



Mechanics/electronics

	IT4600g	IT4800i	IT4820	IT4820i
Operating voltage	4.5 V DC ... 14 V DC		3.6 V DC ¹⁾	
Housing	Polycarbonate, UL 94V0			
Enclosure rating	IP 41	IP 54	IP 41	IP 54
Weight	185 g, without cable		260 g, incl. rechargeable battery	272 g, incl. rechargeable battery
Dimensions	157 mm x 135 mm x 81 mm	163 mm x 135 mm x 81 mm	157 mm x 135 mm x 81 mm	163 mm x 135 mm x 81 mm

¹⁾ Rechargeable battery operation.

Ambient data

	IT4600g	IT4800i	IT4820	IT4820i
Shock resistance	50 drops from 1.8 m height on concrete	50 drops from 2 m height on concrete	50 drops from 1.8 m height on concrete	50 drops from 2 m height on concrete
Ambient operating temperature	0 °C ... +50 °C			
Storage temperature	-40 °C ... +60 °C			
Permissible relative humidity	95 %, non-condensing			
Ambient light safety	100,000 lx, max. on bar code			

Ordering information

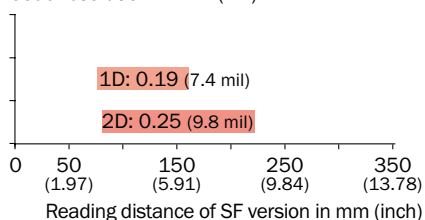
Sub product family	Field of application	Type	Items supplied	Model name	Part no.	
IT4600g	General purpose	High Density	Single scanner	-	IT4600g HD 051CE	6036667
		Short Range	Single scanner	-	IT4600g SF 031CE	6028636
					IT4600g SF 051CE	6028637
		Standard Range	Single scanner	-	IT4600g SR 031CE	6028680
IT4600g SR 051CE	6028681					
IT4800i	Industrial	Short Range	Single scanner	-	IT4800i SF 031CE	6028634
					IT4800i SF 051CE	6028635
		Standard Range	Single scanner	-	IT4800i SR 031CE	6028682
					IT4800i SR 051CE	6028683
		Kit	Kit contains cordless scanner, CDF600, DC/DC converter cable and RS-232 cable	IT4800i SR CDF600 SET	1051650	
IT4820	Cordless	Short Range	Single scanner	-	IT4820 SF 0C1CBE	6029309
					IT4820 SR 0C1CBE	6029310
		Short Range	Kit	EU kit: contains cordless scanner, base station, power supply with European power cord and user guide on CD-ROM	IT4820 SF EU KIT	6034040
					UK-Kit: contains cordless scanner, base station, power supply with United Kingdom power cord and user guide on CD-ROM	IT4820 SF UK KIT	6034041
		Standard Range	Kit	EU kit: contains cordless scanner, base station, power supply with European power cord and user guide on CD-ROM	IT4820 SR EU KIT	6034038
					UK kit: contains cordless scanner, base station, power supply with United Kingdom power cord and user guide on CD-ROM	IT4820 SR UK KIT	6034039
IT4820i	Cordless, industrial	Short Range	Single scanner	-	IT4820i SFE	6034080
		Standard Range	Single scanner	-	IT4820i SRE	6034079
		Short Range	Kit	EU USB kit: contains cordless scanner, base station, straight USB cable, power supply with European power cord and quick start guide	IT4820i SF USB EU KIT	6034078

Sub product family	Field of application	Type	Items supplied		Model name	Part no.
IT4820i	Cordless, industrial	Standard Range	Kit	EU USB kit: contains cordless scanner, base station, straight USB cable, power supply with European power cord and quick start guide	IT4820i SR USB EU KIT	6034076

Reading field diagrams





IT4xxx

Code resolution in mm (mil)






Recommended accessories

Plug connectors and cables


	Brief description	Part no.
	Spiral cord 2.8 m, 6-pin Mini DIN male (42206132-02)	6012110
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-04E)	6010819
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232

Power supply units

	Brief description	Model name	Part no.
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including AC line with North American plug ¹⁾	PS5U-41E	6034790
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with European plug ¹⁾	PS5U-42E	6034941
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with United Kingdom plug ¹⁾	PS5U-43E	6034942

¹⁾ only for wired hand-held scanners.

Rechargeable batteries and battery chargers

	Brief description	Model name	Part no.
	Radio base and charging station for IT2020-5BE Bluetooth	IT2020-5BE	6029312

For additional accessories, please see page L-21

Reliable identification of direct part marked codes



Matrix Camera 	1D 	Stacked 	2D
DPM Marked 	Omni-directional 	Wireless 	



Product description

The IT6300 DPM series offers decoding algorithms specially designed for dealing with the challenges of direct part marked codes. With this scanner, it is now possible to find and decode low contrast or poor quality codes. By combining

innovative optics, specialized software and durability, the IT6300 DPM series is the ideal solution for direct part marking applications. The DPM hand-held scanners are available in tethered as well as in cordless versions.

At a glance

- Illumination adjustable to application
- Decoding algorithms ideal for direct part marked codes
- USB, RS-232, PS/2 interfaces
- IP 54 enclosure rating

Your benefits

- One device capable of reading various marking technologies
- Rugged, ergonomic design ensures reliability under harsh conditions
- Low contrast or highly reflective DPM codes are identified reliably
- Cordless version provides flexibility



Additional information

Detailed technical data.....H-19
 Ordering information.....H-20
 Reading field diagrams.....H-20
 Recommended accessories.....H-21

H

Detailed technical data

Features

Scanner design	2D DPM hand-held scanner
Sensor	1.280 x 960 px
Lighting	Integrated diffuser, configurable LED segments
Aiming	Horizontal, green aiming line
Code resolution	≥ 0.13 mm (depending on type)
Reading distance (at code resolution)	0 mm ... 150 mm (0.5 mm) (depending on type)
Reading field (at distance)	60 mm x 60 mm (40 mm) 100 mm x 100 mm (120 mm) (depending on type)

Performance

	IT6300 DPM	IT6320 DPM
Supported code type	1D, 2D, DPM, Stacked	
Bar code types	EAN13, UPC-A, EAN8, UPC-E, Interleaved 2 of 5, Code 39, Code 128, Code 93, postal codes, RSS, UPU, UCC/EAN-128, Planet	
2D code types	Data Matrix, QR code, MicroQR-Code, PDF417, MicroPDF417	
Code alignment	Omni-directional	
Battery power		1,600 mAh, max. 57,000 cans, max. 12 h (continuous operation), max. 4 h charging time
Batch function		500 Codes (UPC) at 12 characters

Interfaces

	IT6300 DPM	IT6320 DPM
Serial	✓	
Function	RS-232 TTL	
Ethernet	-, optional via external connection module (CDM + CMF)	
CAN bus	-, optional via external connection module (CAN232)	
PROFIBUS	-, optional via external connection module (CDF)	
DeviceNet	-, optional via external connection module (CDM + CMF)	
PS/2	✓	
Function	Keyboard wedge	
USB	✓	
Function	Keyboard wedge, COM-Port emulation	
Bluetooth	-	✓
Function		Wireless operating range up to 10 m, batch function for expansion of the wireless radius
Protocol		Bluetooth™ V1.2, Class 2, 2.4 ... 2.4835 GHz
Optical indicators	1 LED (good read)	2 LEDs (good read, charge of battery)
Acoustic indicators	Beeper, disengageable (good read)	Beeper, disengageable (good read, radio connection status)



Mechanics/electronics

	IT6300 DPM	IT6320 DPM
Operating voltage	5 V DC	3.6 V DC ¹⁾
Housing	Polycarbonate, with shock-absorbing rubber strips	
Housing color	Red/gray	
Enclosure rating	IP 54	
Weight	270 g, without cable	330 g, incl. rechargeable battery
Dimensions	134 mm x 84 mm x 175 mm	

¹⁾ Rechargeable battery operation.

Ambient data

	IT6300 DPM	IT6320 DPM
Shock resistance	50 drops from 2 m height on concrete	25 drops from 2 m height on concrete
Ambient operating temperature	0 °C ... +50 °C	
Storage temperature	-40 °C ... +70 °C	-40 °C ... +60 °C
Permissible relative humidity	95 %, non-condensing	

Ordering information

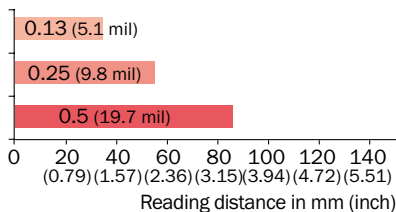
Sub product family	Field of application	Type	Items supplied	Model name	Part no.	
IT6300 DPM	Industrial	Standard Range	Single scanner	-	IT6300 DPM	6032812
			Kit	Kit contains cordless scanner, CDF600, DC/DC converter cable and RS 232 cable	IT6300 DPM CDF600 PROFIBUS SET	1048382
		Long Range	Single scanner	-	IT6300 DPM-LR	6035059
IT6320 DPM	Cordless, industrial	Standard Range	Single scanner	-	IT6320 DPM	6032814
		Long Range	Single scanner	-	IT6320 DPM-LR	6035061
		-	Kit	EU USB kit: contains cordless scanner, base station, straight USB cable, power supply with European power cord and quick start guide	IT6320 DPM USB KIT EU	6032813
				IT6320 DPM-LR USB KIT EU	6035060	

H

Reading field diagrams

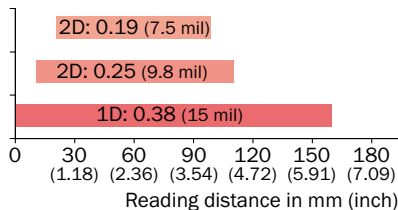
IT6300/IT6320 DPM

Code resolution in mm (mil)







IT6300/IT6320 DPM-LR

Code resolution in mm (mil)






Recommended accessories

Plug connectors and cables


	Brief description	Part no.
	2 m coiled cable for USB, connector type A (42206416-01E), additional power supply needed	6033019
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109
	Straightened RS-232 TTL cable, 2.4 m, 9-pin D-sub connector, voltage on pin 9 (42203758-03S)	6028186
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232

Power supply units

	Brief description	Part no.
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including AC line with North American plug ¹⁾	6034790
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with European plug ¹⁾	6034941
	Universal AC adapter, input AC 100 ... 240 V, output DC 5 V, including the power cable with United Kingdom plug ¹⁾	6034942

¹⁾ only for wired hand-held scanners.

Rechargeable batteries and battery chargers

	Brief description	Model name	Part no.
	Radio base and charging station IT2020-5B-DPME Bluetooth, only for cordless DPM scanners	IT2020-5B-DPME	6036870

For additional accessories, please see page L-24





Intelligent identification

Radio-based RFID technologies in the HF (high frequency) and UHF (ultra high frequency) ranges supplement SICK's industrial automation portfolio. In applications where process-relevant data is modified remotely, RFID makes it possible to store data on writable and rewritable media. And, in contrast to optical solutions, RFID provides reliable identification of all objects – despite dirt and everyday wear.

Your benefits

- Reliable solution for long-term use
- Maintenance-free
- Simple integration into existing machines



RFID

Product family overview I-2



RFH62x I-4
Intelligent RFID communication



RFI341. I-8
Powerful, reliable, flexible high frequency RFID



RFI641. I-10
Powerful, long-range ultra high frequency RFID



RFA3xx. I-12
Industrial RFID HF antenna




RFA6xx. I-14
Industrial RFID UHF antenna

Product family overview

	
RFH62x	RFI341
Intelligent RFID communication	Powerful, reliable, flexible high frequency RFID

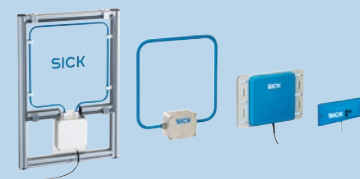
Technical data overview			
Product category	Interrogator (write/read unit)	Interrogator (write/read unit)	
Frequency band	HF (13.56 MHz)	HF (13.56 MHz)	
Type	Short Range	Long Range	
Scanning range	Up to 160 mm	Up to 1.2 m	
Serial (RS-232, RS-422/485)	✓	-	
Serial (RS-232)	-	✓	
Ethernet	- / ✓	✓	
PROFIBUS	- , optional via external connection module (CDF)	- , optional via external connection module (CDF)	
DeviceNet	- , optionally available externally	-	
CAN bus	✓	-	
Weight	450 g / 520 g	4.7 kg / 4.8 kg	

At a glance			
			
	<ul style="list-style-type: none"> • 13.56 MHz short range RFID interrogator • Compact, industrial design with integrated antenna • Suitable for all standard fieldbus and networks • Application-specific modes: command, stand-alone and continuous • Uses SICK SOPAS operating software • Wide range of diagnostic functions • Supports SICK cloning functionality via CMC600 or a SD Micro card 	<ul style="list-style-type: none"> • 13.56 MHz long range RFID interrogator • Global standardized air interface (ISO/IEC 15693) • Freely programmable data output format • Digital switching inputs for trigger control (photoelectric sensors, laser scanners, ...) • Digital switching outputs for process control (Good Read / No Read) • Up to 4 external antennas can be connected using splitter/multiplexer modes of operation • Service function for antenna tuning 	
Detailed information	→ I-4	→ I-8	



RFI641

Powerful, long-range ultra high frequency RFID



RFA3xx

Industrial RFID HF antenna



RFA6xx

Industrial RFID UHF antenna

Interrogator (write/read unit)	Antenna	Antenna
UHF (860 ... 960 MHz)	HF (13.56 MHz)	UHF (860 ... 960 MHz)
Long Range	Short Range Mid Range Long Range	Long Range
Typically up to 5 m	RFA321: up to 450 mm RFA331: up to 650 mm RFA341: up to 1,200 mm	-
-	-	-
✓	-	-
✓	-	-
- , optionally available externally	-	-
-	-	-
-	-	-
2.95 kg / 8 kg	800 g ... 6.6 kg	470 g

<ul style="list-style-type: none"> • Connections for up to 4 antennas • Flexible data interfaces (Ethernet, RS-232) • Programmable digital inputs and outputs • Integrated Linux operating system with web server functionality • 2 watts of transmission power, up to 5 m range 	<ul style="list-style-type: none"> • Large writing/reading ranges • Maintenance-free 	<ul style="list-style-type: none"> • Large writing/reading ranges • Compact design
→ I-10	→ I-12	→ I-14

Intelligent RFID communication



Micro SD Card

2 x Button

CE **FC**

Additional information

Detailed technical data I-5

Ordering information I-6

Reading field diagrams I-6

Recommended accessories I-6

Dimensional drawings M-14

Product description

The RFH620 is compact, high frequency (HF) write/read unit for ranges up to 160 mm. Thanks to its compact design and integrated antenna, it is a cost-effective and flexible solution for logistics. Integrated signal and data processing ensure

extremely high ID process speeds. Trigger signals and output control enable use as a locally controlled unit. It is ISO/IEC-15693 compatible. Compatible with all CLV scanner accessories, such as CMC600 and uses SOPAS operating software.

At a glance

- 13.56 MHz short range RFID interrogator
- Compact, industrial design with integrated antenna
- Suitable for all standard fieldbus and networks
- Application-specific modes: command, stand-alone and continuous
- Uses SICK SOPAS operating software
- Wide range of diagnostic functions
- Supports SICK cloning functionality via CMC600 or a SD Micro card

Your benefits

- Reliable identification ensures maximum throughput
- Adapts to changing needs, ensures investment over the long term
- Simple integration, saves installation time
- A wide range of functionality ensures a flexible solution
- Maintenance-free
- Compatible SICK connector technology

Detailed technical data

Features

Product category	Interrogator (write/read unit)
Scanning range	Up to 160 mm
Antenna	Integrated
Further functions	Heartbeat, triggering, diagnosis, freely programmable data output format, cloning function (SD card or system), updatable firmware

Interfaces

HF interface	✓
Carrier frequency	13.56 MHz
Output power	200 mW
RFID standard	ISO/IEC 15693
Serial (RS-232, RS-422/485)	✓
Data transmission rate	0.3 kBaud ... 500 kBaud
Protocol	STX/ETX, SICK Standard (SOPAS-ET CoLa A)
Ethernet	- / ✓ (depending on type)
Data transmission rate	10 Mbit/s ... 100 Mbit/s
Protocol	TCP/IP, EtherNet/IP, half/full-duplex
PROFIBUS	-, optional via external connection module (CDF)
DeviceNet	-, optionally available externally
CAN bus	✓
Data transmission rate	20 kbit/s ... 1,000 kbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
Switching inputs	
Standard	2 (2 additional inputs via CMC600 in CDB620)
Ethernet	1 (2 additional inputs via CMC600 in CDB620)
Switching outputs	
Standard	2 (2 additional outputs via CMC600 in CDB620)
Ethernet	0 (2 outputs via CMC600 in CDB620)
Optical indicators	6 LED
Acoustic indicators	1 Beeper (to confirm reading, adjustable)

Mechanics/electronics

Operating voltage	10 V DC ... 30 V DC
Power consumption	5 W
Housing color	Blue, black
Enclosure rating	IP 67
Protection class	III
Weight	450 g / 520 g (depending on type)
Dimensions	147 mm x 88 mm x 39 mm ¹⁾

¹⁾ Pivotal connector unit is 15 mm longer with Ethernet model.

Ambient data

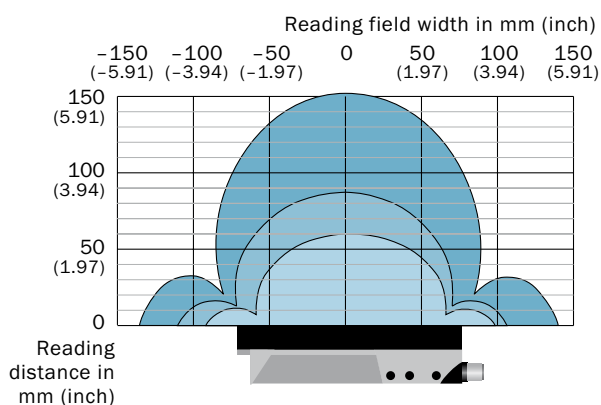
Radio equipment type approval	EN 300330, FCC Part 15
Electromagnetic compatibility (EMC)	EN 301489
Ambient operating temperature	-20 °C ... +60 °C
Permissible relative humidity	95 %, non-condensing

Ordering information

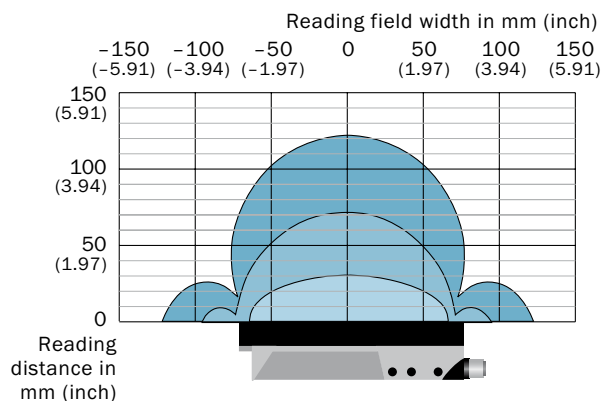
- Frequency band: HF (13.56 MHz)
- Type: Short Range

Connection type	Model name	Part no.
Standard	RFH620-1000001	1044838
Ethernet	RFH620-1001201	1044839

Reading field diagrams






- Coin 16
- Disc 30
- ISO Card





- Glass transponder
- On-metal
- Disc 50

Recommended accessories

Modules

	Brief description	Model name	Part no.
	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620 to a PROFIBUS network	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362

Plug connectors and cables

	Brief description	Part no.
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)	6034414
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-Sub, 2 m (socket/plug)	2041834

For additional accessories, please see page L-27



Powerful, reliable, flexible
high frequency RFID



Product description

The Interrogator RFI341 is a high frequency (HF), 13.56 MHz RFID write/read unit. Because of its high transmission rate and maximum sensitivity, read ranges of up to 1.2 m can be achieved, depending on the antenna and trans-

ponder used. It is possible to simultaneously read up to 50 Tag UIDs (64 bit) per second. Two to four antennas can be operated using an optional external splitter or multiplexer. It is also ISO/IEC-15693 compatible.

At a glance

- 13.56 MHz long range RFID interrogator
- Global standardized air interface (ISO/IEC 15693)
- Freely programmable data output format
- Digital switching inputs for trigger control (photoelectric sensors, laser scanners, ...)
- Digital switching outputs for process control (Good Read / No Read)
- Up to 4 external antennas can be connected using splitter/multiplexer modes of operation
- Service function for antenna tuning

Your benefits

- Reads reliably – even at higher conveyor speeds
- Adapts to changing needs, ensures investment over the long term
- Widely available low-cost transponders due to compatibility with ISO/IEC15693 standard
- Easy to integrate into existing systems, saving installation time
- A self-sufficient solution, maintains local control
- Maintenance-free



Additional information

Detailed technical data. I-9
Ordering information. I-9
Accessories L-27

Detailed technical data

Features

Product category	Interrogator (write/read unit)
Scanning range	Up to 1.2 m
Splitter	External
Multiplexer	External
Service functions	Application-specific antenna setting via integrated standing wave measurement with acoustic and optic display
Further functions	Heartbeat, triggering, diagnosis, command mode, stand-alone mode, updatable firmware

Interfaces

HF interface	✓
Carrier frequency	13.56 MHz
Output power	4 W (adjustable in four steps: 0.7 W, 1 W, 2 W and 4 W) / 3.4 W (depending on type)
RFID standard	ISO/IEC 15693
Serial (RS-232)	✓
Data transmission rate	9.600, 19.200, 38.400, 57.600, 115.200 Bd
Protocol	STX/ETX
Ethernet	✓
Protocol	TCP/IP, STX/ETX
PROFIBUS	-, optional via external connection module (CDF)
Switching inputs	2 (Ue = max. DC 30 V, electrically isolated)
Switching outputs	2 (short-circuit proof, overload-proof, I _{max} = 400 mA)
Optical indicators	2 LED

Mechanics/electronics

Electrical connection	Terminal strip / 6 M12 (depending on type)
Operating voltage	20 V ... 29 V
Power consumption	50 W, when switching outputs are not connected
Housing	Steel sheet
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65
Protection class	III
Weight	4.7 kg / 4.8 kg (depending on type)
Dimensions	300 mm x 200 mm x 120 mm

Ambient data

Radio equipment type approval	EN 300330
Ambient operating temperature	-20 °C ... +50 °C
Storage temperature	-20 °C ... +60 °C

Ordering information

- Frequency band: HF (13.56 MHz)
- Type: Long Range

Version	Model name	Part no.
Base	RFI341-1503	1043330
M12	RFI341-1503S02	1044537
FCC	RFI341-1503S04	1045449

For accessories, please see page L-27

Powerful, long-range ultra high frequency RFID



Product description

The RFI641 is an ultra high frequency (UHF) RFID write/read unit for ranges up to 5 m. Up to 4 external antennas can be used with the system. Individual events can be triggered and signalled via 4 inputs/ outputs. The system has an integrated Linux operating system. It can be operated either via the web interface (Ethernet) or via Ethernet or RS-232. The

device has special application software with which the customer can parameterize event-driven output data. Customer-specific application solutions can also be written in Java/Python (programming languages) and implemented on the device. The RFI641 is ISO/IEC-18000-6C transponder compatible.

At a glance

- Connections for up to 4 antennas
- Flexible data interfaces (Ethernet, RS-232)
- Programmable digital inputs and outputs
- Integrated Linux operating system with web server functionality
- 2 watts of transmission power, up to 5 m range

Your benefits

- Meets global standards
- Integrated application-specific software, saves commissioning time
- Data can be filtered in the device, minimizes the need for external hardware, streamlining data processing
- Flexible data output format for easy use
- Programmable digital inputs for trigger control
- The digital switching outputs ensure direct process control



Additional information

Detailed technical data.....	I-11
Ordering information.....	I-11
Accessories.....	L-27
Dimensional drawings.....	M-15

Detailed technical data

Features

Product category	Interrogator (write/read unit)
Scanning range	Typically up to 5 m
Multiplexer	Integrated, 4 antenna connections
Further functions	Triggering, diagnosis, remote control, updatable firmware

Interfaces

UHF interface	Carrier frequency	860 MHz ... 960 MHz, Europe, USA and Asia
	Output power	2 W
	RFID standard	EPC Gen2, ISO/IEC 18000-6C
Serial (RS-232)	Data transmission rate	1,200 Baud ... 115,200 kBaud
	Protocol	STX/ETX
Ethernet	Protocol	TCP/IP, STX/ETX
PROFIBUS		-, optionally available externally
Switching inputs		4
Switching outputs		4
Optical indicators		6 LEDs (4 in the device cover and 2 on the Ethernet connection)

Mechanics/electronics

Operating voltage	115 V AC ... 230 V AC
Power consumption	60 W, when switching outputs are not connected
Housing	Steel sheet / Aluminum (depending on type)
Housing color	Gray / light blue (RAL 5012) (depending on type)
Enclosure rating	IP 65 / IP 40 (depending on type)
Protection class	III
Weight	8 kg / 2.95 kg (depending on type)
Dimensions	400 mm x 500 mm x 156 mm 220 mm x 342 mm x 56 mm (depending on type)

Ambient data

Radio equipment type approval	EN 302 208 / FCC Part 15
Ambient operating temperature	-20 °C ... +60 °C (depending on type)
Permissible relative humidity	95 %, non-condensing

Ordering information


- **Frequency band:** UHF (860 ... 960 MHz)
- **Type:** Long Range


	Version	Model name	Part no.
	Cabinet	RFI641-1522	1044139
	Base	RFI641-0422	6034315

For accessories, please see page L-27

Industrial RFID HF antenna







Additional information

Detailed technical data I-13

Ordering information I-13

Accessories L-30

Product description

The high-performance RFA3xx series of antennas are used for wireless identification of objects with passive transponders. The maximum effective range of the near field is possible using an optimized

antenna gain (Q-factor). The RFA321 and RFA341 antennas can also be adapted for specific surroundings using smoothing capacitors.

