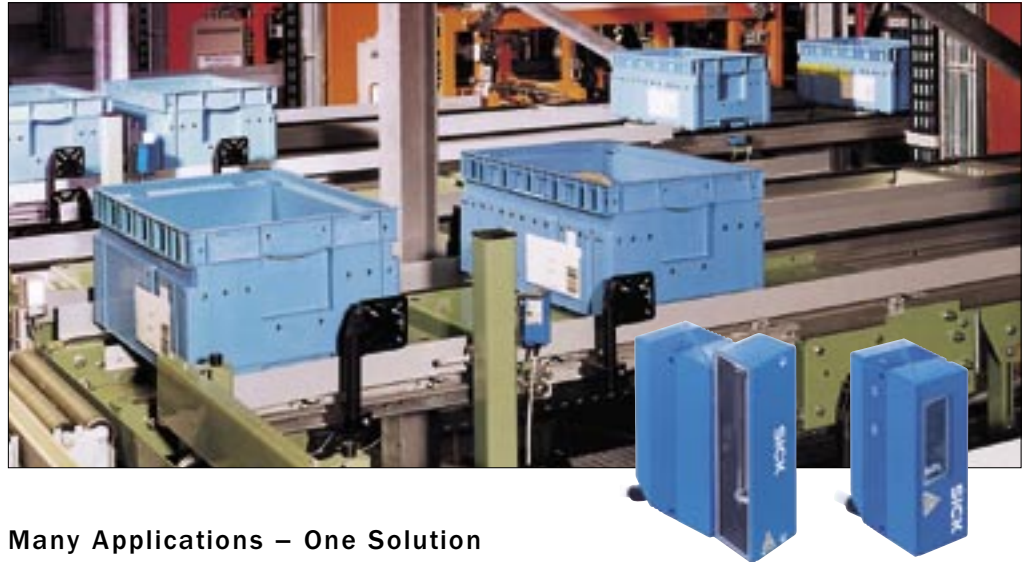


# CLV 450

## Bar Code Scanner

### Dynamic focus control

### Advanced line



#### Many Applications – One Solution

The new high-performance CLV 450 scanner with dynamic focus control can identify bar codes across large reading distances of up to 1200 mm with a large depth of field.

With poor-quality code prints, the SMART code recognition technology can enhance the reading rate considerably. In addition, the profile-code programming function enables you to configure the device parameters without the need for additional tools.

This functionality is integrated in an extremely small IP 65 cast aluminum housing, thus making the CLV 450 one of the most compact devices in its class.

Thanks to its outstanding features, the CLV 450 can provide a simple and cost-effective solution for applications in handling and warehousing systems. The product range is complemented by an oscillating mirror version, which can be used to detect bar codes reliably on large areas.

#### Benefits:

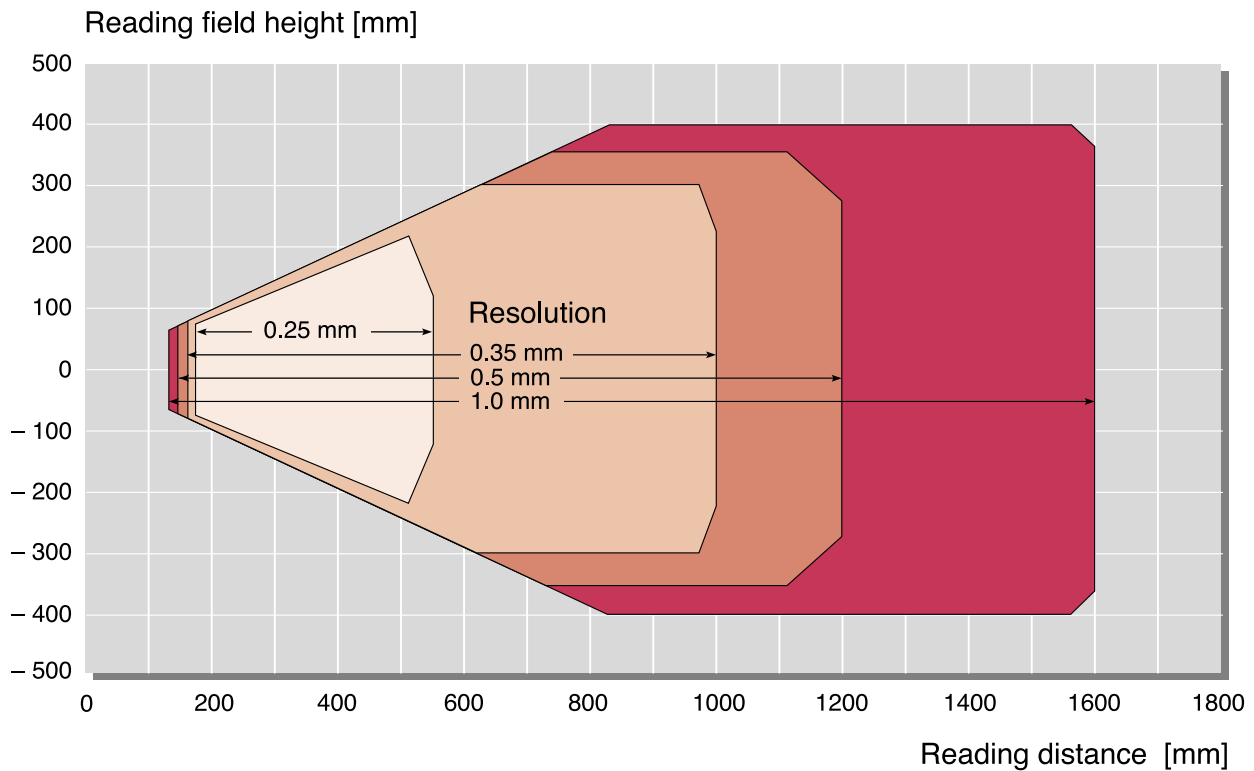
- Reliable bar code identification across large reading distances (1200 mm)
- Extremely large depth of field thanks to dynamic focus control
- High reading rate with damaged, rotated, or dirty bar codes thanks to high scanning frequency of 1000 Hz combined with SMART decoder
- Compact design facilitates installation in situations where space is at a premium
- Extremely easy to operate
- Short commissioning time
- High system availability
- Extremely reliable

