

# CLV 430/431/432

## Bar Code Scanner

### Fixfocus

#### Advanced line



#### Compact but powerful

The new bar code scanners CLV 430, CLV 431 and CLV 432 represent the newest members of our 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.

#### 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
- Extremely easy handling
- Quick installation
- Highest availability
- High reliability

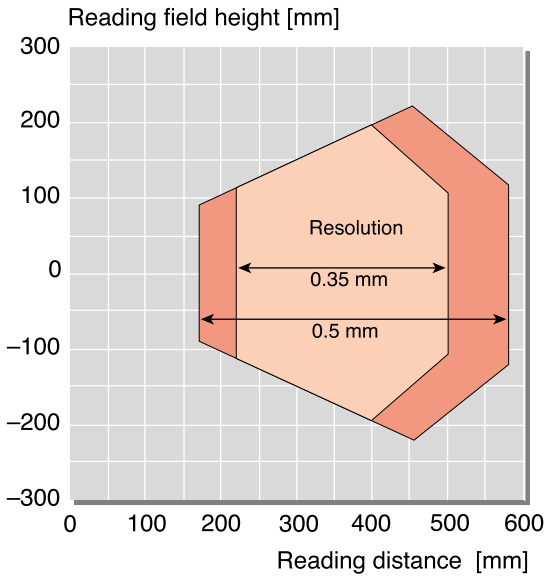
#### CLV 430/431/432 at a glance:

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

# Reading diagrams

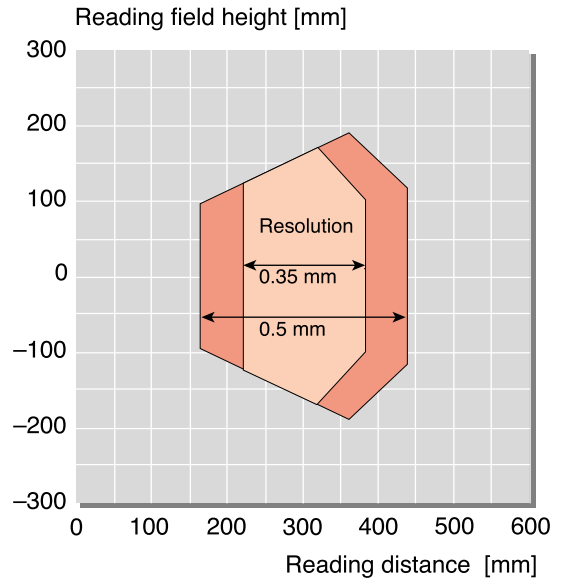
## Line scanner

**CLV 430-0010 LONG RANGE**

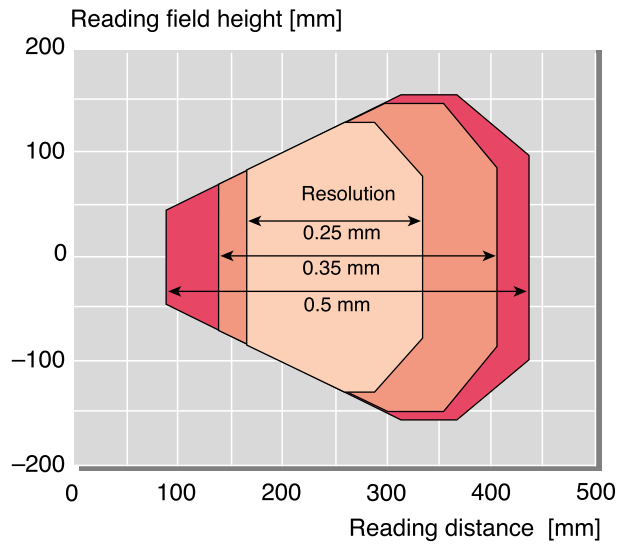


## Line scanner with oscillating mirror

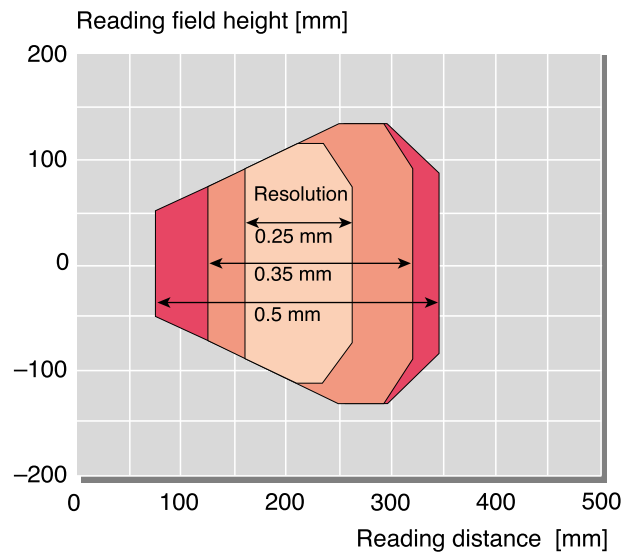
**CLV 430-6010 LONG RANGE**



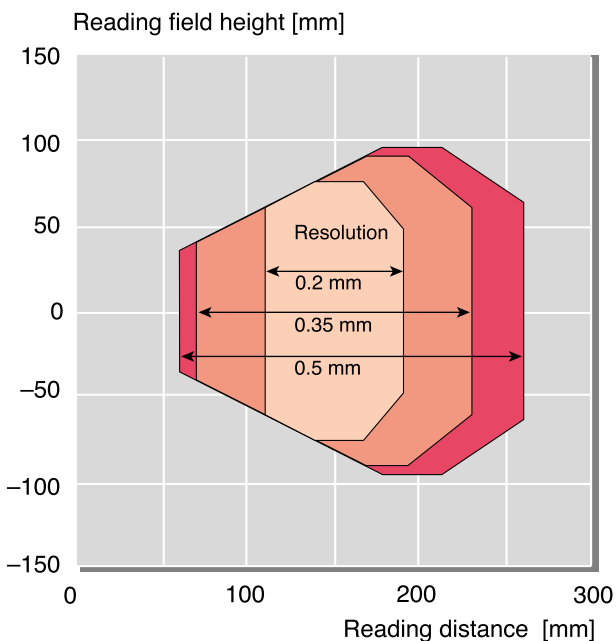
**CLV 431-0010 MID RANGE**



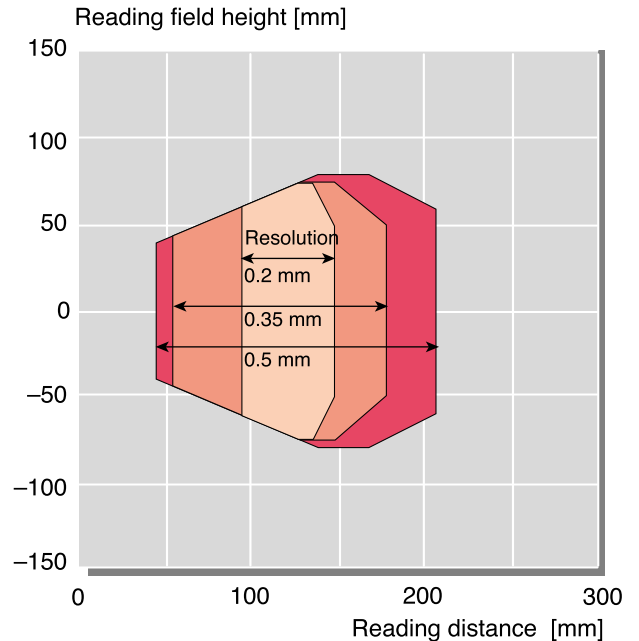
**CLV 431-6010 MID RANGE**



**CLV 432-0010 SHORT RANGE**



**CLV 432-6010 SHORT RANGE**



# Technical data line/raster scanner

Type	CLV 430	CLV 431	CLV 432
Line scanner	CLV 430-0010/Order No. 1 017 585	CLV 431-0010/Order No. 1 017 622	CLV 432-0010/Order No. 1 017 623
Raster scanner	CLV 430-1010/Order No. 1 016 705	CLV 431-1010/Order No. 1 016 679	CLV 432-1010/Order No. 1 016 680
Line scanner with 105° angle att.	-	CLV 431-2010/Order No. 1 016 746	CLV 432-2010/Order No. 1 016 748
Raster scanner with 105° angle att.	-	CLV 431-3010/Order No. 1 016 747	CLV 432-3010/Order No. 1 016 749
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 ( $\lambda= 670$ nm)		
Service life of laser diode	MTBF 20,000 h		
Laser class	Class 2 (pursuant to DIN EN 60825-1)		
Useful aperture angle	max. 50°		
Scanning/decoding frequency	300 ... 800 Hz		
Resolution	0.2 ... 1.0 mm		
Raster height	15 mm (8 lines) at a reading distance of 200 mm (end reading window)		
Bar code print contrast (PCS)	≥ 60 %		
Immunity to ambient light	2000 lx (on bar code)		
No. of bar codes per scan	1 ... 20 (standard decoder), 1 ... 6 (SMART decoder)		
