

CLV410/CLV412/CLV414

The small powerful system



The CLV41x family is userfriendly and can be easily integrated into your application with a high reliability.

The optical concept of "Autocollimation", SICK's standard for high perform-

ance scanner, is integrated into a housing with very small dimensions. This guarantees highly stable reading properties under ambient light conditions and large reading distances for small module widths.

Your benefits:

- Easy to use
- Quick installation
- Minimized costs due to integrated functions
- Quick adaptation to your application
- Flexible integration even in highly sophisticated machines
- Highest availability
- High reliability

The CLV410/412/414 at a glance:

- Line scanner and Raster scanner option
- Reflector Polling generates an automatic trigger
- Profile Programming makes configuration easy
- Auto Setup for flexible adjustment
- Autocollimation guarantees high reading reliability
- Beeper reports the reading gate
- Power supply tolerates a wide range of input voltage
- Compact housing for tight fits

Technical data

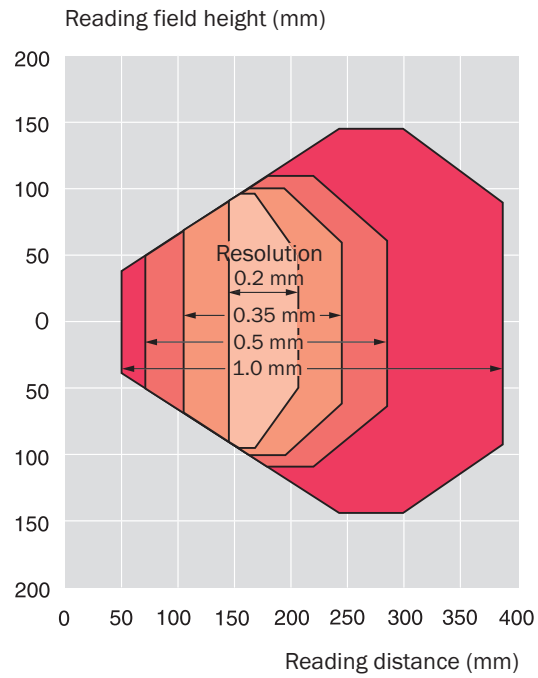
Type	CLV410 (Standard)	CLV412 (High Density)	CLV414 (Short Range)
Focus	Fixed focus		
Reading window	Line/Raster scanner: front Line/Raster scanner with angle attachment: side (angle of emergence 105°)		
Laser diode (wavelength)	Red light ($\lambda = 670 \text{ nm}$)		
MTBF of laser diode	20,000 h		
Laser class of device	Class 2 (pursuant to EN 60825-1)		
Useful aperture angle	Max. 60° (front reading window)/max. 50° (side reading window)		
Scanning/decoding frequency	200 ... 800 Hz		
Resolution	0.2 ... 1.0 mm	0.1 ... 0.2 mm	0.2 ... 0.5 mm
Raster height	15 mm (8 lines) at a reading distance of 200 mm (front reading window)		
Bar code print contrast (PCS)	$\geq 60 \%$		
Ambient light compatibility	2,000 lx (on bar code)		
No. of bar codes per scan	1 ... 3		
No. of bar codes per reading interval	1 ... 10		
Bar code types	Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, 2/5 Interleaved, Pharmacode		
Bar code length	Max. 50 characters (max. 100 characters across all bar codes per reading interval)		
Print ratio	2:1 ... 3:1		
No. of multiple reads	1 ... 99		
Optical indicators	4 x LEDs (status indicators)		
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 and RS-422/485, variable data output format		
Data transfer rate	300 ... 57,600 Bd		
Protocols	SICK-Standard		
Physical configurations	Stand-alone, SICK Network		
Switching inputs	2 ("Sensor 1", "Sensor 2")		
Switching outputs	3 ("Result 1", "Result 2", "Result 3")		
Electrical connection	15-pin D Sub HD connector, cable length 0.9 m		
Operating voltage/power consumption	5 ... 30 V DC ¹⁾ /max. 3 W		
Housing	Zinc die-cast, does not represent a problem in paint shops		
Enclosure rating/protection class	IP 65 (to DIN 40 050)/Class 3 (to IEC 1010-1)		
EMC/vibration/shock tested	To EN 61000-6-3, EN 61000-6-2/to IEC 68-2-6 Test FC/to IEC 68-2-27 Test EA		
Weight	250 g with connecting cable (front reading window)/320 g (side reading window)		
Operating/storage temperature	0 ... +40 °C/-20 ... +70 °C		
Max. rel. humidity	90 %, non condensing		

