



## CLV 480 Bar Code Scanner

### For near and far

### Dynamic focus control

### Advanced line

#### A large range of applications – One device

The CLV 480 enables omni-directional reading of bar codes for large distances. 5 inputs from a height tree provide a dynamic focus adjustment to cover a very large reading area. An optional internal heating allows for usage in refrigerated area applications. SICK's SMART code recognition algorithms and other special parameters provide superior reading stability even for low quality bar codes. Tricky code print properties, scattered print and background colour influences can be overcome by application-specific adjustments.

The CLV 480 is available as line or oscillating mirror versions.

The oscillating mirror model is the ideal solution for static code reading situations or when the code position is not well-defined.

#### Benefits:

- Covers reading distances of 260 ... 2050 mm
- High read rates even for tilted, dirty, partially destroyed bar codes, also with scattered print
- Reading of bar codes with short bar height with the aid of the SMART Code Recognition Technology
- Larger aperture angle enables code reading in various positions including close-up applications
- Heating option for line and oscillating mirror versions

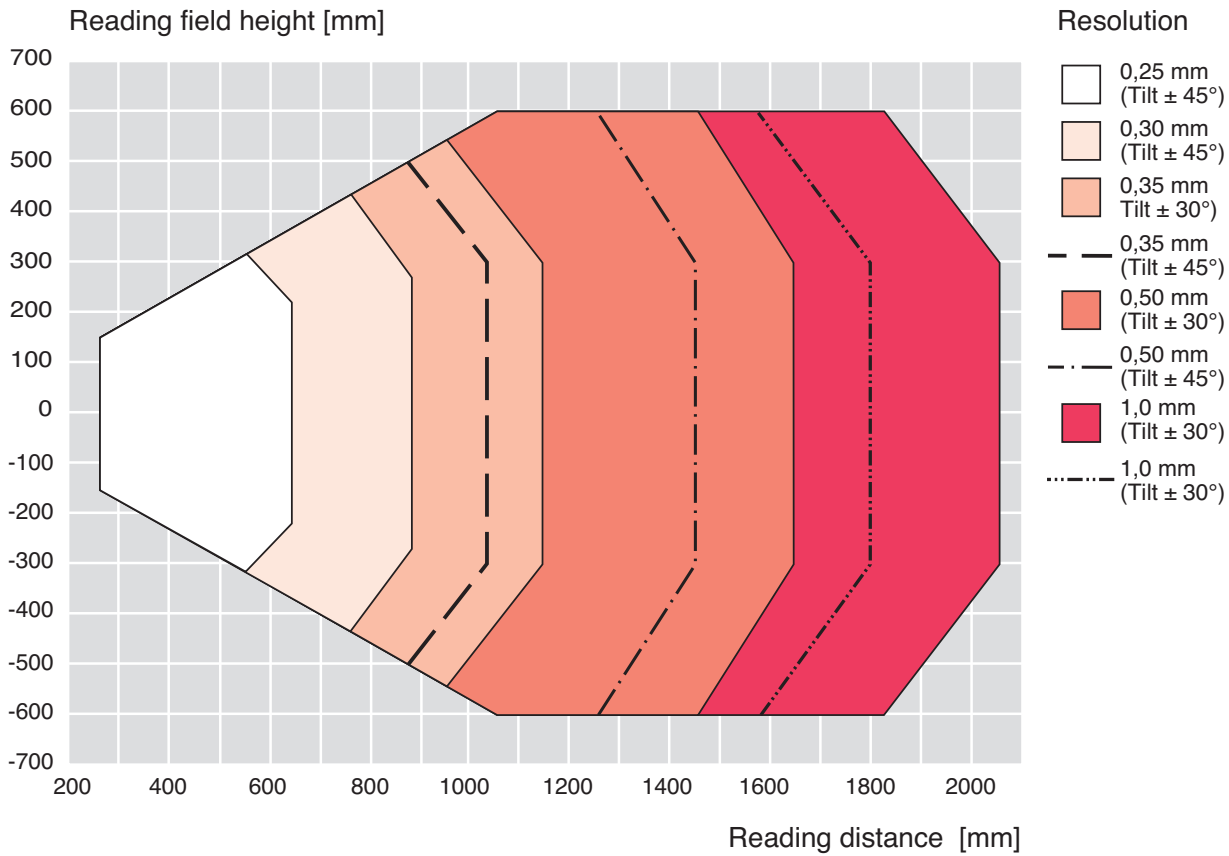
#### CLV 480 at a glance:

- Dynamic focus control in realtime
- Independent of tilt – 45° ... + 45° for most parts of reading fields
- Optimal reading of thermal print codes through the use of laser diodes with wavelength of 650 nm
- Resistant to ambient light and glare
- Optional external parameter storage enables easy scanner exchange
- CAN BUS supported for external interfacing and for OMNI tracking mode
- Flash memory for firmware