No. of bar codes per reading interval	1 ... 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 ... 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 or RS 422/485, variable data output format		
Data transfer rate	300 ... 57 600 Bits/s		
Protocols	SICK Standard, SICK Network and 3964 (R)		
Physical configurations	Stand-alone, SICK Network (Bus), Daisy Chain (Pass-Through or Master/Slave)		
"CAN" data interface	CANopen protocol, CAN Scanner Network		
Data transfer rate	10 KBits/s...1 MBits/s		
"Terminal" data interface	RS 232, 9600 Bits/s, 8 data bits, no parity, 1 stop bit, fixed output format		
Switching inputs	2 ("Sensor 1", "Sensor 2")		
Switching outputs	2 ("Result 1", "Result 2")		
Electrical connection	15-pin D Sub HD connector, cable length 0.9 m		
Operating voltage/power consumption	10 ... 30 V DC/4 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 50081-2, EN 50082-1, EN 50082-2/to IEC 68-2-6 Test FC/to IEC 68-2-27 Test EA		
Weight	420 g with connecting cable (with additional angle attachment 105°: 450 g)		
Operating/storage temperature	0 ... +40 °C/-20 ... +70 °C		
Max. rel. humidity	90 %, non condensing		

# Oscillating mirror

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

## Oscillating mirror

The oscillating mirror enables the CLV to deflect the scan line so that it is perpendicular to the scanning direction. By doing so, the CLV 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.  $\pm 20^\circ$ ).

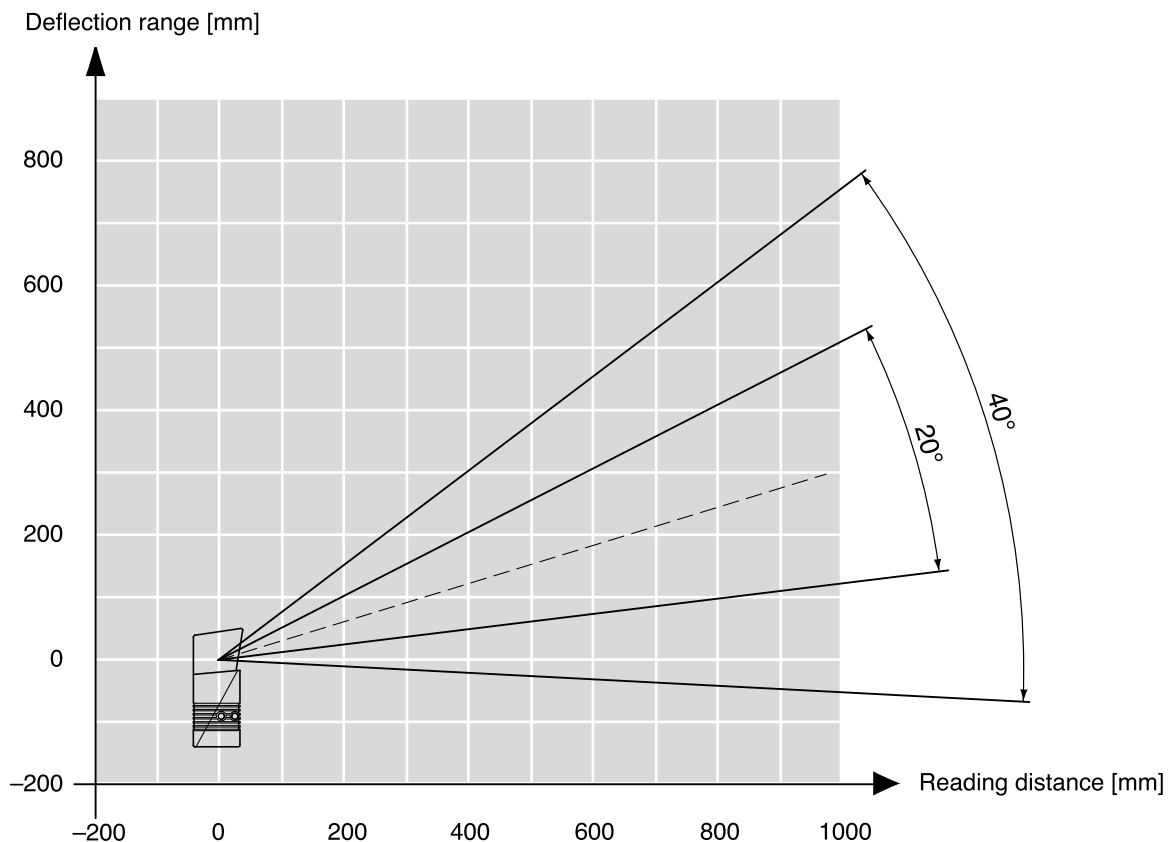
### ■ One shot:

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

Type	CLV 430	CLV 431	CLV 432
Line scanner with oscillating mirror	CLV 430-6010/Order No. 1 017 981	CLV 431-6010/Order No. 1 017 982	CLV 432-6010/Order No. 1 017 983
Reading window	side		
Angle of emergence	105° (center position CW=50)		
Trigger source for DC <sup>1)</sup> 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 ... 4 Hz		
Max. angle of deflection	+20°... -20° (can be set with software)		
Operating voltage/power consumption	10 ... 30 V DC/max 6.15 W		
Weight	620 g with connecting cable		

<sup>1)</sup> DC = distance configuration



**Front reading window**

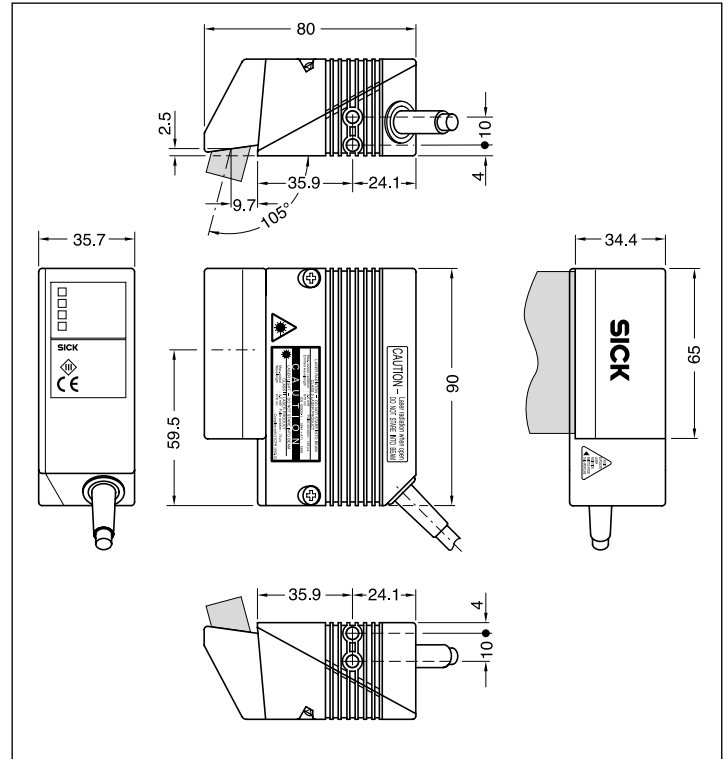
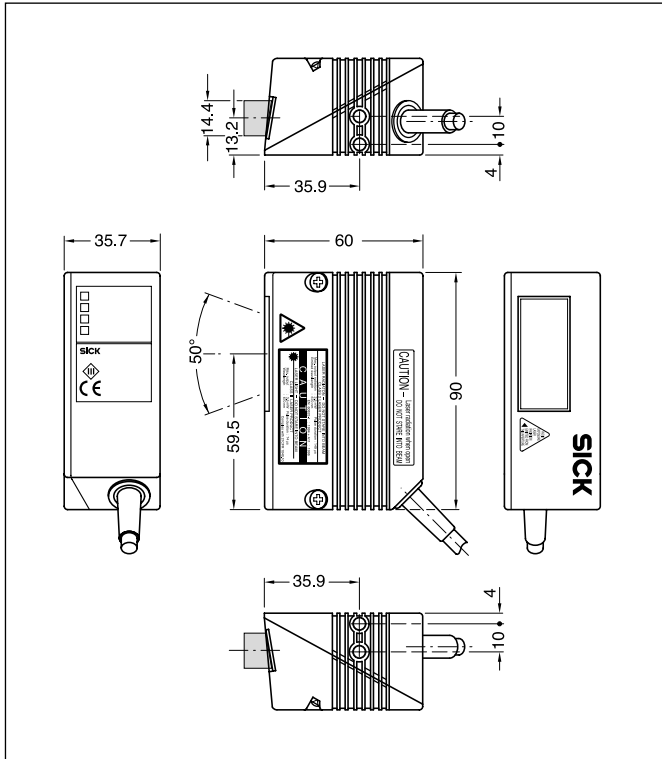
**Side reading window**