¹⁾ UL certified when a class 2 power supply according to UL 1310 is used

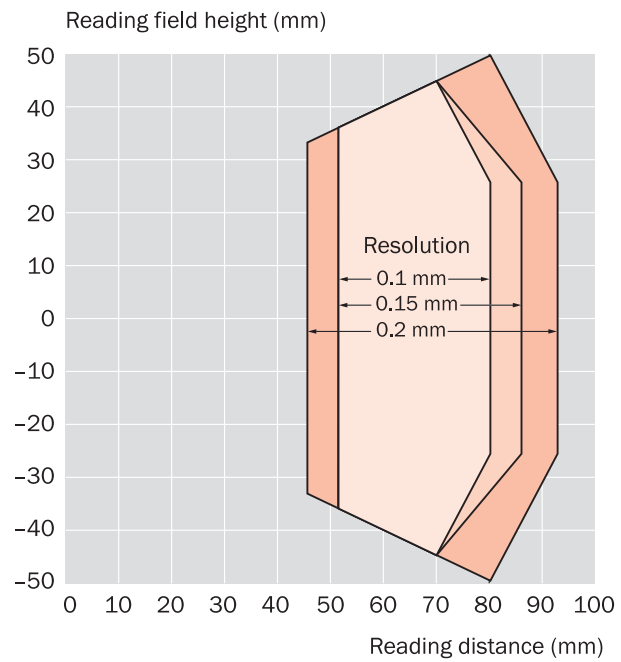


Line/Raster scanners with front reading window*)

CLV410 Standard Range

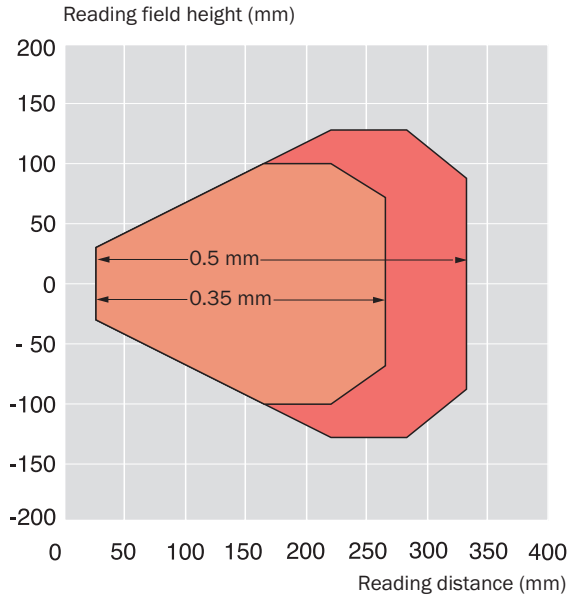


CLV412 High Density

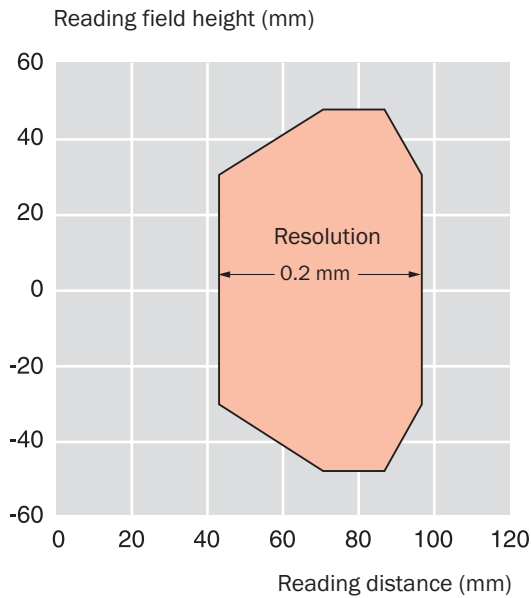


*) Line/Raster scanner with side reading window:
The whole reading range shifts by approx. 15 mm towards the reading window.
The aperture angle is max. 50°.