At a glance

- Large writing/reading ranges
- Maintenance-free

Your benefits

- Reliable identification
- Clear traceability
- Adapts to changing needs, ensures investment over the long term
- Simple integration, saves installation time

Detailed technical data

Features

	RFA321 Short Range	RFA331 Mid Range	RFA341 Long Range
Product category	Antenna		
Scanning range	4 W: up to 450 mm	4 W: up to 650 mm	4 W: up to 1,200 mm
Further functions	Antenna tuning	-	Antenna tuning
Supported products	Interrogator RFI341		

Interfaces

HF interface	✓
Carrier frequency	13.56 MHz

Mechanics/electronics

	RFA321 Short Range	RFA331 Mid Range	RFA341 Long Range
Electrical connection	BNC plug		
Housing	Plastic		Plastic / metal (depending on type)
Housing color	Light blue (RAL 5012)		
Frame	-		PVC-U/Plexiglas
Enclosure rating	IP 67 (EN 60529 (1991-10))	IP 40	IP 65 (EN 60529 (1991-10), A1 (2002-02))
Protection class	III (VDE 0106)		III (EN 61140 (2002-03))
Weight	800 g	1.1 kg	6.6 kg / 1.7 kg (depending on type)
Dimensions	260 mm x 110 mm x 45 mm	300 mm x 210 mm x 33 mm	516 mm x 765.5 mm x 58.6 mm 450 mm x 400 mm x 71 mm (depending on type)
Incoming impedance	50 Ohm		
Input power	< 4 W		

Ambient data

Ambient operating temperature	0 °C ... +50 °C	-20 °C ... +70 °C
Storage temperature	-20 °C ... +60 °C	-20 °C ... +70 °C

Ordering information


- Frequency band: HF (13.56 MHz)

Type	Model	Model name	Part no.
Short Range	-	RFA321-1701	1042834
Mid Range	-	RFA331-1020	1028858
Long Range	With mounting frame	RFA341-1400	1042754
	Without mounting frame	RFA341-3520	1028857


For accessories, please see page L-30

Industrial RFID UHF antenna





SICK



Additional information

Detailed technical data I-15

Ordering information I-15

Accessories L-30

Product description

The RFA641 is a multi-purpose UHF antenna. It offers a broad frequency range that can be used in many logistics and industrial applications, such as tote tracking or baggage identification.

The antenna's compact design enables quick and easy installation. In combination with the antenna cable, it can be installed up to 10 m from the RFI641 UHF interrogator.

At a glance

- Large writing/reading ranges
- Compact design

Your benefits

- Reliable identification
- Simple integration, saves installation time
- Clear traceability
- Adapts to changing needs, ensures investment over the long term

Detailed technical data

Features

Product category	Antenna
Supported products	Interrogator RFI641

Interfaces

UHF interface	✓
Carrier frequency	860 MHz ... 960 MHz, Europe and USA
Connection	N socket, 0.3 m cable, impedance 50 ohm
Standing wave ratio	< 1.3
Gain	7 dBi (± 1 dBi)

Mechanics/electronics

Housing	ABS
Enclosure rating	IP 54
Weight	470 g
Dimensions	254.5 mm x 253 mm x 56.5 mm

Ambient data

Ambient operating temperature	-20 °C ... +70 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	95 %, non-condensing

Ordering information

Frequency band	Type	Model name	Part no.
UHF (860 ... 960 MHz)	Long Range	RFA641-3440	6034316

For accessories, please see page L-30



Secure – flexible – quick

SICK's cutting-edge technology is incorporated into its logistics automation system solutions. We offer a wide range of global services ... from ideas and consulting to implementation and on-site after-sales service. SICK's dedicated experts are able to provide the right, high-quality solution – even for the most challenging applications.





J




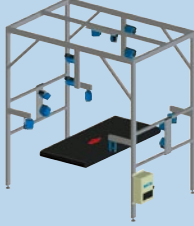

System solutions

Product family overview J-2

	OPS400 J-6 Complete omni-directional reading performance in compact design
	OPS (customized) J-10 A clear edge in logistics sortation
	ALIS J-12 Airport Luggage Identification System – making sure your luggage gets there
	ICR88x J-14 Compact and powerful line-scan camera system
	ICR89x J-18 The next generation high-end camera system

	VMS410/510 J-22 The single-head volume measurement system for cuboidal objects
	VMS420/520 J-24 The dual-head, high-speed volume measurement system for nearly any shape
	DWS Static. J-26 The manual dimensioning weighing scanning system
	DWS Dynamic J-28 Your “package solution” from a single source

Product family overview

	 <p>OPS400</p>	 <p>OPS (customized)</p>	 <p>ALIS</p>	
	<p>Complete omni-directional reading performance in compact design</p>	<p>A clear edge in logistics sortation</p>	<p>Airport Luggage Identification System – making sure your luggage gets there</p>	

Technical data overview				
Type of system	Code reading systems		Code reading systems	
Model	Laser-based bar code scanners		Laser-based bar code scanners	
Serial (RS-232, RS-422/485)	✓ (RS-232, RS-422/485)		✓ (RS-232, RS-422/485)	
Ethernet	- , optional via external connection module (CDM + CMF)		✓ (3)	
CAN bus	✓ , limited		✓ (2)	
PROFIBUS	- , optional via external connection module (CDM + CMF)		✓ , via MSC800 controller	
DeviceNet	- , optional via external connection module (CDM + CMF)		-	

At a glance				
	<ul style="list-style-type: none"> • Compact housing • Single-sided, omni-directional reading • Real-time auto focus function • Reliable code reading through SMART code recognition technology • Integrated tracking for minimum object distances 	<ul style="list-style-type: none"> • Excellent performance • Real-time auto focus function – no additional components needed for detection of object distances • Use of SICK high-end scanners • Cloning modules store the configuration parameters for each scanner and quick release brackets precisely maintain scanner alignment • Variety of bus connection modules can be integrated 	<ul style="list-style-type: none"> • Optional 100 % redundant design • Suitable for belt conveyors and container-type sorters • Extremely high read rates • For T-codes, linear codes and IATA RFID-tags • Real-time auto focus function • Uses tried-and-tested high-performance CLV490 scanners 	

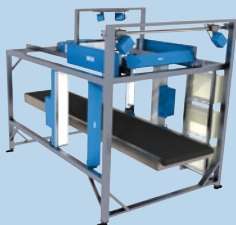
<p>Detailed information</p>	<p>→ J-6</p>	<p>→ J-10</p>	<p>→ J-12</p>	
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J



ICR88x

Compact and powerful line-scan camera system



ICR89x

The next generation high-end camera system



VMS410/510

The single-head volume measurement system for cuboidal objects



VMS420/520


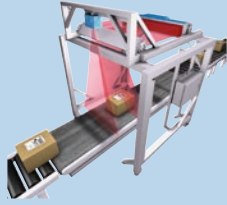
The dual-head, high-speed volume measurement system for nearly any shape

	Code reading systems Image-based code readers	Code reading systems Image-based code readers	Volume measurement systems 1-scanner solution	Volume measurement systems 2-scanner solution
	✓ (RS-232)	✓ (RS-232)	✓ (RS-232, RS-422)	✓ (RS-232, RS-422)
	✓ (3)	✓ (3)	- / ✓	- / ✓
	✓ (2)	✓ (2)	-	-
	✓ , via MSC800 controller	✓ , via MSC800 controller	- / ✓	- / ✓
	-	-	-	-

<ul style="list-style-type: none"> • High-end camera system; optimized for short reading distances • Highest level of integration – all decoders onboard • Highest level of reliability – no external PCs needed • 1D and 2D codes supported • Parameter cloning for all components • High line rate of 19 kHz for high-resolution images (> 200 dpi) • Integration of laser scanners and dimension systems possible • Industrial design for highest reliability <p>→ J-14</p>	<ul style="list-style-type: none"> • Large reading field for conveyor coverage up to 1,300 mm • High-end CCD sensor (8,192 pixel) • Integrated, real-time focus control • Integrated high-performance decoder board • OCR compatible picture quality • Online status monitoring of all system components • Scalable solutions based on MSC800 network controller • Integration of dimensioning systems and scales possible <p>→ J-18</p>	<ul style="list-style-type: none"> • Measures length, width and height of an object • Calculation of the smallest rectangular box that fully encloses the object (box volume) • Optimized application software • All measuring functions are built in the measuring head, no additional evaluation unit is required <p>→ J-22</p>	<ul style="list-style-type: none"> • Measurement of length, width and height of any shaped object • Calculation of the smallest rectangular box that fully encloses the object (box volume) • Calculation of real volume • Optimized application software • All measuring functions are built in the measuring head, no additional evaluation unit is required <p>→ J-24</p>
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Product family overview

	 <p style="text-align: center;">DWS Static</p>	 <p style="text-align: center;">DWS Dynamic</p>
	The manual dimensioning weighing scanning system	Your "package solution" from a single source
Technical data overview		
Type of system	Hybrid systems	Hybrid systems
Serial (RS-232, RS-422)	✓	✓
Ethernet	✓	✓
PROFIBUS	✓	✓
At a glance		
	<ul style="list-style-type: none"> • Dimensioning, weighing and identification data at the push of a button • Complete solution with integrated frame and roller conveyor • Commissioning within a few minutes • Legal-for-trade certified (according to OIML, MID and NAWI) 	<ul style="list-style-type: none"> • Legal-for-trade capture of volume and weight data with integrated code reading • Flexible system design individually adapted for your application • Highest measurement accuracy – even in rough industrial environments • Extremely high read rates in combination with proven reliability • Full integration in existing conveyor systems without reduction of throughput
Detailed information	→ J-26	→ J-28





Complete omni-directional reading performance in compact design



Product description

The OPS400 offers simple operation for omni-directional reading for logistics processes. The functionality of the omni-portal system is integrated in a single housing and covers the same width at the same scanning frequency as SICK’s customized OPS system. The OPS400

incorporates SICK’s proprietary SMART code reading technology, a real-time auto focus function and integrated tracking. As a result, the application can be easily solved – even with short object distances and wide object height differences.

At a glance

- Compact housing
- Single-sided, omni-directional reading
- Real-time auto focus function
- Reliable code reading through SMART code recognition technology
- Integrated tracking for minimum object distances

Your benefits

- No supplementary components necessary for changing focus position, reducing costs
- Reads labels that are dirty or partially concealed, reducing manual processing
- High level of operational reliability
- Service-friendly and economical



Additional information

- Detailed technical data J-7
- Ordering information J-8
- Dimensional drawings M-16

J

Detailed technical data

Features

	OPS400-00 Standard Density	OPS400-20 High Density	OPS400-60 Low Density
Reading field	Front		
Focus	Auto focus (alternative: dynamic focus control)		
No. of distance configurations	8		
Focus adjustment time	≤ 20 ms		
Focus trigger source	Switching inputs "Sensor 1-1 ... 1-7", timer		
Light source	Visible red light (650 nm)		
MTBF	80,000 h		
Laser class	2 (DIN EN 60825-1)		
Field of view	≤ 60°		
Scanning frequency	600 Hz ... 1,200 Hz		
Code resolution	0.25 mm ... 1 mm	0.17 mm ... 0.4 mm	0.5 mm ... 1.2 mm
Reading distance (at code resolution)	500 mm ... 2,000 mm (0.5 mm)	400 mm ... 1,500 mm (0.3 mm)	500 mm ... 1,700 mm (0.5 mm)

Performance

Bar code types	All current code types, including Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, Interleaved 2 of 5
Print ratio	2:1 ... 3:1
No. of codes per scan	1 ... 12 (Standard decoder, SMART decoder)
No. of codes per reading interval	40
No. of characters per reading interval	600
No. of multiple readings	1 ... 99

Interfaces

Serial (RS-232, RS-422/485)	✓
Function	Host, AUX (only RS-232)
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	-, optional via external connection module (CDM + CMF)
CAN bus	✓, limited
Function	Internal to OPS400
PROFIBUS	-, optional via external connection module (CDM + CMF)
DeviceNet	-, optional via external connection module (CDM + CMF)
Switching inputs	12 ("Trigger 1 ... 3", "INC 1 ... 2", "Sensor 1-1 ... 1-7")
Switching outputs	4 ("Result 1" ... "Result 4")
Reading pulse	3 switching inputs (Trigger 1, 2 and 3), software trigger (data interface)
Optical indicators	26 LEDs (function indicator)
Acoustic indicators	optional

Mechanics/electronics

Electrical connection	Screw terminals
Operating voltage	86 V AC ... 264 V AC
Power consumption	70 W
Housing	Steel sheet with aluminum cover and base, no materials containing silicone on the outside surface
Enclosure rating	IP 54 (DIN 40 050) ¹⁾
Protection class	III (VDE 0106/IEC 1010-1)
Weight	10.7 kg
Dimensions	598 mm x 270 mm x 158 mm

¹⁾ Optics IP 65.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-4 (2001-10)
Vibration resistance	IEC 68-2-6 Test FC
Shock resistance	IEC 68-2-27 Test EA
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

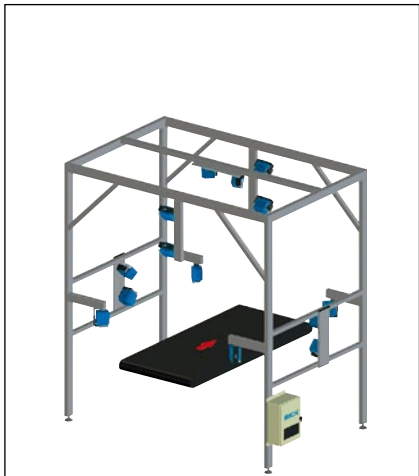
Ordering information

- **Model:** Laser-based bar code scanners

Type	Model name	Part no.
Standard Density	OPS400-00	1019691
High Density	OPS400-20	1019692
Low Density	OPS400-60	1019693



A clear edge in logistics sortation



Product description

The omni-directional OPS (Omni-Portal System) from SICK helps optimize logistics processes. As a complete, optimized system for identifying bar codes on goods and freight, it is ideal for state-of-the-art logistics demands. The use

of individual scanners allows customized configurations for a number of applications. Thousands of installations worldwide illustrate the reliability and performance capability of the OPS.

At a glance

- Excellent performance
- Real-time auto focus function – no additional components needed for detection of object distances
- Use of SICK high-end scanners
- Cloning modules store the configuration parameters for each scanner and quick release brackets precisely maintain scanner alignment
- Variety of bus connection modules can be integrated

Your benefits

- Modular design permits individual adaptation to your application
- High level of operational reliability
- Highly cost-effective



Additional information

Detailed technical data..... J-11

Ordering information..... J-11

J

Detailed technical data

Interfaces

Serial (RS-232, RS-422/485)	✓
Function	AUX (only RS-232)
Data transmission rate	AUX: 9,600 Baud
Ethernet	✓ (3)
Function	AUX
Data transmission rate	1x 10/100 Mbit/s, 2x Gbit/s
Protocol	TCP/IP, FTP, half/full-duplex
CAN bus	✓ (2)
Function	CAN sensor network (Master/Slave, Multiplexer)
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	✓, via MSC800 controller
Switching inputs	12 ("Trigger 1 ... 3", "INC 1 ... 2", "Sensor 1-1 ... 1-7")
Switching outputs	4 ("Result 1" ... "Result 4")
Reading pulse	3 switching inputs (Trigger 1, 2 and 3), software trigger (data interface)
Optical indicators	26 LEDs (function indicator)
Acoustic indicators	Optional

Ambient data

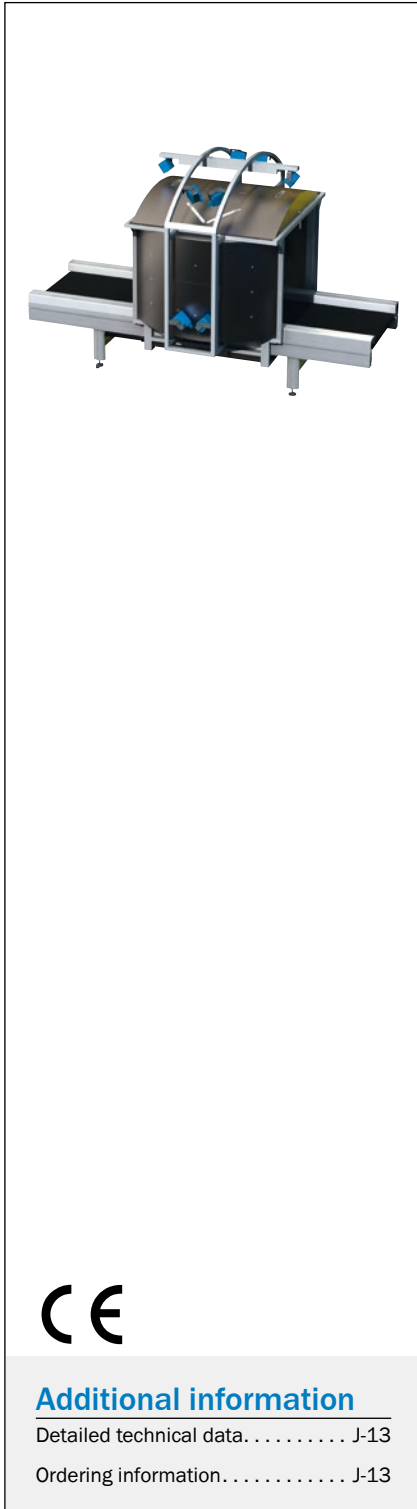
Electromagnetic compatibility (EMC)	EN 61000-6-2 (2001-10) / EN 61000-6-4 (2001-10)
Vibration resistance	IEC 68-2-6 Test FC
Shock resistance	IEC 68-2-27 Test EA
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	2,000 lx, on bar code
Bar code print contrast (PCS)	≥ 60 %

Ordering information

Model	Model name	Part no.
Laser-based bar code scanners	OPS customized	On request



Airport Luggage Identification System – making sure your luggage gets there



Product description

To make sure that your luggage gets sorted quickly and transferred to the correct destination, SICK offers ALIS – a state-of-the-art bar code reader and RFID system that is designed to identify IATA bar codes and/or RFID tags on airport luggage. As one of the few manufactur-

ers in this field, we provide turn-key systems – from electronic components, photoelectric sensors and evaluation software, to commissioning services. SICK can also help plan and engineer your system and support you through every phase of the project.

At a glance

- Optional 100 % redundant design
- Suitable for belt conveyors and container-type sorters
- Extremely high read rates
- For T-codes, linear codes and IATA RFID-tags
- Real-time auto focus function
- Uses tried-and-tested high-performance CLV490 scanners

Your benefits

- Reads labels that are dirty or partially concealed, reducing manual processing
- Cloning modules store the configuration parameters for each scanner and quick release brackets precisely maintain scanner alignment
- High level of operational reliability
- Service-friendly and economical



Additional information

- Detailed technical data..... J-13
- Ordering information..... J-13

J

Detailed technical data

Interfaces

Serial (RS-232, RS-422/485)	✓
Function	Host, AUX
Data transmission rate	300 Baud ... 57,600 Baud, AUX: 9,600 Baud
Ethernet	✓ (3)
Function	AUX
Data transmission rate	1x 10/100 Mbit/s, 2x Gbit/s
Protocol	TCP/IP, FTP, half/full-duplex
CAN bus	✓ (2)
Function	CAN sensor network
Data transmission rate	10 kbit/s ... 1 Mbit/s
Protocol	CANopen, CSN (SICK CAN sensor network)
PROFIBUS	✓, via MSC800 controller
Switching inputs	16 (LED, opto-decoupled (Trigger 1 ...3, Increment 1 - 2, Sensor 1-1 ... 1-7, Sensor 2-1 ... 2-4))
Switching outputs	4 (LED) 1 (Relay Output)
Optical indicators	Optional
Acoustic indicators	Optional

Ordering information

Model name	Part no.
ALIS – Airport Luggage Identification System	On request

Compact and powerful line-scan camera system



Product description

The ICR880 vision system covers the high-end applications for linear and 2D code reading. The modular camera design includes an integrated illumination, focus control functionality and high-performance decoder.

The ICR880 is optimized for small sorter applications. Thanks to the short reading distance the system can be built up with a very compact footprint.

At a glance

- High-end camera system; optimized for short reading distances
- Highest level of integration – all decoders onboard
- Highest level of reliability – no external PCs needed
- 1D and 2D codes supported
- Parameter cloning for all components
- High line rate of 19 kHz for high-resolution images (> 200 dpi)
- Integration of laser scanners and dimension systems possible
- Industrial design for highest reliability

Your benefits

- Compact design without deflection mirrors; easy to install
- Increased read rates due to high-resolution images and powerful decoders
- Possibility of image-output for tracking and analysis
- “One-component-solution” instead of multiple matrix camera arrays
- Maintenance free system design
- Reduced energy consumption due to reduced lighting and integrated decoder
- Easy configuration with SOPAS engineering tool
- High reliability (80,000 h MTBF); short MTTR (10 min)



Additional information

- Detailed technical data. J-15
- Ordering information. J-16
- Reading field diagrams. J-16

J

Detailed technical data

Features

Reading field	Front
Focus	Dynamic focus control
Sensor	Line camera
Sensor resolution	8,192 px (200 dpi) (1.3 m)
Light source	Visible red light (620 nm)
MTBF	80,000 h
Scanning frequency	19,100 Hz
Reading distance (at code resolution)	0.8 m ... 1.35 m (0.2 mm)
MTTR (Mean time to repair)	< 10 min
Covered conveyor width	800 mm (200 dpi)
Depth of field	550 mm (200 dpi)
Lens	80 mm (standard)

Performance

Bar code types	EAN 128, Code 39, Code 128, EAN/UPC with add-on, Codabar, Interleaved 2 of 5
2D code types	Data Matrix ECC200, PDF417, MaxiCode, QR code, others on request
OCR fonts	On request
Print ratio	2:1 ... 3:1
Transport speed	4.8 m/s (100 lpi)
Minimum object distance	50 mm
Number of objects per second	10

Interfaces

Serial (RS-232)	Function	✓ AUX
	Data transmission rate	≤ 57,600 Baud
Ethernet	Function	✓ (3) AUX, real-time image output
	Data transmission rate	1x 10/100 Mbit/s, 2x Gbit/s
	Protocol	TCP/IP, FTP, half/full-duplex
CAN bus	Function	✓ (2) CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
PROFIBUS		✓, via MSC800 controller
Reading pulse		CAN
Optical indicators		5 LEDs (Status displays)
Memory card		SD card, 128 MB

Mechanics/electronics

Electrical connection	7 x M12 2 x RJ45 1 x IN/OUT power supply
Power consumption	155 W, typical
Housing	Die-cast aluminum, Aluminum extruded profile
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 64 (DIN 40 050)
Protection class	III (IEC 1010-1)
Weight	28.5 kg
Dimensions	874 mm x 348 mm x 231 mm

Ambient data

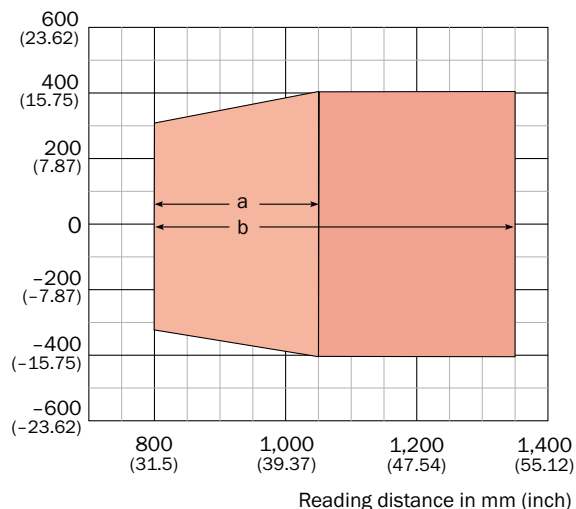
Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	IEC 68-2-6
Shock resistance	IEC 68-2-27 / IEC 68-2-32
Ambient operating temperature	0 °C ... +50 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	95 %, non-condensing
Ambient light safety	2,000 lx, on code
Bar code print contrast (PCS)	≥ 40 %

Ordering information

Model	Model name	Part no.
Image-based code readers	ICR880 System	On request

Reading field diagrams

Reading field height in mm (inch)



Resolution

a: 0.15 mm (5.9 mil), 250 dpi
 b: 0.20 mm (7.9 mil), 200 dpi



The next generation high-end camera system



Product description

The ICR890 is a CCD-based camera system that reads 1D and 2D bar codes used in high-performance sortation systems. It provides the highest available resolution and the best image quality on the market, resulting in better overall performance. Its fully integrated modular

design offers on-the-fly JPEG compression that allows for OCR-quality images that take less network bandwidth. The ICR890 includes increased processing power, support of multiple image output paths, optimized decoders, and extended XML file content.

