



## Powerful, Flexible, Easy to use – the CLV600 Series

A complete family of stationary bar code scanners for  
intelligent solutions in logistics and factory automation

# The complete family: CLV620, CLV630, CLV640, CLV650

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With the release of the new CLV650, the CLV600 family now covers nearly all industrial applications for automatic identification.

With a high scanning frequency of up to 1,200 Hz in combination with SMART code reconstruction, the CLV600 series offers an excellent speed to reliability ratio.

We offer these powerful and easily installed products in two housing sizes, three designs, two connection types and two scanning technologies.

Discover the compact bar code scanners of the CLV600 series: Powerful, Flexible, Easy to use.

## At home in many industries

The future demands greater reading performance, greater flexibility for product changes and optimum networkability – and at ever-decreasing sizes. In order to meet these demands we have developed the compact CLV600 series bar code scanners to easily solve automatic identification applications in nearly all industries. Leveraging our broad base of expertise across all markets, we can better understand your application in its entirety and offer you comprehensive solutions from a single source.

### Material handling and warehousing systems

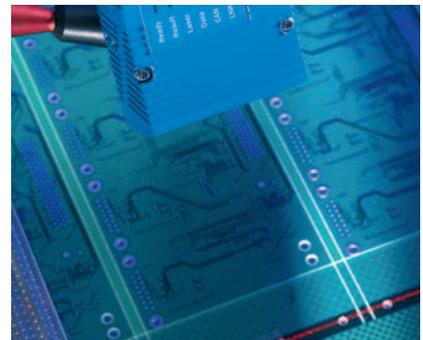
- Complete CLV620–CLV650 product portfolio for nearly all reading requirements
- Excellent reading properties even with partially covered or damaged bar codes
- Flexible fieldbus connection
- Quick disconnect connectors
- External mirror hood reduces the reading distance when used between two closely spaced conveyors
- Rapid, easy replacement of bar code scanners due to external parameter cloning

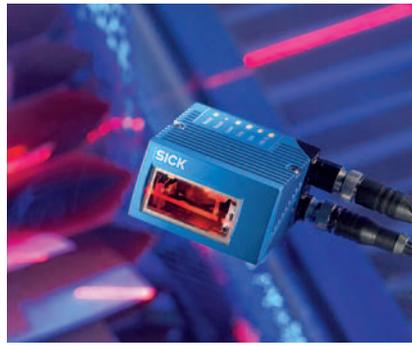
### The automotive industry

- Long reading distances
- Models with autofocus or dynamic focus available
- Flexible fieldbus connection
- Quick disconnect connectors
- Silicon-free
- Rapid, easy replacement of bar code scanners due to external parameter cloning

### Electronic industry

- High-density models for extremely small module widths
- Excellent reading properties even with partially covered or damaged bar codes, as well as low-contrast bar codes





#### Pharmaceutical/clinical analyses

- Complete CLV620–CLV650 product portfolio for nearly all reading requirements
- Large depth of field for bar code identification over several racks
- Compact housing for mounting within test tube carousels
- Reliable and rapid decoding of codes on pharmaceutical packages

#### Document handling/letter sorting

- Extremely high triggering and decoding rate
- Transport speeds of up to 6 m/s (1000 ft/min) possible
- Excellent reading properties, even with low-contrast bar codes
- Lightweight, compact housing

#### Food and beverage

- Excellent reading properties even on highly reflective material
- Transport speeds of up to 6 m/s (1000 ft/min) possible
- Available with plastic window upon request
- IP 65 enclosure rating, also for the connection system

#### Stackers/industrial trucks

- Autofocus models available
- Highly flexible data sorting and formatting
- Highly flexible code comparison possibilities
- Mounting brackets available with vibration and impact dampening
- Models with special cables on request



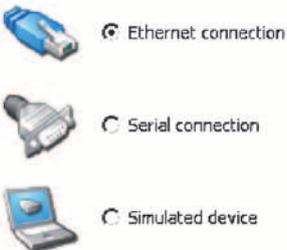
# Overview of the CLV600 series



CLV630 / CLV640 / CLV650



Reading of damaged codes thanks to SMART



Simple connection assistant



The practical pivoting plug-in unit allows the CLV600 series family to be installed and connected even in difficult locations. Result: more comfortable network construction, more rapid plug connection thanks to speedcon, and flexible mounting options.

## Powerful

- Very fast reading rate even with damaged, dirty and partially covered bar codes thanks to the significantly improved **SMART** code reconstruction algorithm
- Extremely high transport speeds of up to **6 m/s (1000 ft/min)** possible
- Remote diagnostic ability via integrated web server or optional **RDT400** remote diagnostic tool for visualizing long-term read statistics (see page 33)

## Flexible

- **CAN, Ethernet TCP/IP and Ethernet IP on board**
  - No additional Ethernet gateway required
  - Cost reduction for Ethernet connection
  - Safe investment: future industrial Ethernet protocols can be fed-in via software update
- Flexible **fieldbus connection** due to external fieldbus gateways and fieldbus proxies (see page 23)
- **Innovative data handling:** data is transmitted to the controller in desired form due to sorting, filter and output formatting
- Different focus versions (**fixed focus, dynamic focus, autofocus**) cover almost all reading distances

## Easy to use

- Easy, intuitive user concept **SOPAS-ET Single Device** or **SOPAS-ET** (see page 32)
- Connection Assistant for simple and rapid connection to bar code scanners. No extensive fieldbus knowledge necessary.
- Simple set-up even without PC through integrated **buttons, LED bar graph** and **intelligent Auto Setup**
- Simple and rapid replacement of a bar code scanner without re-configuration with a PC, due to parameter cloning via optional **cloning module** or optional **Micro-SD card**
- Simple mounting thanks to compact housing, flexible mounting technology – with rotating connectors and brackets for round bars

## Housings

### Front reading window

Available for the entire CLV600 series

### Side reading window, light exit below 105° (not CLV65x)

### Side reading window with oscillating mirror (not CLV62x)

The oscillating mirror allows bar codes to be read within larger areas.

In addition to **parking** (adjustable fixed position of the scanning line) or **continuous oscillation** independent of the reading cycle, optimized functional processes – based on the reading cycle – are also possible in the oscillating mirror's **Controlled Mode**:

- n-fold oscillations around an adjustable starting position within the reading cycle
- one-shot: single swing (to and from) per reading cycle from an adjustable starting position

## Types of connections

### Standard version

15-pin cable with D-Sub-HD plug

Compatible with pin occupancy of the CLV400 series

### Ethernet version

M12 socket for Ethernet interface;

M12 plug for power supply, triggering, host & auxiliary interfaces and CAN bus;

No additional Ethernet gateway required for operation.

Protocols: Ethernet TCP/IP, Ethernet IP

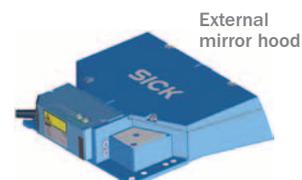
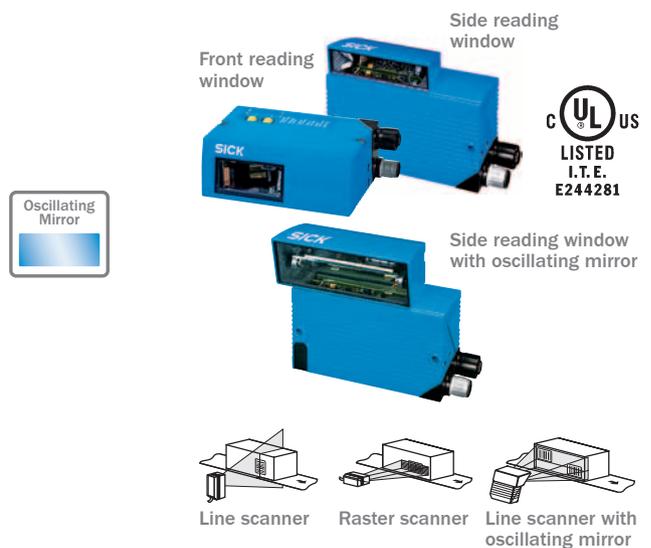
## Special models

### Plastic window

Special models with plastic window are available upon request for the food industry. Simply ask your local SICK Sales Representative.

### External mirror hood

Reduces the reading distance when used between two closely spaced conveyors



# Overview of CLV600 features

## Device features

### Two function buttons

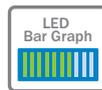
“Select” + “Start/End” for functions such as:

- Start Auto Setup
- Teach-in of a match code
- Start reading diagnosis



### LED bar graph

No PC is necessary to check the reading performance



### Intelligent Auto Setup

Automatically optimizes the bar code scanner for the codes that need to be read.



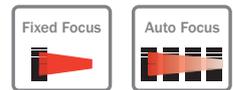
### Micro-SD flash card

Integrated Micro-SD card slot allows simple and rapid replacement of bar code scanners. This is carried out using external parameter cloning – no need to configure using a PC, ensuring quick MTTR<sup>\*)</sup>.



### Focus

Fixed focus for fixed values, dynamic focus for reading at multiple reading distances, and automatic focal point switching in real time with integrated distance measurement (no supplementary photoelectric sensors required)



### SMART (code reconstruction)

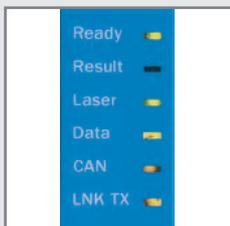
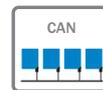
Damaged, dirty and/or partially covered bar codes are also reliably read. There are two versions with differing tilt tolerances.



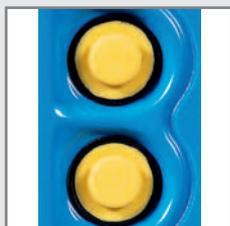
### CAN

Integrated CAN bus supports:

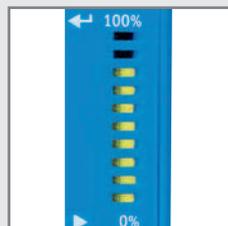
- CANopen
- SICK CAN-sensor network for easy formation of scanner groups
- No additional multiplexer required



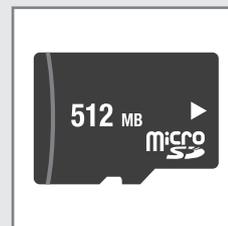
Indicator LEDs



Function buttons



LED bar graph



Micro-SD flash card



Integrated Micro-SD card slot

<sup>\*)</sup> MTTR = Mean Time To Repair

# Product selection guide

Device feature	CLV62x	CLV63x	CLV64x	CLV65x
Oscillating mirror model	–			
Ethernet version				
Function buttons, LED bar graph	–			
Integrated slot for supplementary flash card	–			
Intelligent Auto Setup				
Integrated CAN bus				
Focus, distance measurement				
SMART620 and SMART (code reconstruction)				
Dimensional drawings and read field diagrams	● From Page 12	● From Page 14	● From Page 17	● From Page 21
Technical data	● From Page 10			
Order information	● From Page 26			
Accessories	● From Page 29			

## Quick overview of resolution / reading distance (front reading window)

Resolution (module width, mm)	0.15	0.2	0.25	0.35	0.5	1
Device / reading distance, min. to max. (mm)						
CLV621 Fixed Focus, Long Range				220 to 490	170 to 545	60 to 730
CLV620 Fixed Focus, Mid Range		150 to 210		110 to 250	80 to 285	60 to 365
CLV622 Fixed Focus, Short Range	92 to 137	85 to 150		60 to 180	53 to 200	
CLV630 Fixed Focus, Long Range				220 to 500	170 to 580	60 to 735
CLV631 Fixed Focus, Mid Range			165 to 330	140 to 400	90 to 450	
CLV632 Fixed Focus, Short Range		110 to 190		70 to 250	60 to 285	
CLV640 Dynamic Focus, Standard		62 to 245	60 to 380	55 to 530	55 to 660	60 to 840
CLV642 Dynamic Focus, High Density	30 to 220	30 to 335	30 to 345			
CLV650 Auto Focus, Standard			175 to 550	160 to 1000	150 to 1200	130 to 1600
CLV651 Auto Focus, High Density					150 to 930	