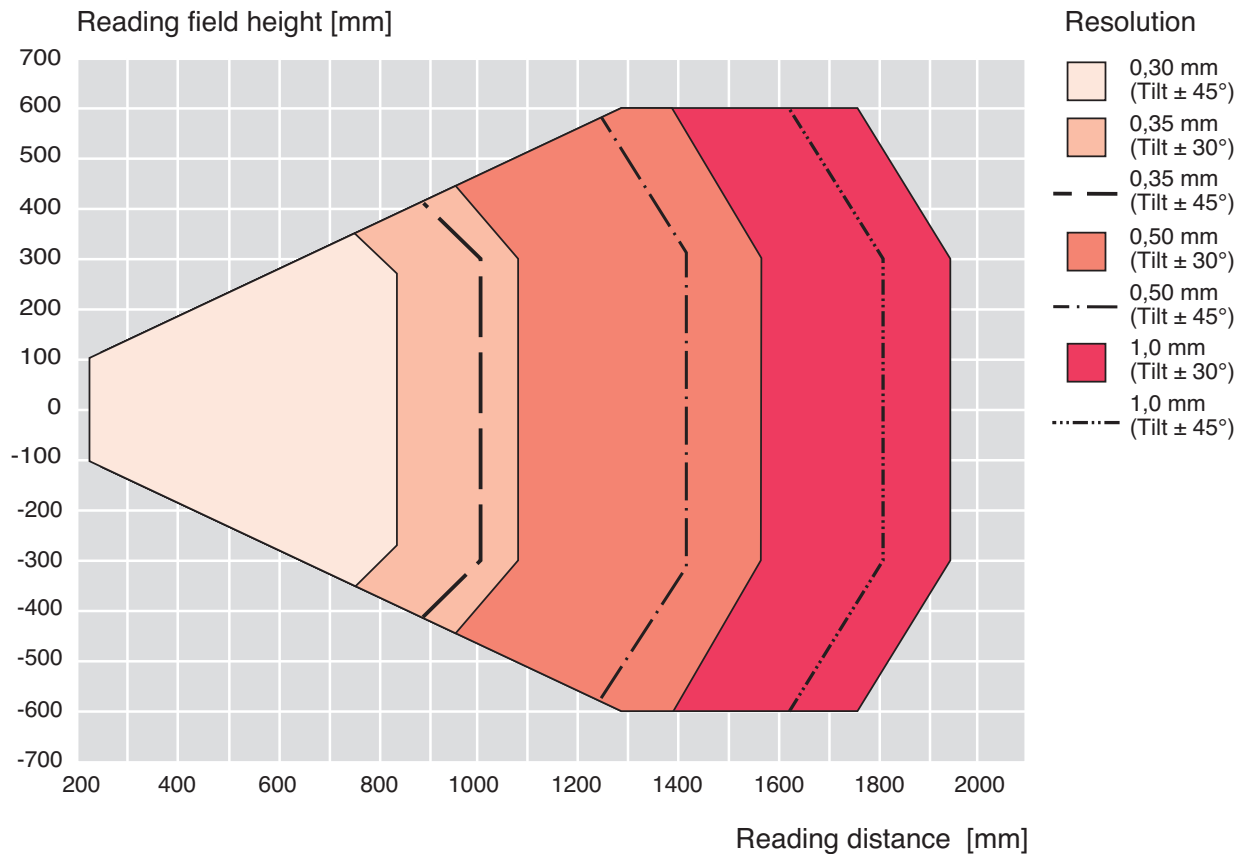
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# Reading diagrams