At a glance

- Large reading field for conveyor coverage up to 1,300 mm
- High-end CCD sensor (8,192 pixel)
- Integrated, real-time focus control
- Integrated high-performance decoder board
- OCR compatible picture quality
- Online status monitoring of all system components
- Scalable solutions based on MSC800 network controller
- Integration of dimensioning systems and scales possible

Your benefits

- Fast and reliable identification of poorly printed codes, optimizes read rates
- Easy configuration with SOPAS software minimizes installation and maintenance efforts
- Real-time performance monitoring and analysis using SICK visualization platform SVP
- Modular design ensures a short mean time to repair (MTTR under 10 min.)
- High reliability (80,000 h MTBF) ensures a long lifetime
- Low cost of ownership
- Maintenance-free, no cyclic calibrations
- Simple component exchange via a quick-action lock system



Additional information

Detailed technical data.....	J-19
Ordering information.....	J-20
Reading field diagrams.....	J-20
Dimensional drawings	M-16

Detailed technical data

Features

Reading field	Front
Focus	Dynamic focus control
Sensor	Line camera
Sensor resolution	8,192 px (200 dpi) (2.5 m)
Light source	Visible red light (620 nm)
MTBF	80,000 h
Scanning frequency	19,100 Hz
Reading distance (at code resolution)	1.4 m ... 3.3 m (0.3 mm)
MTTR (Mean time to repair)	< 10 min
Covered conveyor width	1,300 mm (150 dpi)
Depth of field	1,600 mm (150 dpi)
Lens	135 mm (standard)

Performance

Bar code types	EAN 128, Code 39, Code 128, EAN/UPC with add-on, Codabar, Interleaved 2 of 5
2D code types	Data Matrix ECC200, PDF417, MaxiCode, QR code, others on request
OCR fonts	On request
Print ratio	2:1 ... 3:1
Transport speed	4.8 m/s (100 lpi)
Minimum object distance	50 mm
Number of objects per second	10

Interfaces

Serial (RS-232)	Function	✓ AUX
	Data transmission rate	≤ 57,600 Baud
Ethernet	Function	✓ (3) AUX, real-time image output
	Data transmission rate	1x 10/100 Mbit/s, 2x Gbit/s
	Protocol	TCP/IP, FTP, half/full-duplex
CAN bus	Function	✓ (2) CAN sensor network (Master/Slave, Multiplexer)
	Data transmission rate	10 kbit/s ... 1 Mbit/s
PROFIBUS		✓, via MSC800 controller
Reading pulse		CAN
Optical indicators		5 LEDs (Status displays)
Memory card		SD card, 128 MB

Mechanics/electronics

Electrical connection	7 x M12 2 x RJ45 1 x IN/OUT power supply
Power consumption	250 W, typical
Housing	Die-cast aluminum, Aluminum extruded profile
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 64 (DIN 40 050)
Protection class	III (IEC 1010-1)
Weight	37 kg
Dimensions	1,224 mm x 348 mm x 231 mm

Ambient data

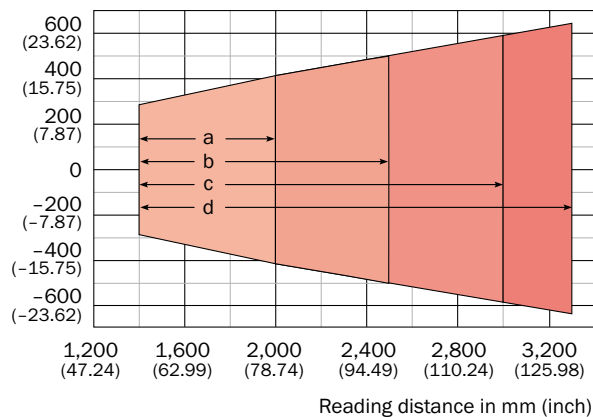
Electromagnetic compatibility (EMC)	EN 61000-6-2 / EN 61000-6-4
Vibration resistance	IEC 68-2-6
Shock resistance	IEC 68-2-27 / IEC 68-2-32
Ambient operating temperature	0 °C ... +50 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	95 %, non-condensing
Ambient light safety	2,000 lx, on code
Bar code print contrast (PCS)	≥ 40 %

Ordering information

Model	Model name	Part no.
Image-based code readers	ICR890 System	On request

Reading field diagrams

Reading field height in mm (inch)

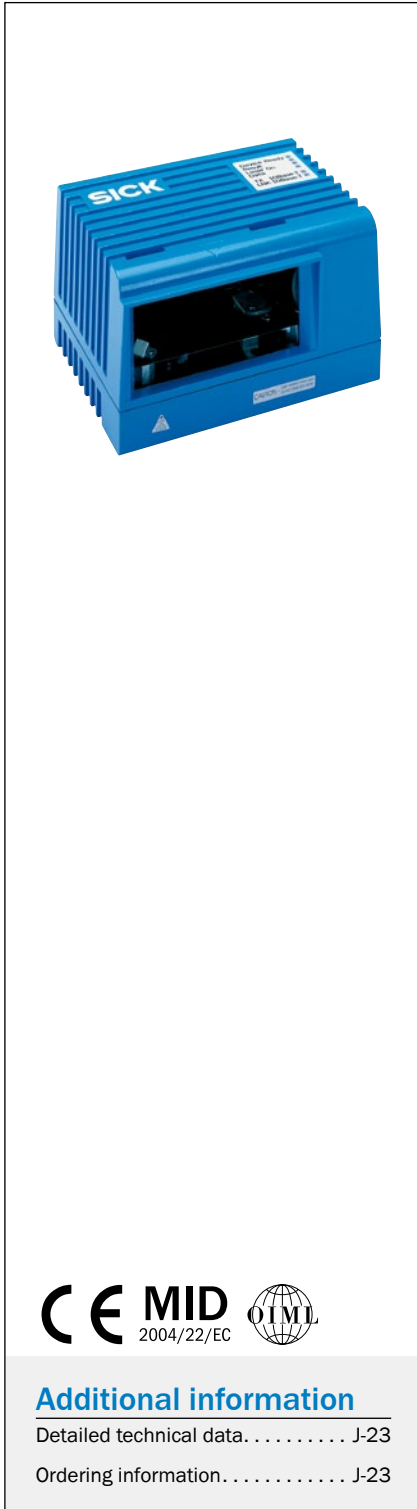


Resolution

- a: 0.15 mm (5.9 mil), 250 dpi
- b: 0.20 mm (7.9 mil), 200 dpi
- c: 0.25 mm (9.8 mil), ≥ 170 dpi
- d: 0.30 mm (11.8 mil), ≥ 150 dpi



The single-head volume measurement system for cuboidal objects



Product description

Designed for measuring the volume of cuboidal objects and/or packages on flat conveyor belts, etc. SICK's VMS410/510 volume measurement system family offers quick installation and simple alignment and commissioning. There are certified variants available for calculating

billable weight: the VMS510 OEM and the VMS510 MID (tested and certified to OIML, MID and further standards). In addition, a certified special version for the measurement of side-by-side objects is available, the VMS510 MID-e.

At a glance

- Measures length, width and height of an object
- Calculation of the smallest rectangular box that fully encloses the object (box volume)
- Optimized application software
- All measuring functions are built in the measuring head, no additional evaluation unit is required

Your benefits

- Simple mounting saves time on installation, commissioning, and provides flexibility for different application environments
- Compact design ensures easy integration into new and existing systems
- Low-maintenance system (short MTTR through plug & play unit exchange)
- Tested and certified to OIML, MID and further standards



Additional information

- Detailed technical data..... J-23
- Ordering information..... J-23

J

Detailed technical data

Features

Light source	Visible red light (650 nm)
Laser class	2
Field of view	≤ 70°

Performance

Transport speed	2 m/s
Minimum object distance	25 mm
Detectable object shape	Cuboid objects, singulated
Minimum object size	50 mm x 50 mm x 50 mm (v ≤ 1.2 m/s) 100 mm x 100 mm x 50 mm (v = 1.2 m/s ... v = 2 m/s)
Maximum object size	2,600 mm x 1,000 mm x 1,000 mm 2,300 mm x 1,000 mm x 1,000 mm (for VMS510 MID-e)
Accuracy of object coverage	± 5 mm x ± 5 mm x ± 5 mm (v ≤ 1.2 m/s) ± 10 mm x ± 10 mm x ± 5 mm (v = 1.2 m/s ... v = 2 m/s)

Interfaces

	VMS410	VMS510
Serial (RS-232, RS-422)	✓	
Ethernet	-	- / ✓ (depending on type)
PROFIBUS	-	- / ✓ (depending on type)
Output data	Dimensions (length, width, height) of the box volume	

Mechanics/electronics

	VMS410	VMS510
Operating voltage	≤ 24 V DC , ± 15 %	≤ 24 V DC , ± 15 % 100 V AC ... 240 V AC , ± 15 % (depending on type)
Power consumption	25 W	25 W / 50 W (depending on type)

Ambient data

Object remission	10 % ... 200 %
Electromagnetic compatibility (EMC)	EN 61000-6-2:2001 / EN 61000-6-4:2001
Vibration resistance	EN 60068-2-65, -27, -29, -64
Shock resistance	EN 60068-2-65, -27, -29, -64
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C


Ordering information


- Model: 1-scanner solution

Certification	Model name	Part no.
-	VMS410	1025985
OIML, MID	VMS510 OEM	1025986
	VMS510 MID	1043950
	VMS510 MID-e	1048289

The dual-head, high-speed volume measurement system for nearly any shape







Additional information

Detailed technical data. J-25

Ordering information. J-25

Product description

The VMS420/520 are ideal when speed and precision are important. They can accurately measure almost all object shapes at up to 3 m/s on flat conveyor belts. The robust two-head volume mea-

surement system is also available in a certified version – the VMS520 conforms with the MID European Measurement Directive, OIML R 129 and additional standards.

At a glance

- Measurement of length, width and height of any shaped object
- Calculation of the smallest rectangular box that fully encloses the object (box volume)
- Calculation of real volume
- Optimized application software
- All measuring functions are built in the measuring head, no additional evaluation unit is required

Your benefits

- Simple mounting saves time on installation, commissioning, and provides flexibility for different application environments
- Compact design ensures easy integration into new and existing systems
- Low-maintenance system (short MTTR through plug & play unit exchange)
- Tested and certified to OIML, MID and further standards

J

Detailed technical data

Features

Light source	Visible red light (650 nm)
Laser class	2
Field of view	70°

Performance

Transport speed	3 m/s
Minimum object distance	25 mm
Detectable object shape	Almost any, singulated
Minimum object size	50 mm x 50 mm x 50 mm (v ≤ 3 m/s)
Maximum object size	2,600 mm x 1,000 mm x 1,600 mm
Accuracy of object coverage	± 5 mm x ± 5 mm x ± 5 mm (v ≤ 3 m/s)

Interfaces

	VMS420	VMS520
Serial (RS-232, RS-422)	✓	
Ethernet	-	- / ✓ (depending on type)
PROFIBUS	-	- / ✓ (depending on type)
Output data	Maximum dimensions (length, width, height)	

Mechanics/electronics

	VMS420	VMS520
Operating voltage	≤ 24 V DC , ± 15 %	≤ 24 V DC , ± 15 % 100 V AC ... 240 V AC , ± 15 % (depending on type)

Ambient data

Object remission	10 % ... 200 %
Electromagnetic compatibility (EMC)	EN 61000-6-2:2001 / EN 61000-6-4:2001
Vibration resistance	EN 60068-2-65, -27, -29, -64
Shock resistance	EN 60068-2-65, -27, -29, -64
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C

Ordering information

- Model: 2-scanner solution

Certification	Model name	Part no.
-	VMS420	1041964
OIML, MID	VMS520 OEM	1041965
	VMS520 MID	1043951
	VMS520 MID-x	On request
	VMS520 Sorter	On request

The manual dimensioning weighing scanning system



Product description

For the complete data capture of volume, weight and bar code information of freight for the courier, freight, and parcel industry as well as for retail and warehousing, SICK developed the DWS510 Static, a new dimensioning weighing scanning system. By simply pushing the scan button of the hand-held scanner, the DWS510 Static measures dimensions and weight of the parcel lying on the roller conveyor. This data can be

used for invoicing freight charges or it can be used in ERP systems to create freight documents automatically.

The system consists of the proven VMS510 volume measurement system, a static scale and a hand-held bar code scanner integrated into a robust steel frame. The commissioning of the DWS510 Static takes only a few minutes and the complete system is legal-for-trade approved.

At a glance

- Dimensioning, weighing and identification data at the push of a button
- Complete solution with integrated frame and roller conveyor
- Commissioning within a few minutes
- Legal-for-trade certified (according to OIML, MID and NAWI)

Your benefits

- Automated invoicing of freight charges using legal-for-trade weight and volume data (revenue recovery)
- Highest read rates in combination with proven product reliability lead to the shortest return on investment period on the market
- Several freely programmable host interfaces can be used to generate additional data for sorting parcels



Additional information

Detailed technical data. J-27

Ordering information. J-27

J

Detailed technical data

Performance

Authorizations	Legal-for-trade approvals (OIML, MID and NAWI)
Minimum object size	50 mm x 50 mm x 50 mm
Maximum object size	1,100 mm x 700 mm x 700 mm (larger dimensions on request)
Accuracy of object coverage	± 5 mm x ± 5 mm x ± 5 mm
Allowed weight for legal-for-trade weighing	0.1 kg ... 60 kg
Accuracy of scale	e = 20 g
Throughput	Approx. 500 pph (measuring time approx. 1.5 sec per object)
Identification of parcels	Robust IT3800i hand-held bar code scanner fitted with a cable for all standard 1D bar codes, reading distance of up to 2,100 mm, minimum module width 0.19 mm (other hand-held scanner types available upon request)

Interfaces

Serial (RS-232, RS-422)	✓
Ethernet	✓
PROFIBUS	✓

Mechanics/electronics

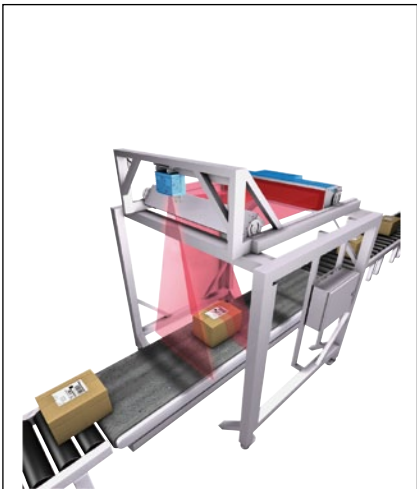
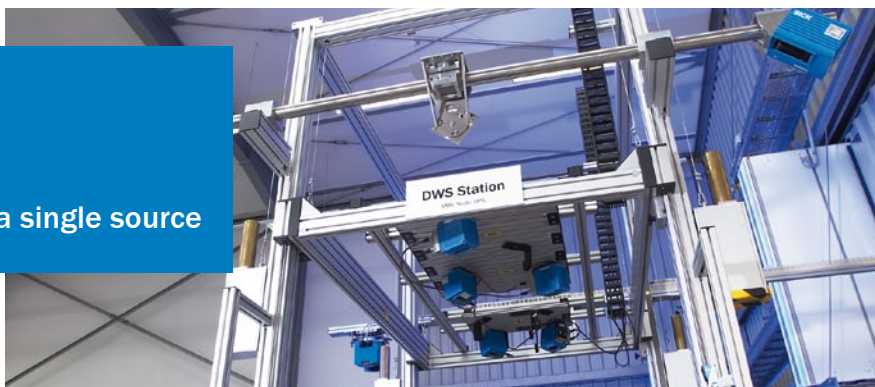
Dimensions of the roller conveyor	L = 1,250 mm x B = 650 mm, Height above floor: adjustable from 700 mm to 950 mm (in 50 mm-steps)
--	---

Ordering information

Model name	Part no.
DWS510 Static (Dimensioning weighing scanning system)	6039575



Your “package solution” from a single source



Product description

No matter if you handle small, large, heavy or lightweight packages, SICK has a solution. The combination of weight and volume defines the freight costs of packages. Dimensioning weighing scanning (DWS) systems from SICK automatically measure weight and volume of packages and identify them by reading 1D or 2D codes. They can be integrated

in existing conveyor systems and work reliably at conveyor speeds up to 2.9 m/s. SICK’s DWS systems are complete legal-for-trade solutions with integrated alibi storage, meeting the requirements of the OIML R129 and R51-1 regulations as well as the Measuring Instruments Directive 2004/22/EG (“MID”).

At a glance

- Legal-for-trade capture of volume and weight data with integrated code reading
- Flexible system design individually adapted for your application
- Highest measurement accuracy – even in rough industrial environments
- Extremely high read rates in combination with proven reliability
- Full integration in existing conveyor systems without reduction of throughput

Your benefits

- Automated invoicing of freight charges using legal-for-trade weight and volume data (revenue recovery)
- Highest read rates in combination with proven product reliability lead to the shortest return on investment period on the market
- Several freely programmable host interfaces can be used to generate additional data for sorting parcels



Additional information

- Detailed technical data..... J-29
- Ordering information..... J-29

J

Detailed technical data

Performance

Transport speed	0.5 m/s ... 2.9 m/s
Authorizations	Legal-for-trade approvals (OIML R129, OIML R51-1, Measuring Instruments Directive 2004/22/EG (MID))
Minimum object size	50 mm x 50 mm x 50 mm
Maximum object size	2,600 mm x 1,000 mm x 1,000 mm
Accuracy of object coverage	±5 mm x ± 5 mm x ± 5 mm ± 10 mm x ± 10 mm x ± 10 mm (depends on application)
Allowed weight for legal-for-trade weighing	0.1 kg ... 120 kg
Accuracy of scale	e = 20 g to e = 50 g (depends on application)
Throughput	1,500 pph to 4,000 pph (single-belt scale); 6,000 pph to 8,000 pph (double-belt scale)
Identification of parcels	Customized OPS omni-directional bar code scanner systems or CCD line camera systems ICR890 for identification on up to six sides and optional OCR / video coding.

Interfaces

Serial (RS-232, RS-422)	✓
Ethernet	✓
PROFIBUS	✓

Mechanics/electronics

Dimensions of the weighing conveyer	L = 600 mm x B = 400 mm to L = 1,800 mm x B = 1,000 mm
-------------------------------------	--

Ordering information

Model name	Part no.
DWS Dynamic (Dimensioning weighing scanning system)	On request





SICK connects – complete connectivity from a single source

SICK provides connection devices that easily connect to other devices in your machine, regardless of the selected automatic identification technology. These devices enable easy integration of fieldbus gateways into the modular connection boxes, making it possible to incorporate the scanner, camera or RFID systems into different fieldbus technologies. A fieldbus proxy, external parameter memory, display, and power modules provide a high degree of application flexibility.

Your benefits

- Easy to integrate into industrial machines, even in tight spaces
- Connects to numerous fieldbus technologies, providing increased flexibility
- Integrated connection diagrams simplify mounting
- Adaptable for the future
- Easy access to the connection module, allowing the device to be “embedded” in the machine

K



Connectivity

IDpro connects – modular connectivity from a single source. K-2
Product family overview K-4



CDF (Connection Device Fieldbus). K-6
 Easy PROFIBUS connection



CDB (Connection Device Basic) K-10
 Simplified automatic identification component commissioning – from SICK



CDM (Connection Device Modular) K-14
 Commissioning sensors the easy way – for more flexibility

IDpro connects

Modular connectivity from a single source



The chart represents how to connect the IDpro devices in various fieldbus technologies in a flexible way and with less wiring effort.



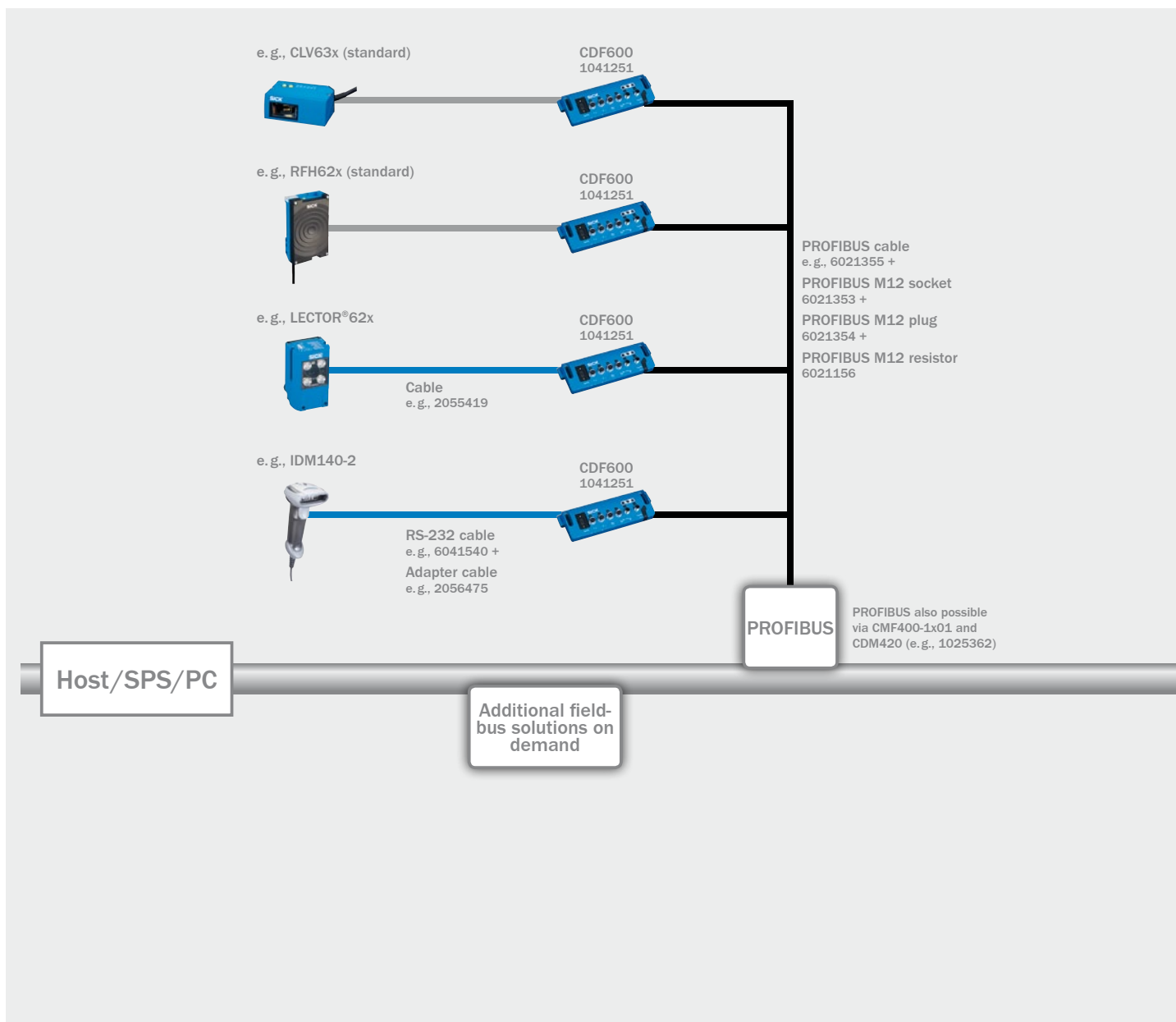
Ordering information for code reader (see chapter F, G and I)

Ordering information for connectivity modules (see chapter K)

— Connection cable for code readers (see chapter L)

— Connection cable for connectivity modules (see page L-31)

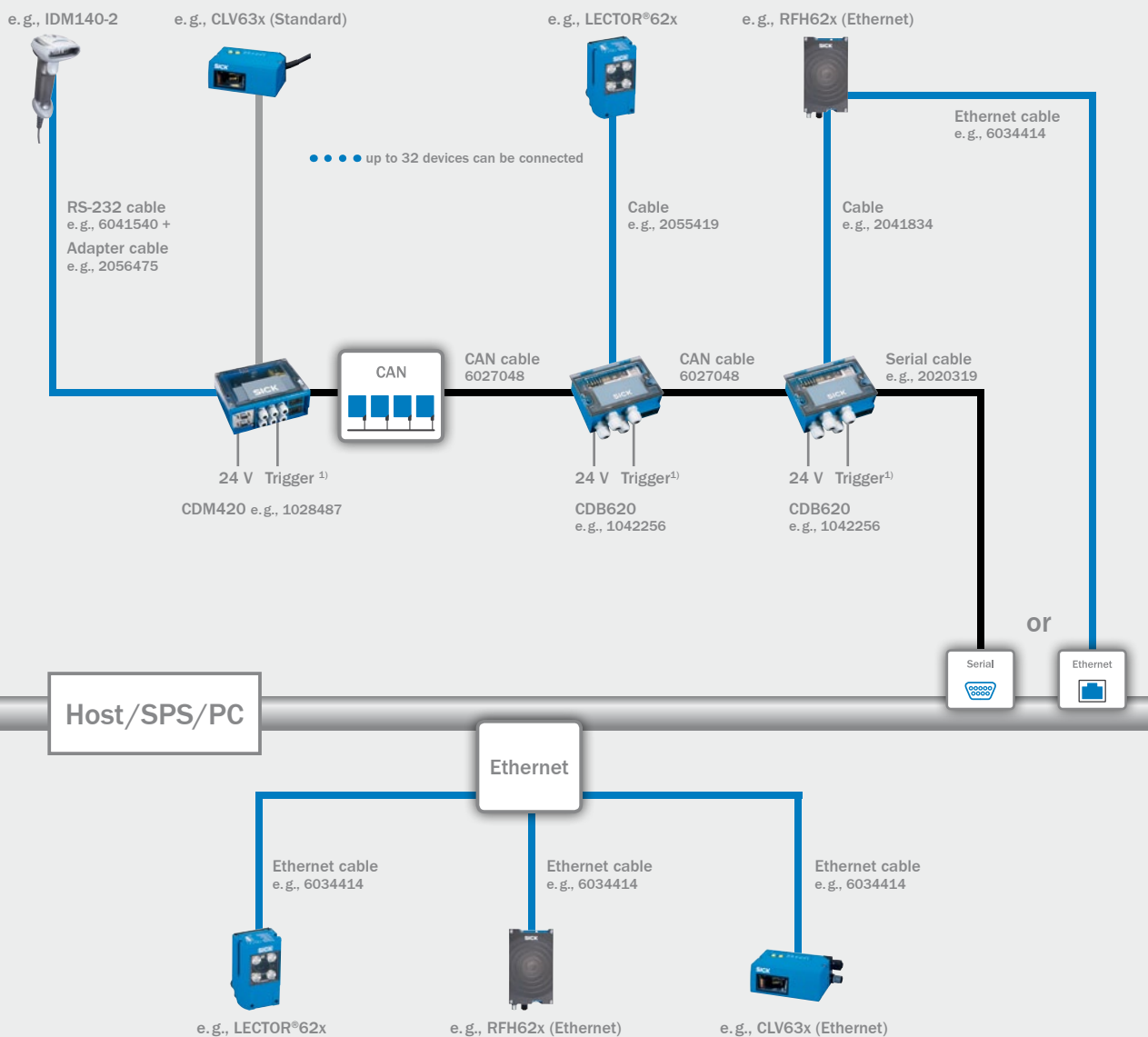
— Connection cable already integrated in code reader



K

The IDpro devices already have Ethernet and CAN interfaces. All devices can also be used as multiplexers in SICK CAN-sensor networks. The scanners can be integrated in PROFIBUS and DeviceNet networks via external fieldbus gateways.

The “2-component” solution – device with separate connection module – offers the advantage that the scanner can be “buried” within the machine/system while the connection module remains easily accessible from outside. Therefore, SICK’s connectivity concept ensures a high grade of flexibility.