## Technical data



	CLV62x	CLV63x	CLV63x OSCILLATING MIRROR
Laser diode (wavelength)	Red light ( $\lambda = 655 \text{ nm}$ )		
MTTF of laser diode	20,000 h		
Laser class of device <sup>1)</sup>	Class 2		
Usable aperture	Max. 50°		
Scanning/decoder frequency	400 to 1,200 Hz		
Oscillation frequ./length of period	-	-	0.5 to 6.25 Hz / 2,000 to 160 ms
Max. amplitude	-	-	+20° to -20°
Resolution	0.15 to 1.0 mm (type-dependent)		
Raster height <sup>2)</sup>	15 mm (8 lines)		
Bar code print contrast (PCS)	$\geq 60\%$		
Ambient light immunity	2,000 lx (on bar code)		
Numb. of bar codes per scan	Standard decoder 1 to 20; SMART/SMART620 decoder 1 to 6		
Numb. of bar codes per read. gate <sup>3)</sup>	1 to 50 (auto-discriminating)		
Bar code types	Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, 2/5 Interleaved, Pharmacode		
Bar code length <sup>4)</sup>	Max. 50 symbols		
Print ratio	2:1 to 3:1		
Number of multiple readings	1 to 99		
Acoustic indicators <sup>5)</sup>	Beeper (Buzzer)		
Read cycles	Cycle sources for start: switching inputs "Sensor 1" <sup>6)</sup> and/or "Sensor 2"; Command; Autocycle; CAN Cycle sources for stop: read cycle source, "Sensor 1", "Sensor 2", Command, Timer, Good Read, Condition		
Data interface, "Host"	Serial: RS 232 or RS 422/485; Ethernet (Port 2112), data format (serial) and data output format adjustable		
Data transfer rate	2.4 to 115.2 kBd		
Protocol	SICK Standard (SOPAS-ET Cola A)		
Physical configurations	Stand-alone		
Data interface, "Aux"	Serial: RS 232 (57.6 kBd; 8 data bits, no parity, 1 stop bit); Ethernet (Port 2111), fixed data output format		
Data interface, "Ethernet"	Only with Ethernet version: 10/100 MBit/s; TCP/IP, half/full duplex		
Data interface, "CAN"	20 kBit/s to 1 MBit/s, SICK CAN-sensor network (Master, Slave, Multiplexer)		
Digital switching inputs <sup>6)</sup>	2 (Standard), 1 (Ethernet); Each version with 2 additional external inputs via CMC600		
Digital switching outputs	2 (Standard), 0 (Ethernet); Each version with 2 additional external outputs via CMC600		
Electrical connection	Standard version: cable (0.9 m) with 15-pin D-Sub HD plug Ethernet version: rotating plug unit with 2 x M12 round plug-in connectors (12-pin plug, 4-pin socket)		
Operating voltage <sup>7)8)</sup>	10 to 30 V DC	18 to 30 V DC	
Power consumption	Typ. 4.5 W at 24 V DC $\pm 10\%$	Typ. 5 W at 24 V DC $\pm 10\%$	Typ. 6 W at 24 V DC $\pm 10\%$
Housing / housing colour	Aluminum die-cast / light blue (acc. to RAL 5012)		
Electrical safety	Acc. to EN 60950-1		
Protection class	III acc. to EN 61140		
Enclosure rating	IP 65, acc. to EN 60529; A1		
EMC testing	Emission of interference: acc. to EN 61000-6-3, immunity to interference: acc. to EN 61000-6-2		
Vibration / impact immunity	Acc. to EN 60068-2-6/acc. to EN 60068-2-27		
Weight Standard <sup>9)</sup> / Ethernet <sup>10)</sup>	225 g / 205 g	320 g / 250 g	450 g / 350 g
Ambient / storage temperature	0 to +40 °C / -20 to +70 °C		
Max. relative air humidity	90%, non-condensing		

<sup>1)</sup> Acc. to IEC 60825-1 and EN 60825-1, see warning label on device for date of publication; <sup>2)</sup> At 200 mm reading distance (frontal read field);

<sup>3)</sup> Read gate: time window for code evaluation generated internally via read cycle; <sup>4)</sup> Max. 5,000 symbols from all bar codes per read gate, 500 symbols with Multiplexer function (CAN); <sup>5)</sup> Can be deactivated, potential function for results status indication



CLV64X	CLV64X OSCILLATING MIRROR	CLV65x	CLV65x OSCILLATING MIRROR
Red light ( $\lambda = 655 \text{ nm}$ )			
20,000 h			
Class 2			
Max. 50° (CLV642: max. 25°)		Max. 50°	
400 to 1,200 Hz		600 ... 1.000 Hz	
-	0.5 to 6.25 Hz / 2,000 to 160 ms	-	0.5 to 6.25 Hz / 2,000 to 160 ms
-	+20° to -20°	-	+20° to -20°
0.2 to 1.0 mm (type-dependent)		0.25 to 1.0 mm (type-dependent)	0.5 to 1.0 mm (type-dependent)
15 mm (8 lines)			
≥ 60%			
2,000 lx (on bar code)			
Standard decoder 1 to 20; SMART/SMART620 decoder 1 to 6			
1 to 50 (auto-discriminating)			
Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, 2/5 Interleaved, Pharmacode			
Max. 50 symbols			
2:1 to 3:1			
1 to 99			
Beeper (Buzzer)			
Cycle sources for start: switching inputs "Sensor 1" <sup>6)</sup> and/or "Sensor 2"; Command; Autocycle; CAN			
Cycle sources for stop: read cycle source, "Sensor 1", "Sensor 2", Command, Timer, Good Read, Condition			
Serial: RS 232 or RS 422/485; Ethernet (Port 2112), data format (serial) and data output format adjustable			
2.4 to 115.2 kBd			
SICK Standard (SOPAS-ET Cola A)			
Stand-alone			
Serial: RS 232 (57.6 kBd; 8 data bits, no parity, 1 stop bit); Ethernet (Port 2111), fixed data output format			
Only with Ethernet version: 10/100 MBit/s; TCP/IP, half/full duplex			
20 kBit/s to 1 MBit/s, SICK CAN-sensor network (Master, Slave, Multiplexer)			
2 (Standard), 1 (Ethernet); Each version with 2 additional external inputs via CMC600			
2 (Standard), 0 (Ethernet); Each version with 2 additional external outputs via CMC600			
Standard version: cable (0.9 m) with 15-pin D-Sub HD plug			
Ethernet version: rotating plug unit with 2 x M12 round plug-in connectors (12-pin plug, 4-pin socket)			
18 to 30 V DC			
Typ. 5 W at 24 V DC ±10%	Typ. 6.5 W at 24 V DC ±10%	Typ. 8 W at 24 V DC ±10%	Typ. 9 W at 24 V DC ±10%
Aluminum die-cast/ light blue (acc. to RAL 5012)			
Acc. to EN 60950-1			
III acc. to EN 61140			
IP 65, acc. to EN 60529; A1			
Emission of interference: acc. to EN 61000-6-3, immunity to interference: acc. to EN 61000-6-2			
Acc. to EN 60068-2-6/acc. to EN 60068-2-27			
320 g / 250 g	450 g / 350 g	406 g / 336 g	
0 to +40 °C / -20 to +70 °C			
90%, non-condensing			

<sup>6)</sup> Ethernet version: only switching input Sensor 1; <sup>7)</sup> Acc. to IEC 60364-4-41 (SELV and PELV acc. to IEC 60364-4-41); <sup>8)</sup> The CLV600 bar code scanners are certified according to UL60950-1 when a LPS or Class 2 power supply is used. Valid with corresponding product marking on the nameplate. The enclosure rating (IP) is not tested by UL; <sup>9)</sup> With connection cable (frontal read window); <sup>10)</sup> Without connection cables (frontal read window)

# Dimensional drawings/ reading field diagrams CLV62x, front reading window

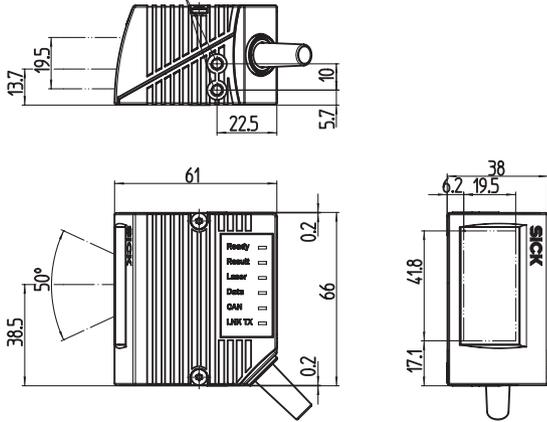


Standard version

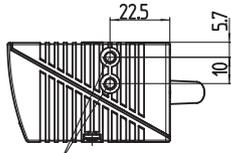
Ethernet version

## Standard version

Blind hole tap M5, 5 deep

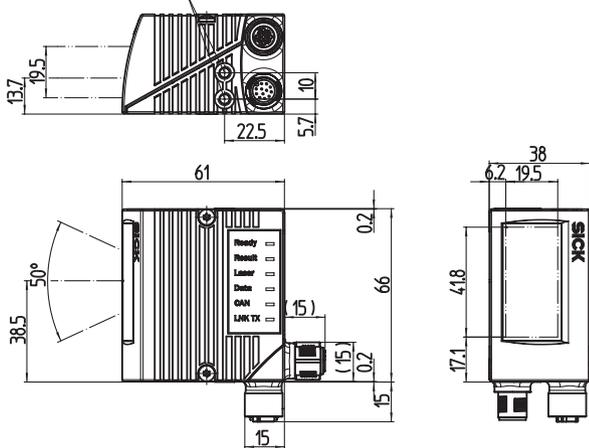


Blind hole tap M5, 5 deep

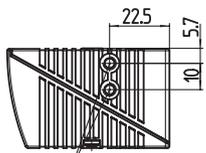


## Ethernet version

Blind hole tap M5, 5 deep

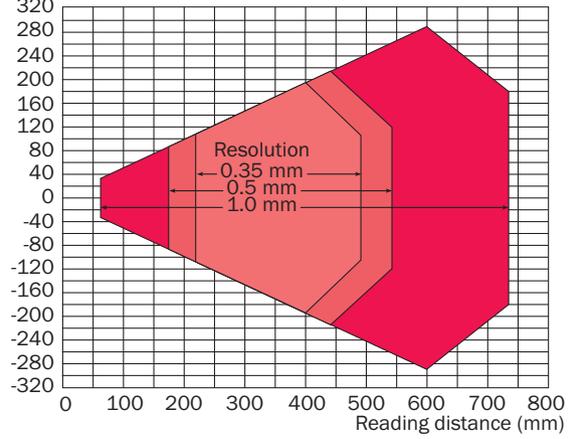


Blind hole tap M5, 5 deep



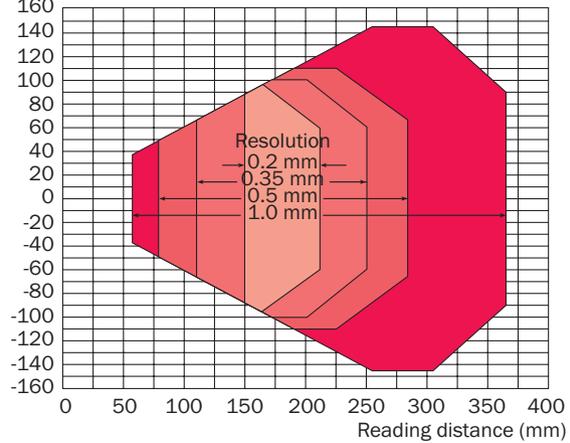
## CLV621 – Long Range

Reading field height (mm)



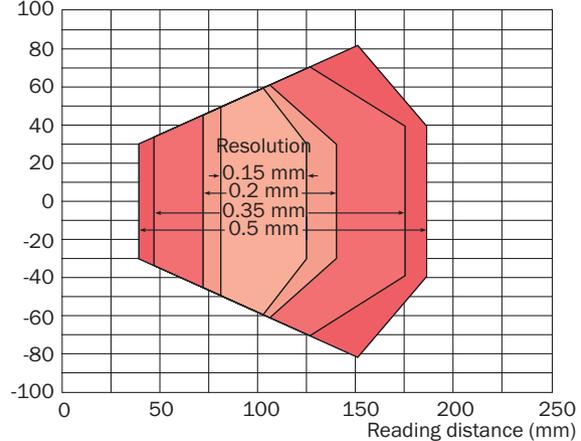
## CLV620 – Mid Range

Reading field height (mm)



## CLV622 – Short Range

Reading field height (mm)



# Dimensional drawings / reading field diagrams CLV62x, side reading window

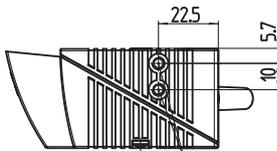
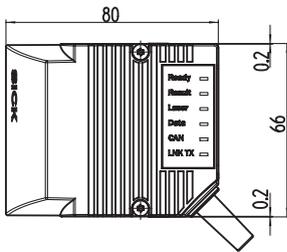
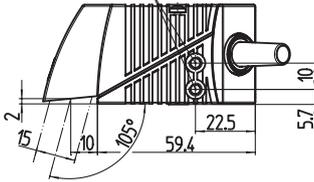


Standard version

Ethernet version

## Standard version

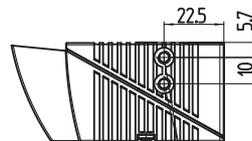
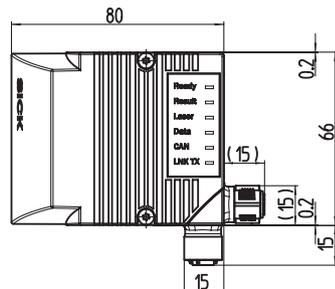
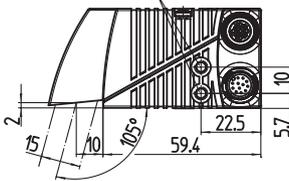
Blind hole tap M5, 5 deep