**Line scanner**  
 CLV 430-0010  
 CLV 431-0010  
 CLV 432-0010

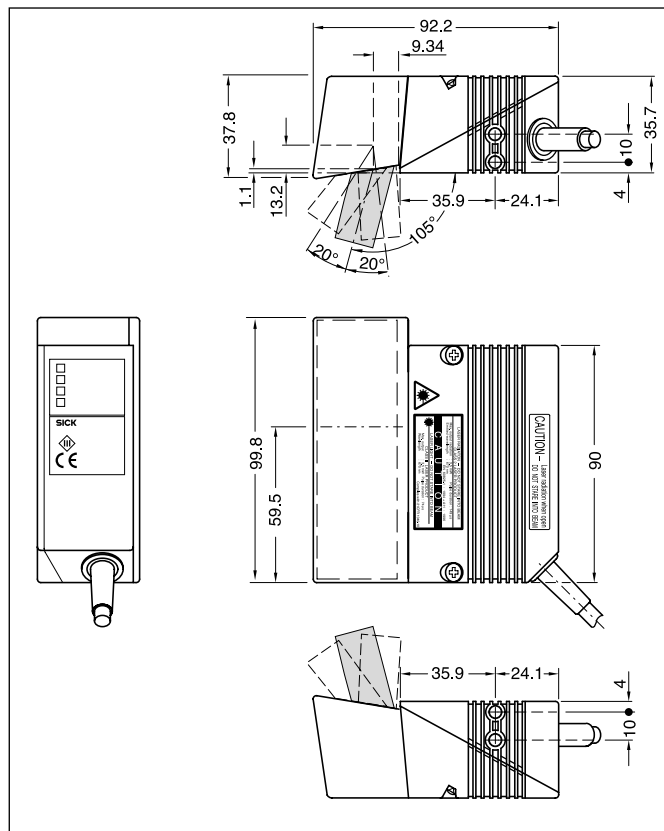
**Raster scanner**  
 CLV 430-1010  
 CLV 431-1010  
 CLV 432-1010

**Line scanner**  
 CLV 431-2010  
 CLV 432-2010

**Raster scanner**  
 CLV 431-3010  
 CLV 432-3010



**Line scanner with oscillating mirror**  
 CLV 430-6010  
 CLV 431-6010  
 CLV 432-6010



All tapped blind holes  
 5 M, 5 mm deep.

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