¹⁾ e.g., WL18-3



Product family overview



CDF (Connection Device Fieldbus)

Easy PROFIBUS connection

Technical data overview

Supported products	CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x RFH62x 5-V hand-held scanner
Supports cloning module (CMC)	Integrated / no
Supports display module (CMD)	No
Supports power supply module (CMP)	No
Supports fieldbus gateway (CMF)	Integrated (PROFIBUS)
Serial (RS-232)	✓
Serial (RS-232, RS-422/485)	-
Ethernet	-
CAN bus	✓, depending on sensor connected / -
PROFIBUS	✓
PROFINET	-
DeviceNet	-

At a glance



- Simple mounting
- All electrical connections are pluggable
- Three rotary switches for setting the PROFIBUS addresses or PROFIBUS mode
- Integrated parameter storage
- 6 LEDs for status and error display
- Integrated CAN interface

Detailed information

→ K-6







CDB (Connection Device Basic)

Simplified automatic identification component commissioning – from SICK




CDM (Connection Device Modular)




Commissioning sensors the easy way – for more flexibility

<p>CLV41x, CLV42x, CLV43x, CLV44x, CLV45x, CLV48x, CLV49x, CLX49x CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x ICR84x-2 ICR85x-2 RFH62x 5-V hand-held scanner</p>	<p>CLV41x, CLV42x, CLV43x, CLV44x, CLV45x, CLV48x, CLV49x, CLX49x CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x ICR84x-2 ICR85x-2 RFH62x 5-V hand-held scanner</p>
<p>No / yes</p>	<p>No / yes</p>
<p>No</p>	<p>No / yes</p>
<p>No</p>	<p>Yes</p>
<p>No</p>	<p>Yes (PROFIBUS, Ethernet, DeviceNet) Partly integrated (PROFIBUS, PROFINET)</p>
<p>-</p>	<p>-</p>
<p>✓, depending on sensor connected</p>	<p>✓, depending on sensor connected</p>
<p>-</p>	<p>✓, corresponding CMF fieldbus gateway additionally necessary</p>
<p>✓, depending on sensor connected</p>	<p>✓, depending on sensor connected</p>
<p>-</p>	<p>✓, corresponding CMF fieldbus gateway additionally necessary</p>
<p>-</p>	<p>✓, depending on type</p>
<p>-</p>	<p>✓, corresponding CMF fieldbus gateway additionally necessary</p>
<p></p> <ul style="list-style-type: none"> • Compact design • Two mounting holes for fast and precise installation • Connection diagram integrated in lid • Clearly visible and easily accessible screw/spring-loaded terminals • Configuration by switch • IP 65 connection of a scanner using SICK standard cable • Cable glands provide strain relief • Service plug for direct access to the AUX interface 	<p></p> <ul style="list-style-type: none"> • Efficient solution to power and connect to SICK's Auto-ID component portfolio • Slots for optional fieldbus modules, parameter memory, display and power supply module • Simple voltage supply of scanner • IP 65 connection of a scanner using SICK standard cable • Direct access to the service interface of the sensor • Connection diagram integrated in lid • Clearly visible and easily accessible screw/spring-loaded terminals
<p>→ K-10</p>	<p>→ K-14</p>



Easy PROFIBUS connection

Additional information

- Detailed technical data. K-7
- Ordering information. K-8
- Recommended accessories. K-8

Product description

The CDF600 integrates CLV6xx bar code scanners, LECTOR®62x image-based code readers, RFID interrogators RFH6xx as well as 5-V hand-held devices easily into a PROFIBUS network. With two screws and a plug-in design, the CDF600 is very easy to mount in the system. The PROFIBUS address and the PROFIBUS mode are easy to set using rotary switches. The integrated parameter memory saves all parameter values of the connected sensor. If the sensor

is replaced, the parameter values are automatically copied into the new device. On the housing of the fieldbus module there are six LEDs that display the general operating status, the data exchange with the Busmaster and the status of the switching inputs and outputs. For simple diagnostics, error conditions are also signalled via the LEDs. With the integrated CAN interface, the CDF600 can also be used as terminal equipment in SICK CAN sensor networks (CSN).

At a glance

- Simple mounting
- All electrical connections are plug-gable
- Three rotary switches for setting the PROFIBUS addresses or PROFIBUS mode
- Integrated parameter storage
- 6 LEDs for status and error display
- Integrated CAN interface

Your benefits

- A two-screw system makes mounting quick and easy
- Electrical installation is quick since all connections are established with plugs
- Auto detect: Sensor and CDF600 detect each other automatically
- Quick sensor exchange due to integrated parameter memory
- Easy mechanical installation due to the very compact size
- Easy diagnosis via 6 LEDs

K

Detailed technical data

Features

Supported products	CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x RFH62x 5-V hand-held scanner (depending on type)
Supports cloning module (CMC)	Integrated
Supports display module (CMD)	No
Supports power supply module (CMP)	No
Supports fieldbus gateway (CMF)	Integrated (PROFIBUS)

Interfaces

Serial (RS-232)	Function	✓ AUX
	Data transmission rate	57.6 kBaud
CAN bus		✓, depending on sensor connected
PROFIBUS	Function	✓ Slave
	Data transmission rate	9.6 kbit/s ... 12 Mbit/s, autodetect
Switching inputs		2
Switching outputs		2
Optical indicators		6 LEDs

Mechanics/electronics

Electrical connection	1 x 15-pin D Sub HD socket (DEVICE) 3 x 5-pin M12 socket (IN 1, IN 2, OUT 1/2) 1 x 5-pin M12 socket (PROFIBUS OUT) 1 x 5-pin M12 plug (PROFIBUS IN) 1 x 5-pin M12 plug (POWER) 1 x 4-pin M8 socket (AUX)
Operating voltage	18 V DC ... 30 V DC
Power consumption	7 W, if no sensor is connected and digital switching inputs and outputs are not connected
Housing	Die-cast aluminum
Housing color	Light blue (RAL 5012)
Enclosure rating	IP 65 (DIN 40 050) ¹⁾
Protection class	III
Weight	590 g
Dimensions	225 mm x 76.5 mm x 47 mm ²⁾
Scanner connection	RS-232

¹⁾ When using a SICK scanner standard connecting cable.

²⁾ Without plugged-in connections.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-4 (2007-01) / EN 61000-6-2 (2005-08)
Vibration resistance	EN 60068-2-6 (1995)
Shock resistance	EN 60068-2-27 (1993)
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing


Ordering information

Brief description	Model name	Part no.
CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, LECTOR®62x, RFH620, 5-V hand-held scanner ¹⁾ to a PROFIBUS network	CDF600-0100	1041251



¹⁾ Hand-held scanner (depending on type) in conjunction with RS-232 cable (e.g., 6041541 for IDM1xx) and appropriate adapter cable (2056475).

Recommended accessories

Device protection (mechanical)

	Brief description	Part no.
	Cover for code switches of CDF600 as protection against manipulation, incl. 2 fixing screws	2052296

Plug connectors and cables

	Brief description	Part no.
	Parameter setting cable for PC connection (9-pin Sub-D) to CDF600 (4-pin M8), 2 m	6021195
	PROFIBUS cable, 2 x 0,34 mm, sold by the meter	6021355

For additional accessories, please see page L-31



Simplified automatic identification component commissioning – from SICK



Product description

The Connection Device Basic (CDB) offers everything users need for fast connection to all SICK CLV4xx and CLV6xx scanners; ICR84x-2, ICR85x-2, LECTOR®62x image-based code readers; and RFH6xx RFID interrogators as well as 5-V hand-held devices to SICK CAN sensor networks, host computers or PLCs. The connectivity devices are rated IP 65 and are protected against dust

and water spray. In addition, the CDB is already prepared to accept SICK's Connection Module Cloning (CMC) unit. This cloning module offers an external auxiliary memory on the connection module for all scanner parameters. If a bar code scanner requires replacement, the application-specific parameters are automatically copied into the new device.

At a glance

- Compact design
- Two mounting holes for fast and precise installation
- Connection diagram integrated in lid
- Clearly visible and easily accessible screw/spring-loaded terminals
- Configuration by switch
- IP 65 connection of a scanner using SICK standard cable
- Cable glands provide strain relief
- Service plug for direct access to the AUX interface

Your benefits

- Compact, fits into small spaces
- Fast installation saves time
- Clearly marked and easily accessed wiring terminals save time when connecting to peripherals
- Easy, rapid troubleshooting
- Small investment
- Extremely rapid exchange of scanners through use of a Connection Module Cloning (CMC) unit



Additional information

- Detailed technical data.....K-11
- Ordering information.....K-12
- Recommended accessories.....K-12
- Dimensional drawings M-17

K

Detailed technical data

Features

	CDB405	CDB410	CDB620
Supported products	5-V hand-held scanner CLV5xx	CLV41x	CLV42x, CLV43x, CLV44x, CLV45x, CLV48x ¹⁾ , CLV49x ¹⁾ CLX49x ¹⁾ CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x ICR84x-2 ICR85x-2 RFH62x 5-V hand-held scanner
Supports cloning module (CMC)	No		Yes
Supports display module (CMD)	No		
Supports power supply module (CMP)	No		
Supports fieldbus gateway (CMF)	No		

¹⁾ With special cable.

Interfaces

	CDB405	CDB410	CDB620
Serial (RS-232, RS-422/485)	✓, depending on sensor connected		
CAN bus	-		✓, depending on sensor connected
Switching inputs	Depending on sensor connected		
Switching outputs	Depending on sensor connected		
Optical indicators	6 LED	5 LED	9 LED

Mechanics/electronics

	CDB405	CDB410	CDB620
Operating voltage	18 V DC ... 30 V DC	Supply voltage of the connected scanner + 1 V	
Power consumption	4 W	3 W	16 W
Housing	Polycarbonate		
Housing color	Blue (RAL 5012)		
Enclosure rating	IP 65 (DIN 40 050) ¹⁾		
Protection class	III (VDE 0106)		
Weight	250 g		
Dimensions	124.2 mm x 113.1 mm x 53.9 mm		
Scanner connection	15-pin D-Sub HD socket		
Service plug	9-pin D-Sub HD socket (internal)		

¹⁾ When using a SICK scanner standard connecting cable.

Ambient data

Ambient operating temperature	0 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing



Ordering information

Sub product family	Brief description	Model name	Part no.
CDB405	Small connection module for 5-V hand-held scanners, CLV50x and ICR80x	CDB405-001	1027093
CDB410	Small connection module for one CLV41x	CDB410-001	1023813
CDB620 ¹⁾	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256
	Small connection module for one sensor, 2 cable glands, 2 x M12 connector/socket for CAN, base for CMC600	CDB620-101	1042257
	Small connection module for a sensor, 5 cable glands, basic unit for CMC600	CDB620-201	1042258


¹⁾ 5-V hand-held scanners in conjunction with RS-232 cable (e.g., 6041540 for IDM1xx) and appropriate adapter cable (2056475).

Recommended accessories

Modules

	Brief description	Model name	Part no.
	External parameter memory for integration in CDB620 / CDM42x	CMC600-101	1042259

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-31



Commissioning sensors the easy way – for more flexibility



Product description

The CDM offers a modular design, ensuring fast connection of a SICK 1D/2D code reader or RFID interrogator to a SICK CAN scanner network, a host computer or a PLC. The CDM supports scanners from the CLV4xx/CLV6xx and ICR84x/ICR85x/LECTOR®62x and RFH6xx families as well as the LMS4xx laser measurement sensors. The CDM is rated IP 65. The CDM490 can even be used for deep-freeze applications

down to -35° C in connection with a CLV480 or CLV/X490 bar code scanner with integrated heating. The CDM offers free plug-in slots for additional modules, such as power supply, display or fieldbus gateways (depending on type). The CMC600 Connection Module Cloning unit stores all the parameter values of the connected scanner. The values are automatically copied to a new device if a scanner requires replacement.

At a glance

- Efficient solution to power and connect to SICK’s Auto-ID component portfolio
- Slots for optional fieldbus modules, parameter memory, display and power supply module
- Simple voltage supply of scanner
- IP 65 connection of a scanner using SICK standard cable
- Direct access to the service interface of the sensor
- Connection diagram integrated in lid
- Clearly visible and easily accessible screw/spring-loaded terminals

Your benefits

- Easy connection of the sensor to fieldbus systems
- Fast installation and easy networking save time
- Fast exchange of the sensor through parameter memory CMC
- Simple troubleshooting
- Easy diagnosis via optional CMD400 display module



Additional information

- Detailed technical data.K-15
- Ordering information.K-16
- Recommended accessories.K-16

K

Detailed technical data

Features

	CDM410	CDM420 / CDM425	CDM490
Supported products	CLV41x	CLV42x, CLV43x, CLV44x, CLV45x CLV62x, CLV63x, CLV64x, CLV65x LECTOR®62x ICR84x-2, ICR85x-2 RFH62x 5-V hand-held scanner (depending on type)	CLV48x CLV49x CLX49x
Supports cloning module (CMC)	No	Yes	
Supports display module (CMD)	No	Yes	Yes / no (depending on type)
Supports power supply module (CMP)	Yes		
Supports fieldbus gateway (CMF)	No	Yes (PROFIBUS, PROFINET, Ethernet, DeviceNet) (depending on type)	Yes (PROFIBUS, Ethernet, DeviceNet) (depending on type)

Interfaces

	CDM410	CDM420 / CDM425	CDM490
Serial (RS-232, RS-422/485)	✓, depending on sensor connected		
Ethernet	-	✓, corresponding CMF fieldbus gateway additionally necessary (depending on type)	
CAN bus	-	✓, depending on sensor connected	
PROFIBUS	-	✓, corresponding CMF fieldbus gateway additionally necessary (depending on type)	
PROFINET	-	✓, only for CDM425	-
DeviceNet	-	✓, corresponding CMF fieldbus gateway additionally necessary (depending on type)	
Switching inputs	Depending on sensor connected		
Switching outputs	Depending on sensor connected		
Optical indicators	5 LED		9 LED

Mechanics/electronics

	CDM410	CDM420 / CDM425	CDM490
Operating voltage	Supply voltage of the connected sensor + 1 V		
Power consumption	Power consumption of the sensor + 1 W		
Housing	Polycarbonate		
Housing color	Blue (RAL 5012)		
Enclosure rating	IP 65 (DIN 40 050) ¹⁾		
Protection class	III (VDE 0106)		
Weight	800 g		870 g
Dimensions	192 mm x 167 mm x 70 mm		
Scanner connection	15-pin D-Sub HD socket		15-pin D-Sub HD socket, 15-pin D-Sub HD plug
Service plug	9-pin D-Sub plug (internal)		

¹⁾ When using a SICK scanner standard connecting cable.

Ambient data


	CDM410	CDM420 / CDM425	CDM490
Ambient operating temperature	0 °C ... +40 °C		-35 °C ... +40 °C
Storage temperature	-20 °C ... +70 °C		
Permissible relative humidity	90 %, non-condensing		

Ordering information


Sub product family	Brief description	Model name	Part no.
CDM410	Modular connection module for one CLV41x	CDM410-0001	1025361
CDM420 / CDM425	Modular connection module for one sensor	CDM420-0001	1025362
	Modular connection module for two sensors	CDM420-0004	1028487
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM420-0101	1025364
	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP400, US power cord	CDM420-0102	1026220
	Modular connection module for one sensor with premounted CMF400 PROFIBUS-Module (Interface 9-pin D-Sub) and integrated CMC parameter cloning module	CDM420-0105	1040002
	Modular connection module for one sensor with premounted CMF400 PROFIBUS-Module (Interface 2 x M12) and integrated CMC parameter cloning module	CDM420-0205	1029854
	Modular connection module for one sensor, additional M12 socket for PROFINET on face plate	CDM425-00034094	1048488
CDM490	Modular connection module for two sensors with faceplate that includes one M12 socket for PROFINET fieldbus connection. 4x M16 cable gland, one M12 socket for CAN bus and one M12 connector for power supply.	CDM425-10234094	1050643
	Modular connection module for one sensor	CDM490-0001	1025363
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM490-0101	1025365
	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP490, US power cord	CDM490-0103	1026264

Recommended accessories

Modules

	Brief description	Model name	Part no.
	External parameter memory for integration in CDB620 / CDM42x	CMC600-101	1042259

Plug connectors and cables

	Brief description	Part no.
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-Sub receptacle	2014054

For additional accessories, please see page L-31







A winning combination: sensors and accessories from SICK

For optimum integration of sensors into your systems, SICK offers a complete range of accessories. This includes everything from connection and mounting systems, to reflectors and lenses.

Reliable signal transmission is paramount for productivity – high-quality connectivity components with long service lives reduce costs. SICK offers perfect connection systems for any application or sector, whether for the material handling, packaging, automotive or food and beverage industries. The extensive range of connectors and distributors lets you easily implement the best cabling solution for every application, even under the harshest and most difficult conditions.

With its sophisticated mounting concept, SICK reponds to a vast array of sensor installation requirements and offers the right solutions for mounting, alignment and protection of industrial SICK sensor systems. Efficient, and functional.

In addition to the accessories listed in this chapter, please consult your local SICK sales representative for additional country-specific accessories.

Product  Finder

www.mysick.com/products

All accessories can be found online: enter the part no. of the product, and make your selection in “Related content: Accessories.”






Accessories

Bar code scanners	L-2
Image-based code readers.	L-11
Hand-held scanners	L-18
RFID	L-27
Connectivity	L-31




Bar code scanners – CLV4 series


Adapters/distributors (without cable)

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Converter RS-232 to USB (if no RS-232 interface is available with the PC)	6042499	●	●	●	●	●	●	●	●	●	●	●




Codes

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Profile bar codes DIN A5	8008085	-	-	●	●	●	-	-	-	-	-	-




Device protection (mechanical)

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	IP 65 sealing ring for extension cable with 15-pin D-sub plug connection (6010075 and 6020092)	4038847	●	●	●	●	●	-	-	-	-	-	-





Modules

	Brief description	Model name	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
 Illustration may differ	Small connection module for one CLV41x	CDB410-001	1023813	●	-	-	-	-	-	-	-	-	-	-
 Illustration may differ	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256	-	●	●	●	●	●	●	●	●	●	●
	Small connection module for one sensor, 2 x M12 connector/socket for CAN, base for CMC600	CDB620-101	1042257	-	●	●	●	●	●	●	●	●	●	●
 Illustration may differ	Small connection module for a sensor, 5 cable glands, socket for CMC cloning module	CDB620-201	1042258	-	●	●	●	●	●	●	●	●	●	●
	Modular connection module for one CLV41x	CDM410-0001	1025361	●	-	-	-	-	-	-	-	-	-	-







	Brief description	Model name	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
 Illustration may differ	Modular connection module for one sensor	CDM420-0001	1025362	-	●	●	●	●	-	-	-	-	-	-
	Modular connection module for two sensors	CDM420-0004	1028487	-	●	●	●	●	-	-	-	-	-	-
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM420-0101	1025364	-	●	●	●	●	-	-	-	-	-	-
	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP400, US power cord	CDM420-0102	1026220	-	●	●	●	●	-	-	-	-	-	-
	Modular connection module for one sensor with pre-mounted CMF400 PROFIBUS module (Interface 9-pin D-sub) and integrated CMC parameter cloning module	CDM420-0105	1040002	-	●	●	●	●	-	-	-	-	-	-
	Modular connection module for one sensor with pre-mounted CMF400 PROFIBUS module (Interface 2 x M12) and integrated CMC parameter cloning module	CDM420-0205	1029854	-	●	●	●	●	-	-	-	-	-	-
 Illustration may differ	Modular connection module for one sensor, additional M12 socket for PROFINET on face plate	CDM425-00034094	1048488	-	●	●	●	●	-	-	-	-	-	-
	Modular connection module for two sensors, additional M12 socket for PROFINET on face plate. Reduction of cable glands from 6 to 4, M12 socket for CAN bus and M12 plug for connection to power supply on front side	CDM425-10234094	1050643	-	●	●	●	●	-	-	-	-	-	-
 Illustration may differ	Modular connection module for one sensor	CDM490-0001	1025363	-	-	-	-	-	●	●	●	●	●	●
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM490-0101	1025365	-	-	-	-	-	●	●	●	●	●	●
	Kit: modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP490, US power cord	CDM490-0103	1026264	-	-	-	-	-	●	●	●	●	●	●


Mounting brackets/plates

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Single angle bracket, with 2 self-locking M6 x 10 screws	2013824	-	-	-	-	-	●	●	●	●	-	-
	Joint angle (angle bracket 2013824 double), with 2 M6 x 10 screws	2018435	-	-	-	-	-	●	●	●	●	-	-
	Mounting angle, with 2 self-locking M6 x 12 screws	2022996	-	-	-	-	-	●	-	●	-	●	●
	U-shaped mounting bracket, with mounting material (3 self-locking M5 x 8 screws, 3 x A5 washers, 2 M5 x 12 screws, 2 x A5.3 washers)	2022564	-	-	●	●	●	-	-	-	-	-	-







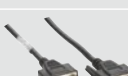



	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	U-shaped mounting bracket, with shock absorber and mounting material (3 self-locking M5 x 8 screws, 3 x A5 washers, 2 M5 x 16 screws, 2 x A5.3 washers)	2021342	-	-	-	-	●	-	-	-	-	-	-
	Large mounting bracket, with mounting material (2 M4 x 8 screws, 2 x A4.3 washers, 2 x B4 spring rings)	2020078	●	●	-	-	-	-	-	-	-	-	-
	Small mounting bracket, with mounting material (2 M4 x 8 screws, 2 x A4.3 washers, 2 x B4 spring rings)	2020077	●	●	-	-	-	-	-	-	-	-	-
	Mounting bracket with 2 self-locking M5 x 8 screws	2020410	-	-	●	●	●	-	-	-	-	-	-













Other mounting accessories

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Mirror shield (for reducing the mounting area)	2032070	-	-	-	-	-	●	●	●	●	-	-



Plug connectors and cables

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	D-sub plug house, 15-pin HD socket, hand-soldered terminal	6010019	●	●	●	●	●	●	-	●	-	●	-
	D-sub plug house, 15-pin HD plug, hand-soldered terminal	6010020	●	●	●	●	●	●	-	●	-	●	-
	D-sub plug house (metal), for 9-/15-pin HD insert	6009438	●	●	●	●	●	●	-	●	-	●	-
	Data cable for extension up to 3 m, Ø 6.6 mm, 15 x 0.09 mm ² , shielded, available per meter	6010088	●	●	●	●	●	●	-	●	-	●	-
	Data cable for RS-485 network, Ø 8.5 mm, 2 x 2 x 0.23 mm ² , twisted pair, shielded, available per meter	6007508	-	-	-	-	-	●	-	●	-	●	-
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-sub receptacle	2014054	●	●	●	●	●	●	●	●	-	●	-
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034417	●	●	●	●	●	-	-	-	-	-	-
	Extension cable, 3 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034418	●	●	●	●	●	-	-	-	-	-	-




	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (socket/open end) AWG26	2043413	●	●	●	●	●	-	-	-	-	-	-
	Connection cable ("Host/Term"), Ø 8 mm, 3 m, 15-wired, shielded, with 15-pin D-sub HD plug/open end	2020303	-	-	-	-	-	●	-	●	-	●	-
	Connection cable ("I/O"), Ø 8 mm, 3 m, 15-wired, shielded, with 15-pin D-sub HD plug/open end	2020264	-	-	-	-	-	●	-	●	-	●	-
	Connection cable for CLV480, CLV/X490 to CDB620, 3 m, without EEPROM parameter store	2027046	-	-	-	-	-	●	-	●	-	●	-
	Connection cable to CDB620, 1 m, with EEPROM parameter store	2033325	-	-	-	-	-	●	-	●	-	●	-
	Connection cable to CDB620, 3 m, with EEPROM parameter store	2030023	-	-	-	-	-	●	-	●	-	●	-
	Cold cable (3 m), with plug housing and parameter store (EEPROM), IP 65	2030065	-	-	-	-	-	-	●	-	●	-	●
	Cold cable (10 m), with plug housing and parameter store (EEPROM), IP 65	2031034	-	-	-	-	-	-	●	-	●	-	●
	Plug housing (IP 65) for CLV/X490, with EEPROM parameter store, with 2 cables Ø 8 mm, each 3 m, each 15 x 0.14 mm ² , shielded, open end	2020981	-	-	-	-	-	●	-	●	-	●	-
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 1 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2021806	-	-	-	-	-	●	-	●	-	●	-
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2020307	-	-	-	-	-	●	-	●	-	●	-
	Connection cable (3 m), Ø 8 mm, shielded, with 15-pin D-sub HD receptacle and 15-pin D-sub HD plug	2020302	-	-	-	-	-	●	-	●	-	●	-

Reflectors





	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Polling reflector, large distance (0.5 m up to 0.8 m)	4030795	●	●	-	-	-	-	-	-	-	-	-
	Polling reflector, short distance (up to 0.5 m)	4030794	●	●	-	-	-	-	-	-	-	-	-

Software

	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	CD-ROM Manuals & Software	2029112	●	●	●	●	●	●	●	●	●	●	●




Terminal and alignment brackets



	Brief description	Part no.	CLV41x	CLV42x	CLV43x	CLV44x	CLV45x	CLV48x	CLV48x Heating	CLV49x	CLV49x Heating	CLX49x	CLX49x Heating
	Clamp bracket for tubes with 12 ... 20 mm outer diameter, with U-shaped mounting bracket, with mounting material (1 M8 x 16 grub screw, 3 self-locking M5 x 8 screws, 3 A5 washers)	2023691	-	-	●	●	●	-	-	-	-	-	-
	Holder for bars, with mounting angles and mounting material (3 M4 x 8 screws, 2 A4.3 plates, 2 x B4 spring rings, M8 x 16 grub screw)	2032868	●	●	-	-	-	-	-	-	-	-	-
	Quick clamp	2025526	-	-	●	●	●	-	-	-	-	-	-
	Quick-change clamping device with mounting material (2 M6 x 12 screws, 2 M6 x 16 screws, 2 x A6.4 washer)	2016110	-	-	-	-	-	●	●	●	●	●	●

Bar code scanners – CLV5 series


Modules

	Brief description	Model name	Part no.	CLV503 Standard	CLV503 USB	CLV505 Standard	CLV505 USB
	Small connection module for 5-V hand-held scanners, CLV50x and ICR80x	CDB405-001	1027093	●	-	●	-



Mounting brackets/plates

	Brief description	Part no.	CLV503 Standard	CLV503 USB	CLV505 Standard	CLV505 USB
	Mounting bracket for CLV503	2050021	●	●	-	-
	Mounting bracket for CLV505	2050022	-	-	●	●

Plug connectors and cables


	Brief description	Part no.	CLV503 Standard	CLV503 USB	CLV505 Standard	CLV505 USB
	D-sub plug house, 15-pin HD socket, hand-soldered terminal	6010019	●	-	●	-




	Brief description	Part no.	CLV503 Standard	CLV503 USB	CLV505 Standard	CLV505 USB
	D-sub plug house, 15-pin HD plug, hand-soldered terminal	6010020	●	-	●	-
	D-sub plug house (metal), for 9-/15-pin HD insert	6009438	●	-	●	-