Blind hole tap M5, 5 deep

## Ethernet version

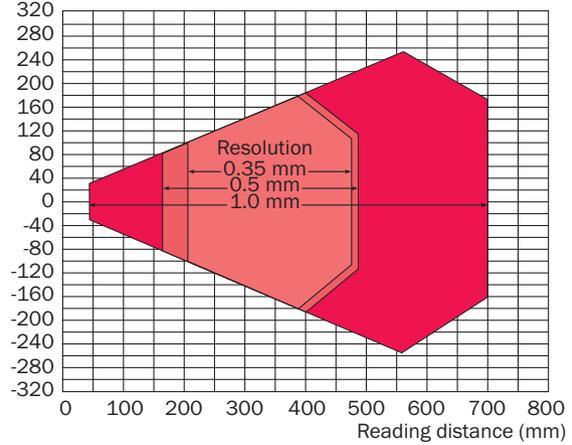
Blind hole tap M5, 5 deep



Blind hole tap M5, 5 deep

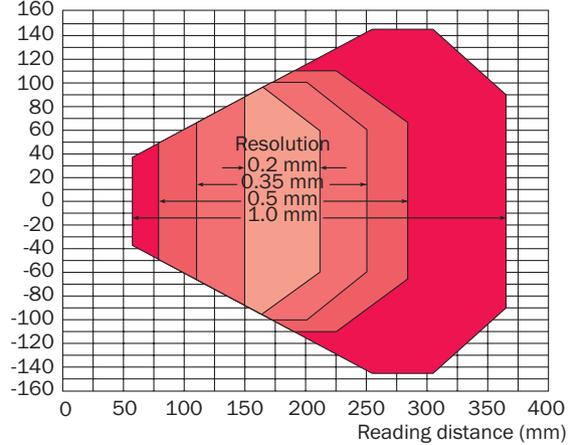
## CLV621 – Long Range

Reading field height (mm)



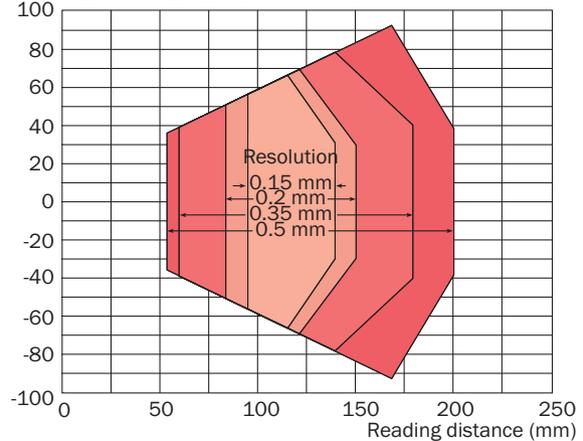
## CLV620 – Mid Range

Reading field height (mm)



## CLV622 – Short Range

Reading field height (mm)



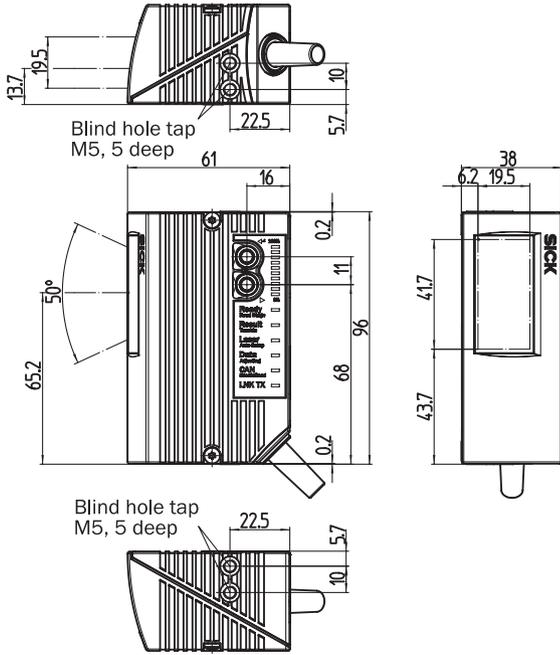
# Dimensional drawings/ reading field diagrams CLV63x, front reading window



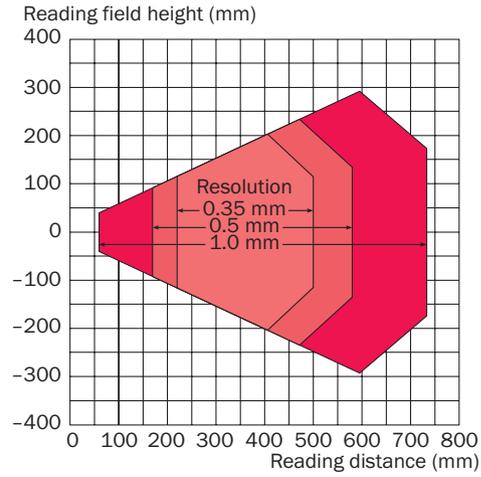
Standard version

Ethernet version

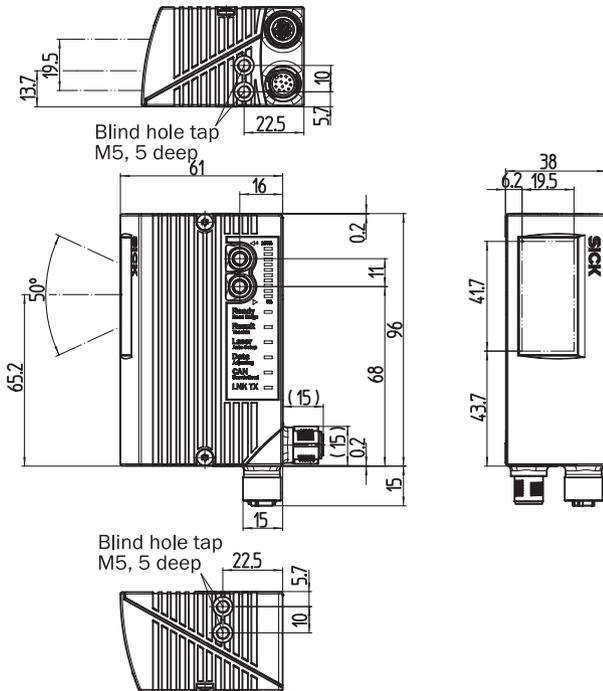
## Standard version



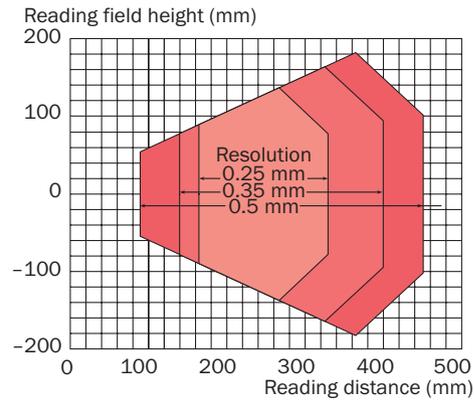
## CLV630 – Long Range



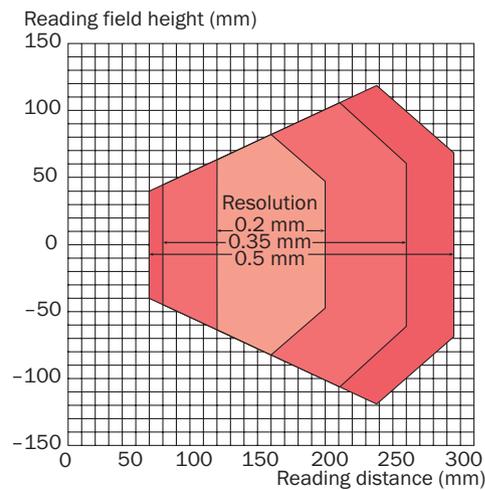
## Ethernet version



## CLV631 – Mid Range



## CLV632 – Short Range



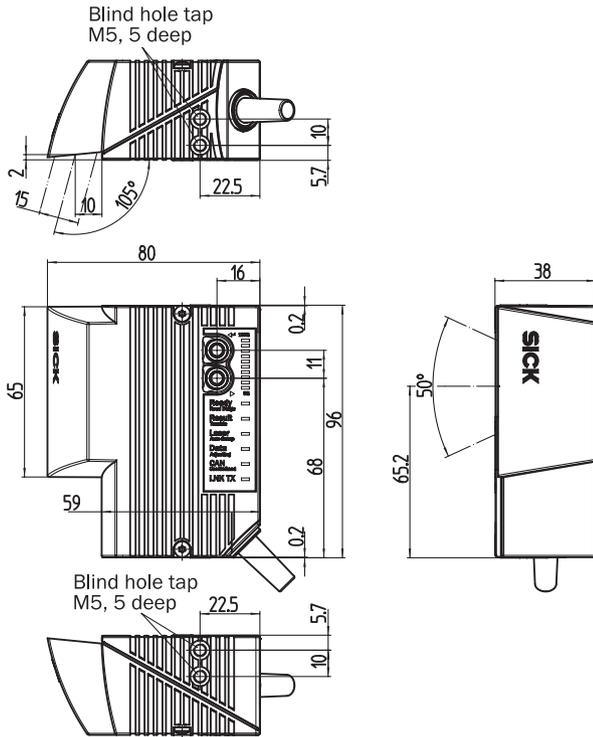
# Dimensional drawings / reading field diagrams CLV63x, side reading window



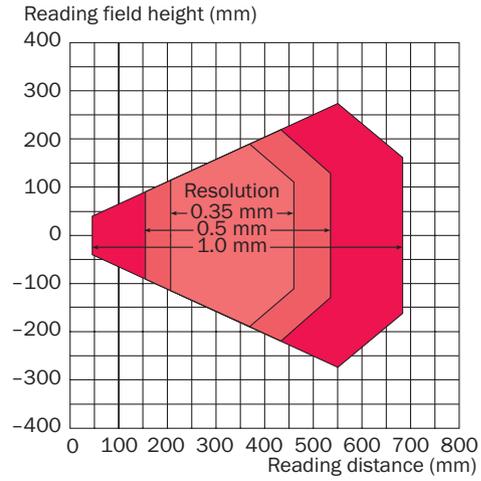
Standard version

Ethernet version

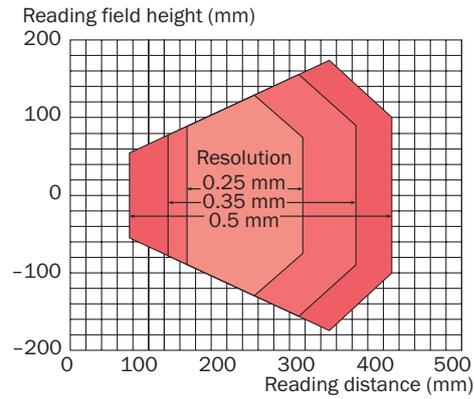
## Standard version



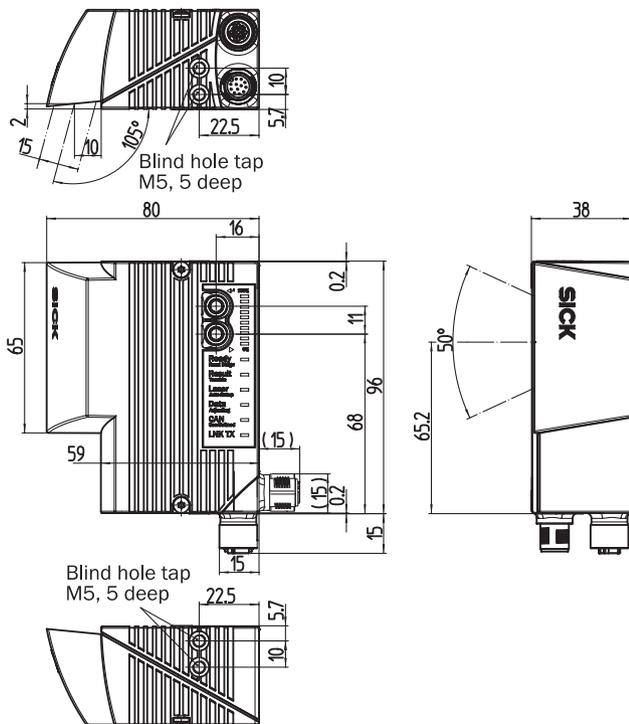
## CLV630 – Long Range



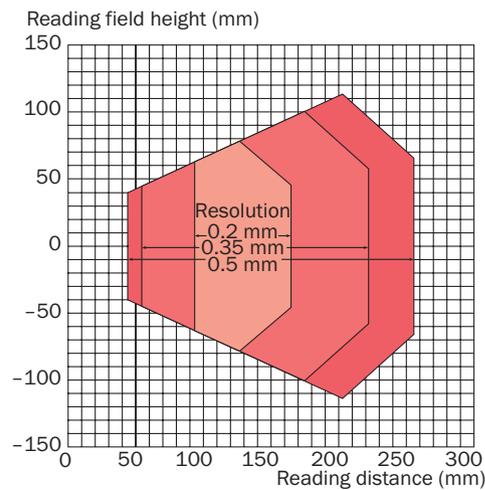
## CLV631 – Mid Range



## Ethernet version



## CLV632 – Short Range



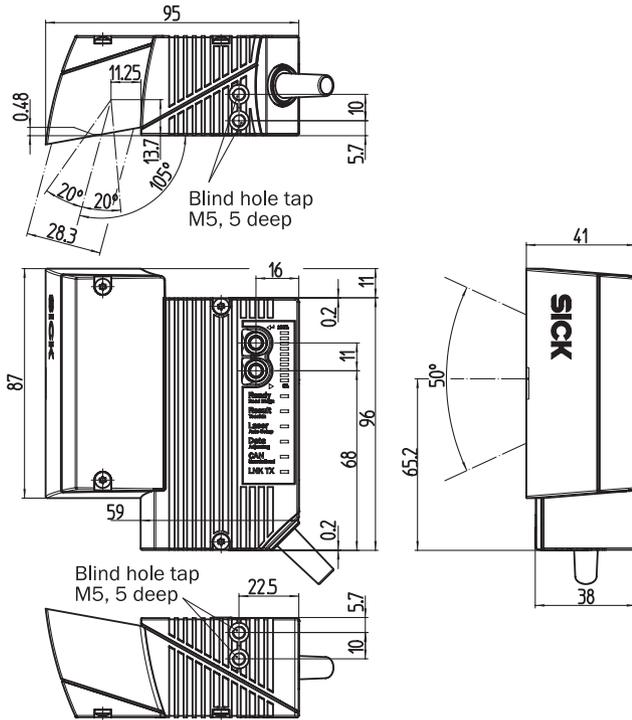
# Dimensional drawings / reading field diagrams CLV63x with oscillating mirror