#### CLV 450 at a glance:

- Dynamic focus control in realtime
- Insensitive to ambient light and glare
- AutoSetup ensures automatic optimizing of reading performance
- Flash memory for firmware
- CAN-Bus compatible
- Integrated power supply tolerates wide range of input voltage

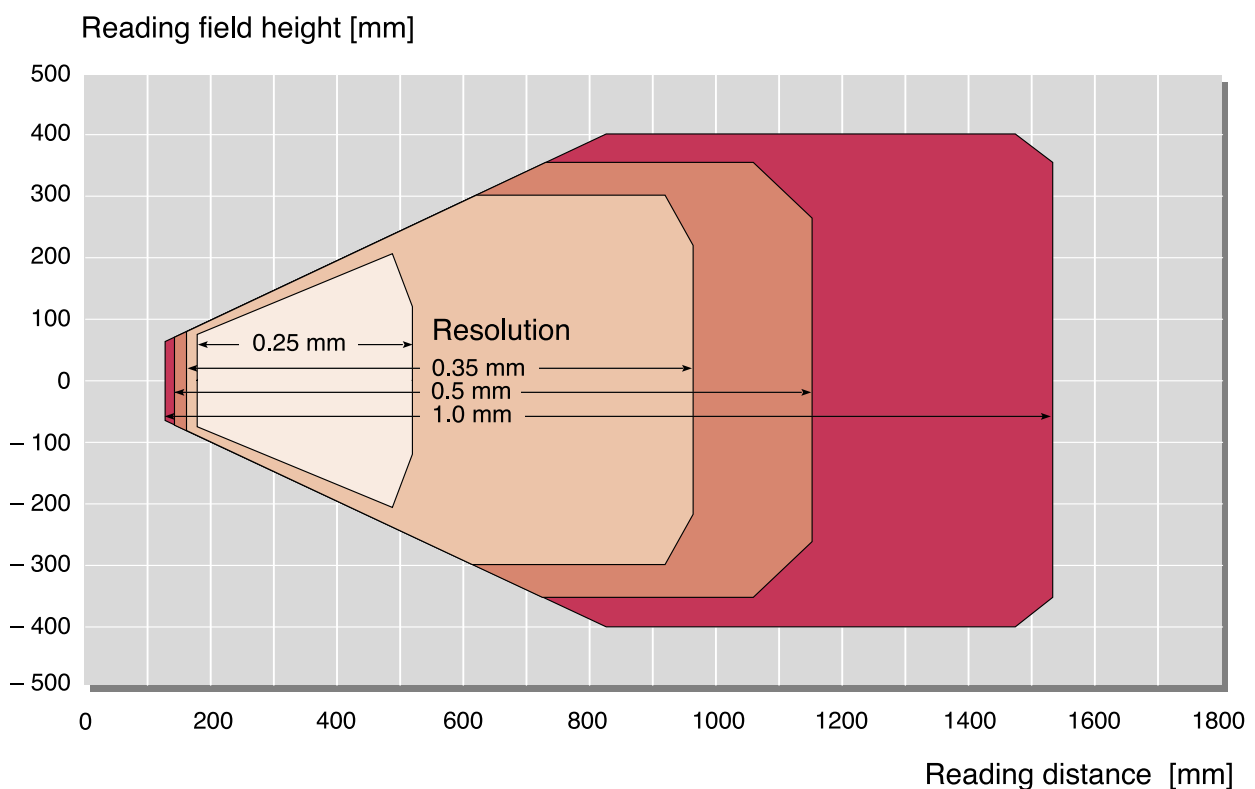
# Reading diagrams

## Line scanner CLV 450-0010



Resolution	Focus position
0.25 mm	200 ... 500 mm
0.35 mm	200 ... 880 mm
0.50 mm	200 ... 980 mm
1.00 mm	200 ... 1200 mm

## Line scanner with oscillating mirror CLV 450-6010



# Technical data CLV 450 line scanner

Type	CLV 450
Line scanner	CLV 450-0010
Focus	dynamic focus control
Number of distance configurations	max. 8
Focus adjustment time	≤ 50 ms (from min. to max. focus position)
Focus trigger source	"Sensor 2" switching input/serial interface/timer
Laser diode (wavelength)	red light ( $\lambda = 650$ 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	400 ... 1000 Hz
Resolution	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 ... 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	"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, 9 600 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/6 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 61000-6-2/to EN 61010-1/to EN 60068-2-27
Weight	530 g with connecting cable
Operating/storage temperature	0 ... + 40 °C/- 20 ... + 70 °C
Max. rel. humidity	90 %, non condensing

# Oscillating mirror

## 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.  $\pm 20^\circ$ ).

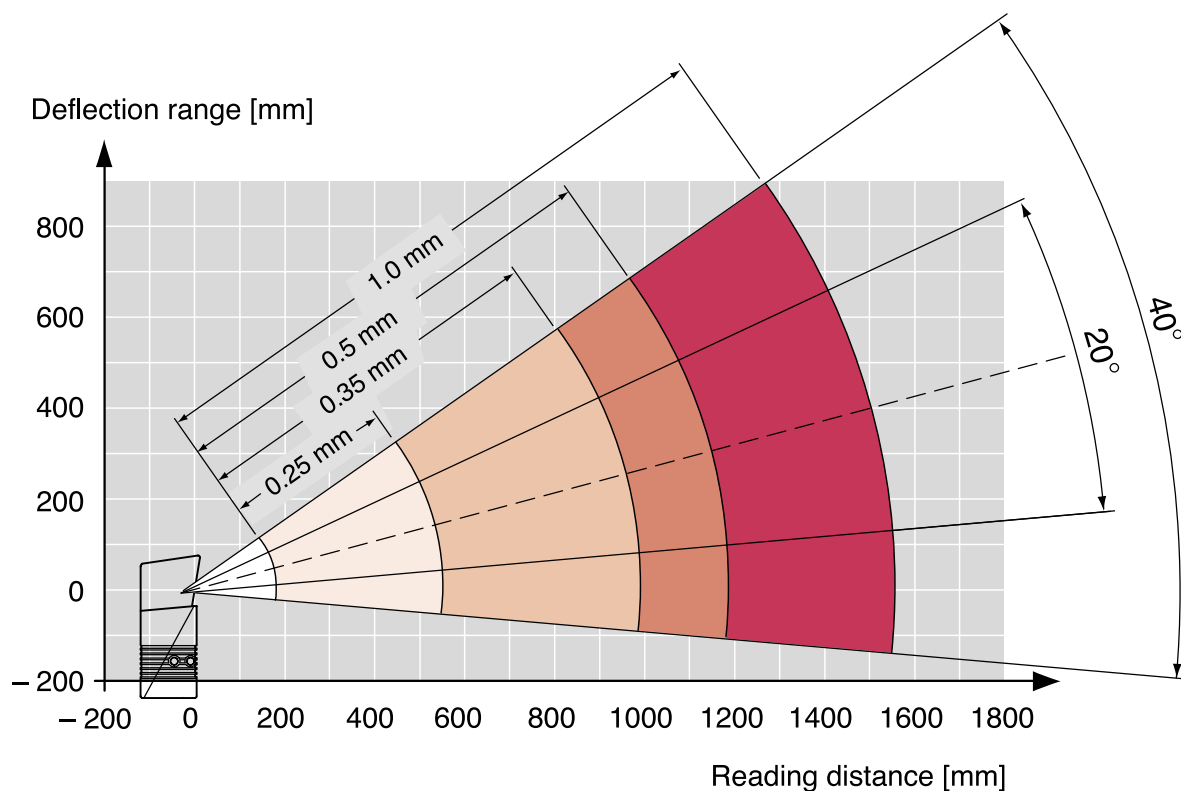
### ■ One shot:

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

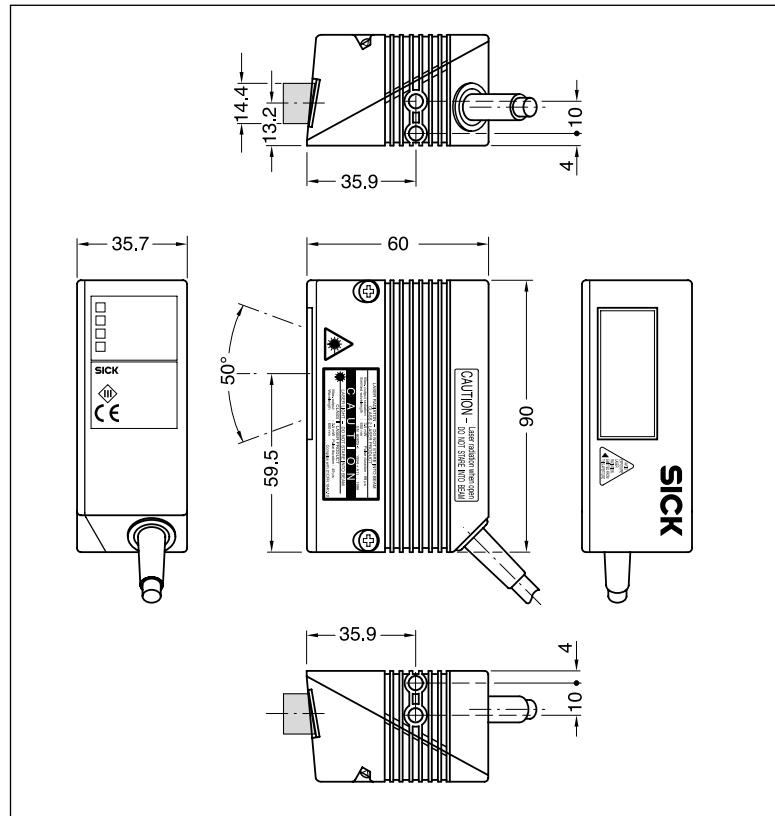
## Additional technical data of line scanner with oscillating mirror

Type	CLV 450
Line scanner with oscillating mirror	CLV 450-6010
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. 7.2 W
Weight	700 g with connecting cable

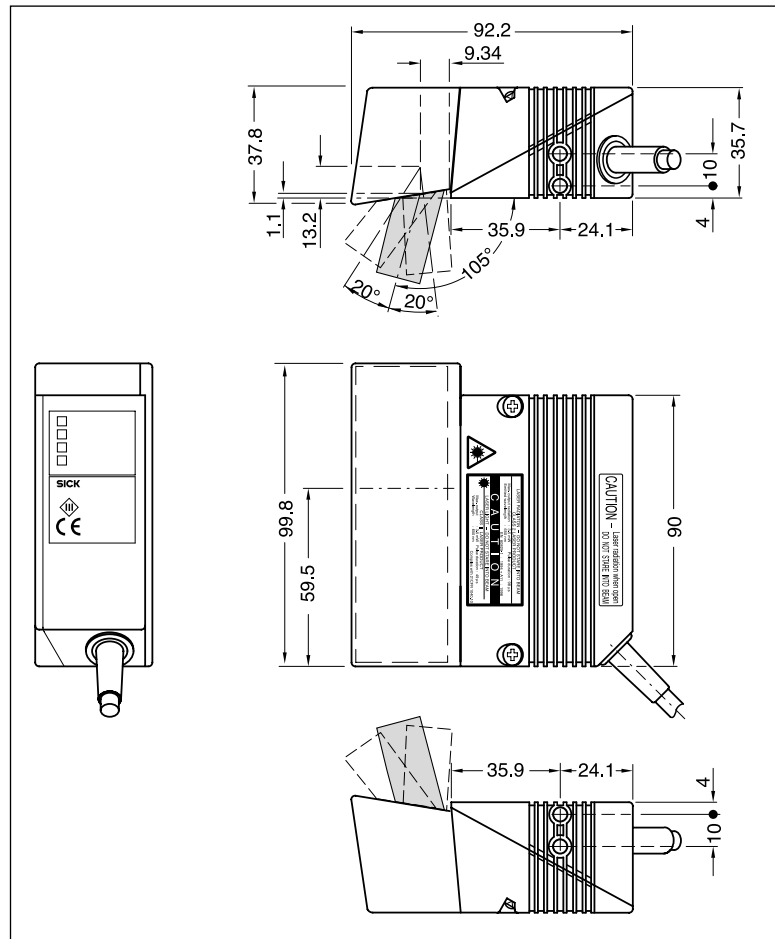
<sup>1)</sup> DC = distance configuration



**Line scanner  
CLV 450-0010**



**Line scanner with oscillating mirror  
CLV 450-6010**



All tapped blind holes  
M 5, 5 mm deep

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