Bar code scanners – CLV6 series




Adapters/distributors (without cable)

	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Converter RS-232 to USB (if no RS-232 interface is available with the PC)	6042499	●	●	●	●	●	●	●	●

Device protection (mechanical)


	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	IP 65 sealing ring for extension cable with 15-pin D-sub plug connection (6010075 and 6020092)	4038847	●	●	●	●	●	●	●	●

Heating units





	Brief description	Model name	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	All CLV63x, CLV64x and CLV65x bar code scanners have heated versions – with separate part numbers – available upon request. (The heating can't be retrofitted.)	CLV6xx-Heating-Standard-Front	-	-	●	●	●	●	●	●
		CLV6xx-Heating-Standard-OM	-	-	●	●	●	●	●	●
		CLV6xx-Heating-Standard-Side	-	-	●	●	●	●	-	-






Mirror adapters

	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	External mirror hood reduces the reading distance when used between two closely spaced conveyors	2046811	●	●	●	●	●	●	●	●


Modules

	Brief description	Model name	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
 Illustration may differ	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256	●	●	●	●	●	●	●	●
	Small connection module for one sensor, 2 cable glands, 2 x M12 connector/socket for CAN, base for CMC600	CDB620-101	1042257	●	●	●	●	●	●	●	●
	Small connection module for a sensor, 5 cable glands, socket for CMC cloning module	CDB620-201	1042258	●	●	●	●	●	●	●	●
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251	●	●	●	●	●	●	●	●
 Illustration may differ	Modular connection module for one sensor	CDM420-0001	1025362	●	●	●	●	●	●	●	●
	Modular connection module for two sensors	CDM420-0004	1028487	●	●	●	●	●	●	●	●
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM420-0101	1025364	●	●	●	●	●	●	●	●
	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP400, US power cord	CDM420-0102	1026220	●	●	●	●	●	●	●	●
 Illustration may differ	Modular connection module for one sensor, additional M12 socket for PROFINET on face plate	CDM425-00034094	1048488	●	●	●	●	●	●	●	●
	Modular connection module for two sensors, additional M12 socket for PROFINET on face plate. Reduction of cable glands from 6 to 4, M12 socket for CAN bus and M12 plug for connection to power supply on front side	CDM425-10234094	1050643	●	●	●	●	●	●	●	●



Mounting brackets/plates

	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Mounting bracket with integrated vibration/shock absorber for mounting the scanner e.g., on a forklift	2042799	-	-	●	●	●	●	●	●
	Mounting bracket with 2 self-locking M5 x 8 screws	2020410	●	●	●	●	●	●	●	●
	Bracket with adapter board	2042902	●	●	-	-	-	-	-	-




	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Mounting bracket, including installation material	2042800	-	-	●	●	●	●	●	●

Plug connectors and cables


	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Cable, M12 12-pin, to open end, 5 m	6034605	-	●	-	●	-	●	-	●
	D-sub plug house, 15-pin HD plug, hand-soldered terminal	6010020	●	●	●	●	●	●	●	●
	D-sub plug house, 15-pin HD socket, hand-soldered terminal	6010019	●	●	●	●	●	●	●	●
	D-sub plug house (metal), for 9-/15-pin HD insert	6009438	●	●	●	●	●	●	●	●
	Data connection cable (RS-232) for CLV/ICR/RFH/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-sub receptacle	2014054	●	●	●	●	●	●	●	●
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 0.9 m (socket/plug)	2042916	-	●	-	●	-	●	-	●
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 2 m (socket/plug)	2041834	-	●	-	●	-	●	-	●
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 3 m (socket/plug)	2042914	-	●	-	●	-	●	-	●
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 5 m (socket/plug)	2042915	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)	6034414	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host RJ45, 3 m (plug/plug), drag-chain compliant	6029630	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host RJ45, 5 m (plug/plug)	6034415	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host RJ45, 10 m (plug/plug)	6030928	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host RJ45, 20 m (plug/plug)	6036158	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host M12, 2 m (plug/plug)	6034420	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host M12, 3 m (plug/plug)	6034421	-	●	-	●	-	●	-	●
	Cable, M12 4-pin, Ethernet to Host M12, 5 m (plug/plug)	6034422	-	●	-	●	-	●	-	●
	Extension cable, 3 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034418	●	●	●	●	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034417	●	●	●	●	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (socket/open end) AWG26	2043413	●	●	●	●	●	●	●	●



Software

	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	DVD Manuals & Software	2039442	●	●	●	●	●	●	●	●

Storage mediums

	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Micro SD flash card, memory medium with 512 MB	4051366	-	-	●	●	●	●	●	●

Terminal and alignment brackets





	Brief description	Part no.	CLV62x Standard	CLV62x Ethernet	CLV63x Standard	CLV63x Ethernet	CLV64x Standard	CLV64x Ethernet	CLV65x Standard	CLV65x Ethernet
	Quick clamp	2025526	●	●	●	●	●	●	●	●
	Rod clamp for outer diameters from 12 up to 20 mm, including installation material	2042801	-	-	●	●	●	●	●	●
	Round rod holders for round rods and tubes	2042802	●	●	-	-	-	-	-	-






Image-based code readers



Adapters/distributors (without cable)

	Brief description	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Converter RS-232 to USB (if no RS-232 interface is available with the PC)	6042499	-	-	-	●	●	●	●

Device protection (mechanical)














	Brief description	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	IP 65 sealing ring for extension cable with 15-pin D-sub plug connection (6010075 and 6020092)	4038847	●	-	-	●	●	●	●
	IP 65 Ethernet protective cap with gasket incl. screws for direct mounting on casing without additional frame; Ethernet cable cannot be plugged in once unit has been screwed on	2048510	-	-	-	●	●	●	●
	IP 65 cover usable with attachable adapter frame (no. 2044711)	6032800	-	-	-	●	●	●	●

Lens and accessories

	Brief description	Model name	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Lens hood up to IP 65 classification	IP 65 lens cover	2049130	-	-	-	-	-	●	-
 Illustration may differ	C-mount lens f = 8mm	OBJ-C00814A	5314041	-	-	-	-	-	●	-
	C-mount lens f = 12 mm	OBJ-C01214A	5314042	-	-	-	-	-	●	-
	C-mount lens f = 16 mm	OBJ-C01614A	5315114	-	-	-	-	-	●	-
	C-mount lens f = 25 mm	OBJ-C02514A	5314043	-	-	-	-	-	●	-
	C-mount lens f = 50 mm	OBJ-C05023A	5319456	-	-	-	-	-	●	-
	C-mount lens f = 75 mm	OBJ-C07528A	5319457	-	-	-	-	-	●	-









Lightings







	Brief description	Model name	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
 <p>Illustration may differ</p>	Ring illumination set, dark field for ICR840-2B (80 mm focus position), red illumination, incl. mounting bracket, screws and connection cable (2 m) for ring illumination	Dark field illumination (red) - Set 01	1047877	-	-	-	●	-	-	-
	Ring illumination set, dark field for ICR840-2A and ICR845-2A (50 mm focus position), red illumination, incl. mounting bracket, screws and connection cable (2 m) for ring illumination	Dark field illumination (red) - Set 02	1047878	-	-	-	●	●	-	-
	Dark field light – external ring illumination ICR840-2B (focus position 80 mm)	External dark field light	2034076	-	-	-	●	-	-	-
	Dark field light – external ring illumination ICR84x-2A (focus position 50 mm)	External dark field light	2040503	-	-	-	●	●	-	-
	Ring illumination, bright field, red illumination, illumination distance 200 mm to 1 m	ICL170-F222	1048371	-	-	-	-	-	●	-
	Ring illumination set ICL170-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 1 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL170-F222 Set 01 (red)	1048476	-	-	-	-	-	●	-
	Ring illumination, bright field, red illumination, illumination distance 200 mm to 1.5 m	ICL260-F222	1052495	-	-	-	-	-	●	-
	Ring illumination set ICL260-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 1.5 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL260-F222 Set 01 (red)	1053193	-	-	-	-	-	●	-
	Ring illumination, bright field, infrared illumination, illumination distance 200 mm to 2 m	ICL300-F202S01	1047957	-	-	-	-	-	●	-
	Ring illumination set ICL300-F202S01, bright field for ICR845-2L0020S01, infrared illumination, distance 200 mm to 2 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL300-F202S01 Set 01 (infrared)	1047994	-	-	-	-	-	●	-
	Ring illumination, bright field, red illumination, illumination distance 200 mm to 2 m, only for ICR845-2L0020S01	ICL300-F222	1046820	-	-	-	-	-	●	-
	Ring illumination set ICL300-F222, bright field for ICR84x-2L, red illumination, distance 200 mm to 2 m incl. mounting bracket, screws and connection cable (2 m) for ring illumination	ICL300-F222 Set 01 (red)	1047879	-	-	-	-	-	●	-
	Spot lighting set, white lighting color, incl. 24 V power supply (in 24 V, out max. 7 V)	VLR-10PL1011P01	6037795	-	-	-	-	-	●	-
	Spot lighting set, blue lighting color, incl. 24 V power supply (in 24 V, out max. 7 V)	VLR-47PL1011P01	6037797	-	-	-	-	-	●	-
	Spot lighting set, green lighting color, incl. 24 V power supply (in 24 V, out max. 7 V)	VLR-52PL1011P01	6037796	-	-	-	-	-	●	-
	Spot lighting set, red lighting color, incl. 24 V power supply (in 24 V, out max. 7 V)	VLR-66PL1011P01	6037794	-	-	-	-	-	●	-




Modules

	Brief description	Model name	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
 Illustration may differ	Small connection module for 5-V hand-held scanners, CLV50x and ICR80x	CDB405-001	1027093	-	●	-	-	-	-	-
 Illustration may differ	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256	●	-	-	●	●	●	●
 Illustration may differ	Small connection module for one sensor, 2 cable glands, 2 x M12 connector/socket for CAN, base for CMC600	CDB620-101	1042257	●	-	-	●	●	●	●
 Illustration may differ	Small connection module for a sensor, 5 cable glands, socket for CMC cloning module	CDB620-201	1042258	●	-	-	●	●	●	●
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620, LECTOR®620 to a PROFIBUS network	CDF600-0100	1041251	●	-	-	-	-	-	-
 Illustration may differ	Modular connection module for one sensor	CDM420-0001	1025362	●	-	-	●	●	●	●
	Modular connection module for two sensors	CDM420-0004	1028487	●	-	-	●	●	●	●
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM420-0101	1025364	●	-	-	●	●	●	●
	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP400, US power cord	CDM420-0102	1026220	●	-	-	●	●	●	●
	Modular connection module for one sensor with pre-mounted CMF400 PROFIBUS module (Interface 9-pin D-sub) and integrated CMC parameter cloning module	CDM420-0105	1040002	-	-	-	●	●	●	●
	Modular connection module for one sensor with pre-mounted CMF400 PROFIBUS module (Interface 2 x M12) and integrated CMC parameter cloning module	CDM420-0205	1029854	-	-	-	●	●	●	●



Mounting brackets/plates

	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Mounting bracket with mounting material (2 self-locking M5 x 16 screws)	2025491	-	-	-	●	●	●	●
	Mounting bracket with 2 self-locking M5 x 8 screws	2020410	●	-	-	-	-	-	-
	Mounting bar with mounting material (2 self-locking M5 x 16 screws) for variable mounting of the ICR at 3 different positions	2050691	-	-	-	-	-	●	-
	Bracket with adapter board	2042902	●	-	-	-	-	-	-
	Mounting bracket for ICR803	2050023	-	●	●	-	-	-	-
	Mounting bracket with adjustable skew angle, incl. mounting material (2 self-locking M5 x 16 screws)	2039465	-	-	-	●	●	●	●













	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Mounting bracket to mount ICL170/ICL260/ICL300 to ICR845-2L FlexLens	2049750	-	-	-	-	-	●	-











Optical filters




	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	C-mount OG590 filter to increase ambient light immunity when using a red illumination	2049139	-	-	-	-	-	●	-
	C-mount filter to increase ambient light immunity when using an infrared illumination (only for ICR845-2L0020S01)	2052458	-	-	-	-	-	●	-

Plug connectors and cables






	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Connection cable for external ring illumination ICL170/ICL260/ICL300 and dark field light, 4-pin, M8, 2 m	6030681	-	-	-	●	●	●	-
	Connection cable for external ring illumination ICL170/ICL260/ICL300 and dark field light, 4-pin, M8, 5 m	6030682	-	-	-	●	●	●	-
	Connection cable for external ring illumination ICL170/ICL260/ICL300 and dark field light, 4-pin, M8, 10 m	6030683	-	-	-	●	●	●	-
	D-sub plug house, 15-pin HD plug, hand-soldered terminal	6010020	●	-	-	●	●	●	●
	D-sub plug house, 15-pin HD socket, hand-soldered terminal	6010019	●	-	-	●	●	●	●
	D-sub plug house (metal), for 9-/15-pin HD insert	6009438	●	-	-	●	●	●	●
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-sub receptacle	2014054	●	-	-	●	●	●	●
	Ethernet crossover cable 2 x RJ45	6026084	-	-	-	●	●	●	●
	Ethernet data cable 2 x RJ45	6026083	-	-	-	●	●	●	●
	IP 65 Ethernet patch cable with adapter frame, IP 65 secure, Ethernet connection possible	2039986	-	-	-	●	●	●	●




	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)	6034414	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 3 m (plug/plug), drag-chain compliant	6029630	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 5 m (plug/plug)	6034415	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 10 m (plug/plug)	6030928	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 20 m (plug/plug)	6036158	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host M12, 2 m (plug/plug)	6034420	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host M12, 3 m (plug/plug)	6034421	●	-	-	-	-	-	-
	Cable, M12 4-pin, Ethernet to Host M12, 5 m (plug/plug)	6034422	●	-	-	-	-	-	-
	Cable, M12 17-pin, to open end, 3 m	6042772	●	-	-	-	-	-	-
	Cable, M12 17-pin, to open end, 5 m	6042773	●	-	-	-	-	-	-
	Cable, M12 17-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 0.9 m (socket/plug)	2049764	●	-	-	-	-	-	-
	Cable, M12 17-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 2 m (socket/plug)	2055419	●	-	-	-	-	-	-
	Cable, M12 17-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 3 m (socket/plug)	2055420	●	-	-	-	-	-	-
	Cable, M12 17-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 5 m (socket/plug)	2055859	●	-	-	-	-	-	-
	Coiled cable 2.4 m for RS-232 TTL, 9-pin D-sub connector, voltage on pin 9, (42203758-03E)	6025955	-	●	-	-	-	-	-
	Straight RS-232 TTL cable, 2.4 m length, external power supply necessary	6033047	-	●	-	-	-	-	-
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109	-	●	-	-	-	-	-
	Straightened RS-232 TTL cable, 2.4 m, 9-pin D-sub connector, voltage on pin 9 (42203758-03S)	6028186	-	●	-	-	-	-	-
	Straight cord RS-232, 2 m, for connection on CDB405-001	6034935	-	●	-	-	-	-	-
	2.8 m coiled cable for USB, connector type A (42206202-02)	6032516	-	-	●	-	-	-	-
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232	-	-	●	-	-	-	-
	Extension cable 3 m, 15-wired, shielded, with 15-pin D-sub HD plug/receptacle	6020092	-	-	-	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD plug/open end	6010137	-	-	-	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD plug/socket	6010075	-	-	-	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034417	●	-	-	●	●	●	●

	Brief description	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Extension cable, 3 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034418	●	-	-	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (socket/open end) AWG26	2043413	●	-	-	●	●	●	●
	Data cable for extension up to 3 m, Ø 6.6 mm, 15 x 0.09 mm², shielded, available per meter	6010088	-	-	-	●	●	●	●

Power supply units


	Brief description	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including AC line with North American plug	6034790	-	●	-	-	-	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with European plug	6034941	-	●	-	-	-	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with United Kingdom plug	6034942	-	●	-	-	-	-	-
	Australian power cord connector	6034357	-	●	-	-	-	-	-
	EU power cord connector	6034354	-	●	-	-	-	-	-

Software




	Brief description	Part no.	LECTOR® 62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	CD-ROM Manuals & Software	2029112	-	-	-	●	●	●	●
	DVD Manuals & Software	2039442	●	-	-	-	-	-	-



Storage mediums

	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Micro SD flash card, memory medium with 512 MB	4051366	●	-	-	-	-	-	-
	Micro SD flash card, memory medium with 2 GB	2044525	●	-	-	-	-	-	-

Terminal and alignment brackets

	Brief description	Part no.	LECTOR®62x	ICR80x Serial	ICR80x USB	ICR840-2	ICR845-2	ICR84x-2 FlexLens	ICR85x-2
	Quick clamp	2025526	●	-	-	-	-	-	-
	Quick clamp	2042484	-	-	-	●	●	●	●
	Round rod holders for round rods and tubes	2042802	●	-	-	-	-	-	-



Hand-held scanners 1D



















Mounting accessories

	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	Articulating arm for VMHOLDER	6028231	-	-	-	-	●	●	●	●	●
	Belt holster for IT3820/4820 or IT6320, plus one spare Lithium-ion battery	6036657	-	-	-	-	-	-	-	●	●
	Countertop stand	6036724	-	●	●	-	-	-	-	-	-
	Flex neck countertop stand for IT3800g	6033412	-	-	-	-	●	-	-	-	-
	Flex neck countertop stand	6028226	-	-	-	-	-	●	●	●	●
	Desk holder	6036723	●	●	●	-	-	-	-	-	-
	Desk holder for IT3800g	6033411	-	-	-	-	●	-	-	-	-
	Desk holder	6028227	-	-	-	-	-	●	●	●	●
	Protection cover with metal ring for IT3800g	6034805	-	-	-	-	●	-	-	-	-
	Protection cover with metal ring for IT4600/3820/4820	6028234	-	-	-	-	-	-	-	●	-
	Take-up reel/balancer	6028228	-	-	-	-	●	●	●	●	●
	Vehicle/wall holder	6028229	-	-	-	-	●	●	●	●	●





Plug connectors and cables

	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.20 m (plug/plug)	2056475	●	●	●	-	●	●	●	-	-
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.30 m (plug/plug)	2057709	●	●	●	-	●	●	●	-	-













	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT38001.030E	IT38001.050E	IT3820	IT3820i
	Straightened PS/2 cable, 2 m	6036726	●	●	●	-	-	-	-	-	-
	Straightened USB cable, 1.8 m	6036728	●	●	●	●	-	-	-	-	-
	Spiral cord PS/2 3.8 m (fully extracted)	6039155	●	●	●	-	-	-	-	-	-
	Spiral cord RS-232 3.8 m (fully extracted), additional power supply needed	6039156	●	●	●	-	-	-	-	-	-
	Spiral cord USB 3.8 m (fully extracted)	6039158	●	●	●	-	-	-	-	-	-
	Spiral cord 2.8 m, 6-pin Mini DIN male (42206132-02)	6012110	-	-	-	-	●	-	●	●	●
	Spiral cord 4.5 m for PS/2 keyboard wedge, 6-pin Mini DIN plus (42206132-01), additional power supply needed	6025941	-	-	-	-	●	-	●	●	●
	Spiral cord 2.8 m, Mini DIN male keyboard wedge cable (42206212-02), for XT/AT and PS/2	6025942	-	-	-	-	●	-	●	●	●
	Straightened RS-232 TTL cable, 1.8 m	6036727	●	●	●	-	-	-	-	-	-
	Straightened RS-232 TTL cable, 1.8 m, power on pin 9	6041540	●	●	●	-	-	-	-	-	-
	Coiled cable 4.5 m for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-06E)	6025954	-	-	-	-	●	-	●	-	-
	Coiled cable 2.30 m for RS-232 TTL, 9-pin D-sub connector, including Mini DIN power stealer 0.7 m (42205895-01)	6028233	-	-	-	-	●	-	●	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-04E)	6010819	-	-	-	-	-	●	-	-	-
	Spiral cable 5 m for RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-05E)	6010821	-	-	-	-	-	●	-	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, voltage on pin 9	6025228	-	-	-	-	-	●	-	-	-
	Coiled cable 6.8 m for RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-22E)	6025956	-	-	-	-	-	●	-	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 25-pin D-sub connector, voltage on pin 9 (42204254-01E)	6026514	-	-	-	-	-	●	-	-	-
	Coiled cable 2.4 m for RS-232 TTL, 9-pin D-sub connector, voltage on pin 9, (42203758-03E)	6025955	-	-	-	-	●	-	●	●	●




	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109	-	-	-	-	●	-	●	-	-
	Straightened RS-232 TTL cable, 2.4 m, 9-pin D-sub connector, voltage on pin 9 (42203758-03S)	6028186	-	-	-	-	●	-	●	●	●
	2.8 m coiled cable for USB, connector type A (42206202-02)	6032516	-	-	-	-	●	-	●	●	●
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232	-	-	-	-	●	-	●	●	●





Power supply units

	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including AC line with North American plug	6034790	-	-	-	-	●	●	●	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with European plug	6034941	-	-	-	-	●	●	●	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with United Kingdom plug	6034942	-	-	-	-	●	●	●	-	-
	Australian power cord connector	6034357	-	-	-	-	●	●	●	●	●
	EU power cord connector	6034354	-	-	-	-	●	●	●	●	●
	Power supply kit: includes 5-V power supply and EU, UK, USA and ROW adapters	6036722	●	●	●	●	-	-	-	-	-
	UK power cord connector	6034355	-	-	-	-	●	●	●	●	●
	US power cord connector	6034356	-	-	-	-	●	●	●	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with European plug	6034352	-	-	-	-	-	-	-	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with United Kingdom plug	6034353	-	-	-	-	-	-	-	●	●








	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including AC line with North American plug	6034789	-	-	-	-	-	-	-	●	●

Rechargeable batteries and battery chargers



	Brief description	Part no.	IDM120	IDM140-2	IDM140-2 Bluetooth	IDM140-2 WLAN	IT3800g	IT3800i 030E	IT3800i 050E	IT3820	IT3820i
	Battery charge sleeve for Lithium-ion battery	6033887	-	-	-	-	-	-	-	●	●
	Charging station for IT2020-CB-B without Bluetooth functionality	6029319	-	-	-	-	-	-	-	●	●
	Lithium-ion replacement battery for the radio scanners IDM140-2 Bluetooth	6041193	-	-	●	-	-	-	-	-	-
	Radio base and charging station for IT2020-5BE Bluetooth	6029312	-	-	-	-	-	-	-	●	●
	Charging station without Bluetooth functionality	6041226	-	-	●	-	-	-	-	-	-
	Lithium-ion replacement battery for the ITxx20 Bluetooth radio scanners	6029317	-	-	-	-	-	-	-	●	●

Hand-held scanners 2D


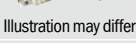













Mounting accessories

	Brief description	Part no.	IT4600g 051CE	IT4600g 031CE	IT4800i 031CE	IT4800i 051CE	IT4820	IT4820i
	Articulating arm for VMHOLDER	6028231	●	●	●	●	●	●
	Belt holster for IT3820/4820 or IT6320, plus one spare Lithium-ion battery	6036657	-	-	-	-	●	●
	Flex neck countertop stand	6028226	●	●	●	●	●	●
	Desk holder	6028227	●	●	●	●	●	●
	Protection cover with metal ring for IT4600/3820/4820	6028234	●	●	-	-	●	-





	Brief description	Part no.	П4600g 051CE	П4600g 031CE	П4800i 031CE	П4800i 051CE	П4820	П4820i
	Take-up reel/balancer	6028228	●	●	●	●	●	●
	Vehicle/wall holder	6028229	●	●	●	●	●	●








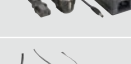


Plug connectors and cables

	Brief description	Part no.	П4600g 051CE	П4600g 031CE	П4800i 031CE	П4800i 051CE	П4820	П4820i
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.20 m (plug/plug)	2056475	●	●	●	●	-	-
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.30 m (plug/plug)	2057709	●	●	●	●	-	-
	Spiral cord 2.8 m, 6-pin Mini DIN male (42206132-02)	6012110	●	-	-	●	●	●
	Spiral cord 4.5 m for PS/2 keyboard wedge, 6-pin Mini DIN plus (42206132-01), additional power supply needed	6025941	●	-	-	●	●	●
	Spiral cord 2.8 m, Mini DIN male keyboard wedge cable (42206212-02), for XT/AT and PS/2	6025942	●	-	-	●	●	●
	Coiled cable 4.5 m for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-06E)	6025954	●	-	-	●	-	-
	Coiled cable 2.30 m for RS-232 TTL, 9-pin D-sub connector, including Mini DIN power stealer 0.7 m (42205895-01)	6028233	●	-	-	●	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-04E)	6010819	-	●	●	-	-	-
	Spiral cable 5 m for RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-05E)	6010821	-	●	●	-	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 9-pin D-sub connector, voltage on pin 9	6025228	-	●	●	-	-	-
	Coiled cable 6.8 m for RS-232 TRUE, 9-pin D-sub connector, additional power supply needed (42204253-22E)	6025956	-	●	●	-	-	-
	Coiled cable 2.4 m, RS-232 TRUE, 25-pin D-sub connector, voltage on pin 9 (42204254-01E)	6026514	-	●	●	-	-	-
	Coiled cable 2.4 m for RS-232 TTL, 9-pin D-sub connector, voltage on pin 9, (42203758-03E)	6025955	●	-	-	●	●	●
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109	●	-	-	●	-	-
	Straightened RS-232 TTL cable, 2.4 m, 9-pin D-sub connector, voltage on pin 9 (42203758-03S)	6028186	●	-	-	●	●	●




	Brief description	Part no.	IT4600g 051CE	IT4600g 031CE	IT4800i 031CE	IT4800i 051CE	IT4820	IT4820i
	2.8 m coiled cable for USB, connector type A (42206202-02)	6032516	●	-	-	●	●	●
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232	●	-	-	●	●	●




Power supply units

	Brief description	Part no.	IT4600g 051CE	IT4600g 031CE	IT4800i 031CE	IT4800i 051CE	IT4820	IT4820i
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including AC line with North American plug	6034790	●	●	●	●	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with European plug	6034941	●	●	●	●	-	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with United Kingdom plug	6034942	●	●	●	●	-	-
	Australian power cord connector	6034357	●	●	●	●	●	●
	EU power cord connector	6034354	●	●	●	●	●	●
	UK power cord connector	6034355	●	●	●	●	●	●
	US power cord connector	6034356	●	●	●	●	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with European plug	6034352	-	-	-	-	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with United Kingdom plug	6034353	-	-	-	-	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including AC line with North American plug	6034789	-	-	-	-	●	●