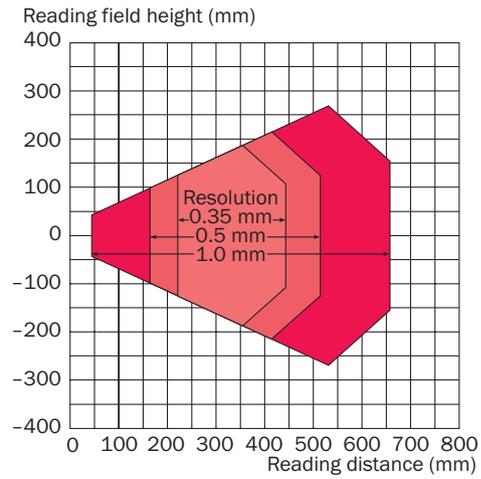
Standard version

Ethernet version

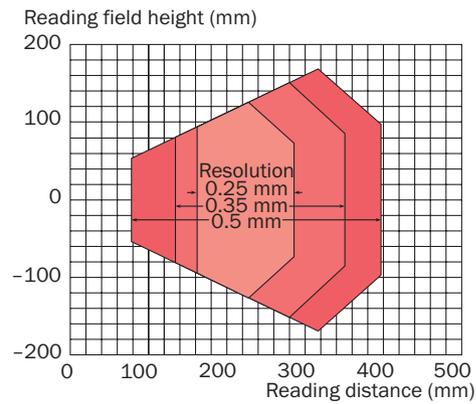
## Standard version



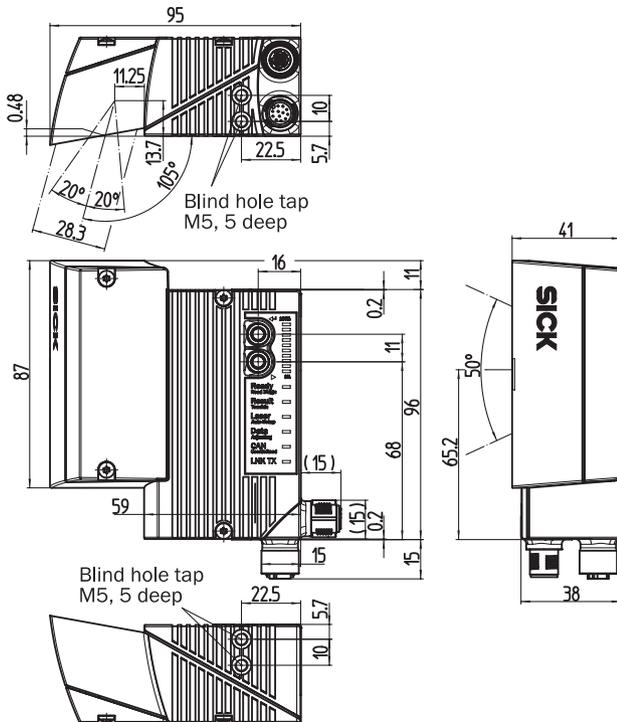
## CLV630 – Long Range



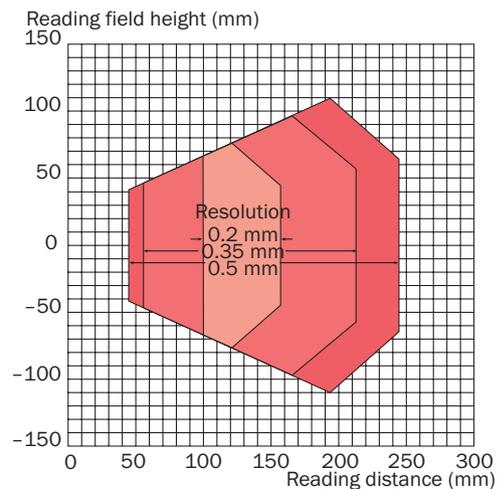
## CLV631 – Mid Range



## Ethernet version



## CLV632 – Short Range



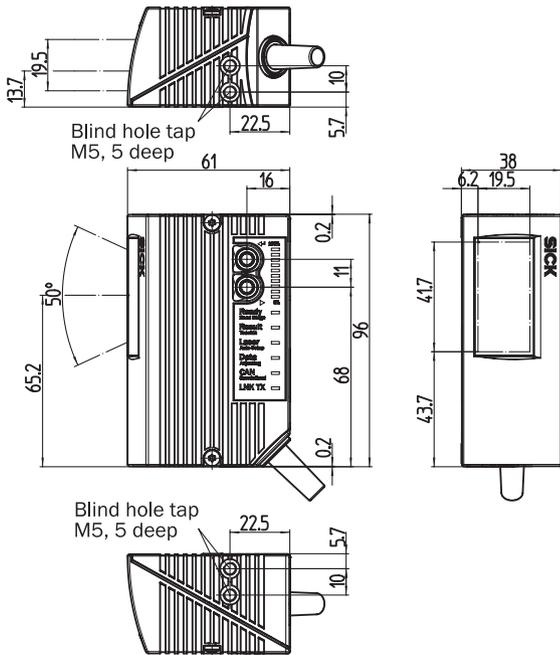
# Dimensional drawings / reading field diagrams CLV640, front reading window



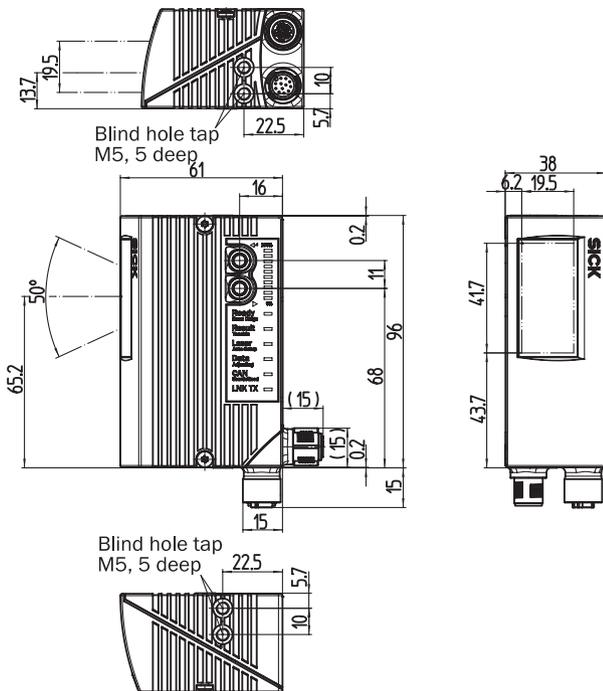
Standard version

Ethernet version

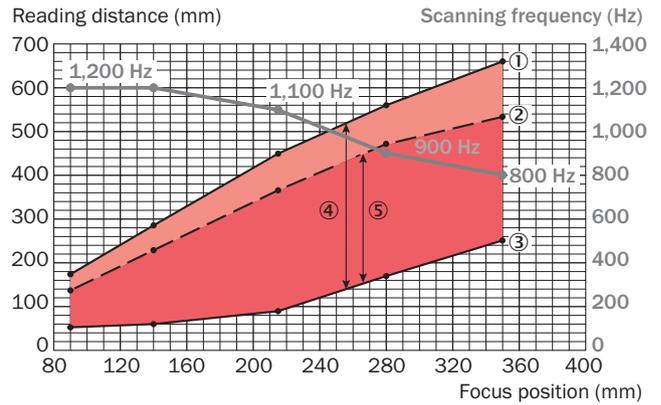
## Standard version



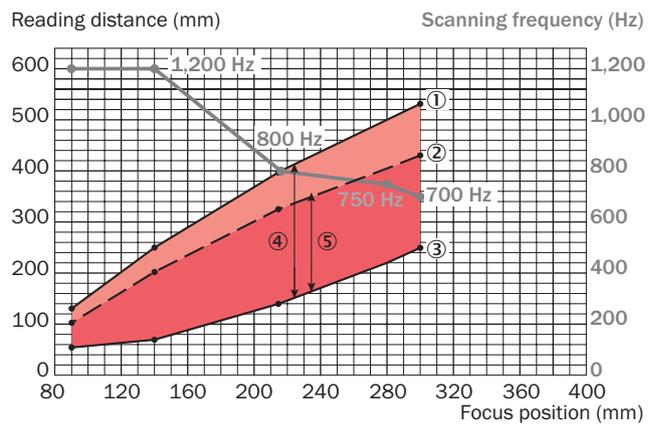
## Ethernet version



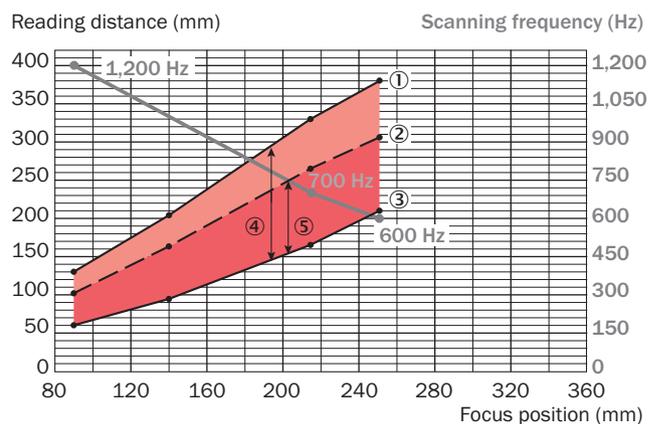
## CLV640 – dynamic, resolution 0.50 mm



## CLV640 – dynamic, resolution 0.35 mm



## CLV640 – dynamic, resolution 0.25 mm



① = Max. reading dist. (aperture angle 25°); ② = Max. reading dist. (aperture angle 50°); ③ = Min. reading dist.; ④ = DOF  $\alpha = 25^\circ$ ; ⑤ = DOF  $\alpha = 50^\circ$

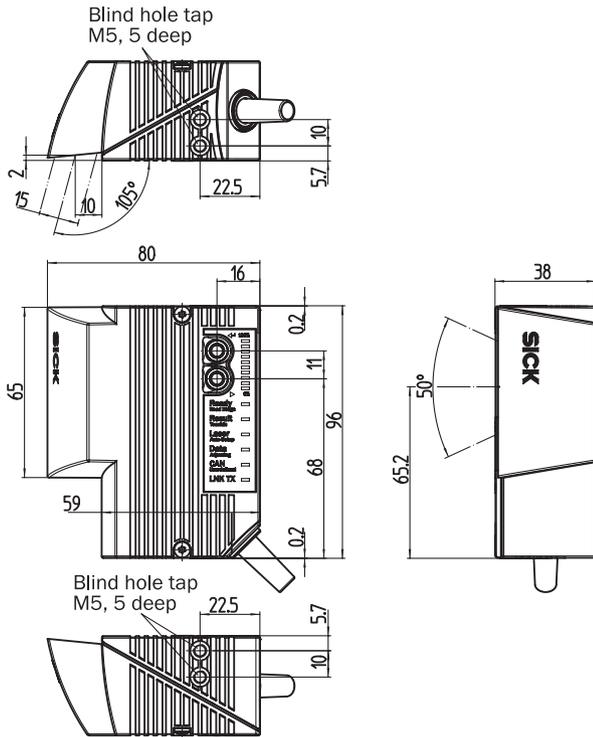
# Dimensional drawings / reading field diagrams CLV640, side reading window



