



Bar code scanners  
CLV65x / CLV650 / Standard Density

CLV650-6000



**Model Name** > **CLV650-6000**  
**Part No.** > **1042124**



**At a glance**

- Huge depth of field due to auto focus
- Integrated pushbuttons for auto setup and reading diagnostics
- CAN, Ethernet TCP/IP, PROFINET, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- Enhanced SMART code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Integrated web server provides remote diagnostics and monitoring
- Advanced, easy-to-use SOPAS configuration software
- Integrated LED bar graph

**Your benefits**

- Economical, as auto focus means no versions or additional light barriers are required for focus adjustment
- Intelligent auto setup and multi-function pushbuttons save time during commissioning
- Easily execute firmware updates using the microSD memory card: no need for a PC
- Enhanced SMART technology reads damaged and partially obscured codes, increasing read rates
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- Integrated web server provides remote diagnostics and monitoring, no additional software required



**Features**

|                  |                             |
|------------------|-----------------------------|
| Version:         | Standard Density            |
| Connection type: | Cable                       |
| Reading field:   | Oscillating mirror          |
| Scanner design:  | Line scanner                |
| Focus:           | Auto focus                  |
| Light source:    | Visible red light (658 nm)  |
| MTBF:            | 40,000 h                    |
| Laser class:     | 2 (EN 60825-1 (A2:2001-03)) |
| Field of view:   | ≤ 50 °                      |
| Code resolution: | 0.25 mm ... 1 mm            |

|                               |  |
|-------------------------------|--|
| Reading distance:             | 125 mm ... 1,570 mm <sup>1)</sup>  |
| Oscillating mirror functions: | Fixed (adjustable position), One shot, Oscillating (variable or fixed amplitude) |
| Oscillation frequency:        | 0.5 Hz ... 6.25 Hz   |
| Angle of deflection:          | -20 ° ... 20 °   |
| Heating:                      | Optional   |
| Scanning frequency:           | 600 Hz ... 1,000 Hz  |

<sup>1)</sup> For details see reading field diagram

## Performance

|   |   |
|---|---|
| Bar code types:                         | Interleaved 2 of 5, All current code types, Codabar, Code 128, Code 39, Code 93, GS1 DataBar, GS1-128/EAN 128, MSI/Plessey, Pharmacode, Telepen, UPC/GTIN/EAN |
| Print ratio:                            | 2:1 ... 3:1   |
| No. of codes per scan:                  | 1 ... 20 (Standard decoder), 1 ... 6 (SMART decoder)  |
| No. of codes per reading interval:      | 1 ... 50 (auto-discriminating)  |
| No. of characters per reading interval: | 5,000, 500 (for multiplexer function in CAN operation)  |
| No. of multiple readings:               | 1 ... 99  |

## Interfaces

|   |  |
|---|--|
| Serial (RS-232, RS-422/485):                          | ✓  |
| Remark (Serial (RS-232, RS-422/485)):                 | AUX (only RS-232)  |
| Function (Serial (RS-232, RS-422/485)):               | Host, AUX  |
| Data transmission rate (Serial (RS-232, RS-422/485)): | 2,400 Baud ... 115 kBaud, AUX: 57.6 kBaud  |
| Ethernet:   | -  |
| Protocol (Ethernet):                                  | PROFINET Dual Port (optional via external connection module CDF600-2), EtherCAT (optional via external connection module CDF600) |
| CAN bus:  | ✓  |
| Function (CAN bus):                                   | SICK CAN sensor network (Master/Slave, Multiplexer/Server)   |
| Protocol (CAN bus):                                   | CANopen, CSN (SICK CAN Sensor Network)   |
| Data transmission rate (CAN bus):                     | 20 kbit/s ... 1 Mbit/s   |
| PROFIBUS DP:  | ✓  |
| Remark (PROFIBUS DP):                                 | Optional via external connection module (CDF600-2)   |
| DeviceNet:  | ✓  |
| Remark (DeviceNet):                                   | Optional via external connection module (CDM + CMF)  |
| Control elements:                                     | 2 buttons (choose and start/stop functions)  |
| Memory card:  | MicroSD memory card (flash card) 512 MB, optional  |
| Switching inputs:                                     | 4 ("Sensor 1", "Sensor 2", 2 inputs via optional parameter storage CMC600 in CDB620/CDM420)                                      |
| Switching outputs:                                    | 4 ("Result 1", "Result 2", 2 outputs via optional parameter storage CMC600 in CDB620/CDM420)                                     |
| Reading pulse:  | Auto pulse, CAN, Non-powered, "Sensor 1" switching input, Serial interface   |
| Optical indicators:                                   | 6 LEDs (Ready, Result, laser, Data, CAN, LNK TX, Bar graph for displaying the reading rate percentage (10 LEDs))                 |
| Acoustic indicators:                                  | Beeper/buzzer (can be switched off, can be allocated as a result indication function)  |
| Configuration software:                               | SOPAS ET   |

## Mechanics/electronics

|                        |  |
|------------------------|--|
| Electrical connection: | 1 x 15-pin D-Sub HD male connector (0.9 m) |
| Operating voltage:     | 18 V DC ... 30 V DC                        |

|                    |                              |
|--------------------|------------------------------|
| Power consumption: | 9.5 W                        |
| Housing:           | Die-cast aluminum            |
| Housing color:     | Light blue (RAL 5012)        |
| Front screen:      | Glass                        |
| Enclosure rating:  | IP 65 (EN 60529)             |
| Protection class:  | III (EN 61140)               |
| Weight:            | 320 g, with connecting cable |
| Dimensions:        | 95 mm x 96 mm x 41 mm        |

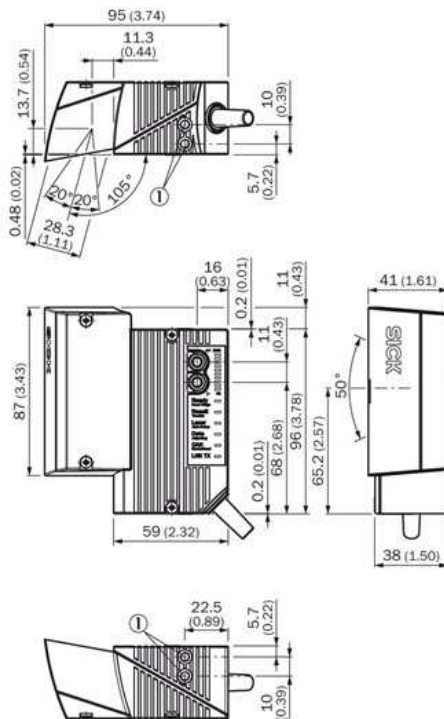
### Ambient data

|                                      |  |
|--------------------------------------|--|
| Electromagnetic compatibility (EMC): | EN 61000-6-3 (2001-10)/EN 61000-6-2:2005 |
| Vibration resistance:                | EN 60068-2-6 (1995)                      |
| Shock resistance:                    | EN 60068-2-27 (1993)                     |
| Ambient operating temperature:       | 0 °C ... +40 °C                          |
| Storage temperature:                 | -20 °C ... +70 °C                        |
| Permissible relative humidity:       | 90 %, non-condensing                     |
| Bar code print contrast (PCS):       | ≥ 60 %                                   |
| Ambient light immunity:              | 2,000 lx, on bar code                    |

### General notes

|              |  |
|--------------|--|
| Note on use: | For Ethernet connection please use an Ethernet version of CLV6xx |
|--------------|--|

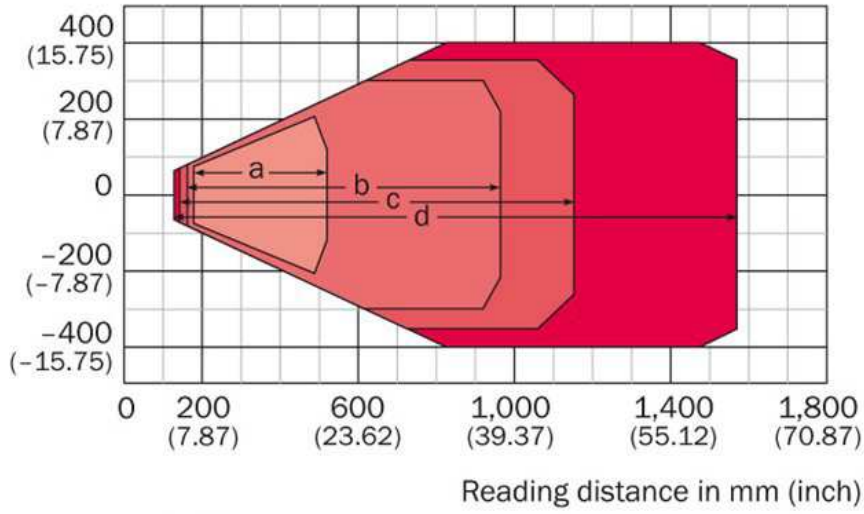
### Dimensional drawing







[1] M5 threaded mounting hole, 5.5 mm deep

## Reading field diagram

Reading field height in mm (inch)



### Resolution

|   |   |
|---|---|
|  a: 0.25 mm (9.8 mil)  |  b: 0.35 mm (13.8 mil) |
|  c: 0.50 mm (19.7 mil) |  d: 1.00 mm (39.4 mil) |

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