Rechargeable batteries and battery chargers





	Brief description	Part no.	IT4600g 051CE	IT4600g 031CE	IT4800i 031CE	IT4800i 051CE	IT4820	IT4820i
	Battery charge sleeve for Lithium-ion battery	6033887	-	-	-	-	●	●








	Brief description	Part no.	IT4600g 051CE	IT4600g 031CE	IT4800i 031CE	IT4800i 051CE	IT4820	IT4820i
	Charging station for IT2020-CB-B without Bluetooth functionality	6029319	-	-	-	-	●	●
	Radio base and charging station for IT2020-5BE Bluetooth	6029312	-	-	-	-	●	●
	Lithium-ion replacement battery for the ITxx20 Bluetooth radio scanners	6029317	-	-	-	-	●	●

Hand-held scanners DPM





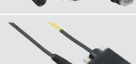


Mounting accessories

	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Articulating arm for VMHOLDER	6028231	●	●
	Belt holster for IT3820/4820 or IT6320, plus one spare Lithium-ion battery	6036657	-	●
	Take-up reel/balancer	6028228	●	●
	Vehicle/wall holder	6028229	●	●






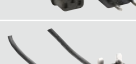


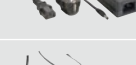
Plug connectors and cables

	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.20 m (plug/plug)	2056475	●	-
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.30 m (plug/plug)	2057709	●	-
	Spiral cord 4.5 m for PS/2 keyboard wedge, 6-pin Mini DIN plus (42206132-01), additional power supply needed	6025941	●	-
	2 m coiled cable for USB, connector type A (42206416-01E), additional power supply needed	6033019	●	-
	2.2 m coiled cable for PS/2 keyboard wedge, 6-pin Mini DIN plug (42206132-03E), additional power supply needed	6033020	●	-
	Spiral cord 2.8 m, 6-pin Mini DIN male (42206132-02)	6012110	-	●




	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Spiral cord 2.8 m, Mini DIN male keyboard wedge cable (42206212-02), for XT/AT and PS/2	6025942	-	●
	Coiled cable 4.5 m for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-06E)	6025954	●	-
	Coiled cable 2.4 m for RS-232 TTL, 9-pin D-sub connector, voltage on pin 9, (42203758-03E)	6025955	-	●
	2.4 m coiled cable for RS-232 TTL, 9-pin D-sub connector, additional power supply needed (42203758-04E)	6012109	●	-
	Straightened RS-232 TTL cable, 2.4 m, 9-pin D-sub connector, voltage on pin 9 (42203758-03S)	6028186	-	●
	2.8 m coiled cable for USB, connector type A (42206202-02)	6032516	-	●
	Straightened USB cable, 2.3 m, connector type A (42206161-01)	6028232	-	●





Power supply units

	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including AC line with North American plug	6034790	●	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with European plug	6034941	●	-
	Universal AC adapter, input 100 ... 240 V AC, output 5 V DC, including the power cable with United Kingdom plug	6034942	●	-
	Australian power cord connector	6034357	●	●
	EU power cord connector	6034354	●	●
	UK power cord connector	6034355	●	●
	US power cord connector	6034356	●	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with European plug	6034352	-	●
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including the power cable with United Kingdom plug	6034353	-	●



	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Universal AC adapter, input 100 ... 240 V AC, output 9 V DC, including AC line with North American plug	6034789	-	●


Rechargeable batteries and battery chargers

	Brief description	Part no.	IT6300 DPM	IT6320 DPM
	Battery charge sleeve for Lithium-ion battery	6033887	-	●
	Charging station for IT2020-CB-B without Bluetooth functionality	6029319	-	●
	Radio base and charging station IT2020-5B-DPME Bluetooth, only for cordless DPM scanners	6036870	-	●
	Lithium-ion replacement battery for the ITxx20 Bluetooth radio scanners	6029317	-	●








RFID interrogators (write/read units)


Adapters/distributors (without cable)

	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Converter RS-232 to USB (if no RS-232 interface is available with the PC)	6042499	●	●	●	●


Antennas







	Brief description	Model name	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Industrial RFID HF antenna	RFA321-1701	1042834	-	-	●	-
	Industrial RFID HF antenna	RFA331-1020	1028858	-	-	●	-
	Industrial RFID HF antenna	RFA341-1400	1042754	-	-	●	-
	Industrial RFID HF antenna	RFA341-3520	1028857	-	-	●	-
	Industrial RFID UHF antenna	RFA641-3440	6034316	-	-	-	●

Device protection (mechanical)


	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	IP 65 sealing ring for extension cable with 15-pin D-sub plug connection (6010075 and 6020092)	4038847	●	●	-	-

Modules



	Brief description	Model name	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
 Illustration may differ	Small connection module for one sensor, 4 cable glands, base for CMC600	CDB620-001	1042256	●	●	-	-
	Small connection module for one sensor, 2 cable glands, 2 x M12 connector/socket for CAN, base for CMC600	CDB620-101	1042257	●	●	-	-
	Small connection module for a sensor, 5 cable glands, socket for CMC cloning module	CDB620-201	1042258	●	●	-	-

	Brief description	Model name	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	CDF600 fieldbus proxy to connect a CLV62x, CLV63x, CLV64x, CLV65x, RFH620 to a PROFIBUS network	CDF600-0100	1041251	●	●	-	-
 Illustration may differ	Modular connection module for one sensor	CDM420-0001	1025362	●	●	-	-
	Modular connection module for two sensors	CDM420-0004	1028487	●	●	-	-
	Modular connection module for one sensor, Host and AUX interface available on face plate	CDM420-0101	1025364	●	●	-	-
 Illustration may differ	Kit: Modular connection module for one sensor, Host and AUX interface available on face plate, power supply CMP400, US power cord	CDM420-0102	1026220	●	●	-	-
	Modular connection module for one sensor, additional M12 socket for PROFINET on face plate	CDM425-00034094	1048488	●	●	-	-
 Illustration may differ	Modular connection module for two sensors, additional M12 socket for PROFINET on face plate. Reduction of cable glands from 6 to 4, M12 socket for CAN bus and M12 plug for connection to power supply on front side	CDM425-10234094	1050643	●	●	-	-
	FCC filter	FCC filter	6037324	-	-	●	-
	Multiplexer to connect up to 4 antennas to an RFI341	Multiplexer	6036002	-	-	●	-
	Multiplexer to connect up to 4 antennas to an RFI341	Multiplexer FCC	6037325	-	-	●	-
	Splitter to connect 2 antennas to an RFI341 (power partition)	Splitter	6036000	-	-	●	-








Mounting brackets/plates

	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Mounting bracket	2048551	●	●	-	-

Plug connectors and cables

	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Cable, M12 12-pin, to open end, 5 m	6034605	-	●	-	-
	D-sub plug house, 15-pin HD socket, hand-soldered terminal	6010019	●	●	-	-
	D-sub plug house, 15-pin HD plug, hand-soldered terminal	6010020	●	●	-	-
	D-sub plug house (metal), for 9-/15-pin HD insert	6009438	●	●	-	-






	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Power supply cable, with M12 5-pin socket (straight) / open end, 10 m	6025908	-	-	●	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)	6034414	-	●	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 3 m (plug/plug), drag-chain compliant	6029630	-	●	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 5 m (plug/plug)	6034415	-	●	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 10 m (plug/plug)	6030928	-	●	-	-
	Cable, M12 4-pin, Ethernet to Host RJ45, 20 m (plug/plug)	6036158	-	●	-	-
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 0.9 m (socket/plug)	2042916	-	●	-	-
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 2 m (socket/plug)	2041834	-	●	-	-
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 3 m (socket/plug)	2042914	-	●	-	-
	Cable, M12 12-pin, to CDB620/CDM420/CDF600 15-pin D-sub, 5 m (socket/plug)	2042915	-	●	-	-
	Control/power supply cable for interrogator to multiplexer, 2 x 4-pin M12 plugs, length 0.5 m	6035859	-	-	●	-
	Extension cable, 3 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034418	●	●	-	-
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034417	●	●	-	-
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (socket/open end) AWG26	2043413	●	●	-	-




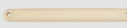
Power supply units

	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Power supply unit with pre-assembled M12 socket	2049552	-	●	-	-


RFID transponder

	Brief description	Model name	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Diameter 16 mm, thickness 2.9 mm, IC: NXP ICODE SLI SL2, -25 °C ... +70 °C, IP 68	RFID coin (16 mm)	6041592	●	●	●	-
	Diameter 22 mm, thickness 3 mm, IC: TI Tag-it HF-I plus, -25 °C ... +90 °C, IP 68	RFID coin (22 mm)	6033173	●	●	●	-
	Diameter 30 mm, thickness 3 mm, IC: NXP ICODE SLI SL2, -25 °C ... +85 °C, IP 68	RFID disc (30 mm)	6034740	●	●	●	-






	Brief description	Model name	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Diameter 50 mm, thickness 3 mm, IC: NXP ICODE SLI SL2, -25 °C ... +85 °C, IP 68	RFID disc (50 mm)	6033781	●	●	●	-
	Diameter 53 mm, thickness 12 mm, IC: NXP ICODE SLI SL2, -40 °C ... +140 °C	RFID disc (high temp)	6041594	●	●	●	-
	Length 22 mm, diameter 4 mm, IC: NXP ICODE SLI SL2, -25 °C ... +85 °C, IP 68	RFID glass transponder	6039237	●	●	●	-
	85,6 mm x 54 mm x 0,76 mm, IC: TI Tag-it HF-I plus, -35 °C ... +50 °C	RFID ISO card	6037846	●	●	●	-
	85,6 mm x 54 mm x 0,76 mm, IC: NXP ICODE SLI SL2, -35 °C ... +50 °C	RFID ISO card	6037848	●	●	●	-
	25 mm x 12,5 mm x 5 mm, IC: NXP ICODE SLI SL2, -25 °C ... +130 °C, IP 68	RFID on-metal	6039051	●	●	●	-
	1500 paper labels on reel, white, siliconized paper, 81 mm x 49 mm, IC: NXP ICODE SLI SL2, -10 °C ... +85 °C	RFID paper label	6037763	●	●	●	-
	UHF Transponder on metal 52 mm x 64 mm x 10 mm	RFT661-4654	6034437	-	-	-	●
	UHF Transponder 223 mm x 23 mm x 8 mm	RFT661-5653	6034277	-	-	-	●

Storage mediums

	Brief description	Part no.	RFH62x Standard	RFH62x Ethernet	RFI341	RFI641
	Micro SD flash card, memory medium with 512 MB	4051366	●	●	-	-

RFID antennas



Plug connectors and cables

	Brief description	Part no.	RFA3xx	RFA6xx
	Antenna connection cable for interrogator to splitter or multiplexer, 2 x BNC plugs, 0.5 m	6037103	●	-
	Antenna cable adapter, RD. STEC/BUC, 0.35 m, male bayonet nut connector (BNC) / female screw connector (TNC)	2046653	●	-
	Cable for connecting the antenna, 1 x TNC plug, 1 x N socket, length 2 m	6034081	-	●









Connectivity





Device protection (mechanical)

	Brief description	Part no.	CDF600	CDB405	CDB410	CDB620	CDM410	CDM420	CDM425	CDM490
	Cover for code switches of CDF600 as protection against manipulation, incl. 2 fixing screws	2052296	●	-	-	-	-	-	-	-
	IP 65 sealing ring for extension cable with 15-pin D-sub plug connection (6010075 and 6020092)	4038847	●	●	●	●	●	●	●	●






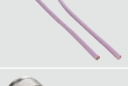






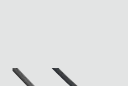

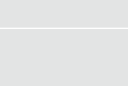





Modules

	Brief description	Model name	Part no.	CDF600	CDB405	CDB410	CDB620	CDM410	CDM420	CDM425	CDM490
	External parameter memory for integration in CDB620/CDM42x	CMC600-101	1042259	-	-	-	●	-	●	-	●
 Illustration may differ	Visualization of read results and read diagnosis data	CMD400	2029466	-	-	-	-	-	●	-	●
 Illustration may differ	PROFIBUS DP Gateway (IP 20, 9-pin D-sub socket)	CMF400-1001	1026241	-	-	-	-	-	●	-	●
	PROFIBUS DP Gateway (IP 65, 9-pin D-sub socket)	CMF400-1101	1026643	-	-	-	-	-	●	-	●
	PROFIBUS DP Gateway (IP 65, 5-pin M12 plug/socket)	CMF400-1201	1028663	-	-	-	-	-	●	-	●
 Illustration may differ	DeviceNet Gateway (IP 65, M12 plug)	CMF400-2101	1026242	-	-	-	-	-	●	-	●
	Ethernet (TCP/IP) Gateway (IP 65, RJ45 socket)	CMF400-3101	1026357	-	-	-	-	-	●	-	●
	Power supply unit, 11 W	CMP400	2029468	-	-	-	-	●	●	-	-
	Power supply unit, 25 W, installation by replacement of lid	CMP490	2030091	-	-	-	-	-	-	-	●








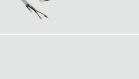

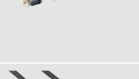

Plug connectors and cables

	Brief description	Part no.	CDF600	CDB405	CDB410	CDB620	CDM410	CDM420	CDM425	CDM490
	Power supply cable, with 5-pin M12 socket (straight)/open end, 2 m	6025906	●	-	-	-	-	-	-	-
	Power supply cable, with 5-pin M12 socket (straight)/open end, 10 m	6025908	●	-	-	-	-	-	-	-
	Power supply cable, with 5-pin M12 socket (angled)/open end, 2 m	6025909	●	-	-	-	-	-	-	-
	Power supply cable, with 5-pin M12 socket (angled)/open end, 10 m	6025911	●	-	-	-	-	-	-	-
	Cable for digital I/Os for CDF600 M12, 5-pin, socket/plug	6025931	●	-	-	-	-	-	-	-
	Parameter setting cable for PC connection (9-pin Sub-D) to CDF600 (4-pin M8), 2 m	6021195	●	-	-	-	-	-	-	-
	Parameter setting cable for PC connection (9-pin Sub-D) to CDF600 (4-pin M8), 10 m	2027649	●	-	-	-	-	-	-	-



	Brief description	Part no.	CDF600	CDB405	CDB410	CDB620	CDM410	CDM420	CDM425	CDM490
	Serial RS-232 cable, 3 m, 9-pin, D-sub, socket/open cable end	2020319	-	●	●	●	●	●	●	●
	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, 3-wired, with 2 x 9-pin D-sub receptacle	2014054	-	●	●	●	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034417	-	●	●	●	●	●	●	●
	Extension cable, 3 m, 15-wired, shielded, with 15-pin D-sub HD (plug/socket) AWG26	6034418	-	●	●	●	●	●	●	●
	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-sub HD (socket/open end) AWG26	2043413	-	●	●	●	●	●	●	●
	PROFIBUS cable, 2 x 0.34 mm, sold by the meter	6021355	●	-	-	-	-	-	-	-
	Bus-IN, PROFIBUS socket, M12	6021353	●	-	-	-	-	-	-	-
	Bus-OUT, PROFIBUS plug, M12	6021354	●	-	-	-	-	-	-	-
	M12 plug PROFIBUS resistor	6021156	●	-	-	-	-	-	-	-
	Unitron CAN cable 2 x 2 x 0.5 mm², sold by the meter	6027048	-	-	-	●	●	●	●	●
	CAN cable 1 m, M12, 5-pin, plug/socket	6021164	-	-	-	●	-	-	●	-
	CAN cable 3 m, M12, 5-pin, plug/socket	6021165	-	-	-	●	-	-	●	-
	CAN cable 5 m, M12, 5-pin, plug/socket	6021168	-	-	-	●	-	-	●	-
	CAN plug, M12, 5-pin, with resistor	6021167	-	-	-	●	-	-	●	-
	CAN cable 5 m, M12, 5-pin, socket/open end	6021166	-	-	-	●	-	●	-	●
	Cable, M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 0.9 m (socket/plug)	2042916	●	-	-	●	-	●	●	-
	Cable, M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 2 m (socket/plug)	2041834	●	-	-	●	-	●	●	-
	Cable, M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 3 m (socket/plug)	2042914	●	-	-	●	-	●	●	-
	Cable, M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 5 m (socket/plug)	2042915	●	-	-	●	-	●	●	-
	Cable, M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 0.9 m (socket/plug)	2049764	●	-	-	●	-	●	●	-
	Cable, M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 2 m (socket/plug)	2055419	●	-	-	●	-	●	●	-
	Cable, M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 3 m (socket/plug)	2055420	●	-	-	●	-	●	●	-
	Cable, M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-sub, 5 m (socket/plug)	2055859	●	-	-	●	-	●	●	-
	Cable, M12 17-pin, to open end, 3 m	6042772	-	-	-	●	-	●	-	-
	Cable, M12 17-pin, to open end, 5 m	6042773	-	-	-	●	-	●	-	-



	Brief description	Part no.	CDF600	CDB405	CDB410	CDB620	CDM410	CDM420	CDM425	CDM490
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.20 m (plug/plug)	2056475	●	-	-	●	-	●	-	-
	Adapter cable incl. 24-V/5-V DC converter for hand-held scanners with cable, 9-pin D-sub (RS-232) to CDB620/CDM420/CDF600 15-pin D-sub, 0.30 m (plug/plug)	2057709	●	-	-	●	-	●	-	-
	Connection cable to CDB620, 1 m, with EEPROM parameter store	2033325	-	-	-	●	-	-	-	-
	Connection cable to CDB620, 3 m, with EEPROM parameter store	2030023	-	-	-	●	-	-	-	-
	Connection cable for CLV480, CLV/X490 to CDB620, 3 m, without EEPROM parameter store	2027046	-	-	-	●	-	-	-	-
	Connection cable (3 m), Ø 8 mm, shielded, with 15-pin D-sub HD receptacle and 15-pin D-sub HD plug	2020302	-	-	-	-	-	-	-	●
	Cold cable (10 m), with plug housing and parameter store (EEPROM), IP 65	2031034	-	-	-	-	-	-	-	●
	Cold cable (3 m), with plug housing and parameter store (EEPROM), IP 65	2030065	-	-	-	-	-	-	-	●
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 1 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2021806	-	-	-	-	-	-	-	●
	Plug housing (IP 65) for CLV/X490, with EEPROM for parameter storage and connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub HD plug/receptacle	2020307	-	-	-	-	-	-	-	●
	Straight cord RS-232, 2 m, for connection on CDB405-001	6034935	-	●	-	-	-	-	-	-
	Cable with safety plug for CMP400 and CMP490, 2 m	6007655	-	-	-	-	-	●	-	●
	PROFIBUS plug for CMF400-1101, IP 65, D-sub plug	6029030	-	-	-	-	-	●	-	●
	Ethernet patch cable for CMF400, IP 65, 1 m	6029064	-	-	-	-	-	●	-	●
	Cold cable with plug housing for CLV48x/49x and CDM420, 10 m	2033126	-	-	-	-	-	●	-	-
	Face plate for connection of hand-held devices or ICR80x into the AUX interface of CDM420	2030565	-	-	-	-	-	●	-	●
	Face plate with two additional cable glands	2029360	-	-	-	-	-	●	-	●
	Face plate with two 9-pin D-sub plugs, IP 20	2029359	-	-	-	-	-	●	-	●



Free CAD downloads at www.mysick.com

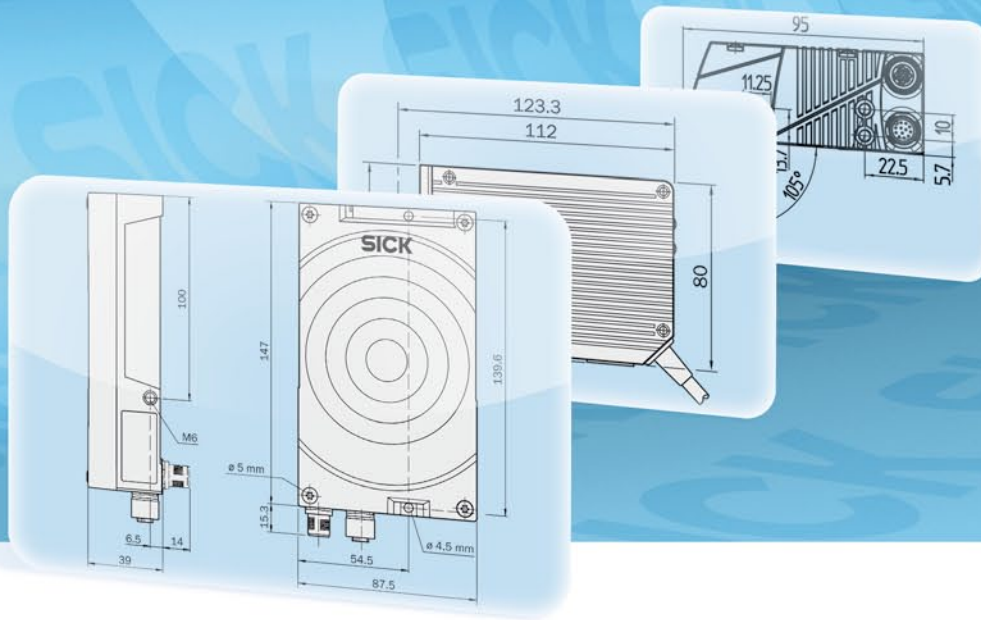
For every device, we provide all popular 2D and 3D CAD models at our online Partner Portal www.mysick.com.

The screenshot displays the SICK Partner Portal interface. At the top, there's a navigation bar with 'Produkte' and 'Service & Support' tabs. Below this, a search bar and navigation links are visible. The main content area is titled 'Bar Code Scanners' and shows details for the CLV65x / CLV651 / Low Density model, including its model name (CLV651-6120) and part number (1046560). A small image of the scanner is shown to the right.

Below the product details, there's a 'CAD Downloads' section. It lists various file formats and their corresponding viewing software. The table below summarizes the data from this section:

Format	File Name	Size	Viewing Software
Visualization Formats	CLV65x_64a_65a-6120-0027501.pdf	4.07 MB	Autodesk Acrobat Reader
Visualization Formats	CLV65x_64a_65a-6120-0027501.iam	0.86 MB	Solid Works eDrawing
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.dxf	5.34 MB	Autodesk Drawing Interchange Format
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.stp	17.36 MB	CATIA v4e Think 3
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.sldasm	5.87 MB	3D ACIS Modeling Inventor Solid Edge
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501_ww_x_1	8.07 MB	Solid Works Unigraphics NX
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.png	2.82 MB	PTC CoCreate Modeler
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.igs	12.51 MB	CATIA v4 Pro / ENGINEER™
3-Dimensional Formats	CLV65x_64a_65a-6120-0027501.asy	1.44 MB	OneSpace.net + PTC Pro / ENGINEER™

On the right side of the CAD download table, there are several utility buttons: 'Bild anzeigen', 'Online data sheet', 'Sachen-URL kopieren', 'Link versenden', and 'Lesesachen erstellen'. Below these, there's a 'Literature' section with links for 'Product information', 'Operating instructions', and 'more...'. An 'Info service' section includes 'Dimensional drawing', 'Reading field diagram', 'Configure data outputs', and 'CAD design models'. At the bottom right, there's a 'Related content' section with a link for 'Accessories'.

