

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

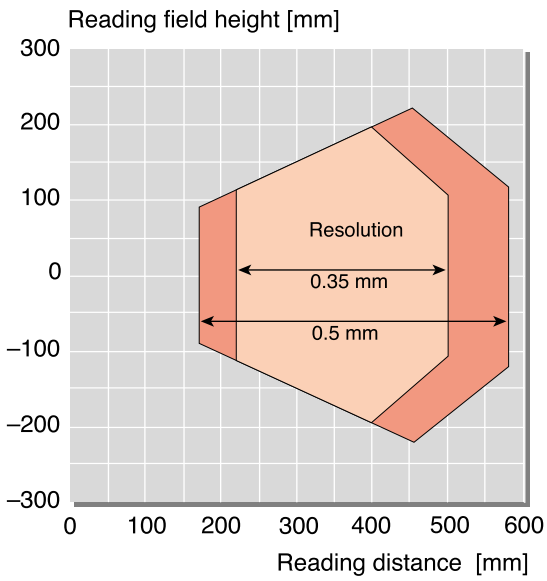
CLV 430/431/432 at a glance:

- 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
- 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

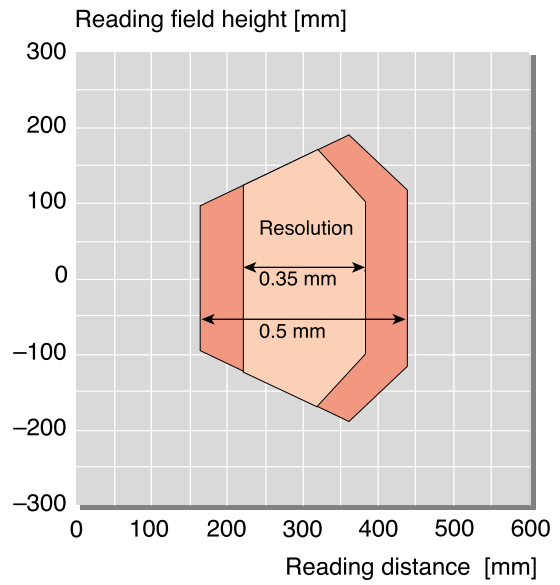
Line scanner

CLV 430-0010 LONG RANGE

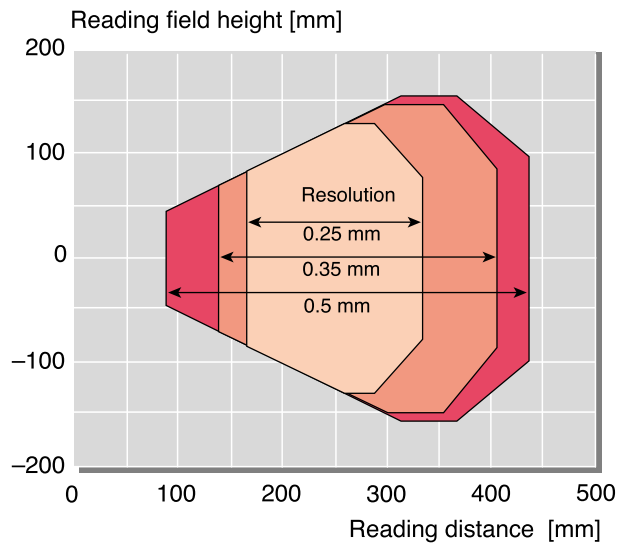


Line scanner with oscillating mirror

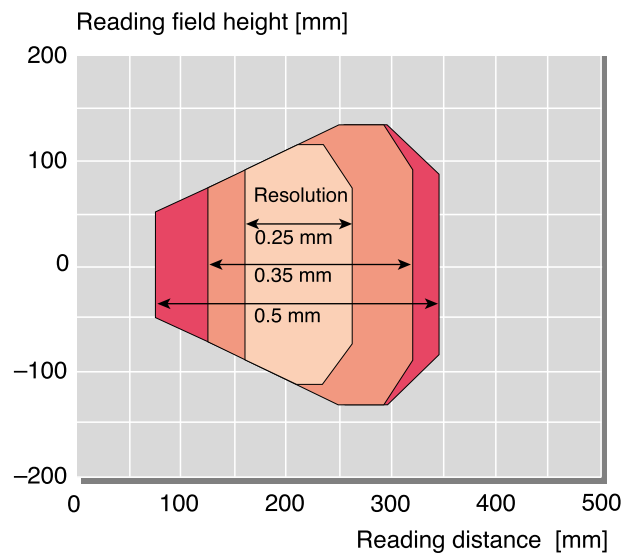
