CLV430/431/432
Bar Code Scanner

Advanced line

SICK
Sensor Intelligence.

CLV430/431/432 Bar Code Scanner: Fixed Focus

Compact but powerful

The bar code scanners CLV430, CLV431 and CLV432 represent the high performance scanner family using fixed optics, 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.

Additional variants, such as angled or 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
- Quick installation
- Highest availability
- High reliability

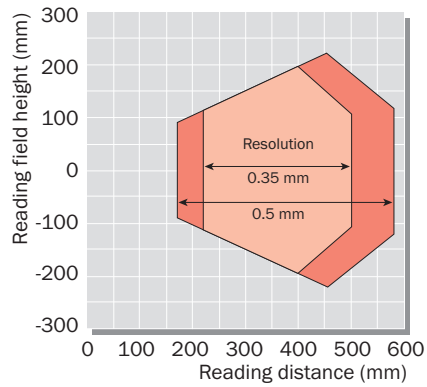**The CLV430/431/432 at a glance:**

- Reliable code recognition in realtime using SMART technology
- Insensitive to ambient light and glare
- Reflector Polling generates an integrated trigger
- Beeper confirms reading process
- AutoSetup ensures automatic optimizing of reading performance
- Profile Programming makes configuration easy
- CAN bus compatible
- Flash memory for firmware
- Integrated power supply tolerates wide range of input voltage
- Compact housing for tight fits
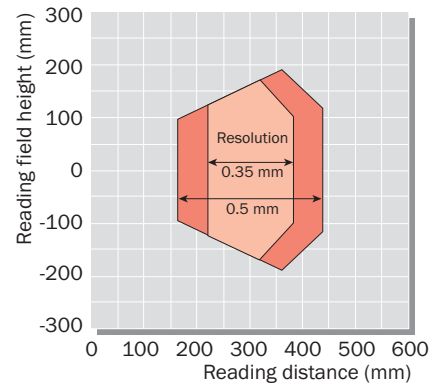- Oscillating mirror optional
- Angle attachment optional

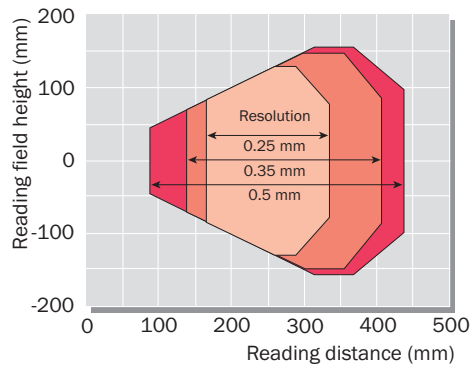## Reading diagrams for line scanners

CLV430-0010 Long Range

CLV431-0010 Mid Range

CLV432-0010 Short Range

Reading diagrams for line scanners with oscillating mirror

CLV430-6010 Long Range

CLV431-6010 Mid Range
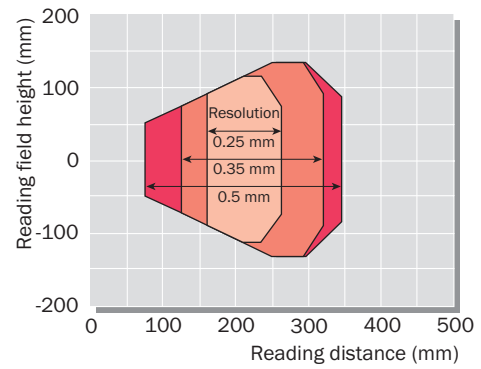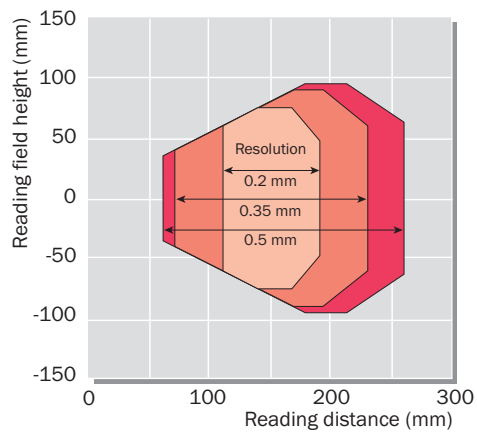
CLV432-6010 Short Range
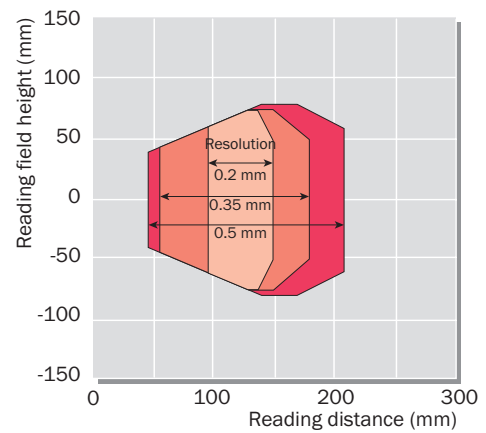
Technical data line/raster scanner CLV43x