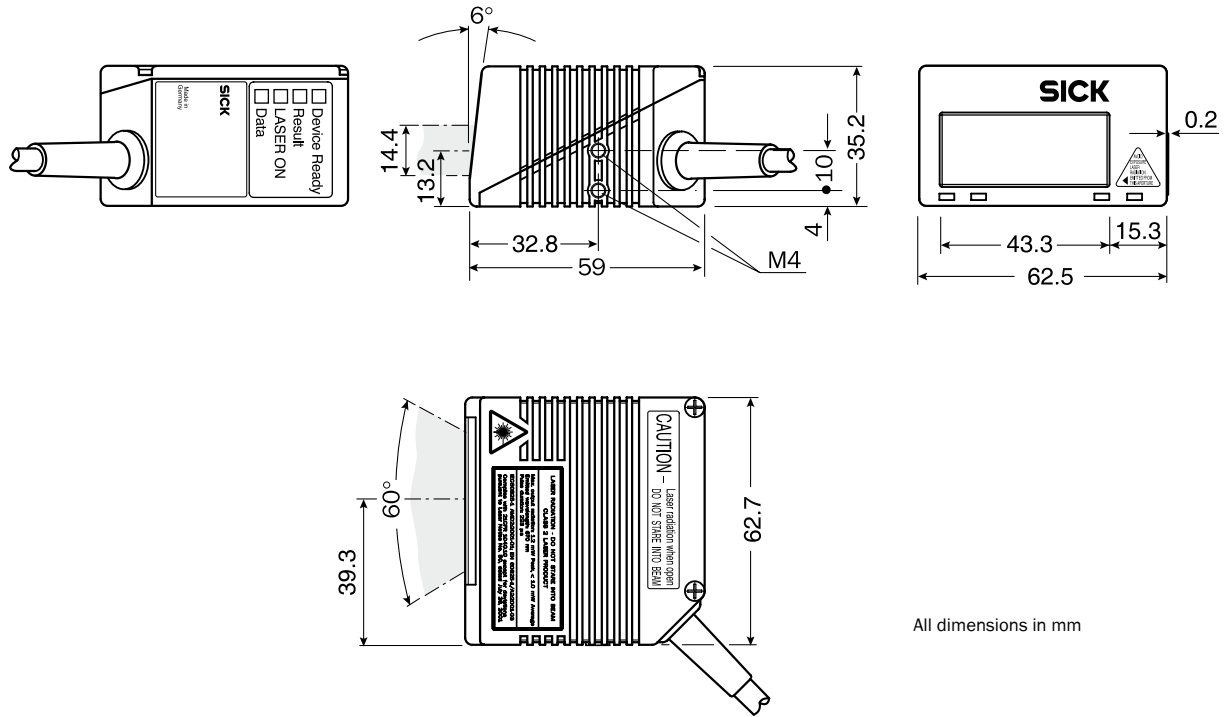


Dimensional drawings

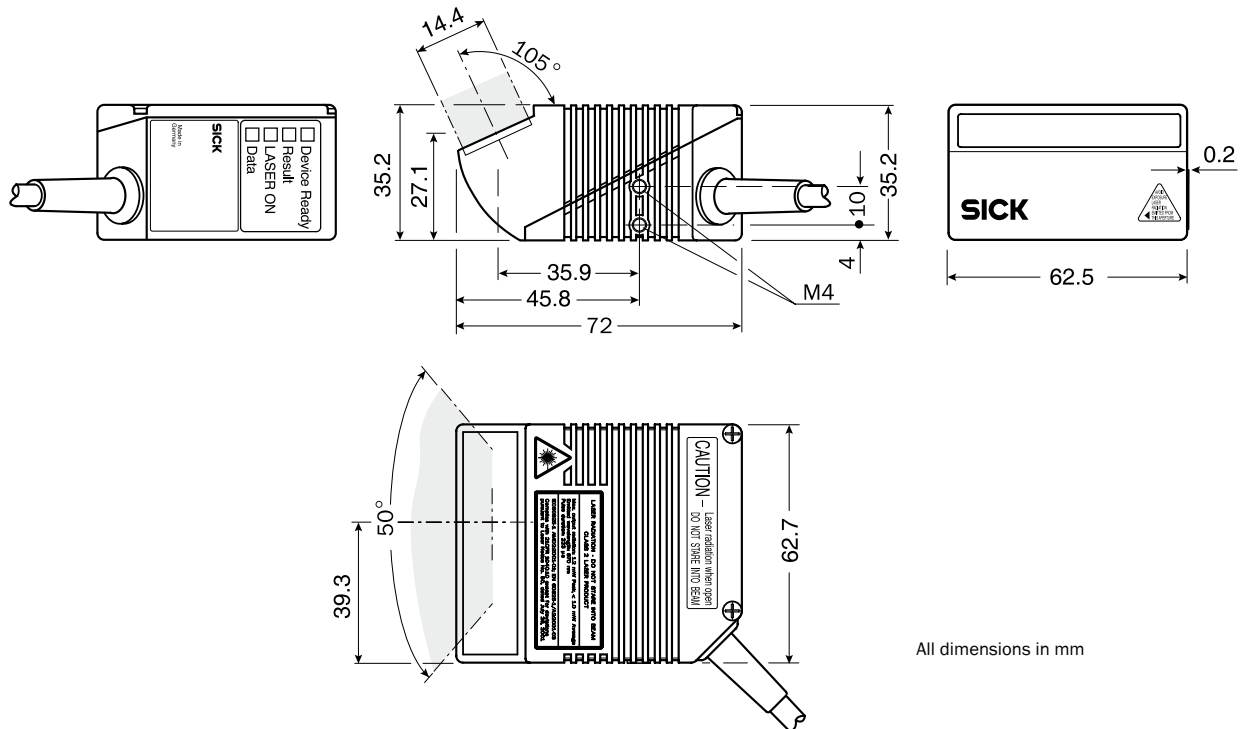
Bar code scanners	M-2
Image-based code readers	M-12
RFID	M-14
System solutions	M-16
Connectivity	M-17

Bar code scanners

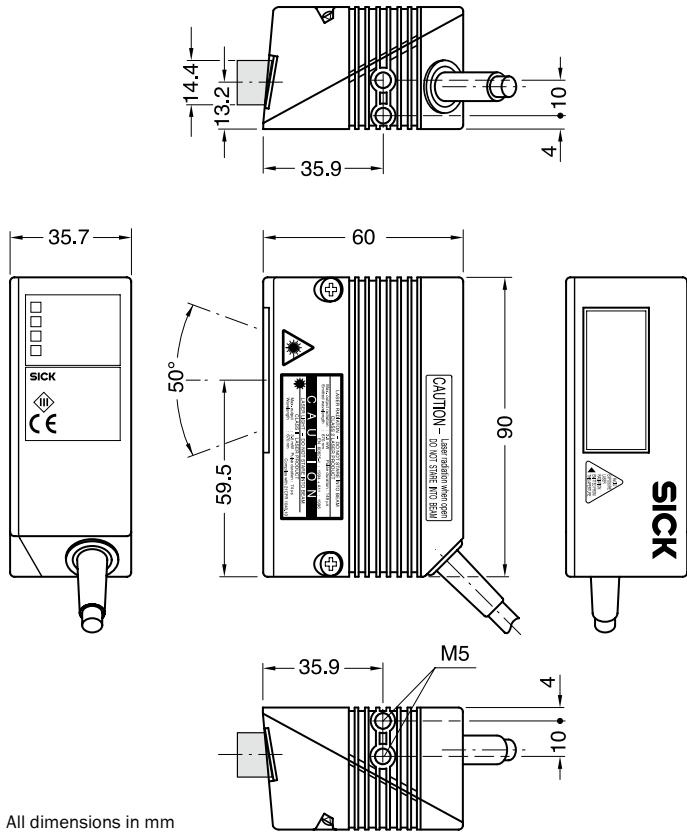
CLV41x/42x front



CLV41x/42x side

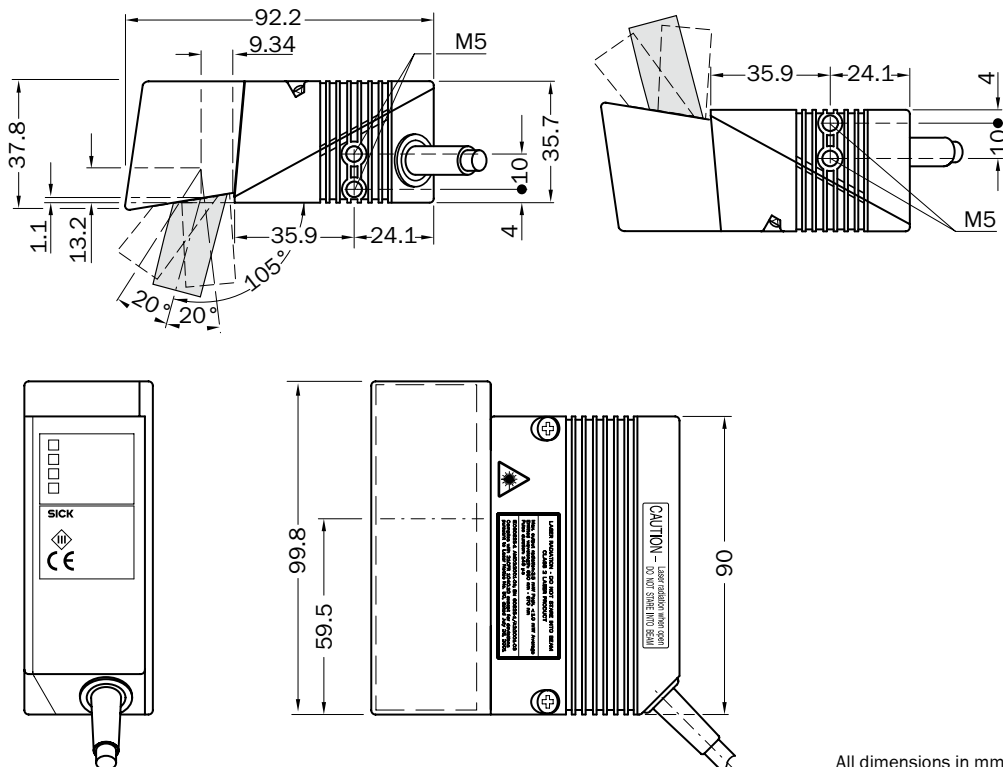


CLV43x/44x/45x front



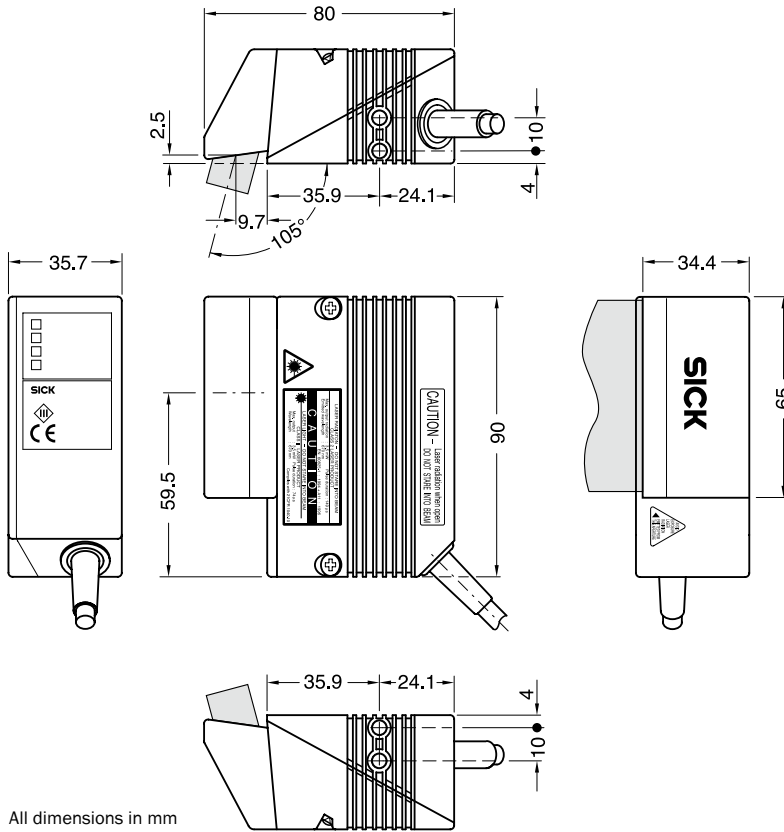
All dimensions in mm

CLV43x/44x/45x oscillating mirror



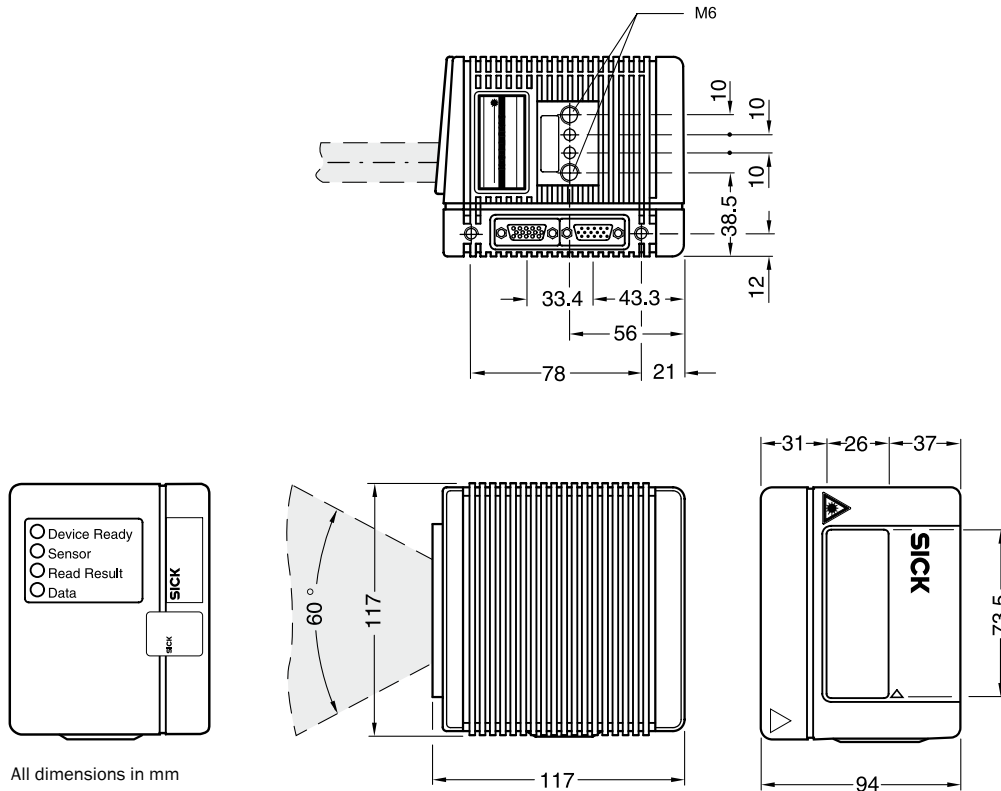
All dimensions in mm

CLV43x side



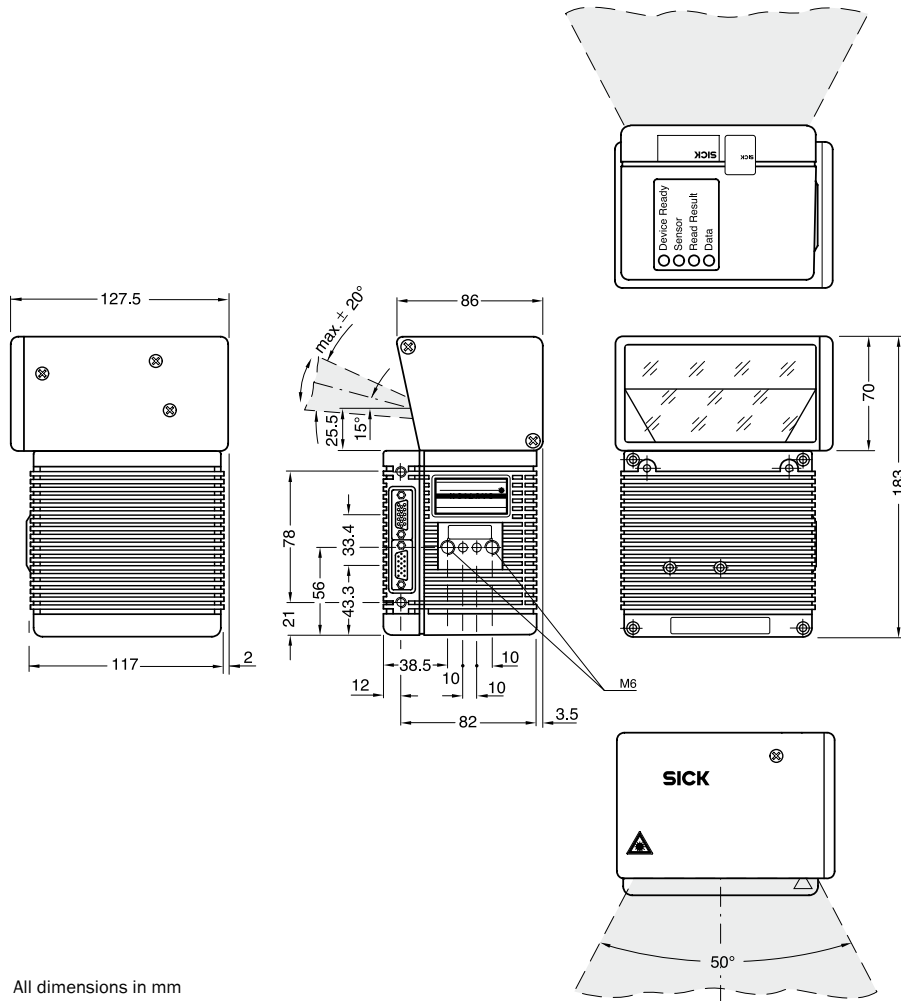
All dimensions in mm

CLV48x/49x front



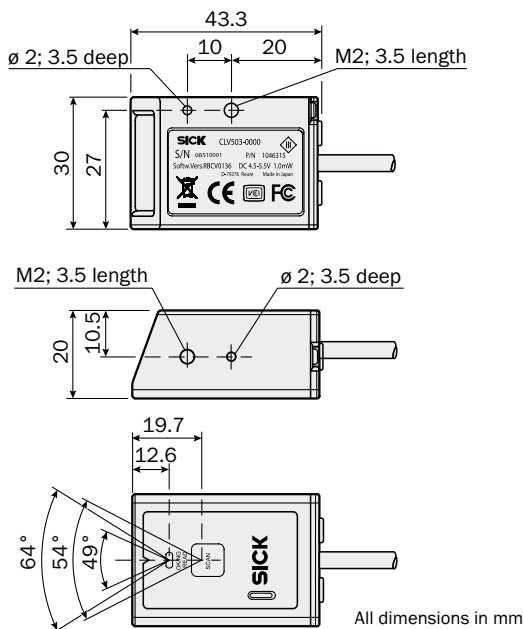
All dimensions in mm

CLV48x/49x oscillating mirror



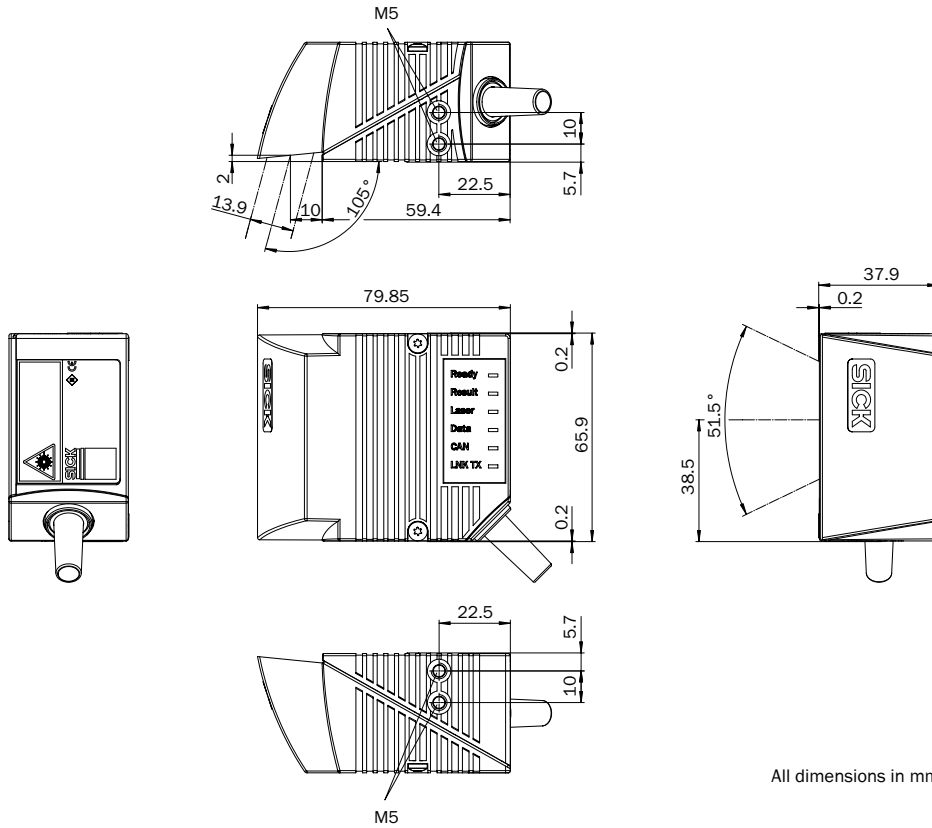
All dimensions in mm

CLV503, front



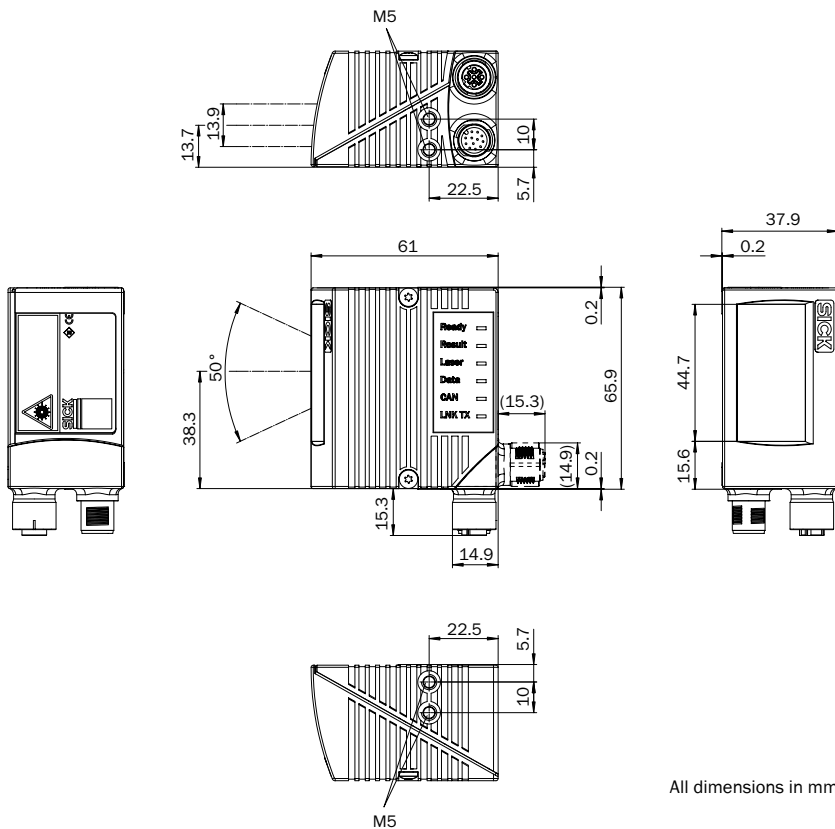
All dimensions in mm

CLV62x Standard, side



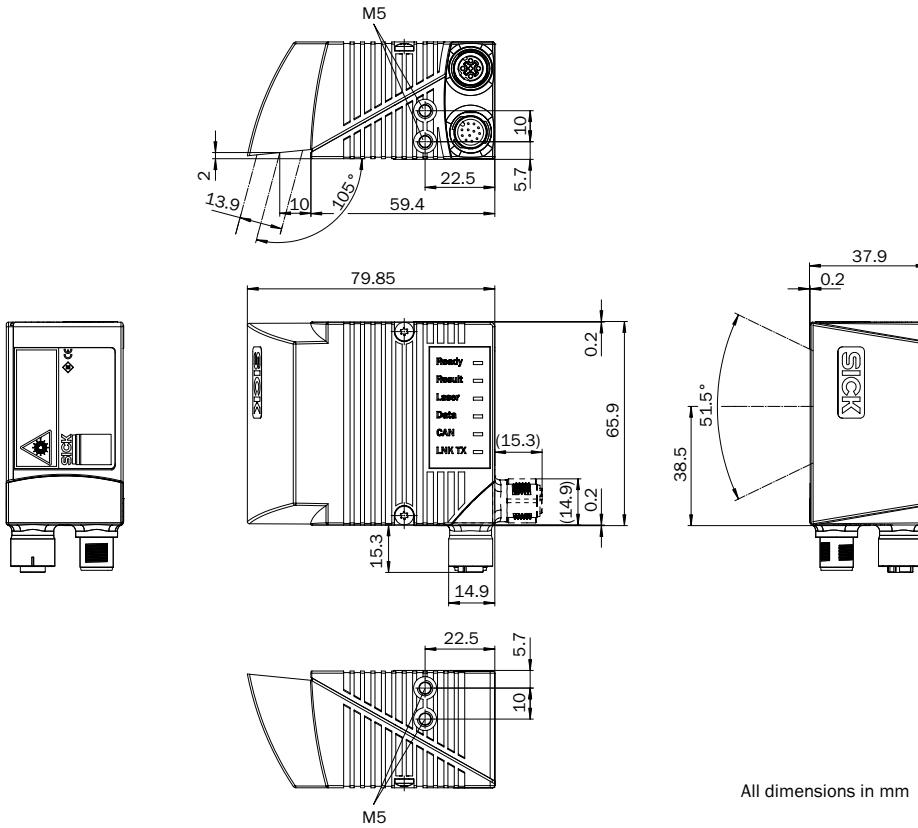
All dimensions in mm

CLV62x Ethernet, front

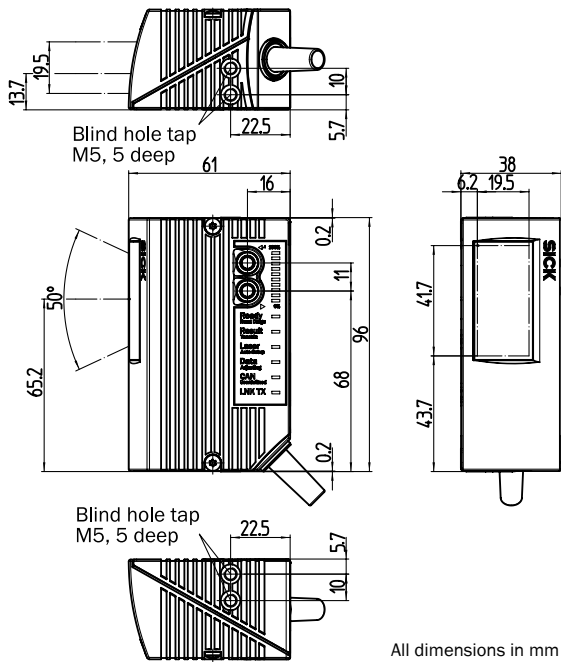


All dimensions in mm

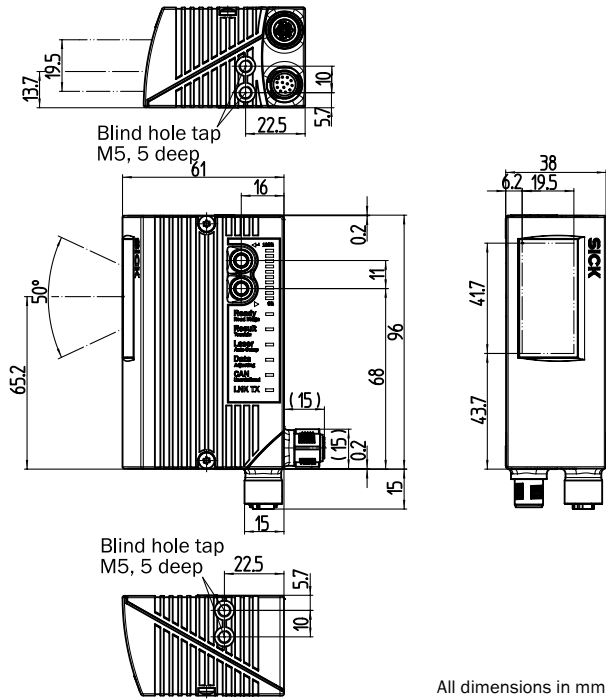
CLV62x Ethernet, side



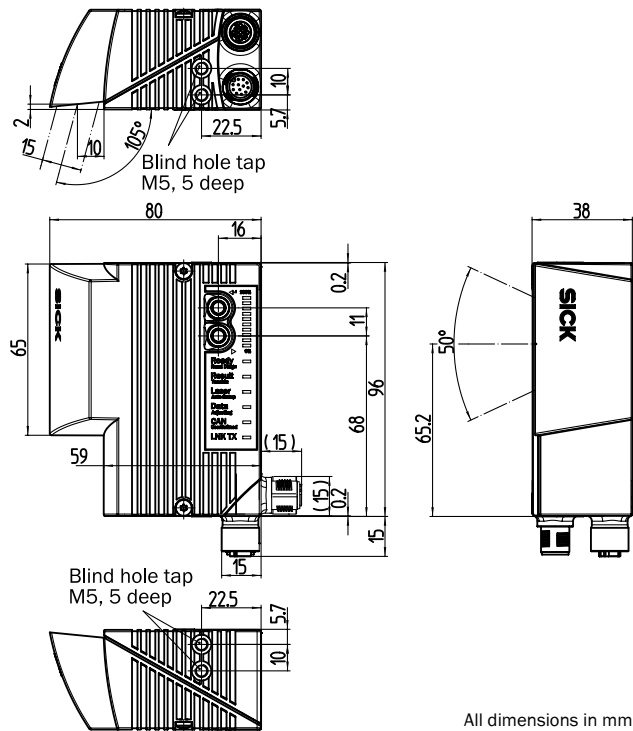
CLV63x/64x/65x Standard, front



CLV63x/64x/65x Ethernet, front



CLV63x/64x Ethernet, side



CLV63x/64x/65x Ethernet, oscillating mirror

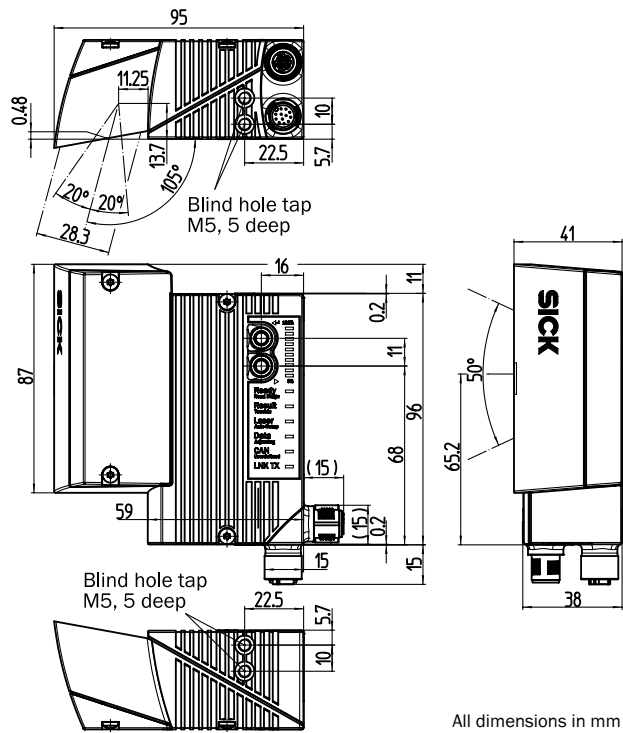
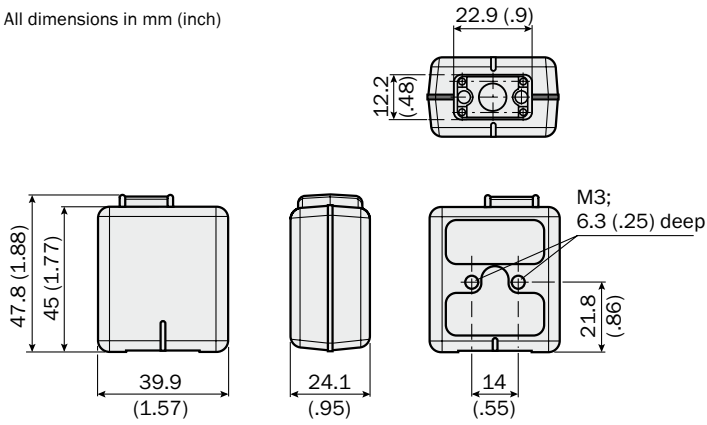