CLV 430-6010 LONG RANGE



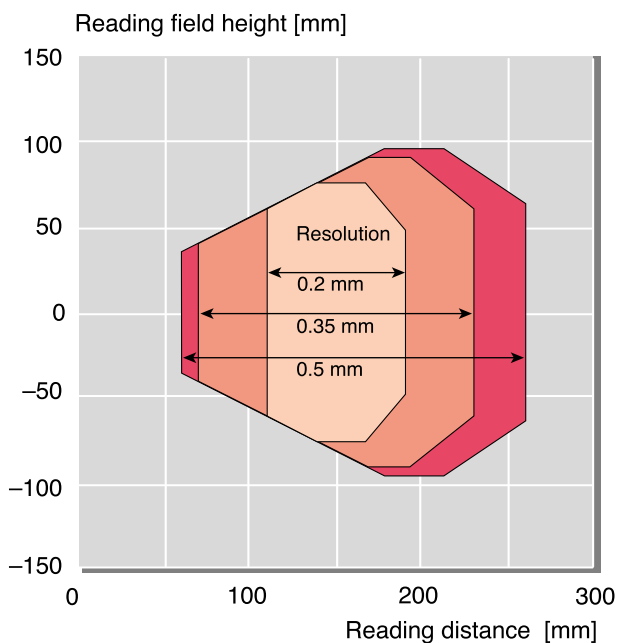
CLV 431-0010 MID RANGE



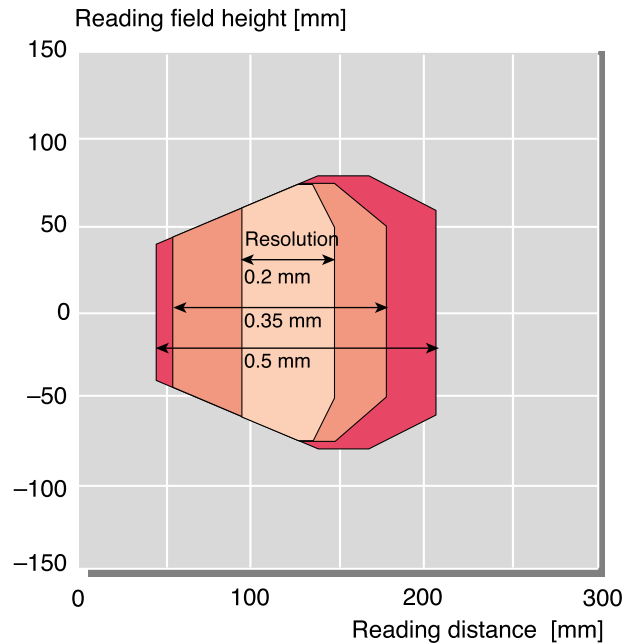
CLV 431-6010 MID RANGE



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 | | |
| 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) | | |
| "Terminal" data interface | RS 232, 9600 baud, 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. $\pm 20^\circ$).

