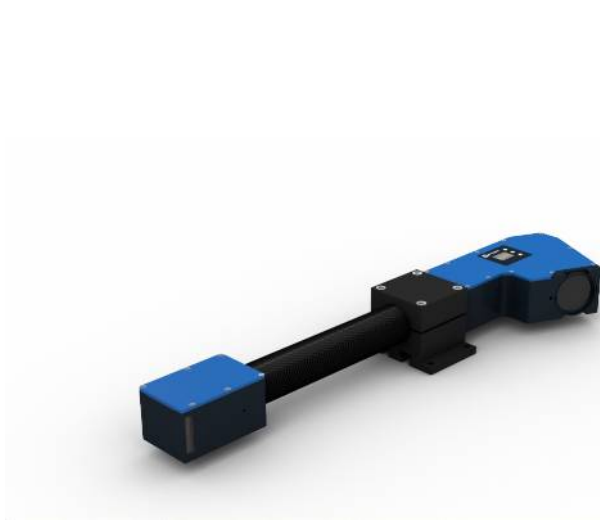


# 2D/3D Profile Sensor

## MLWL244

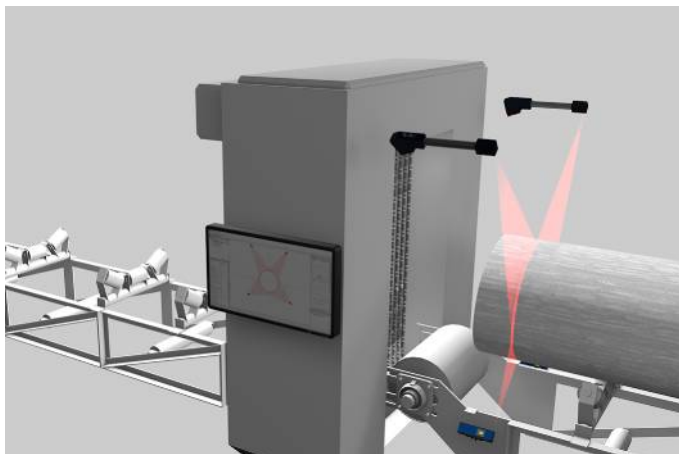
Part Number

weCat3D



- Increased resistance to extraneous light and high speed
- Optimized profile quality thanks to HDR function
- Precise measuring range resolution X (> 2000 measuring points)
- Up to 12 million measuring points per second

2D/3D Profile Sensors project a laser line onto the object to be detected and generate an accurate, linearized height profile with an internal camera which is set up at a triangulation angle. Thanks to its uniform, open interface, the weCat3D series can be incorporated by means of the DLL program library or the GigE Vision standard without an additional control unit. Alternatively, wenglor offers its own software packages for implementing your application.