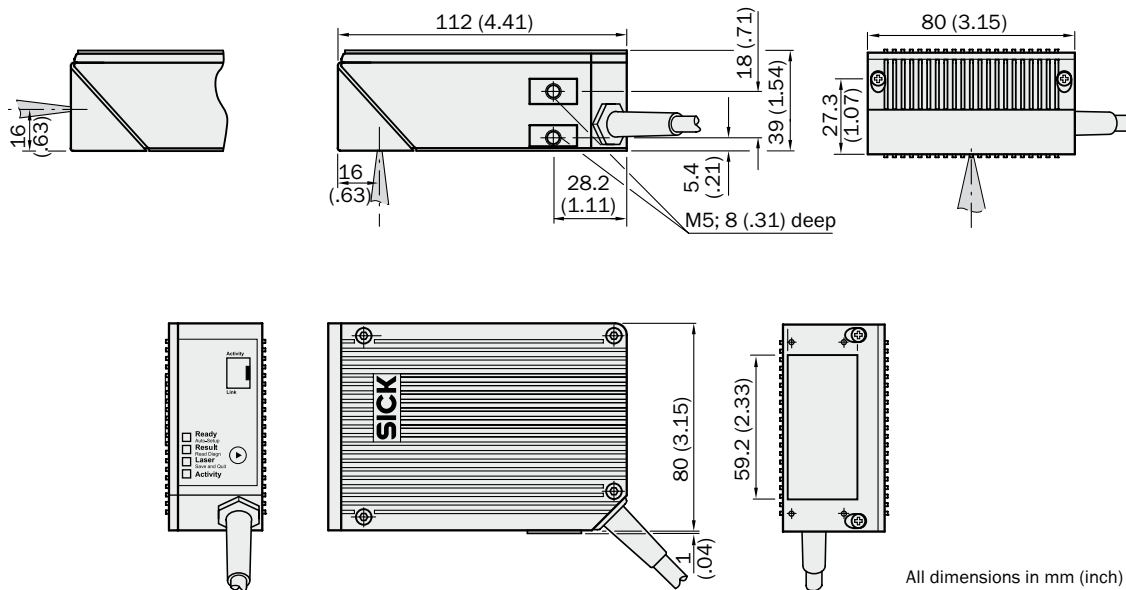
Image-based code readers

ICR80x

All dimensions in mm (inch)

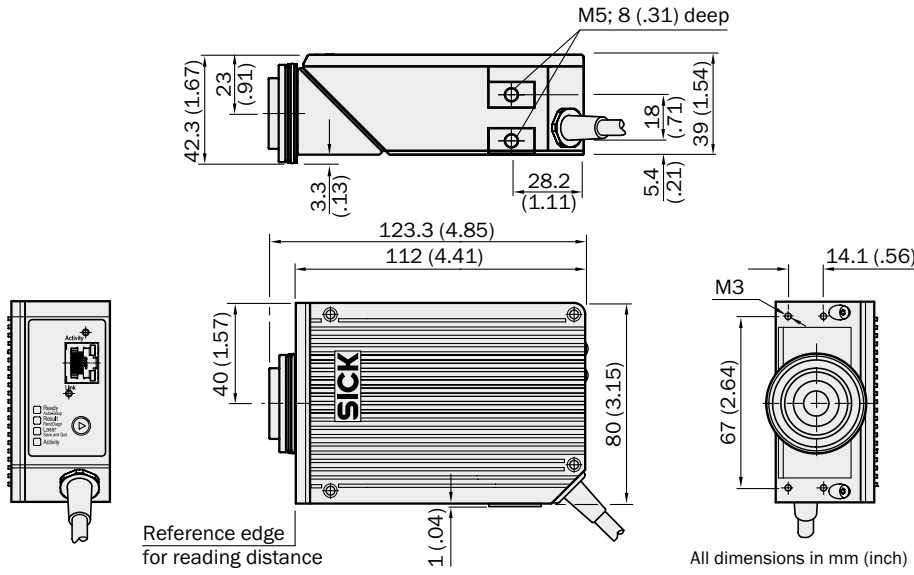


ICR840-2, ICR845-2

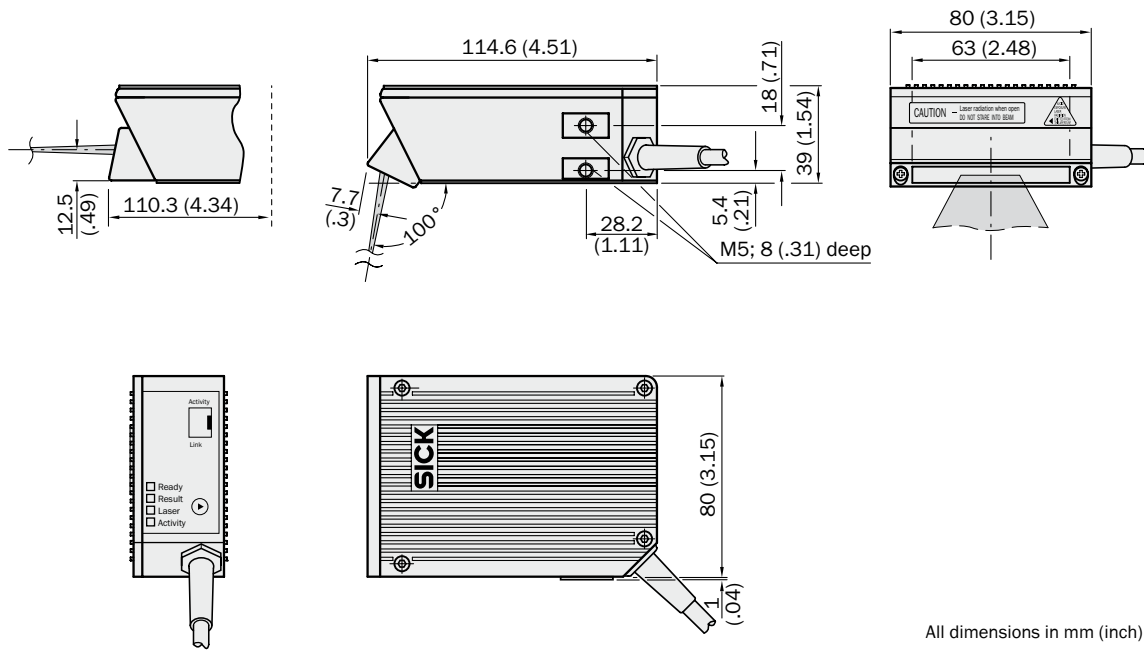


All dimensions in mm (inch)

ICR845-2L FlexLens

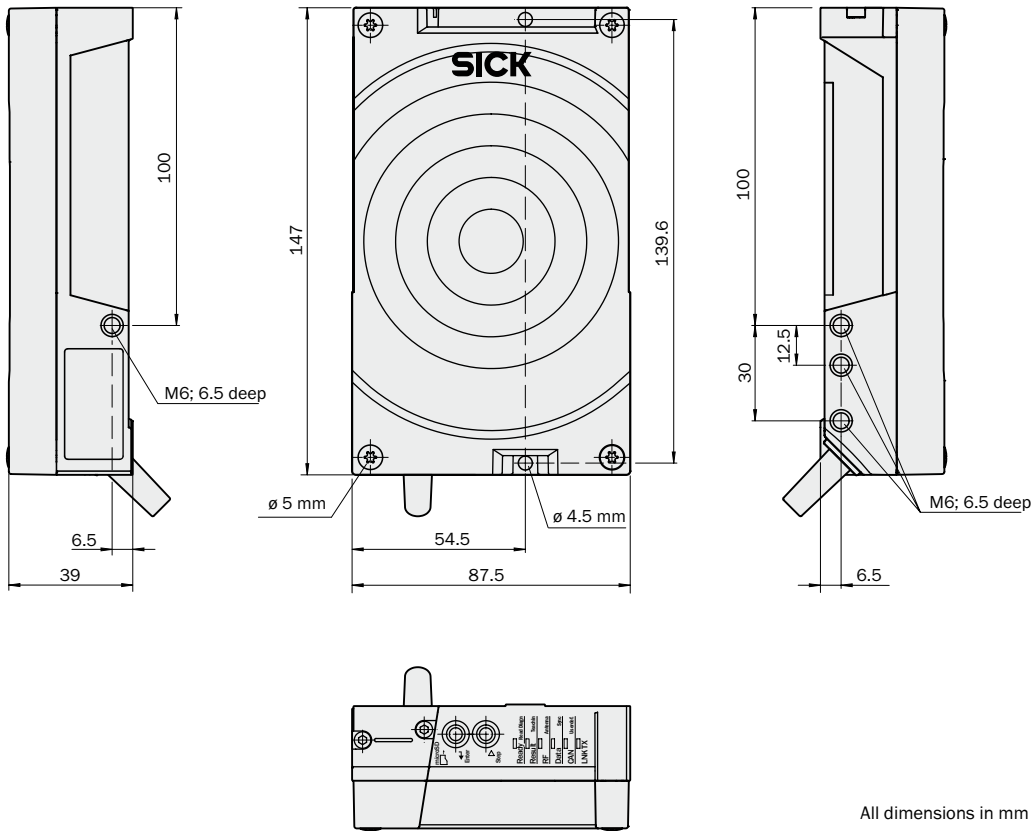


ICR85x-2



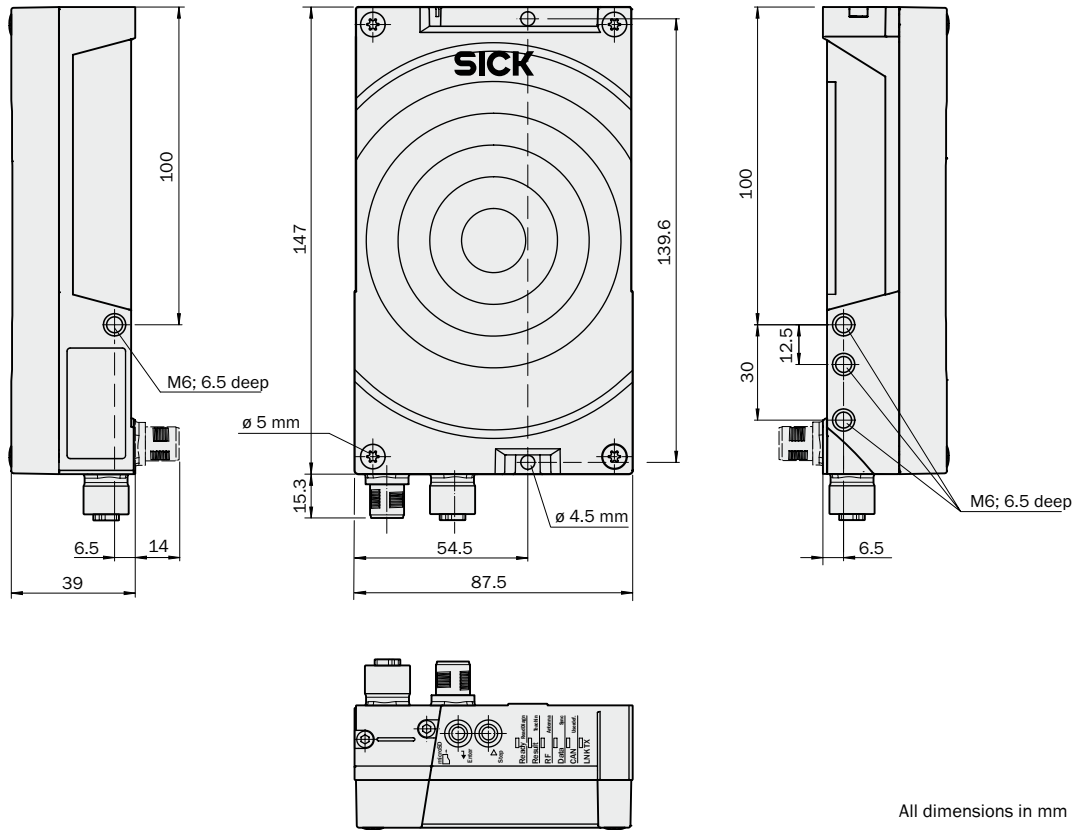
RFID

RFH62x Standard



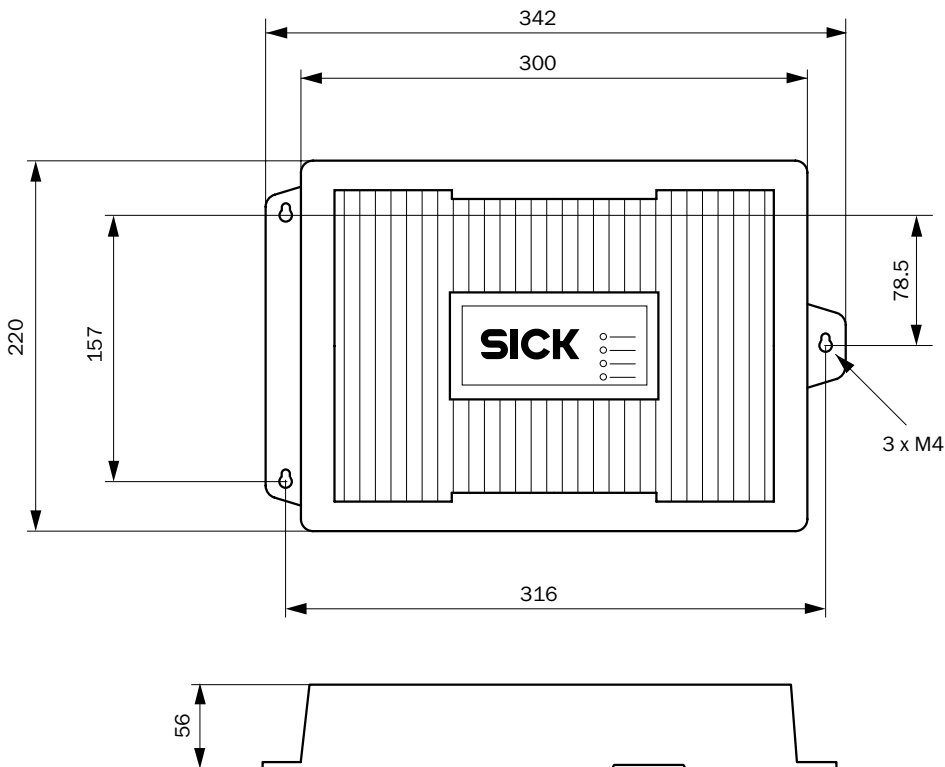
All dimensions in mm

RFH62x Ethernet



All dimensions in mm

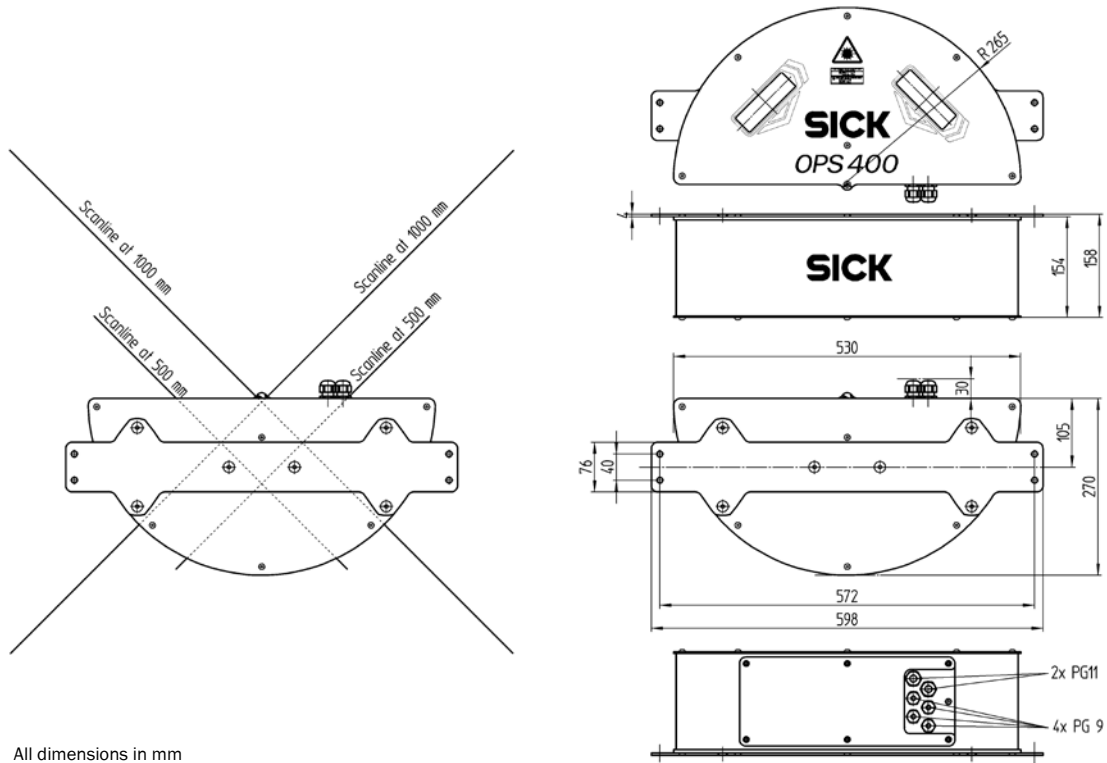
RFI641



All dimensions in mm

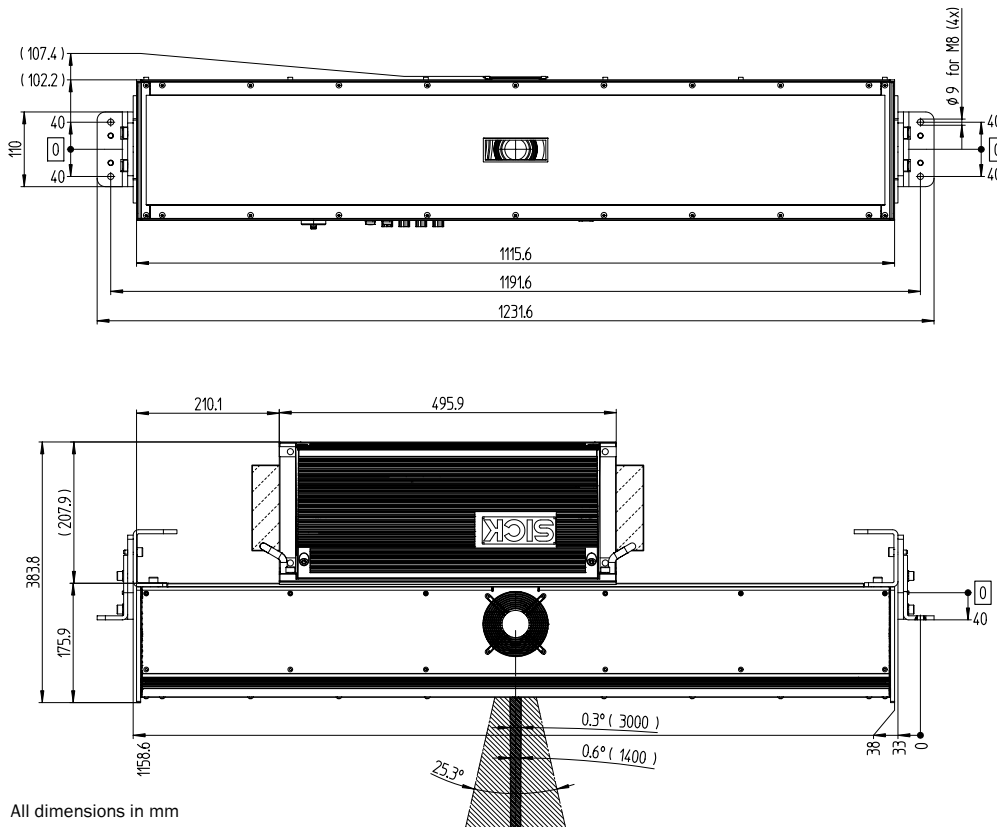
System solutions

OPS400



All dimensions in mm

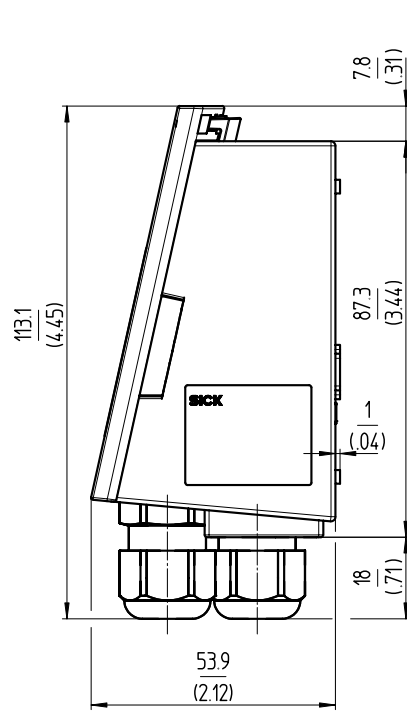
ICR89x



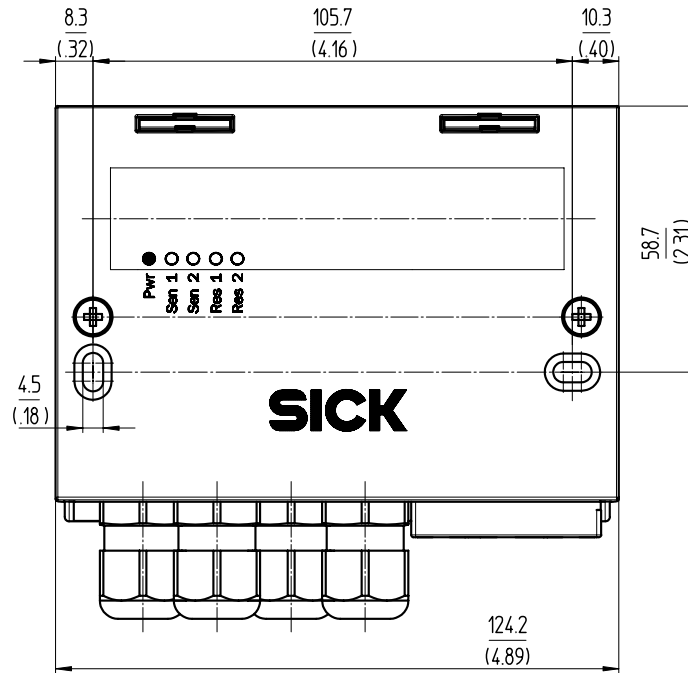
All dimensions in mm

Connectivity

CDB620



All dimensions in mm (inch)



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Norge

Österreich
Polska
Republic of Korea
Republika Slovenija
România
Russia
Schweiz
Singapore
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