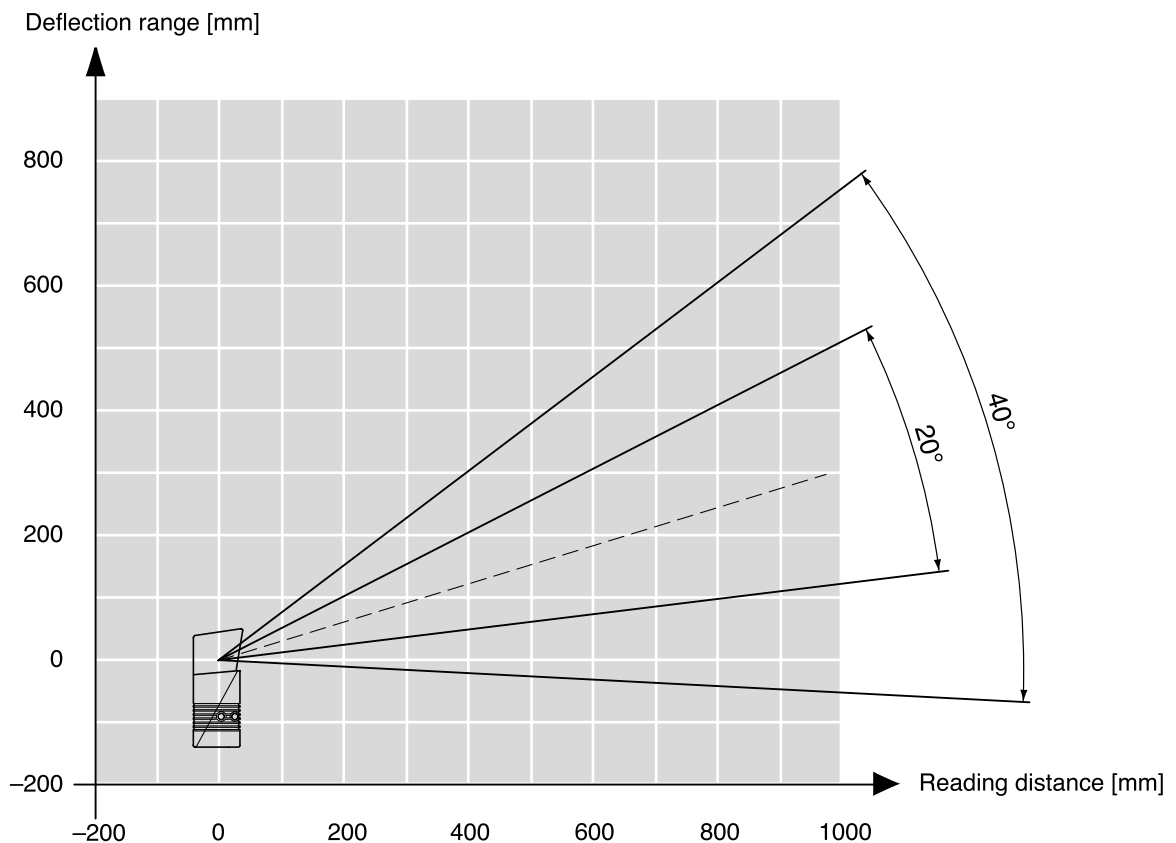
■ One shot:

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 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 ... 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 | | |

¹⁾ DC = distance configuration



Front reading window

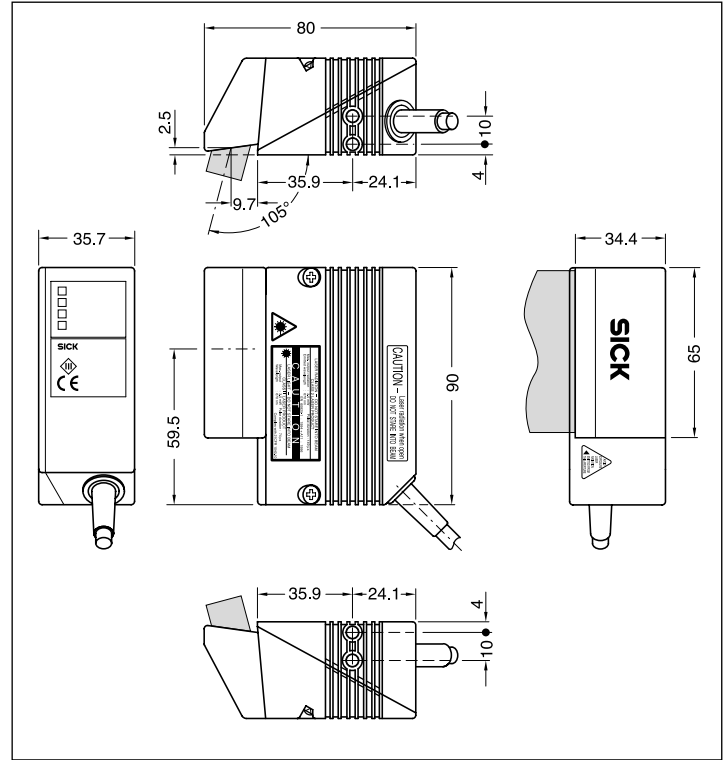
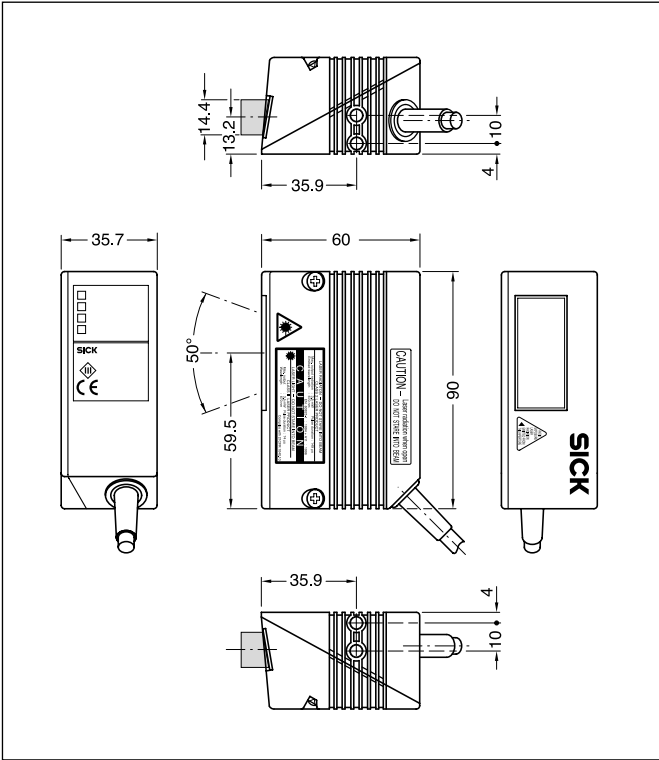
Side reading window

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

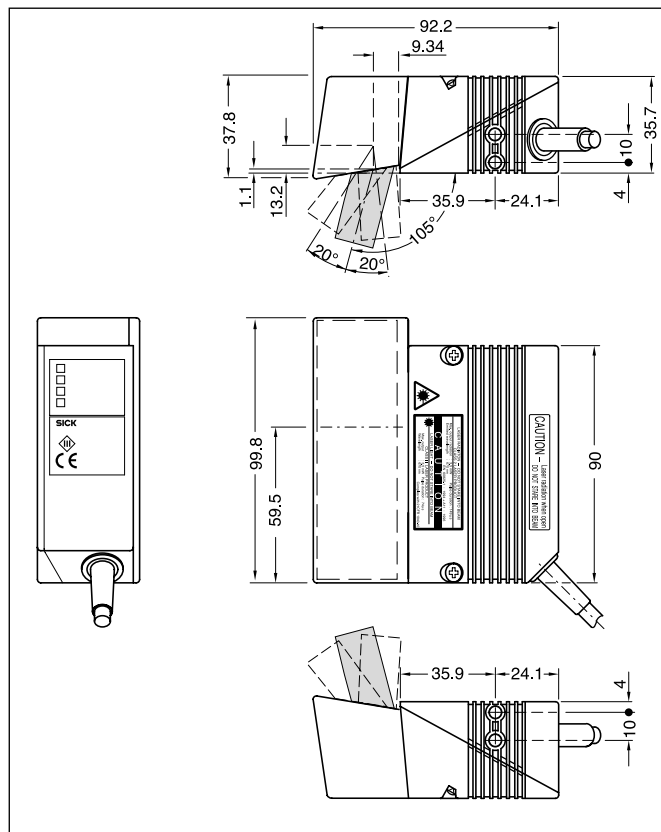
Raster scanner
 CLV 430-1010
 CLV 431-1010
 CLV 432-1010

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.