



CLV440/442 Bar Code Scanner

Advanced line

CLV440/442 Bar Code Scanner: Dynamic focus control

Compact but powerful

The bar code scanners CLV440/442 represent the newest members of our high performance scanner family using dynamic focus control, extremely large reading distance and great depth of field. This all comes in a very compact and robust housing with IP 65 protection.

These scanners were designed by incorporating innovative features into a miniaturized package size. SMART Code recognition technology leads to a definite increase of first good read rate.

The Reflector Polling feature eliminates the necessity of additional photoelectric triggering switches. The dynamic focus control feature opens up a myriad of new applications with alternating reading distances.

Additional variants, such as angled and oscillating mirror versions, provide solutions for special requirements, such as reading bar codes on large areas.



Your benefits:

- Enhanced read rate even on damaged or dirty bar codes
- Cost savings for identification of bar codes at various angles thanks to attractive system design
- No additional photoelectric switch necessary for triggering
- Easy handling
- Profile Programming makes configuration easy
- Compact housing for tight fits
- Quick installation
- Highest availability
- High reliability

The CLV440/442 at a glance:

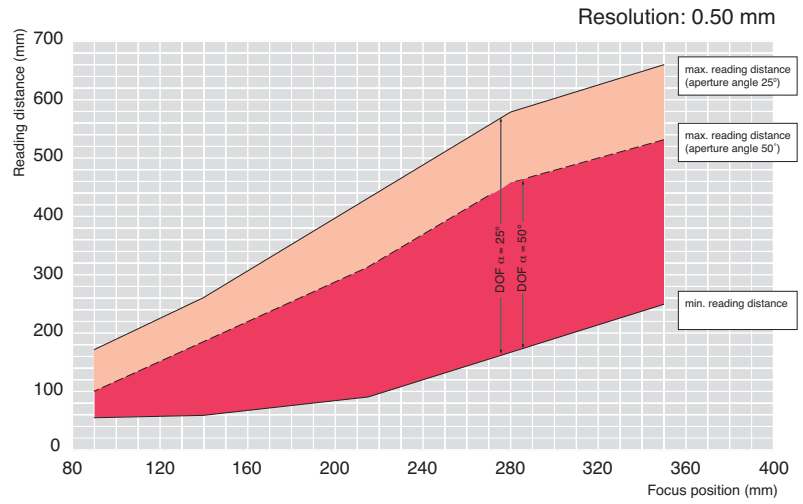
- Reliable code recognition in realtime using SMART technology
- Dynamic focus control in realtime
- Insensitive to ambient light and glare
- Reflector Polling generates an integrated trigger
- Beeper confirms reading process
- Auto Setup ensures automatic optimizing of reading performance
- CAN bus compatible
- Flash memory for firmware
- Integrated power supply tolerates wide range of input voltage
- Angle and oscillating mirror option