## Line scanner CLV 480-0010/-0011



## Line scanner with oscillating mirror CLV 480-1010/-1011



# Technical data CLV 480 line scanner

Type	CLV 480
Line scanner	CLV 480-0010/-0011
Focus	Dynamic focus control
Number of distance configurations	max. 8
Focus adjustment time	≤ 20 ms (typical)
Focus trigger source	"IN 0 ... IN 4" switching inputs/data interface/ timer
Laser diode (wavelength)	Red light ( $\lambda = 650 \text{ nm}$ )
MTBF of laser diode	20,000 h
Laser class	Class 2 (persuant to DIN EN 60825-1)
Useable aperture angle	max. 60°
Scanning/decoding frequency	600 ... 1200 Hz
Resolution (typical)	0.25 ... 1.0 mm
Bar code print contrast (PCS)	≥ 60 %
Immunity to ambient light	2000 lx (on bar code)
No. of bar codes per scan	1 ... 12 (standard decoder), 1 ... 5 (SMART decoder)
No. of bar codes per reading interval	1 ... 50 (autodiscriminating)
Bar code types	Code 39, Code 128, Code 93, Codabar, EAN, EAN 128, UPC, 2/5 Interleaved
Bar code length	max. 50 characters (max. 600 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
Reading pulse	"Sensor" switching input (+ "IN 4")/ free running/ data interface/OTS (Omni Tracking)
"Host" data interface	RS 232 or RS 422/485, variable data output format
Data transfer rate	300 ... 57 600 bd
Protocol	SICK Standard , SICK Network and 3964(R)
Physical configurations	Stand-alone, Network (Bus), Daisy-Chain (Pass-Through or Master/Slave)
"CAN" data interface	CANopen protocol, CAN Scanner Network
Data transfer rate	10 kbit/s ... 1 Mbit/s
"Terminal" data interface	RS 232, 9 600 bd, 8 data bits, no parity, 1 stopbit, fixed output format
Switching inputs	6 ("Sensor", "IN 0 ... IN 4")
Switching outputs	4 ("Result 1" ... "Result 4")
Electrical connection	1 x 15-pin D Sub HD plug, 1 x 15-pin D Sub HD socket
Operating voltage/power consumption	18 ... 30 V DC/ typical 9.5 W, max. 16 W (with heating max. 90 W)
Housing	Aluminium 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 61000-6-2, EN 61000-6-3/to EN 60068-2-6/to EN 60068-2-27
Weight	approx. 1.5 kg
Operating/storage temperature	0 ... + 40 °C (with heating - 35 ... + 35 °C )/- 20 ... + 70 °C
Max. rel. humidity	90 %, non condensing

# Oscillating mirror

## Oscillating mirror

Various operating modes are provided:

The oscillating mirror enables a continuous sweeping of the scan line perpendicular to the transport of the coded object. Picket-fence oriented codes can be picked up even when the position on the object is not well-defined.

### ■ Freely selectable angular position:

The oscillating mirror can be positioned at any angle (static).

### ■ Oscillating mirror with variable deflection range:

Continuously sweeps the scanline in the amplitude setting (max.  $\pm 20^\circ$ ).

### ■ One shot:

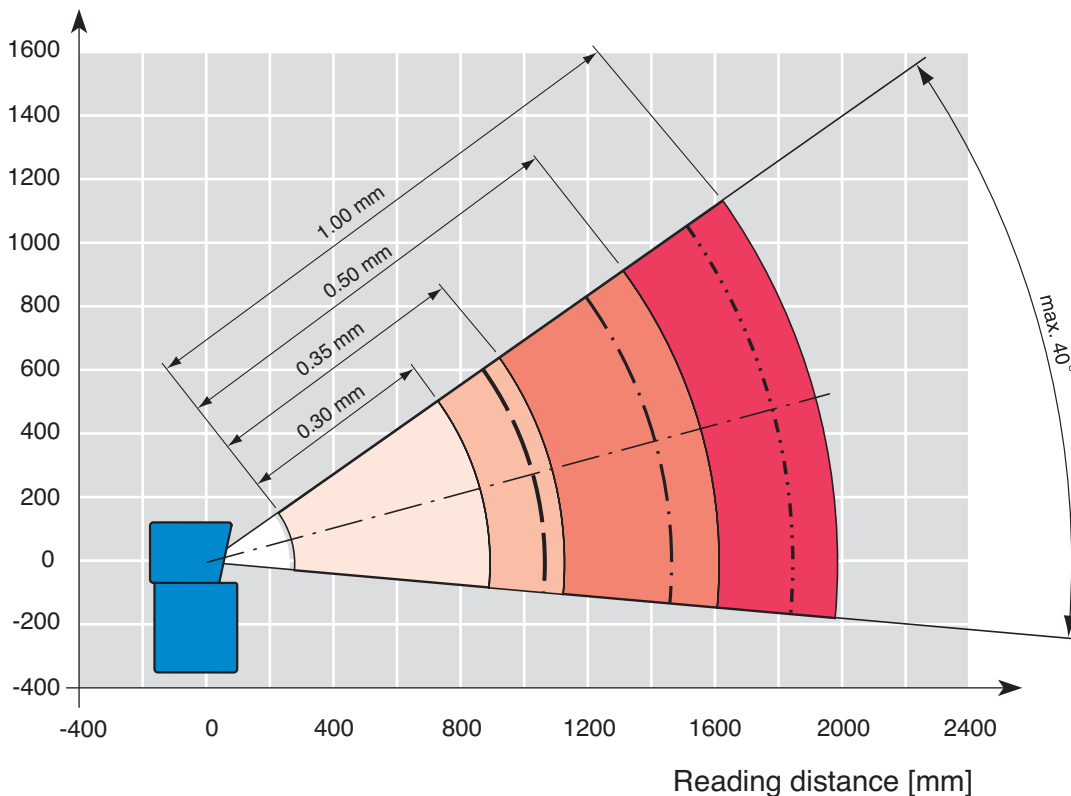
Single sweep movement for each reading gate, comprising one forward and return phase of the oscillating mirror.

## Additional technical data of line scanner with oscillating mirror

Type	CLV 480
Line scanner with oscillating mirror	CLV 480-1010/-1011
Reading window	side
Exit angle	105° (center position CW=50)
Trigger source for DC <sup>1)</sup> switchover	also: oscillating mirror reversal points
Useable aperture angle	max. 50°
Oscillating mirror functions	static (variable position)/oscillating (amplitude per DC variable or fixed)/one-shot
Oscillating frequency	0.2 ... 4 Hz
Max. angle of deflection	+ 20° ... - 20° (software-configurable)
Operating voltage/power consumption	18 ... 30 V DC/max. 18 W, with heating max. 100 W
Weight	approx. 2.2 kg

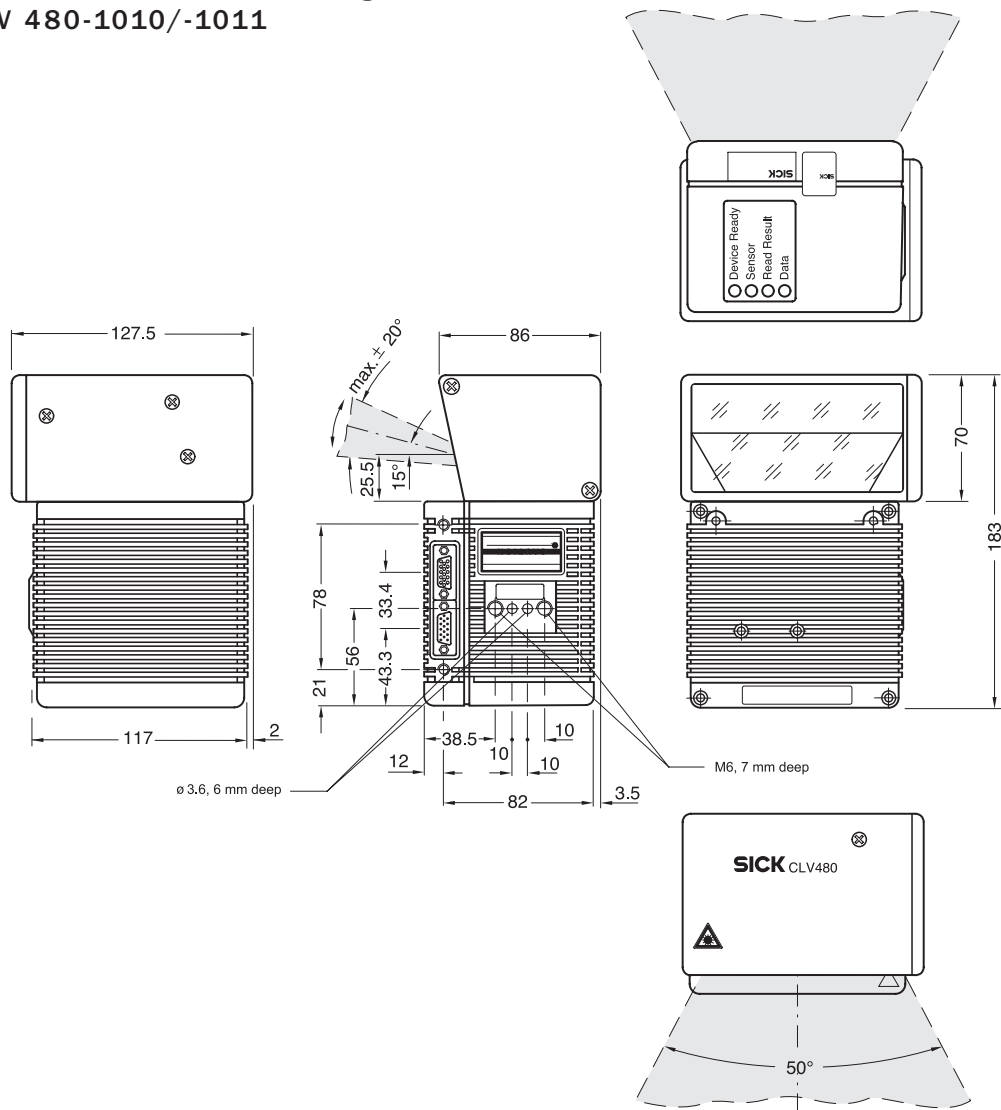
<sup>1)</sup> DC= distance configuration

## Deflection range [mm]



Line scanner  
 CLV 480-0010/-0011

Line scanner with oscillating mirror  
 CLV 480-1010/-1011



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