Type	CLV430	CLV431	CLV432
Line scanner	CLV430-0010 (Order No. 1017585)	CLV431-0010 (Order No. 1017622)	CLV432-0010 (Order No. 1017623)
Raster scanner	CLV430-1010 (Order No. 1016705)	CLV431-1010 (Order No. 1016679)	CLV432-1010 (Order No. 1016680)
Line scanner with 105° angle attachment	–	CLV431-2010 (Order No. 1016746)	CLV432-2010 (Order No. 1016748)
Raster scanner with 105° angle attachment	–	CLV431-3010 (Order No. 1016747)	CLV432-3010 (Order No. 1016749)
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 (λ = 650 to 670 nm)		
MTBF of laser diode	20,000 h		
Laser class	Class 2 (pursuant to EN/IEC 60825-1)		
Useful aperture angle	Max. 50°		
Scanning/decoding frequency	300 to 800 Hz		
Resolution	0.2 to 1.0 mm		
Raster height	15 mm (8 lines) at a reading distance of 200 mm (front reading window)		
Bar code print contrast (PCS)	≥ 60 %		
Immunity to ambient light	2,000 lx (on bar code)		
No. of bar codes per scan/reading interval	1 to 20 (standard decoder), 1 to 6 (SMART decoder)/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 (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 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 KBit/s to 1 MBit/s		
"Auxiliary" data interface	RS 232, 9,600 Bd, 8 data bits, no parity, 1 stop bit, fixed output format		
Digital 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		
Supply voltage/power consumption	10 to 30 V DC[1], SELV respectively PELV accord. to IEC 364-4-41/4 W		
Housing	Zinc die-cast, does not represent a problem in paint shops		
Electrical safety	Accord. to EN 61010-1		
Protection class/enclosure rating	III accord. to EN 61140/IP 65 accord. to EN 60529;A1		
EMC test	Accord. to EN 61000-6-2, EN 61000-6-4		
Vibration/shock test	Accord. to EN 60068-2-27/to EN 60068-2-6		
Weight	420 g with connecting cable (with additional angle attachment 105°: 450 g)		
Operating/storage temperature	0 to +40 °C/−20 to +70 °C		
Max. rel. humidity	90 %, non condensing		

[1] UL certificated when class 2 power supply according to UL 1310 is used

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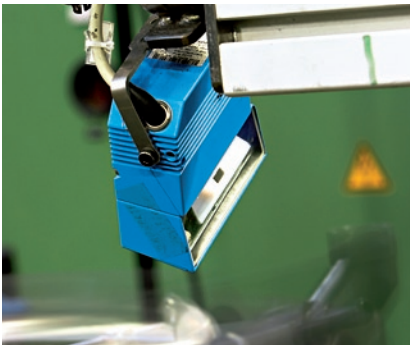
CLV430/431/432
Bar Code Scanner
with oscillating mirror

Oscillating mirror

The oscillating mirror enables the CLV430/431/432 to deflect the scan line so that it is perpendicular to the scanning direction. By doing so, the CLV430/431/432 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. ±20°).