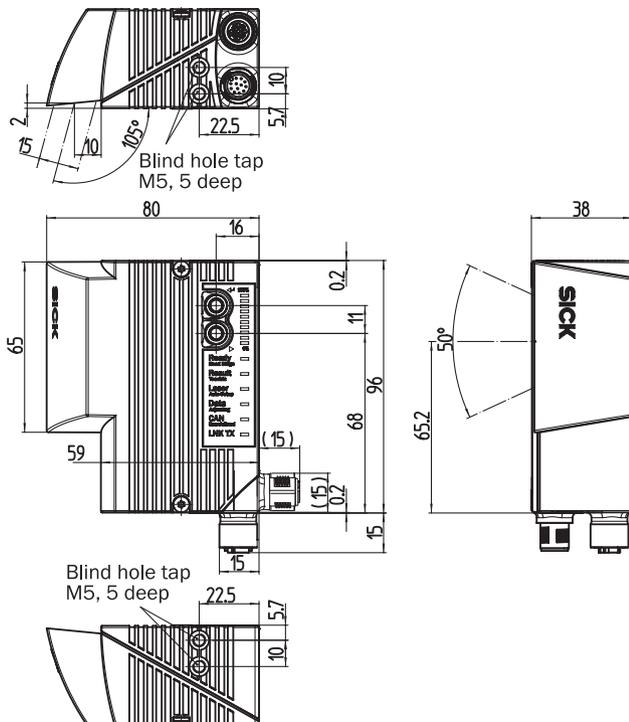
Standard version

Ethernet version

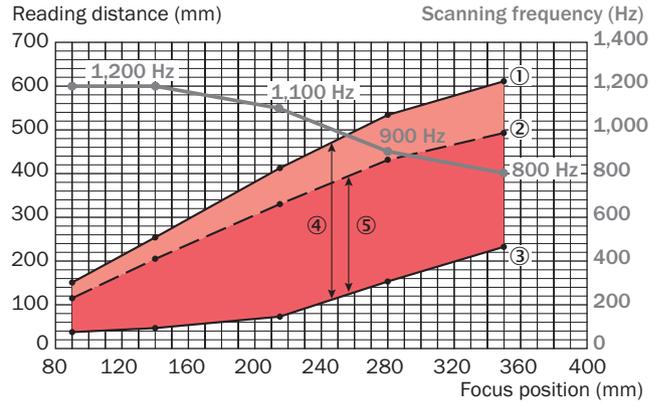
## Standard version



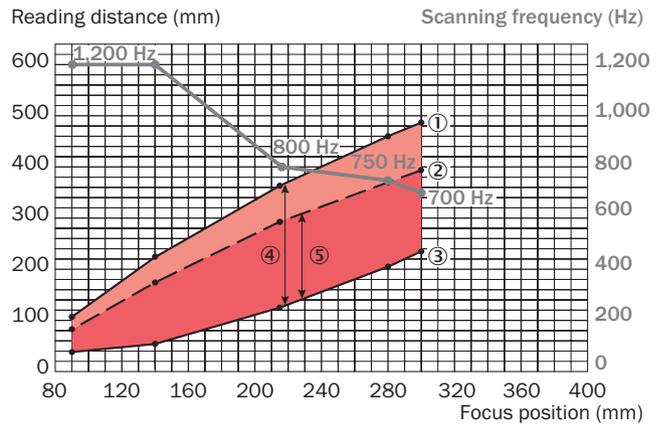
## Ethernet version



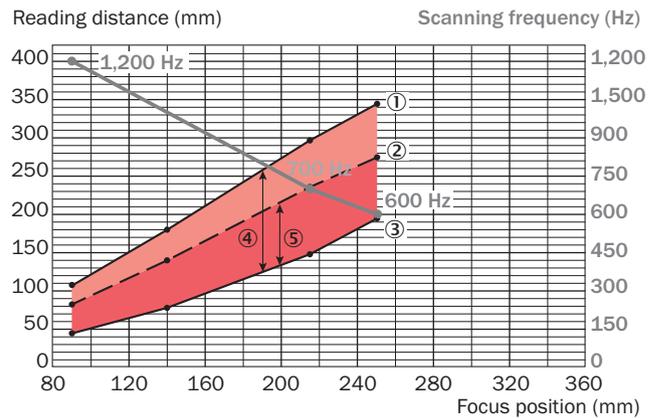
## CLV640 – dynamic, resolution 0.50 mm



## CLV640 – dynamic, resolution 0.35 mm



## CLV640 – dynamic, resolution 0.25 mm



① = Max. reading dist. (aperture angle 25°); ② = Max. reading dist. (aperture angle 50°); ③ = Min. reading dist.; ④ = DOF  $\alpha = 25^\circ$ ; ⑤ = DOF  $\alpha = 50^\circ$

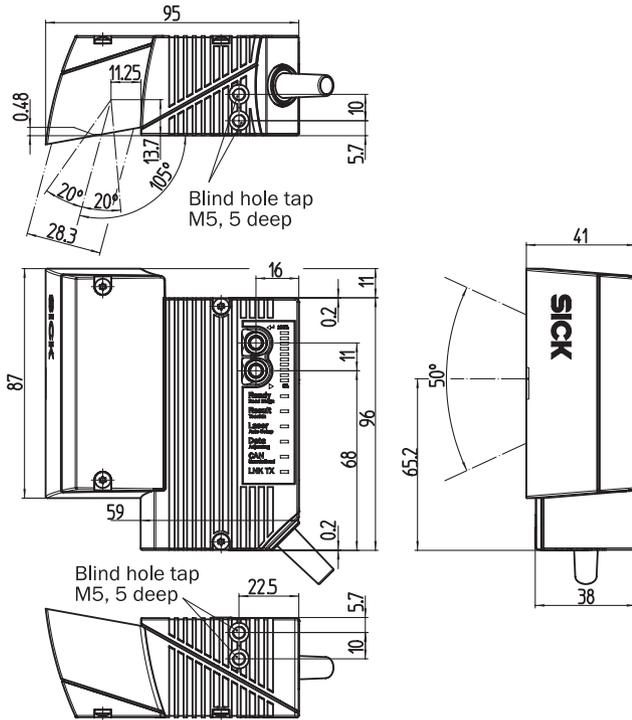
# Dimensional drawings/ reading field diagrams CLV640 with oscillating mirror



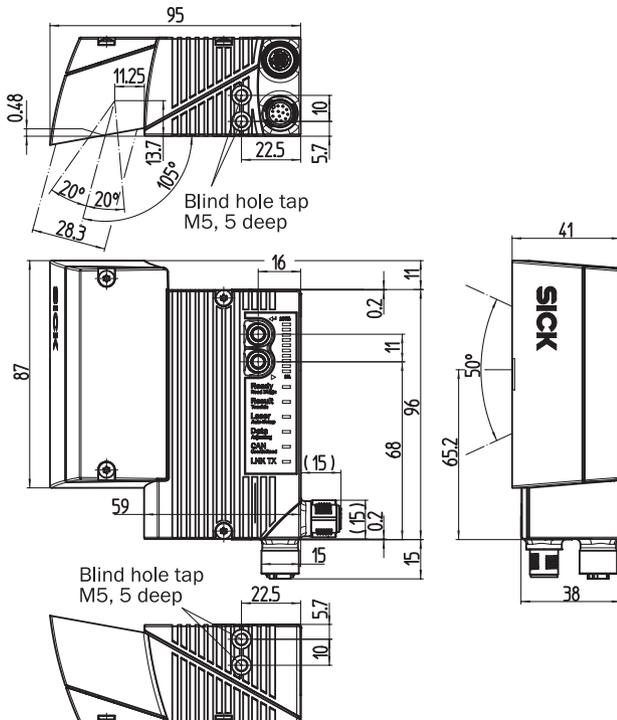
Standard version

Ethernet version

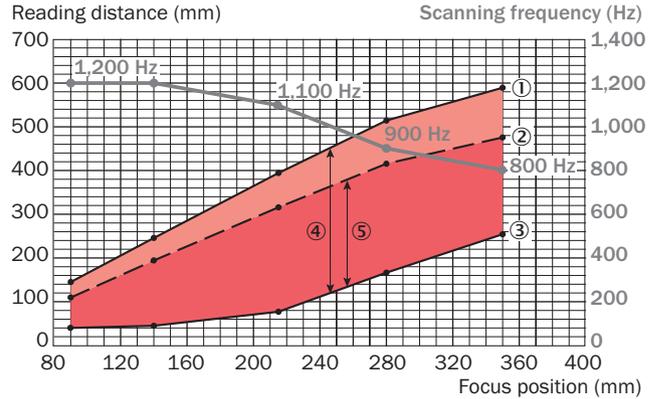
## Standard version



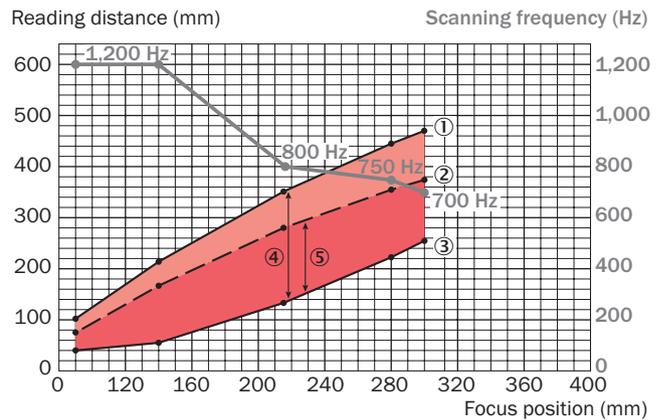
## Ethernet version



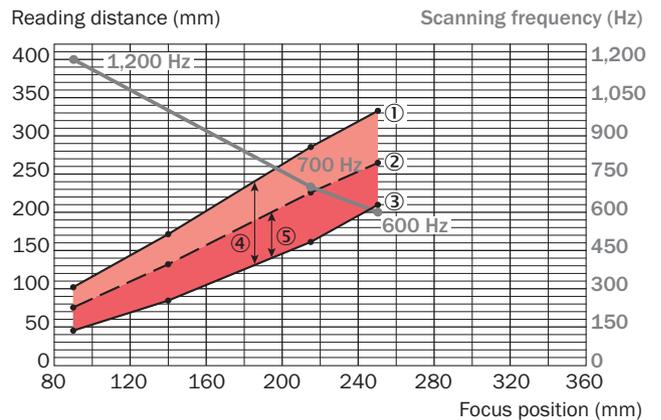
## CLV640 – dynamic, resolution 0.50 mm



## CLV640 – dynamic, resolution 0.35 mm



## CLV640 – dynamic, resolution 0.25 mm



① = Max. reading dist. (aperture angle 25°); ② = Max. reading dist. (aperture angle 50°); ③ = Min. reading dist.; ④ = DOF  $\alpha = 25^\circ$ ; ⑤ = DOF  $\alpha = 50^\circ$

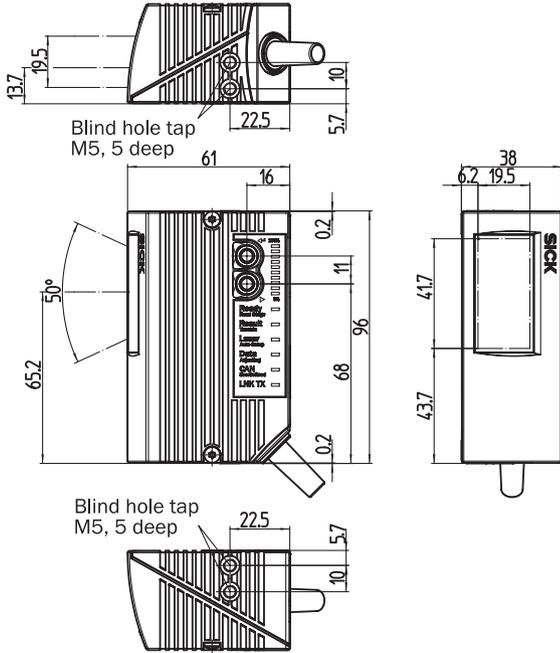
# Dimensional drawings / reading field diagrams CLV642, front reading window



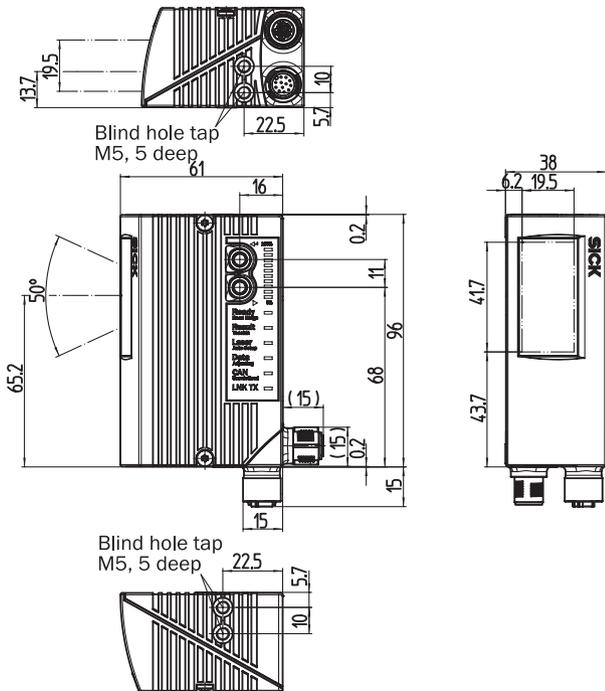
Standard version

Ethernet version

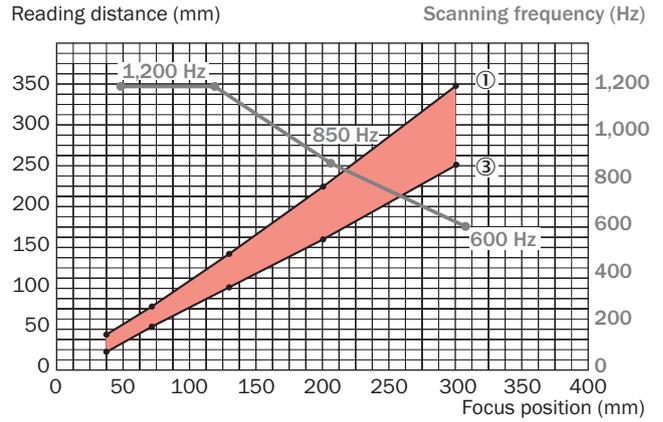
## Standard version



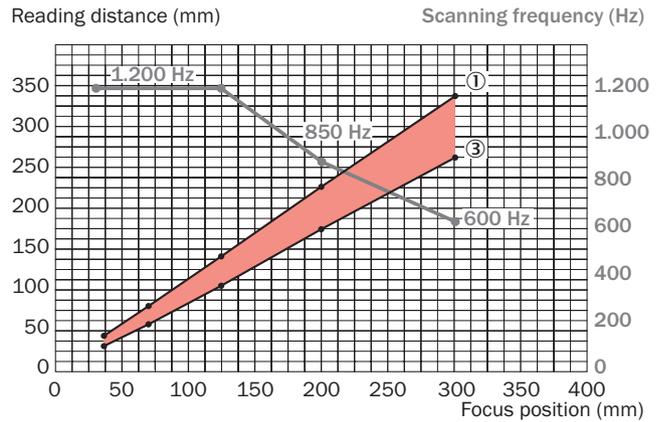
## Ethernet version



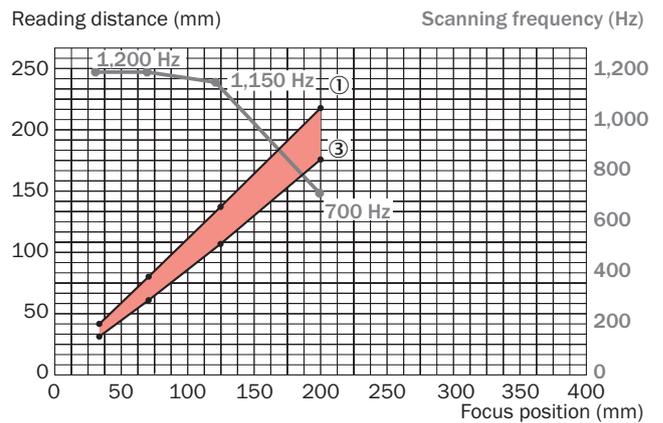
## CLV642 – dynamic, High Density, resolution 0.25 mm



## CLV642 – dynamic, High Density, resolution 0.20 mm



## CLV642 – dynamic, High Density, resolution 0.15 mm



① = Max. reading dist. (aperture angle 25°); ③ = Min. reading dist.