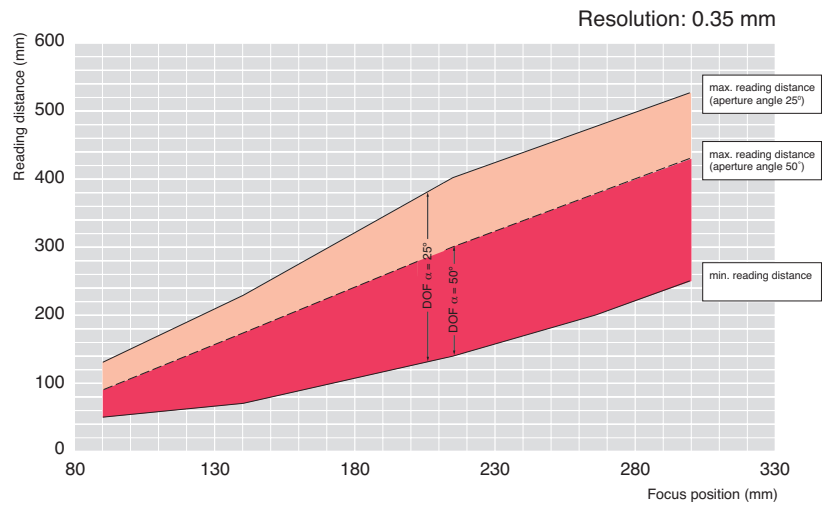


Reading diagrams

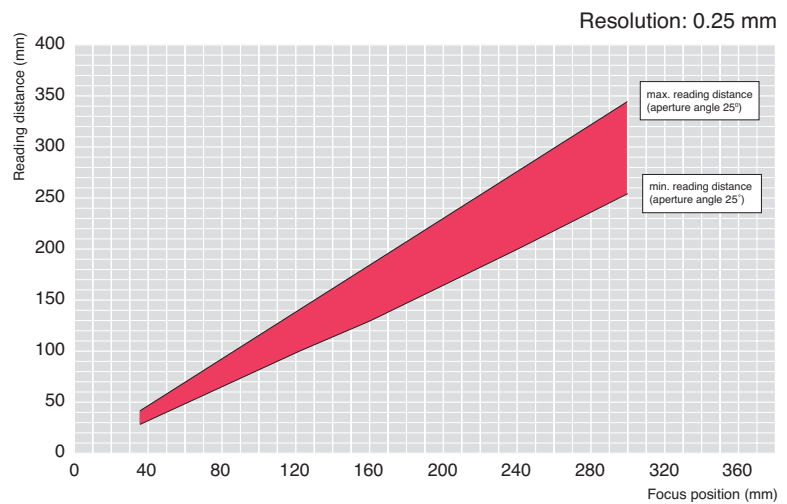
Line scanner
CLV440-0010



Line scanner
CLV440-0010



Line scanner
CLV442-0010

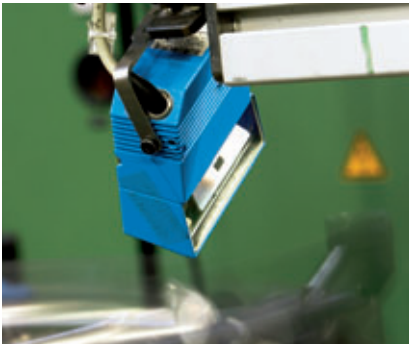


Technical data line/raster scanner CLV44x

Type	CLV440	CLV442
Line scanner	CLV440-0010 (Order No. 1017588)	CLV442-0010 (Order No. 1017595)
Focus	Dynamic focus control	
Number of distance configurations	Max. 8	
Focus adjustment time	≤ 50 ms (from minimum to maximum focus position)	
Focus trigger source	"Sensor 2" switching input/serial interface/timer	
Laser diode (wavelength)	Red light (λ= 650 – 670 nm)	
MTBF of laser diode	20,000 h	
Laser class	Class 2 (to EN 60825-1)	
Useful aperture angle	Max. 50°	
Scanning/decoding frequency	300 to 800 Hz	
Resolution	0.2 to 1.0 mm	optimized for resolution 0.15 to 0.25 mm
Bar code print contrast (PCS)	≥ 60 %	
Immunity to ambient light	2,000 lx (on bar code)	
No. of bar codes per scan	1 to 20 (standard decoder), 1 to 6 (SMART decoder)	
No. of bar codes per reading interval	1 to 50 (autodiscriminating)	
Bar code types (SMART decoder)	Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, 2/5 Interleaved	
Bar code length	Max. 50 characters (max. 500 characters across all bar codes per reading interval)	
Print ratio	2:1 to 3:1	
No. of multiple reads	1 to 99	
Optical indicators	4 x LED	
Acoustic indicator	Beeper, can be deactivated and assigned to a function for result status indication	
Reading pulse	Reflector polling/"Sensor 1" switching input/free running/serial interface	
"Host" data interface	RS 232 or RS 422/485, variable data output format	
Data transfer rate	300 to 57,600 Bd	
Protocols	SICK Standard and 3964 (R)	
Physical configurations	Stand-alone	
"CAN" data interface	CANopen protocol, CAN Scanner Network	
Data transfer rate	10 KBits/s to 1 MBits/s	
"Terminal" data interface	RS 232, 9,600 Bd, 8 data bits, no parity, 1 stop bit, fixed output format	
Switching inputs/outputs	2 ("Sensor 1", "Sensor 2"), opto-decoupled/ 2 ("Result 1", "Result 2"), PNP	
Electrical connection	15-pin D Sub HD connector, cable length 0.9 m	
Operating voltage/power consumption	10 to 30 V DC ^{*)} /5 W	
Housing	Cast zinc die-cast, does not represent a problem in paint shops	
Enclosure rating/protection class	IP 65 (to DIN 40 050)/ Class 3 (to VDE 0106/IEC 1010-1)	
EMC/vibration/shock tested	To EN 61000-6-4, EN 61000-6-1, EN 61000-6-2/to IEC 68-2-6 Test FC/to IEC 68-2-27 Test EA	
Weight	480 g with connecting cable	
Operating/storage temperature	0 to + 40 °C/-20 to + 70 °C	
Max. rel. humidity	90 %, non condensing	

*) UL certificated when class 2 power supply according to UL 1310 is used





CLV440 Bar Code Scanner

Oscillating mirror

The oscillating mirror enables the CLV440 to deflect the scan line so that it is perpendicular to the scanning direction. By doing so, the CLV440 can identify bar codes in large areas.

Various operating modes are provided:

Free selectable angular position:

The oscillating mirror can be positioned at any angle.

Oscillating mirror with variable deflection range:

Deflects the scan line up to the amplitude setting (max. $\pm 20^\circ$).

One Shot:

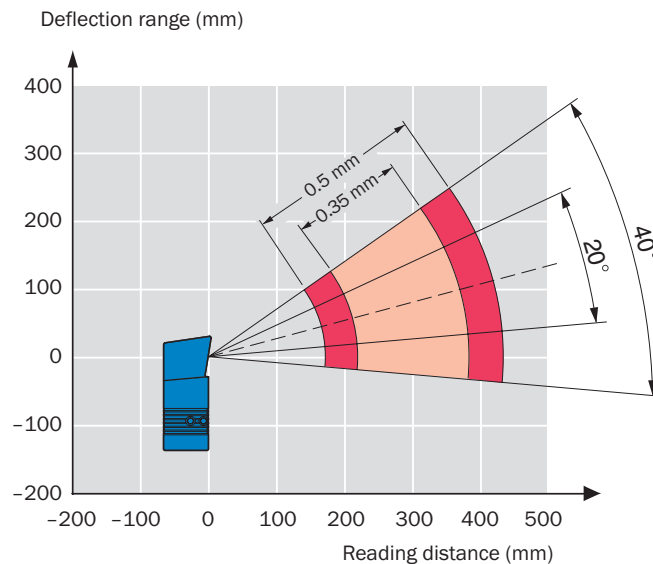
Single oscillating movement for each reading gate, comprising one forward and return phase of the oscillating mirror.

Additional technical data of line scanner with oscillating mirror

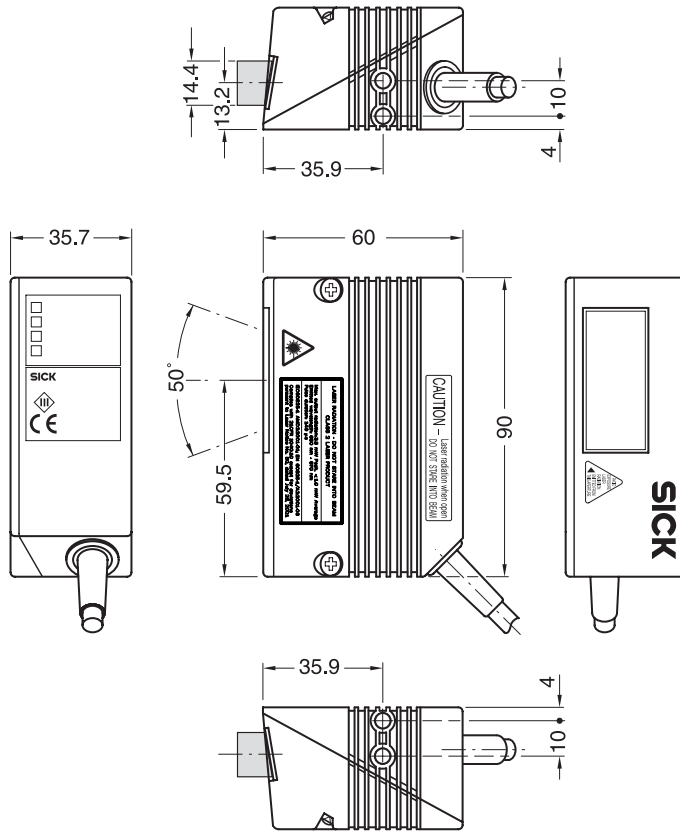
Typ	CLV440
Line scanner with oscillating mirror	CLV440-6010 (Order No. 1017984)
Reading window	Side
Aperature angle	105° (center position CW=50)
Trigger source for DC ¹⁾ switchover	Also: oscillating mirror reversal points
Useful aperture angle	Max. 50°
Oscillating mirror functions	Permanent (variable position)/oscillating (amplitude per DC variable or fixed)/one-shot
Oscillating frequency	0.5 to 4 Hz
Max. angle of deflection	+20° to -20° (can be set)
Operating voltage/power consumption	10 to 30 V DC ²⁾ /max 6.15 W
Weight	620 g with connecting cable

1) DC = distance configuration 2) UL certificated when class 2 power supply according to UL 1310 is used

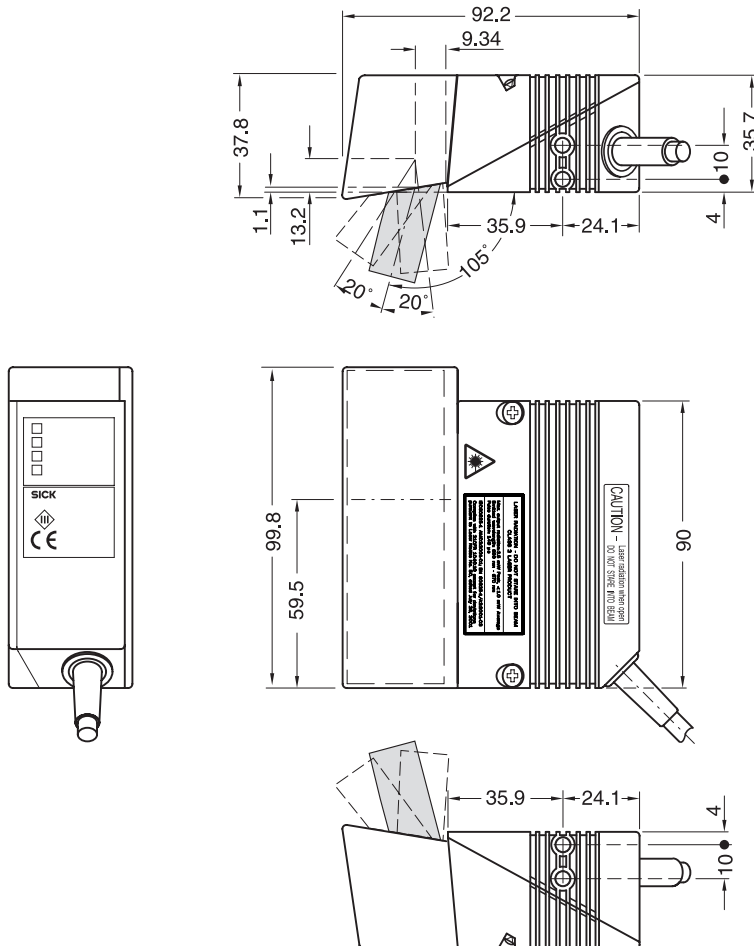
Line scanner with oscillating mirror CLV440-6010



Line scanner
CLV440-0010
CLV442-0010



Line scanner with
oscillating mirror
CLV440-6010



All dimensions in mm.

All tapped blind holes 5M,
5 mm deep.

Accessories

Mounting brackets

Order no.	Description
2020410	Mounting bracket with installation material
2022564	Mounting bracket (U-shaped), CLV44x can be adjusted in two axes, including installation material
2023691	Rod clamp with mounting bracket (U-shaped), CLV44x can be adjusted in two axes, for rods and tubes with 12 to 20 mm external diameter, including installation material
2025526	Quick clamp with installation material

Connectivity¹⁾

1023885	CDB420-001 Connection Module for one CLV44x, with 15-pin D Sub HD socket, 4 x cable glands, 9-pin D Sub plug (internal), terminal strips for signal distribution, 5 x LEDs, polycarbonate housing, max. IP 65
1025362	CDM420-0001 Connection Module for one CLV44x, with 15-pin D Sub HD socket, 6 x cable glands, 9-pin D Sub plug (internal), terminal strips for signal distribution, 5 x LEDs, polycarbonate housing, max. IP 65
1040002	CDM420-0105 Connection Module, as no. 1025362 but with pre-installed CMF400-1001 Fieldbus Gateway (slave) to connect one CLV44x to PROFIBUS-DP via 9-pin D Sub socket (IP 20), CMC400-101 Cloning Module included
1029854	CDM420-0205 Connection Module, as no. 1025362 but with pre-installed CMF400-1101 Fieldbus Gateway (slave) to connect one CLV44x to PROFIBUS-DP via 2 x 5-pin M12-circular-plug-in-connectors (IP 65), CMC400-101 Cloning Module included
1023850	CMC400-101 Cloning Module for using in the CDB420-001 or CDM420-0001 Connection Module to save the scanner parameter values
2029466	Cover with CMD400 Display Module ²⁾ for using in the CDM420 Connection Module, LCD, 4 x 20 characters, illuminated, 5 keys for menu management
1026241	CMF400-1001 Fieldbus Gateway (slave) for using in the CDM420-0001 Connection Module to connect the CLV44x to PROFIBUS-DP via 9-pin D Sub socket, IP 20
1026643	CMF400-1101 Fieldbus Gateway (slave) for using in the CDM420-0001 Connection Module to connect the CLV44x to PROFIBUS-DP via two 5-pin M12-circular-plug-in-connectors, IP 65
1026242	CMF400-2101 Fieldbus Gateway (slave) for using in the CDM420-0001 Connection Module to connect the CLV44x to DeviceNet, IP 65
1026357	CMF400-3101 Fieldbus Gateway (slave) for using in the CDM420-0001 Connection Module to connect the CLV44x to Ethernet TCP/IP, IP 65
2029468	CMP400 Power Supply Module for using in the CDM420-0001 Connection Module to supply one CLV44x

1) Further modules available on request

2) CMC400-101 Cloning Module required

Cables^{*)}

6010075	Extension for CLV44x connecting cable, 2 m, shielded, with 15-pin D sub HD plug and socket
6020092	Extension for CLV44x connecting cable, 3 m, shielded, with 15-pin D sub HD plug and socket
2014054	RS 232 data cable (null modem), 3 m, shielded, with 2 x 9-pin D sub sockets, for configuring the CLV44x
4038847	IP 65 seal for extension cable no. 6010075/no. 6020092

*) Further cables available on request

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