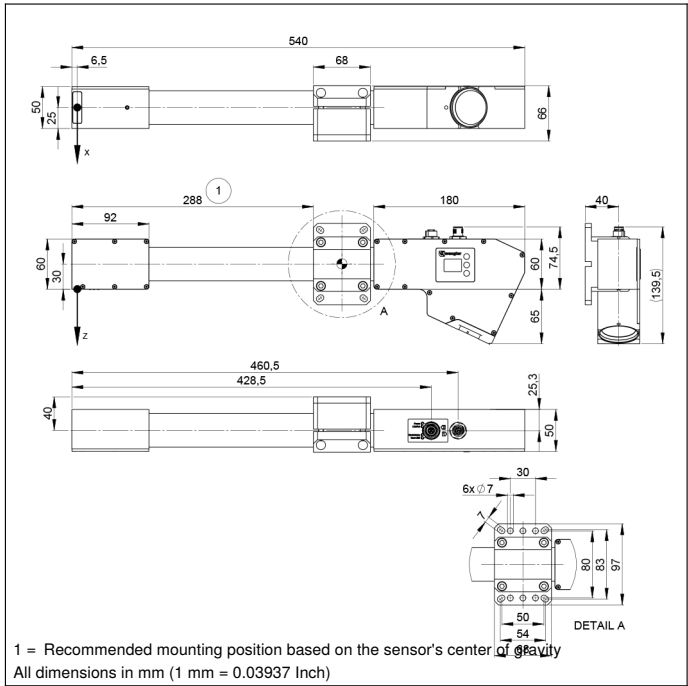


### Technical Data

| Optical Data                               |                                                                                       |      |      |
|--------------------------------------------|---------------------------------------------------------------------------------------|------|------|
| Working range Z                            | 600...2000 mm                                                                         |      |      |
| Measuring range Z                          | 1400 mm                                                                               |      |      |
| Measuring range X                          | 440...1300 mm                                                                         |      |      |
| Linearity Deviation                        | 350 µm                                                                                |      |      |
| Resolution Z                               | 39...289 µm                                                                           |      |      |
| Resolution X                               | 251...683 µm                                                                          |      |      |
| Light Source                               | Laser (red)                                                                           |      |      |
| Wavelength                                 | 660 nm                                                                                |      |      |
| Service Life (T = +25 °C)                  | 20000 h                                                                               |      |      |
| Laser Class (EN 60825-1)                   | 3R                                                                                    |      |      |
| Environmental conditions                   |                                                                                       |      |      |
| Ambient temperature                        | 0...45 °C                                                                             |      |      |
| Storage temperature                        | -20...70 °C                                                                           |      |      |
| Max. Ambient Light                         | 5000 Lux                                                                              |      |      |
| EMC                                        | DIN EN 61000-6-2;<br>61000-6-4                                                        |      |      |
| Shock resistance per DIN IEC 68-2-27       | 30 g / 11 ms                                                                          |      |      |
| Vibration resistance per DIN IEC 60068-2-6 | 6 g (10...55 Hz)                                                                      |      |      |
| Atmospheric humidity                       | 5...95%, non-condensing                                                               |      |      |
| Electrical Data                            |                                                                                       |      |      |
| Supply Voltage                             | 18...30 V DC                                                                          |      |      |
| Current Consumption (Ub = 24 V)            | 300 mA                                                                                |      |      |
| Measuring Rate                             | 175...6000 /s                                                                         |      |      |
| Subsampling                                | 350...6000 /s                                                                         |      |      |
| Inputs/Outputs                             | 4                                                                                     |      |      |
| Switching Output Voltage Drop              | < 1,5 V                                                                               |      |      |
| Switching Output/Switching Current         | 100 mA                                                                                |      |      |
| Short Circuit Protection                   | yes                                                                                   |      |      |
| Reverse Polarity Protection                | yes                                                                                   |      |      |
| Overload Protection                        | yes                                                                                   |      |      |
| Interface                                  | Ethernet TCP/IP                                                                       |      |      |
| Baud Rate                                  | 100/1000 Mbit/s                                                                       |      |      |
| Protection Class                           | III                                                                                   |      |      |
| FDA Accession Number                       | 1710275-000                                                                           |      |      |
| Mechanical Data                            |                                                                                       |      |      |
| Housing Material                           | Aluminum, anodised                                                                    |      |      |
| Degree of Protection                       | IP67                                                                                  |      |      |
| UL Enclosure Type                          | 1                                                                                     |      |      |
| Connection                                 | M12 × 1; 12-pin                                                                       |      |      |
| Type of Connection Ethernet                | M12 × 1; 8-pin, X-cod.                                                                |      |      |
| Optic Cover                                | Glass                                                                                 |      |      |
| Web server                                 | yes                                                                                   |      |      |
| Push-Pull                                  |  |      |      |
| Connection Diagram No.                     | <table border="1"><tr><td>1022</td><td>1034</td></tr></table>                         | 1022 | 1034 |
| 1022                                       | 1034                                                                                  |      |      |
| Control Panel No.                          | <table border="1"><tr><td>X2</td><td>A22</td></tr></table>                            | X2   | A22  |
| X2                                         | A22                                                                                   |      |      |
| Suitable Connection Equipment No.          | <table border="1"><tr><td>50</td><td>87</td></tr></table>                             | 50   | 87   |
| 50                                         | 87                                                                                    |      |      |

### Complementary Products

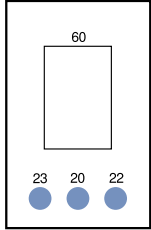
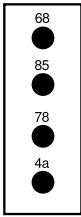
|                                    |
|------------------------------------|
| Connection cables                  |
| Control Unit                       |
| Cooling Unit ZLWK003               |
| EHSS001 Switch                     |
| Machine Vision Controller MVC      |
| Protective Screen Retainer ZLWS003 |
| Software                           |



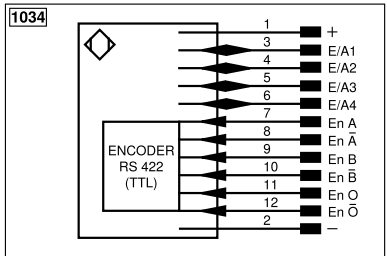
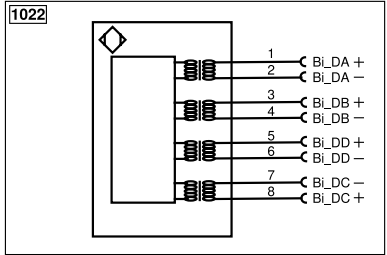
### Ctrl. Panel