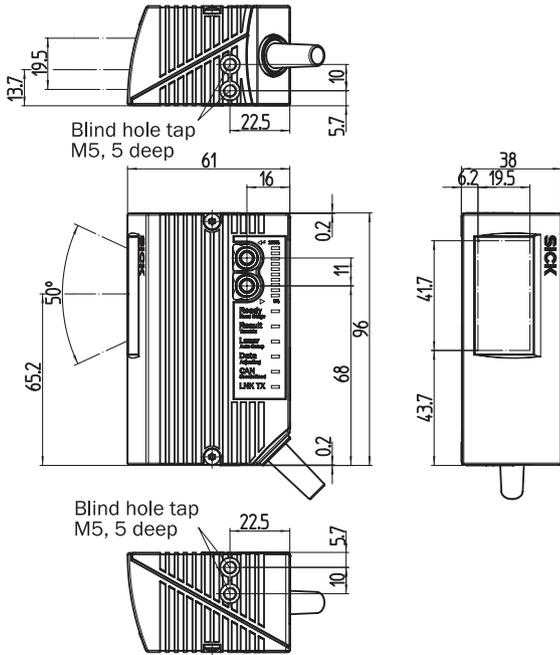
# Dimensional drawings/reading field diagrams CLV65x, front reading window



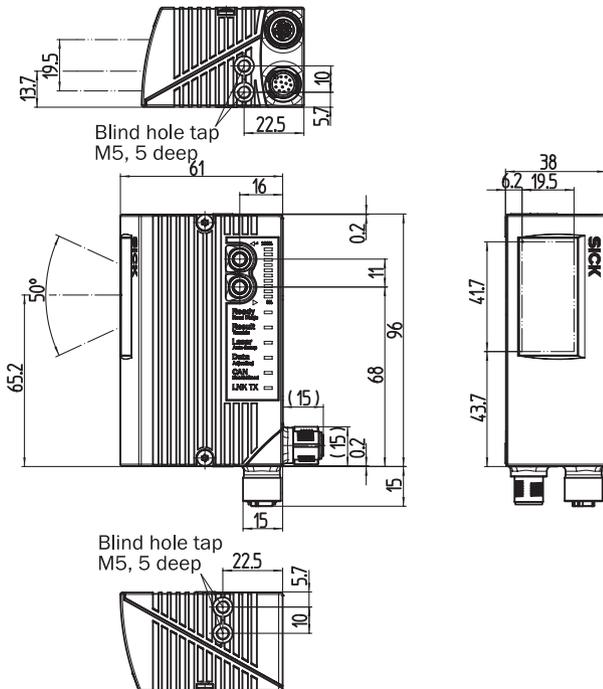
Standard version

Ethernet version

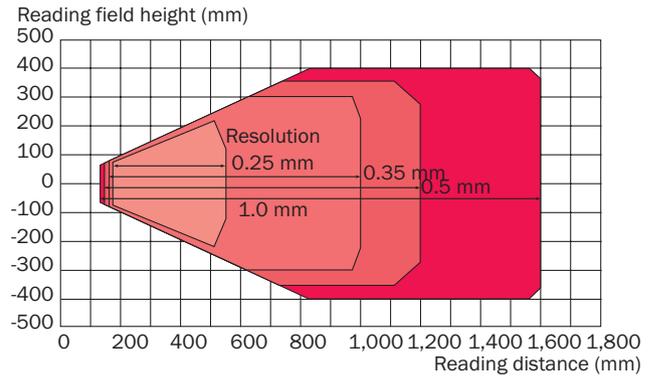
## Standard version



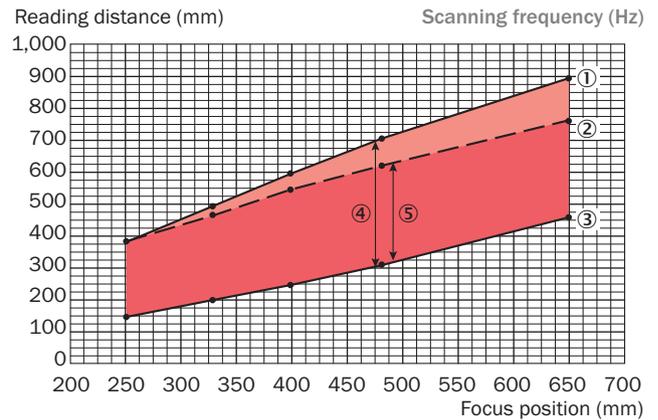
## Ethernet version



## CLV650 – Auto Focus



## CLV651 – Auto Focus, Low Density



① = Max. reading dist. (aperture angle 25°); ② = Max. reading dist. (aperture angle 50°); ③ = Min. reading dist.; ④ = DOF  $\alpha = 0^\circ$ ; ⑤ = DOF  $\alpha = 45^\circ$

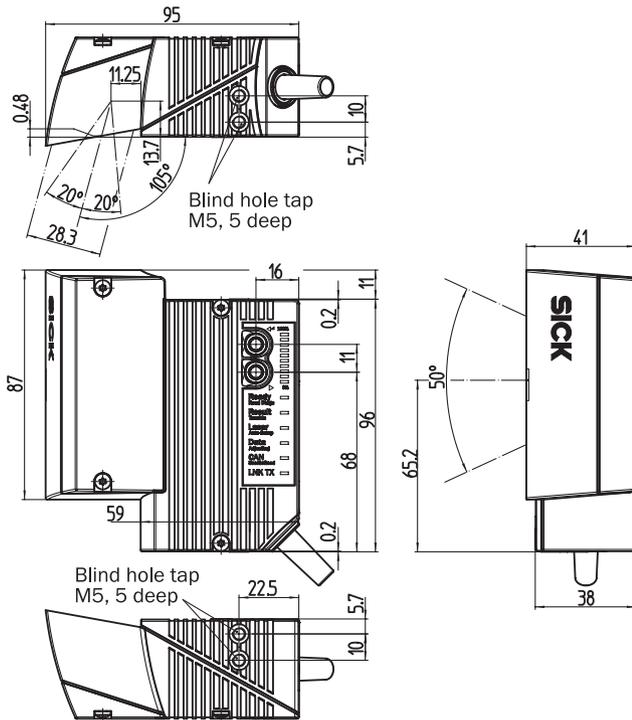
# Dimensional drawings / reading field diagrams CLV65x with oscillating mirror



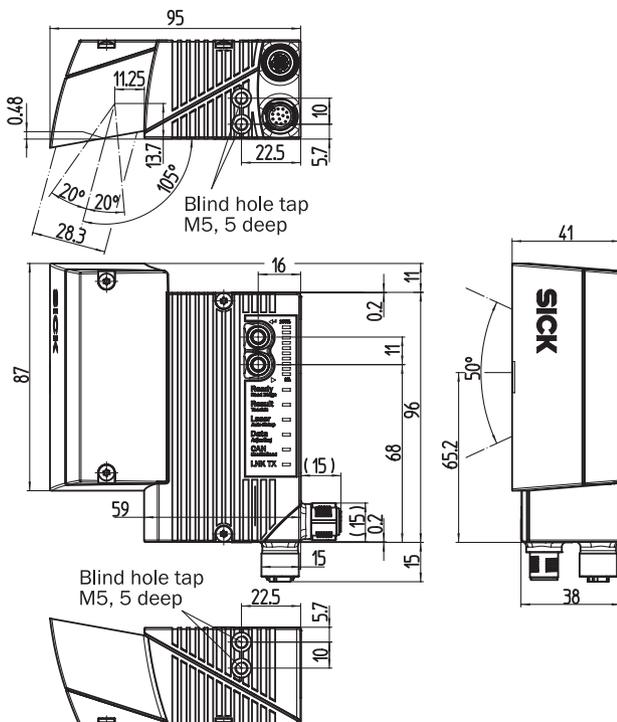
Standard version

Ethernet version

## Standard version

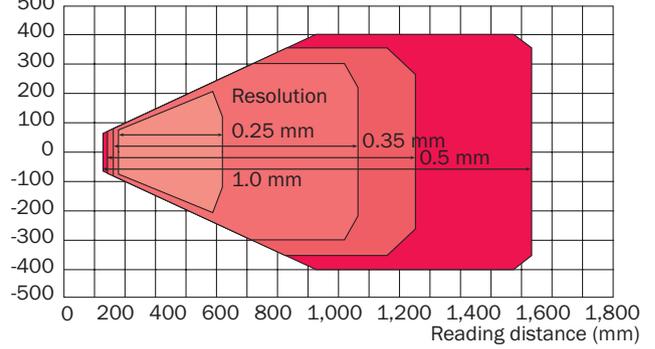


## Ethernet version



## CLV650 – Auto Focus

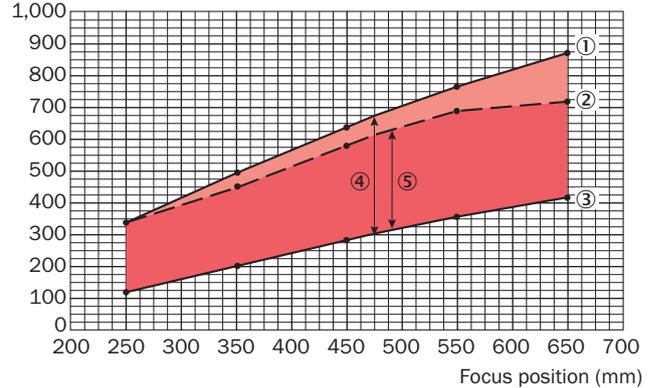
Reading field height (mm)



## CLV651 – Auto Focus, Low Density

Reading distance (mm)

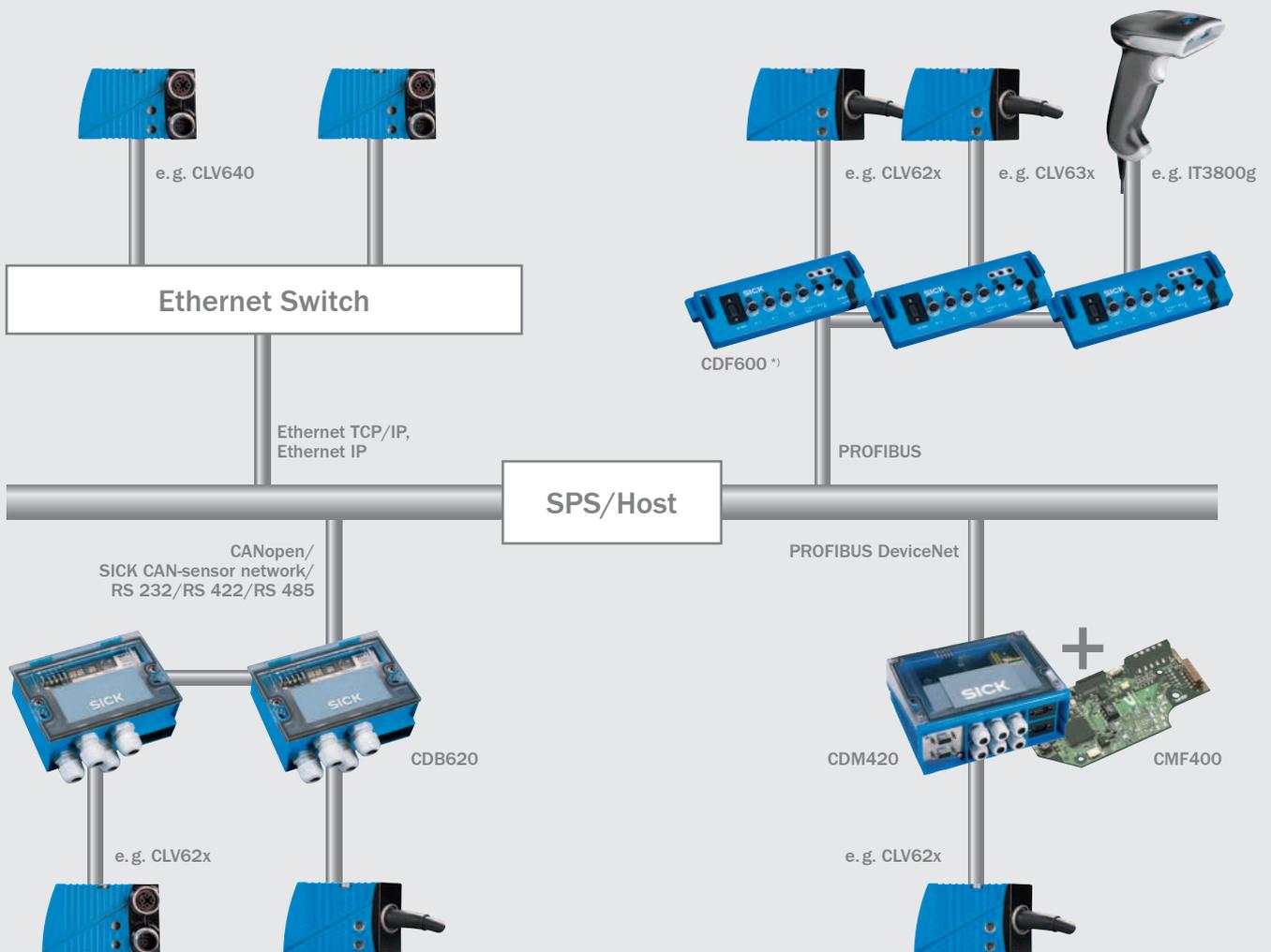
Scanning frequency (Hz)



① = Max. reading dist. (aperture angle 25°); ② = Max. reading dist. (aperture angle 50°); ③ = Min. reading dist.; ④ = DOF  $\alpha = 0^\circ$ ; ⑤ = DOF  $\alpha = 45^\circ$

# Network integration

The CLV600 series can be integrated in numerous fieldbus applications without major wiring effort. The 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.