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

Type	CLV430	CLV431	CLV432
Line scanner with oscillating mirror	CLV430-6010 (Order No. 1017981)	CLV431-6010 (Order No. 1017982)	CLV432-6010 (Order No. 1017983)
Reading window	Side		
Angle of emergence	105° (center position CW = 50)		
Trigger source for DC[2] switchover	Also: oscillating mirror reversal points		
Useful aperture angle	Max. 50°		
Oscillating mirror functions	Permanent (variable position)/oscillating (amplitude per DC[2] variable or fixed)/one-shot		
Oscillating frequency	0.5 to 4 Hz		
Max. angle of deflection	+20° to −20° (can be set with software)		
Supply voltage/power consumption	10 to 30 V DC[1], SELV respectively PELV accord. to IEC 364-4-41/4 W		
Weight	620 g with connecting cable		

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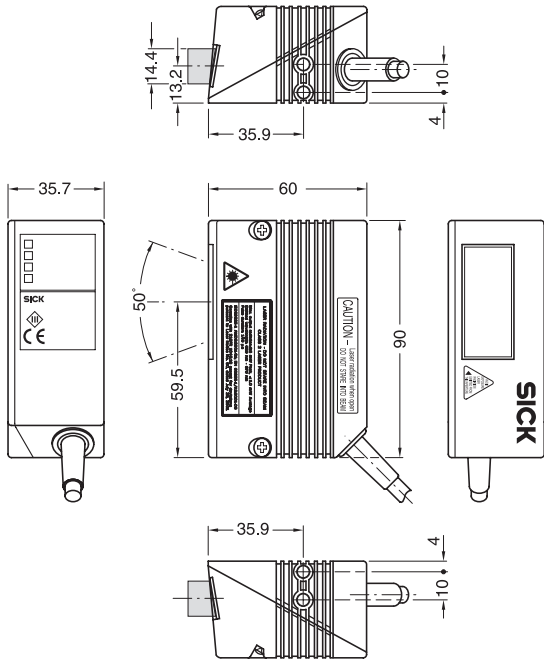[2] DC = distance configuration

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Angle of deflection for line scanner with oscillating mirror CLV430-6010
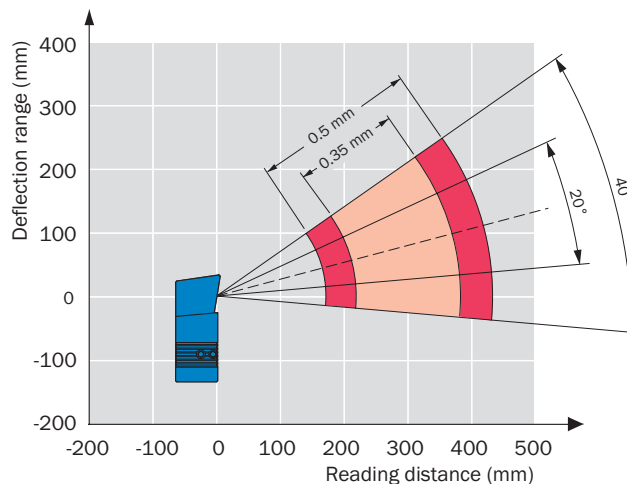
Front reading window

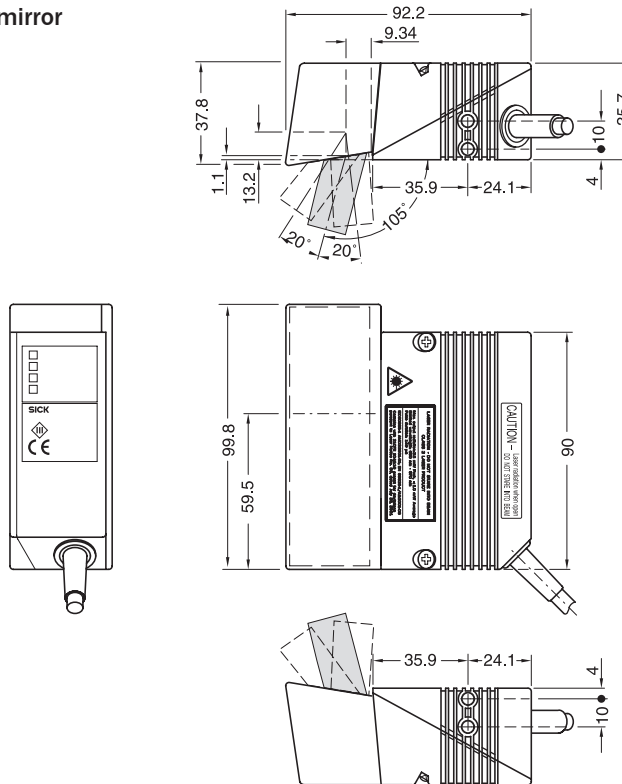| Line scanner	Raster scanner
CLV430-0010	CLV430-1010
CLV431-0010	CLV431-1010
CLV432-0010	CLV432-1010