A22

X2

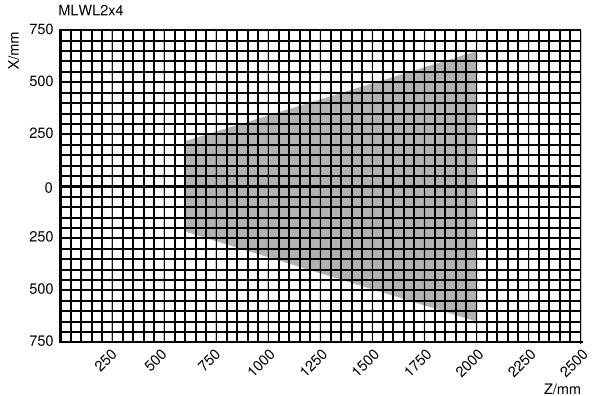


- 20 = Enter key
- 22 = Up key
- 23 = Down key
- 4a = User LED
- 60 = display
- 68 = supply voltage indicator
- 78 = Module status
- 85 = Link/Act LED



| Legend    |                                            |                                        |                                |
|-----------|--------------------------------------------|----------------------------------------|--------------------------------|
| +         | Supply Voltage +                           | nc                                     | Not connected                  |
| -         | Supply Voltage 0 V                         | U                                      | Test Input                     |
| ~         | Supply Voltage (AC Voltage)                | Ū                                      | Test Input inverted            |
| A         | Switching Output (NO)                      | W                                      | Trigger Input                  |
| Ā         | Switching Output (NC)                      | W-                                     | Ground for the Trigger Input   |
| V         | Contamination/Error Output (NO)            | O                                      | Analog Output                  |
| Ū         | Contamination/Error Output (NC)            | O-                                     | Ground for the Analog Output   |
| E         | Input (analog or digital)                  | BZ                                     | Block Discharge                |
| T         | Teach Input                                | Amv                                    | Valve Output                   |
| Z         | Time Delay (activation)                    | a                                      | Valve Control Output +         |
| S         | Shielding                                  | b                                      | Valve Control Output 0 V       |
| RxD       | Interface Receive Path                     | SY                                     | Synchronization                |
| TxD       | Interface Send Path                        | SY-                                    | Ground for the Synchronization |
| RDY       | Ready                                      | E+                                     | Receiver-Line                  |
| GND       | Ground                                     | S+                                     | Emitter-Line                   |
| CL        | Clock                                      | ±                                      | Grounding                      |
| E/A       | Output/Input programmable                  | SnR                                    | Switching Distance Reduction   |
| IO-Link   | IO-Link                                    | Rx+/-                                  | Ethernet Receive Path          |
| PoE       | Power over Ethernet                        | Tx+/-                                  | Ethernet Send Path             |
| IN        | Safety Input                               | Bus                                    | Interfaces-Bus A(+)/B(-)       |
| OSSD      | Safety Output                              | La                                     | Emitted Light disengageable    |
| Signal    | Signal Output                              | Mag                                    | Magnet activation              |
| BL_D+/-   | Ethernet Gigabit bidirect. data line (A-D) | RES                                    | Input confirmation             |
| ENo RS422 | Encoder 0-pulse 0/0 (TTL)                  | EDM                                    | Contact Monitoring             |
| PT        | Platinum measuring resistor                | ENARs422                               | Encoder A/A (TTL)              |
|           |                                            | ENBrs422                               | Encoder B/B (TTL)              |
|           |                                            | ENA                                    | Encoder A                      |
|           |                                            | ENb                                    | Encoder B                      |
|           |                                            | AMIN                                   | Digital output MIN             |
|           |                                            | AMAX                                   | Digital output MAX             |
|           |                                            | AOK                                    | Digital output OK              |
|           |                                            | SY In                                  | Synchronization In             |
|           |                                            | SY OUT                                 | Synchronization OUT            |
|           |                                            | OLt                                    | Brightness output              |
|           |                                            | M                                      | Maintenance                    |
|           |                                            | rsv                                    | Reserved                       |
|           |                                            | Wire Colors according to DIN IEC 60757 |                                |
|           |                                            | BK                                     | Black                          |
|           |                                            | BN                                     | Brown                          |
|           |                                            | RD                                     | Red                            |
|           |                                            | OG                                     | Orange                         |
|           |                                            | YE                                     | Yellow                         |
|           |                                            | GN                                     | Green                          |
|           |                                            | BU                                     | Blue                           |
|           |                                            | VT                                     | Violet                         |
|           |                                            | GY                                     | Grey                           |
|           |                                            | WH                                     | White                          |
|           |                                            | PK                                     | Pink                           |
|           |                                            | GNYE                                   | Green/Yellow                   |

### Measuring field X, Z



Z = Working distance  
X = Measuring Range