<sup>\*)</sup> PROFIBUS also possible via CMF400 with CDM420

# Connection Modules, Gateways, Proxy

## CDB620 Basic Connection Module



- Compact connection module for all SICK bar code scanners
- Integrated wiring diagram
- Straightforward spring-loaded contacts
- IP 65 enclosure rating
- Tension-relieved cables
- + Smaller footprint saves space
- + Easy wiring of all digital I/Os
- + Low investment requirement
- + Easy troubleshooting
- + Easy scanner replacement through use of CMC600

## CDM420 Modular Connection Module



- Connection module for integration of:
  - Fieldbus modules
  - Network devices for power supply
  - Display module
- Integrated connection diagram
- Straightforward spring-loaded/screw contacts
- IP 65 enclosure rating
- Tension-relieved cables
- + Easy to perform network integration
- + Parameter cloning for rapid scanner replacement
- + Monitoring/diagnosis via display
- + Simple mounting
- + Easy troubleshooting
- + AC power option with CMP4xx power supply module

## CMC600 External Parameter Memory for CDB620 and CDM420



- Rapid and simple mounting in CDB/CDM connection modules
- Plug&play functionality
- Address monitoring through visible rotary switch
- Simplified commissioning of CAN networks
- + Allows for quick rapid scanner replacement if repair required
- + Rapid installation in existing connection devices
- + Easy to retrofit
- + No additional space requirement
- + No additional wiring effort

## CMD400 External Display Module for CDM420



- Large illuminated display with 4 x 20 symbols
- 5 buttons for menu guidance
- IP 65 enclosure rating
- + Good LCD visibility
- + Simple diagnosis of scanner
- + No PC connection required
- + Easy to retrofit
- + No additional wiring effort
- + Simple commissioning



	CDB620	CDM420	CMC600
Versions	Basic Connection Module	Modular Connection Module	External Display Module for integration in CDB620 and CDM420
Optical indicators	9 x LED	5/10 x LED	1 x LED
Scanner connection	15-pin D-Sub HD socket		-
Service plug	9-pin D-Sub HD plug		-
Supply voltage	$V_{\text{scanner}} +1 \text{ V}$ , (acc. to IEC 364-4-41)		10 to 30 V DC via CDB/CDM
Power consumption	$P_{\text{scanner}} +0.5 \text{ W}$		500 mW
Housing	Polycarbonate		
Colour	Light blue (acc. to RAL 5012)		-
Inspections	CE	CE, UL	
Protection Class	Class 3 (acc. to EN 61140)	Class 3 (acc. to EN 61140), with power supply module: Class 1	Class 3 (acc. to EN 61140)
Enclosure rating	IP 65 (acc. to EN 60529), on use of a SICK scanner standard connection cable		-
Dimensions (mm)	124.2 x 113.1 x 53.9	192 x 167 x 70	70 x 23 x 17
Weight	Approx. 260 g	Approx. 800 g	30 g
Temperature (operating/storage)	0 to +40 °C/-20 to +70 °C		
Relative air humidity	Max. 90 %, non-condensing		-

• Ordering information see page 28 ff



	CMF400-1X01	CDF600	CMF400-2101
Versions	Gateway	Proxy	Gateway
Interface			
Data transfer rate, fieldbus	9.6 kBit/s to 12 MBit/s		125, 250, 500 kBit/s
Data interface to bar code scanner	RS 232; 9.6 to 57.6 kBd	RS 232; 57.6 kBd	RS 232; 9.6 to 57.6 kBd
Electrical connection Gateway	26-pin SMD plug connector	6 x M12 (plug/socket); 1 x 15-pin D-Sub HD socket	26-pin SMD plug connector
Electrical connection fieldbus	9-pol. D-Sub socket or 5-pin M12 plug/socket	5-pin M12 plug/socket	5-pin M12 plug
Power supply	18 to 30 V DC via CDM420	12 V DC or 24 V DC $\pm$ 20%	18 to 30 V DC via CDM420
Power consumption	2 W	5.0 W	2 W
Enclosure rating	IP 20/IP 65	IP 65	
Temperature (operating/storage)	0 to +40 °C/-20 to +70 °C		
Max. rel. air humidity	90 %, non-condensing		

• Ordering information see page 28 ff

## Ordering information CLV600 series

### CLV62x

Type	Read range	Scanning process	Read window	Standard version with 15-pin D-Sub HD plug		Ethernet version with 2 x M12 plug connectors	
				Type	Order no.	Type	Order no.
CLV621	Long Range	Line	Front	CLV621-0000	1041784	CLV621-0120	1041785
		Raster	Front	CLV621-1000	1041786	CLV621-1120	1041787
		Line	Side	CLV621-2000	1041788	CLV621-2120	1041789
		Raster	Side	CLV621-3000	1041790	CLV621-3120	1041791
CLV620	Mid Range	Line	Front	CLV620-0000	1040288	CLV620-0120	1041547
		Raster	Front	CLV620-1000	1041548	CLV620-1120	1041549
		Line	Side	CLV620-2000	1041550	CLV620-2120	1041551
		Raster	Side	CLV620-3000	1041552	CLV620-3120	1041553
CLV622	Short Range	Line	Front	CLV622-0000	1041792	CLV622-0120	1041793
		Raster	Front	CLV622-1000	1041794	CLV622-1120	1041795
		Line	Side	CLV622-2000	1041796	CLV622-2120	1041797
		Raster	Side	CLV622-3000	1041798	CLV622-3120	1041799

### CLV63x

Type	Read range	Scanning process	Read window	Standard version with 15-pin D-Sub HD plug		Ethernet version with 2 x M12 plug connectors	
				Type	Order no.	Type	Order no.
CLV630	Long Range	Line	Front	CLV630-0000	1040706	CLV630-0120	1041969
		Raster	Front	CLV630-1000	1041970	CLV630-1120	1041971
		Line	Side	CLV630-2000	1041972	CLV630-2120	1041973
		Raster	Side	CLV630-3000	1041974	CLV630-3120	1041975
		Line scanner with oscillating mirror	Side	CLV630-6000	1041976	CLV630-6120	1041977
CLV631	Mid Range	Line	Front	CLV631-0000	1041978	CLV631-0120	1041979
		Raster	Front	CLV631-1000	1041980	CLV631-1120	1041981
		Line	Side	CLV631-2000	1041982	CLV631-2120	1041983
		Raster	Side	CLV631-3000	1041984	CLV631-3120	1041985
		Line scanner with oscillating mirror	Side	CLV631-6000	1041986	CLV631-6120	1041987

## CLV63x

Type	Read range	Scanning process	Read window	Standard version with 15-pin D-Sub HD plug		Ethernet version with 2 x M12 plug connectors	
				Type	Order no.	Type	Order no.
CLV632	Short Range	Line	Front	CLV632-0000	1041988	CLV632-0120	1041989
		Raster	Front	CLV632-1000	1041990	CLV632-1120	1041991
		Line	Side	CLV632-2000	1041992	CLV632-2120	1041993
		Raster	Side	CLV632-3000	1041994	CLV632-3120	1041995
		Line scanner with oscillating mirror	Side	CLV632-6000	1041996	CLV632-6120	1041997

## CLV64x

Type	Read range	Scanning process	Read window	Standard version with 15-pin D-Sub HD plug		Ethernet version with 2 x M12 plug connectors	
				Type	Order no.	Type	Order no.
CLV640	Dynamic	Line	Front	CLV640-0000	1042014	CLV640-0120	1042015
		Raster	Front	CLV640-1000	1042016	CLV640-1120	1042017
		Line	Side	CLV640-2000	1042018	CLV640-2120	1042019
		Raster	Side	CLV640-3000	1042020	CLV640-3120	1042021
		Line scanner with oscillating mirror	Side	CLV640-6000	1042022	CLV640-6120	1042023
CLV642	Dynamic, High Density	Line	Front	CLV642-0000	1044873	CLV642-0120	1044874
		Line	Side with external mirror hood	CLV642-2000	1044875	CLV642-2120	1044876

## CLV65x

Type	Read range	Scanning process	Read window	Standard version with 15-pin D-Sub HD plug		Ethernet version with 2 x M12 plug connectors	
				Type	Order no.	Type	Order no.
CLV650	Auto Focus	Line	Front	CLV650-0000	1041290	CLV650-0120	1042121
		Line scanner with oscillating mirror	Side	CLV650-6000	1042124	CLV650-6120	1042125
CLV651	Auto Focus, Low Density	Line	Front	CLV651-0000	1046557	CLV651-0120	1046558
		Line scanner with oscillating mirror	Side	CLV651-6000	1046559	CLV651-6120	1046560

# Ordering information

## Connection Modules, Gateways, Proxy

### Connection modules and accessories

Order no.	Type	Description	
<b>CDB620, basic connection module</b>			
1042256	CDB620-001	4 x M16 cable gland	
1042257	CDB620-101	2 x M16 cable gland, 2 x M12 for simple CAN network wiring	
1042258	CDB620-201	4 x M16 cable gland, 1 x M12 cable gland	
<b>CDM420, modular connection module</b>			
1025362	CDM420-0001	6 x M16 cable gland	
1028487	CDM420-0004	Connection of 2 x CLV6xx simultaneously via CAN network possible, 6 x M16 cable gland	
<b>CMC600, external parameter memory for CLV6xx for integration in CDB620 / CDM420</b>			
1042259	CMC600-101		
<b>CMx modules, retrofit-enabled for CDM420</b>			
2029466	CMD400	Display module	
2029468	CMP400	Power supply unit, 11 W	
2030091	CMP490	Power supply unit, 25 W, installation by replacement of lid of CDM420	

### Gateways and Proxy

Order no.	Type	Description	
<b>CMF400-1x01, PROFIBUS-DP Gateways</b>			
1026241	CMF400-1001	IP 20, 9-pin D-Sub socket	
1026643	CMF400-1101	IP 65, 9-pin D-Sub socket	
1028663	CMF400-1201	IP 65, 5-pin M12 plug/socket	
<b>CDF600, PROFIBUS-DP Proxy</b>			
1041251	CDF600-0100	IP 65, M12 plug/socket	
1041252	CDF600-0110	IP 65, M12 plug/socket, 12 V version for integration of a handheld scanner in the PROFIBUS network	
<b>CMF400-2101, DeviceNet Gateway</b>			
1026242	CMF400-2101	M12 socket	

# Accessories

## Cables and connectors

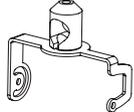
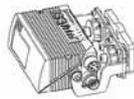
Order no.	Length	Description		CLV6xx Standard	CLV6xx Ethernet	CDB620	CDM420	CMF400	CDF600
6034414	2 m	Cable, M12 4-pin, Ethernet to Host RJ45, plug/plug			•				
6029630	3 m				•				
6034415	5 m				•				
6030928	10 m				•				
6036158	20 m				•				
6034420	2 m	Cable, M12 4-pin, Ethernet to Host M12, plug/plug			•				
6034421	3 m				•				
6034422	5 m				•				
2042916	0.9 m	Cable, M12 12-pin, to CDB620/CDM400/CDF600 15-pin D-Sub, socket/plug			•	•	•		•
2041834	2 m				•	•	•		•
2042914	3 m				•	•	•		•
2042915	5 m				•	•	•		•
6034605	5 m	Cable, M12 12-pin, to open cable end, socket			•				
2014054	3 m	Data connection cable (RS 232) for CLV6xx to PC, 2 x 9-pin D-Sub, socket/socket				•	•		
6035396		Converter USB to RS 232, if RS 232 interface not available on PC				•	•		•
6034419	up to 3 m	Extension cable, 16 x 0.14 mm <sup>2</sup> (AWG26), screened, by meter		•	•				
6034417	2 m	Extension cable, 15-wire, screened, with 15-pin D-Sub HD, plug/socket			•				
6034418	3 m				•	•			
2043413	2 m	Extension cable, 15-wire, screened, with 15-pin D-Sub HD, socket/open cable end, AWG26		•	•				
4038847		IP 65 rubber seal for extension cables with 15-pin D-Sub plug-in connectors		•	•				
6010019		D-Sub plug-in connector insert, 15-pin HD receptacle strip (socket), manual solder connection		•	•				