Line/Raster scanners with front reading window



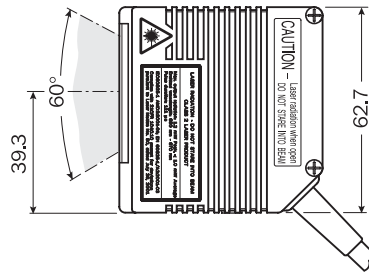
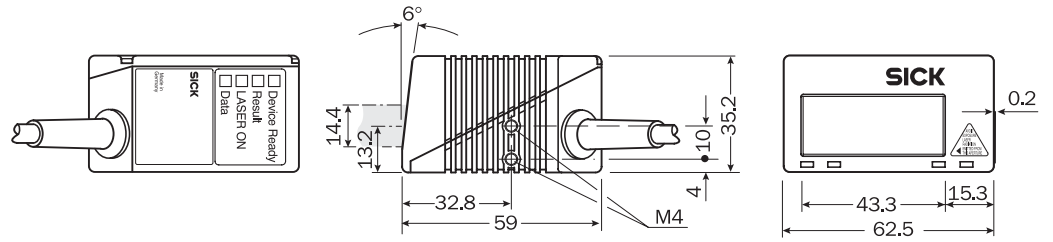
CLV410-2010S02 optimised for module widths of 0.35 mm and 0.5 mm



CLV414 Short Range

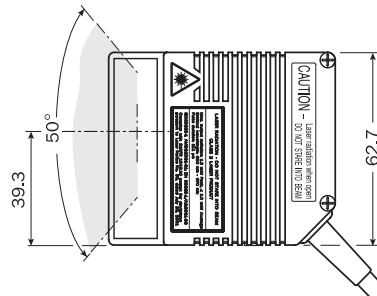
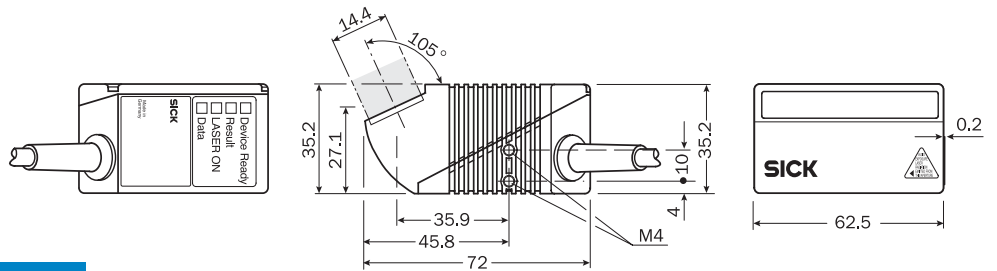
Dimensional drawings

Line/Raster scanner
straight light exit



All dimensions in mm

Line/Raster scanner
angular hood



Order information

Standard Range

Type	Description	Order no.
CLV410-0010	Line, straight light exit	1015421
CLV410-1010	Raster, straight light exit	1015427
CLV410-2010	Line, lateral light exit 105°	1017534
CLV410-3010	Raster, lateral light exit 105°	1017536

High Density

Type	Description	Order no.
CLV412-0010	Line, High Density, straight light exit	1017527
CLV412-1010	Raster, High Density, straight light exit	1017528
CLV412-2010	Line, High Density, lateral light exit 105°	1017538
CLV412-3010	Raster, High Density, lateral light exit 105°	1017540

Short Range

Type	Description	Order no.
CLV414-0010	Line, Short Range, straight light exit	1017368
CLV414-1010	Raster, Short Range straight light exit	1016767
CLV414-2010	Line, Short Range, lateral light exit 105°	1017396
CLV414-3010	Raster, Short Range, lateral light exit 105°	1016831

Accessories

Accessories can be found on Page 218

CLV Accessories

	CLV405	CLV410	CLV420	CLV430	CLV440	CLV450	CLV480/CLV490/ CLX490	CLV480/CLV490/ CLX490 with Heating	CLV6xx Standard Version	CLV6xx Ethernet Version	
Cable											
6010075	■	■	■	■	■	■					Extension for connection cable, 2 m, 15-wired, shielded, with 15-pin, D-Sub-HD plug/receptacle
6010137	■	■	■	■	■	■					As 6010075, but with 15-pin D-Sub-HD plug/open end
2014054	■	■	■	■	■	■	■		■	■	Data connection cable (RS-232) for CLV/ICR/CDB/CDM to PC, 3 m, with 2 x 9-pin D-Sub receptacle
6010088	■	■	■	■	■	■					Data cable for extension up to 3 m, Ø 6.6 mm, 15 x 0.09 mm ² , shielded, available per meter
6010019	■	■	■	■	■	■			■	■	D-Sub female connector, 15-pin HD (receptacle), hand soldered terminal
6010020	■	■	■	■	■	■			■	■	D-Sub female connector, 15-pin HD (plug), hand soldered terminal
6009438	■	■	■	■	■	■			■	■	D-Sub plug housing (metal) for 9-pin/15-pin HD inputs
6020092		■	■	■	■	■					Extension cable 3 m, 15-wired, shielded, with 15-pin D-Sub-HD plug/receptacle
4038847		■	■	■	■	■			■	■	IP 65 sealing ring for extension cable 6010075 and 6020092
2020307							■				Plug housing (IP 65) for CLV/X490, with EEPROM parameter store for the connection to CDM490, with 2 cables, each 3 m, each 15-wired shielded, with 15-pin Sub-HD plug/receptacle
2021806							■				As 2020307, but with a length of 1 m
2020981							■				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
6034414										■	Cable, M12 4-pin, Ethernet to Host RJ45, 2 m (plug/plug)
6029630										■	Cable, M12 4-pin, Ethernet to Host RJ45, 3 m (plug/plug)
6034415										■	Cable, M12 4-pin, Ethernet to Host RJ45, 5 m (plug/plug)
6030928										■	Cable, M12 4-pin, Ethernet to Host RJ45, 10 m (plug/plug)
6034420										■	Cable, M12 4-pin, Ethernet to Host M12, 2 m (plug/plug)
6034421										■	Cable, M12 4-pin, Ethernet to Host M12, 3 m (plug/plug)
6034422										■	Cable, M12 4-pin, Ethernet to Host M12, 5 m (plug/plug)
2042916										■	Cable, M12 12-pin, to CDB620/CDM400/CDF600 15-pin D-Sub, 0.9 m (socket/plug)
2041834										■	Cable, M12 12-pin, to CDB620/CDM400/CDF600 15-pin D-Sub, 2.0 m (socket/plug)
2042914										■	Cable, M12 12-pin, to CDB620/CDM400/CDF600 15-pin D-Sub, 3.0 m (socket/plug)
2042915										■	Cable, M12 12-pin, to CDB620/CDM400/CDF600 15-pin D-Sub, 5.0 m (socket/plug)

CLV Accessories

	CLV405	CLV410	CLV420	CLV430	CLV440	CLV450	CLV480/CLV490/ CLX490	CLV480/CLV490/ CLX490 with Heating	CLV6xx Standard Version	CLV6xx Ethernet Version	
6034605										■	Cable, M12 12-pin, to open end, 5.0 m
6035701									■	■	Extension cable up to 3 m, 16 x 0.14 mm ² (AWG26), shielded, as per meter
6034417									■	■	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-SUB-HD (plug/socket) AWG26
6034418									■	■	Extension cable, 3 m, 15-wired, shielded, with 15 pin D-SUB-HD (plug/socket) AWG26
2043413									■	■	Extension cable, 2 m, 15-wired, shielded, with 15-pin D-SUB-HD (socket/open end) AWG26
2020302							■				Connection cable (3 m), Ø 8 mm, shielded, with 15-pin D-Sub-HD receptacle and 15-pin D-Sub-HD plug
2020264							■				Connection cable for CLV/X490 ("I/O"), Ø 8 mm, 3 m, 15-wired, shielded, with 15-pin D-Sub-HD plug/open end
2020303							■				Connection cable for CLV/X490 ("Host/Term"), Ø 8 mm, 3 m, 15-wired, shielded, with 15-pin D-Sub-HD plug/open end
2027046							■				Connection cable for CLV480, CLV/X490 to CDB420, 3 m, without EEPROM parameter store
2030023							■				Connection cable for CLV480, CLV/X490 to CDB420, 3 m, with EEPROM parameter store
2033325							■				Connection cable for CLV480, CLV/X490 to CDB420, 1 m, with EEPROM parameter store
6007508							■				Data cable for RS-485 network, Ø 8.5 mm, 2 x 2 x 0.23 mm ² , twisted pair, shielded, available per meter
2022714							■	■			Incremental encoder mit wheel resolution 10 mm/pulse max. 100 KHz, power supply DC 18 ... 28 V, with mounting bracket and mounting material (2 x inner hex screw M5 x 30, 2 x nut M5 - A2, 4 x washer A5,3 - A2) (minimal operation temperature: 0° C)
2030065								■			Cold cable (3 m), with plug housing and parameter store (EEPROM), IP 65
2031034								■			Cold cable (10 m), with plug housing and parameter store (EEPROM), IP 65

CLV Accessories

CLV405	CLV410	CLV420	CLV430	CLV440	CLV450	CLV480/CLV490/ CLX490	CLV480/CLV490/ CLX490 with Heating	CLV6xx Standard Version	CLV6xx Ethernet Version
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Holder/Mounting bracket										
2020077		■	■							Mounting bracket, small, with mounting material (2 screws M4 x 8, 2 x washer A 4,3, 2 x spring ring B4)
2020078		■	■							Mounting bracket, large, with mounting material (2 screws M4 x 8, 2 x washer A 4,3, 2 x spring ring B4)
2032868		■	■							Holder for bars, with mounting angles, with mounting material (3 screws M4 x 8, 2 plates A4,3 2 x spring ring B4, grub screw M8 x 16)
2022564				■	■	■				Mounting bracket, U-shaped, with mounting material (3 self-locking screws M 5 x 8, 3 x washer A 5, 2 x screws M 5 x 12, 2 x washer A 5,3)
2021342						■				Mounting bracket, U-shaped, with shock absorber and mounting material (3 self-locking screws M5 x 8, 3 x washer A5, 2 x screw M5 x 16, 2 x washer A5,3)
2023691				■	■	■				Clamp bracket for tubes with 12 ... 20 mm outer diameter, with mounting bracket, U-shapes, with mounting material (1 x grub screw M8 x 16, 3 x self locking screw M5 x 8, 3 x washer A5)
2042802								■	■	Universal holder
2042902								■	■	Bracket with adapter board
2020410				■	■	■		■	■	Mounting set
2025526				■	■	■		■	■	Quick clamp
2016110							■	■		Quick-change clamping device with mounting material (2 screws M6 x 12, 2 screws M6 x 16, 2 x washer A 6,4)
2013824							■	■		Angle bracket, single, with 2 x self-locking screw M6 x 10
2018435							■	■		Joint angle (angle bracket 2013824 double), with 2 screws M6 x 10 mm
2022996							■			Mounting angle, with 2 x screws M6 x 12, self-locking
2032070							■			Mirror shield (for the reduction of the needed mounting area)
8008085				■	■	■				Profile bar codes DIN A5