Side reading window

Line scanner	Raster scanner
CLV431-2010	CLV431-3010
CLV432-2010	CLV432-3010
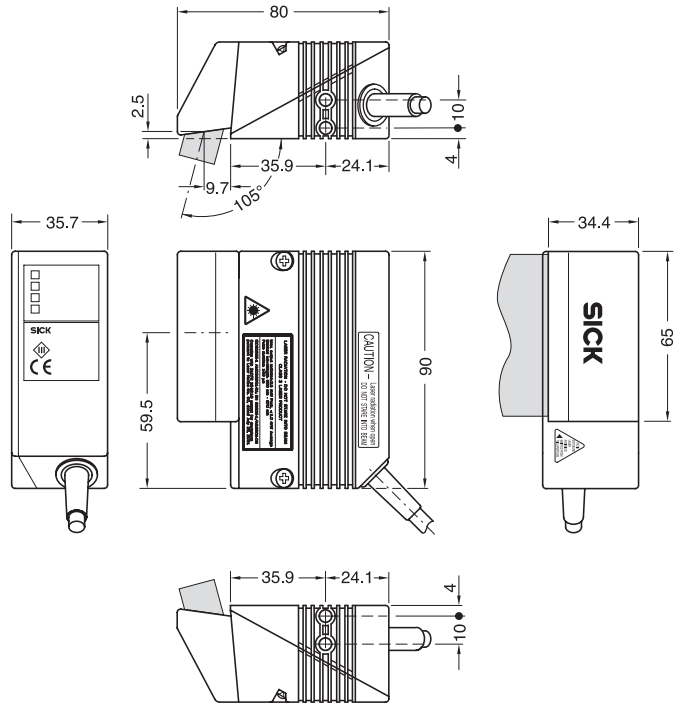
Line scanner with oscillating mirror
CLV430-6010
CLV431-6010
CLV432-6010

All dimensions in mm.

All tapped blind holes M5,
5 mm deep.

Accessories

Mounting brackets

Order No.	Description
2020410	Mounting bracket with installation material
2022564	Mounting bracket (U-shaped), CLV43x can be adjusted in two axes, including installation material
2023691	Rod clamp with mounting bracket (U-shaped), CLV43x 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

Connectivity[3]

Order No.	Description
1023885	CDB420-001 Connection Module for one CLV43x, 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 CLV43x, 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 CLV43x 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 CLV43x 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[4] 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 CLV43x 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 CLV43x to PROFIBUS-DP via 2 x 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 CLV43x to DeviceNet, IP 65
1026357	CMF400-3101 Fieldbus Gateway (slave) for using in the CDM420-0001 Connection Module to connect the CLV43x to Ethernet TCP/IP, IP 65
2029468	CMP400 Power Supply Module for using in the CDM420-0001 Connection Module to supply one CLV43x

[3] Further modules available on request
[4] CMC400-101 Cloning Module required

Cables[5]

Order No.	Description
6010075	Extension for CLV43x connecting cable, 2 m, shielded, with 15-pin D sub HD plug and socket
6020092	Extension for CLV43x 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 CLV43x
4038847	IP 65 seal for extension cable no. 6010075/no. 6020092

[5] Further cables available on request

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