# Accessories

## Cables and connectors

Order no.	Length	Description		CLV6xx Standard	CLV6xx Ethernet	CDB620	CDM420	CMF400	CDF600	
6010020		D-Sub plug-in connector insert, 15-pin HD receptacle strip (plug), manual solder connection		•	•					
6009438		D-Sub plug-in connector housing (metal) for 9-pin/15-pin HD inserts		•	•					
6027048		Unitron CAN cable 2 x 2 x 0.5 mm <sup>2</sup> , by meter				•	•			
6021164	1 m	CAN cable, M12, plug/socket				•				
6021165	3 m					•				
6021168	5 m					•				
6021166	5 m	CAN cable, M12 cable, socket/open cable end				•				
6021167		CAN plug, M12, 5-pin, with resistor				•				
6021195	2 m	Parameterization cable for PC connection (9-pin Sub-D) to CDF600 (4-pin M8)							•	
2027649	10 m								•	
6025906	2 m	Power supply, CDF600 M12, 5-pin plug (straight)/open cable end							•	
6025908	10 m								•	
6025909	2 m	Power supply, CDF600 M12, 5-pin plug (angled)/open cable end							•	
6025911	10 m								•	
6021156		M12 plug, resistance, PROFIBUS						•	•	
6021353		Bus IN, PROFIBUS cable socket, M12						•	•	
6021354		Bus OUT, PROFIBUS cable plug, M12						•	•	
6021355		PROFIBUS cable, 2 x 0.34 mm, by the meter						•	•	
6025931	2 m	Cable for digital I/Os for CDF600 M12, 5-pin, socket/plug							•	

## Brackets

Order no.	Description		CLV62x	CLV63x	CLV64x	CLV65x
2020410	Mounting bracket (simple angle)		•	•	•	•
2025526	Quick-action clamp		•	•	•	•
2042802	Round bar mounting (bracket) for round bars and pipes with an external diameter of 12 to 20 mm		•			
2042902	Bracket with adapter plate		•			
2042800	Mounting bracket, stirrup, incl. mounting material			•	•	•
2042801	Round bar mounting (stirrup) for round bars and pipes with an external diameter of 12 to 20 mm, incl. mounting material			•	•	•
2042799	Mounting bracket with integrated vibration/ shock absorber for mounting the scanner e.g. on a forklift			•	•	•

## Additional accessories

Order no.	Description		CLV62x	CLV63x	CLV64x	CLV65x
2046811	External mirror hood		•	•	•	•
2048633	Round bar mounting (bracket) for mounting the mirror hood on round bars and pipes with an external diameter of 12 to 20 mm		•	•	•	•
2046822	Hinge bracket for mounting the mirror hood on planar surfaces and ITEM profiles		•	•	•	•
4051366	Micro-SD Flash Card, memory medium with 512 MB			•	•	•

# SOPAS-ET Single Device / SOPAS-ET configuration software



Those who use automation solutions from SICK benefit from a comprehensive network of solutions. The communication functions are combined in central software and thus offer high transparency and availability: SOPAS-ET Single Device and SOPAS-ET.

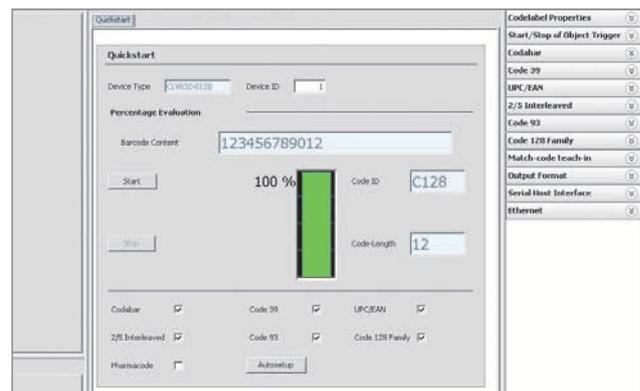
This configuration software was developed as a cross-device engineering tool for all SICK devices. With SOPAS-ET you can combine and centrally control individual components in a single project. Thanks to real time control, you can always keep an eye on all functions, and changes are immediately displayed. Using one software package leads to optimum plant efficiency because you can immediately react thanks to rapid and simple diagnosis. Detailed Online Help provides you with support.

This software provides many advantages when combined with CLV600 series bar code scanners. The scanner's reading field diagrams can be loaded and displayed in SOPAS-ET. An event monitor allows rapid analysis of the scanner's inputs and outputs. The effects of parameter changes are immediately visible via a diagnostic monitor. An assistant allows rapid connection to the bar code scanner. No detailed fieldbus knowledge is necessary.

## SOPAS-ET Single Device

For simple applications

- Simple, intuitive operation due to streamlined parameter selection
- An assistant allows easy connection to the bar code scanner even without detailed fieldbus knowledge
- All reading field diagrams in view
- All effects of parameter changes are immediately visible

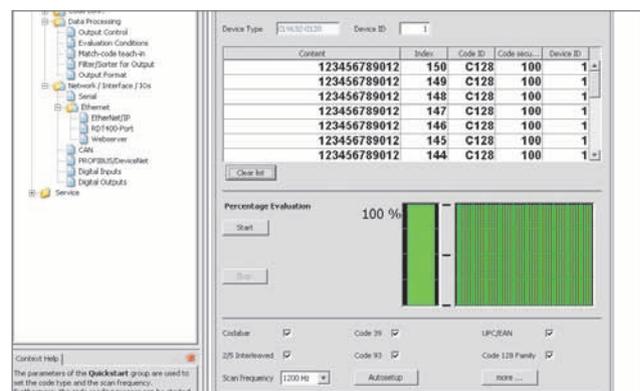


## SOPAS-ET

For more flexibility

- Cross-device tool for all new SICK devices
- Different devices can be combined in a single project
- Optimum plant efficiency thanks to one software package for all SICK devices
- Real time control of current functions on PC
- Full functionality and flexibility

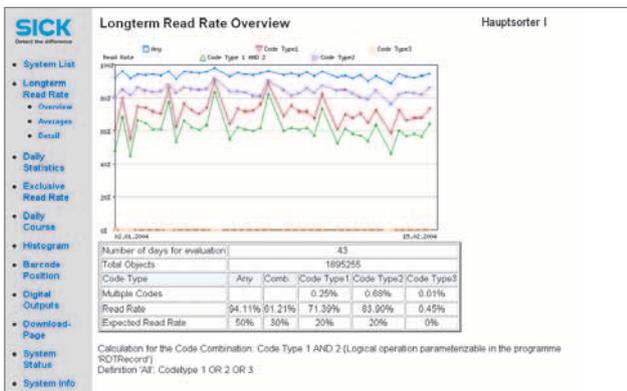
You can obtain SOPAS-ET via download at [www.sick.com](http://www.sick.com). Select between "SOPAS-ET" and "SOPAS-ET Single Device" when starting the software.



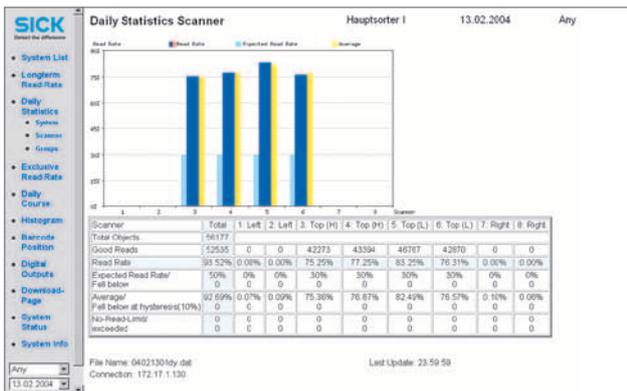
# RDT400 Remote Diagnostic Tool



The RDT400 Remote Diagnostic Tool is a graphic visualization tool for monitoring and controlling scanner systems. This software allows you to analyze reading statistics locally on the scanner, centrally on a control computer, or from anywhere in the world.

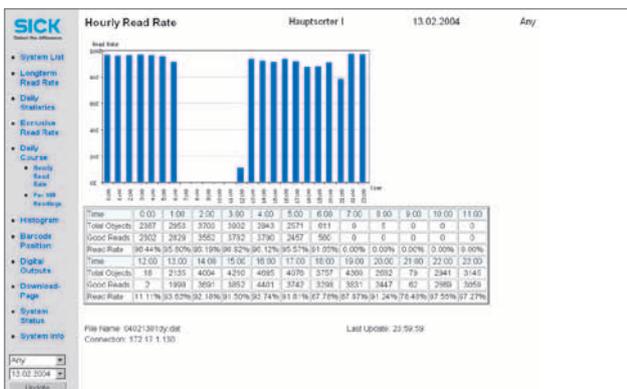


Monitoring takes place via existing network infrastructures, such as Ethernet, and access via standard technologies such as web browsers or TCP/IP transmission. The detailed visualization of the entire system performance includes long-term reading rates (of up to one year), detailed, and hourly reading rates. You also obtain single-scanner statistics and multiread histograms. Permanent monitoring of system performance means that you gain full transparency of the processes in your plant at all times.



## RDT400

- Central visualization of all reading systems
- Use of existing infrastructures via Ethernet
- Visualization at various workplaces
- Use of standard technologies (web, Ethernet, etc.)
- Simple operation
- Remote maintenance
- Preventive maintenance through permanent monitoring of system performance



## Ordering information

Order no.	Type	Description
1046378	RDT400-2001	For 1-3 users
1046379	RDT400-3001	For 1-10 users
1046380	RDT400-4001	For 1-24 users
1046381	RDT400-5001	For 1-64 users

# SICK Service for optimized Auto Ident solutions

## Pre-Sales



### CUSTOMIZED, INTELLIGENT, RELIABLE

#### Application consulting

SICK offers the right solution for your identification tasks. To ensure that this is within your budget, we assess the various cost-relevant parameters and use these to propose an optimized solution tailored to your needs.

#### Engineering

Our team of engineers produce intelligent solutions and combine them to create custom-fit systems. The high dependability of customer systems is thereby ensured by the Quality Management System.

#### Project management

Our project management teams ensure that the projects run as smoothly as possible. They provide support every step of the way, from planning right up to the acceptance phase.

## Installation phase



### INTERNATIONAL, COMPETENT, COOPERATIVE

#### Installation

SICK service technicians install bar code and 2D scanners, RFID systems, installation racks, and scanner networks all over the world, and prepare systems for commissioning.

#### Commissioning

SICK engineers provide their expertise in configuring the application-specific scanning properties of bar code/2D scanners and RFID systems.

#### Site management

SICK site managers ensure that the project runs as smoothly as possible on the customer site. They coordinate the work carried out by the SICK technicians with a high degree of flexibility and act as contacts for customers.

#### Acceptance

SICK service specialists carry out extensive tests to ensure that the agreed performance characteristics of the installed systems are fulfilled.

## After-Sales



### CUSTOMIZED, RAPID RESPONSE, TEAMWORK

#### Maintenance

SICK scanners and RFID systems are maintenance free. To ensure optimum performance during the whole operating period, regular cleaning and adjustment work is recommended. This allows to respond to any changes in the customer application or repair damage.

#### Troubleshooting and spare parts

SICK offers spare parts and repair services designed to meet customer requirements. We produce cost-effective concepts that can be defined as part of a service contract in conjunction with other services.

#### Hotline

You can contact the SICK sales organizations via a free hotline. This allows us to respond to any questions you may have about SICK products quickly by phone. More complex queries are forwarded to the relevant specialist departments without delay.

#### Training

SICK instructors offer an extensive training program either at SICK or on site at the customer. We offer configuration engineers, commissioning engineers, and maintenance technicians tailored, product-specific training courses that help them carry out their duties more effectively.

Offering a range of optimized, cost-effective solutions,  
SICK supports you every step of the way.

### FACTORY AUTOMATION

With its intelligent sensors, safety systems, and auto idet applications, SICK realises comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any types of object
- Accident protection and personal safety using sensors, as well as safety software and services



### LOGISTICS AUTOMATION

Sensors made by SICK form the basis for automating material flows and the optimisation of sorting and warehousing processes.

- Automated identification with bar code and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems



### PROCESS AUTOMATION

Analyzers and Process Instrumentation by SICK MAIHAK provides for the best possible acquisition of environmental and process data.

- Complete systems solutions for gas analysis, dust measurement, flow rate measurement, water analysis or, respectively, liquid analysis, and level measurement as well as other tasks



Worldwide presence with subsidiaries in the following countries:

- Australia
- Belgium/Luxembourg
- Brasil
- Ceská Republika
- China
- Danmark
- Deutschland
- España
- France
- Great Britain
- India
- Israel
- Italia
- Japan

- Nederlands
- Norge
- Österreich
- Polska
- Republic of Korea
- Republika Slovenija
- România
- Russia
- Schweiz
- Singapore
- Suomi
- Sverige
- Taiwan
- Türkiye
- USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at [www.sick.com](http://www.sick.com)

Handed over by:

