

# 2D/3D Profile Sensor

**MLWL171**

**LASER**

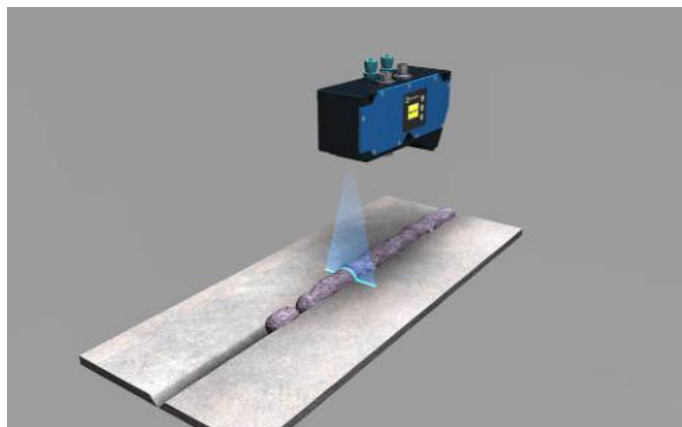
Part Number

weCat3D



- Blue light for applications on metal, organic or semi-transparent materials
- 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.



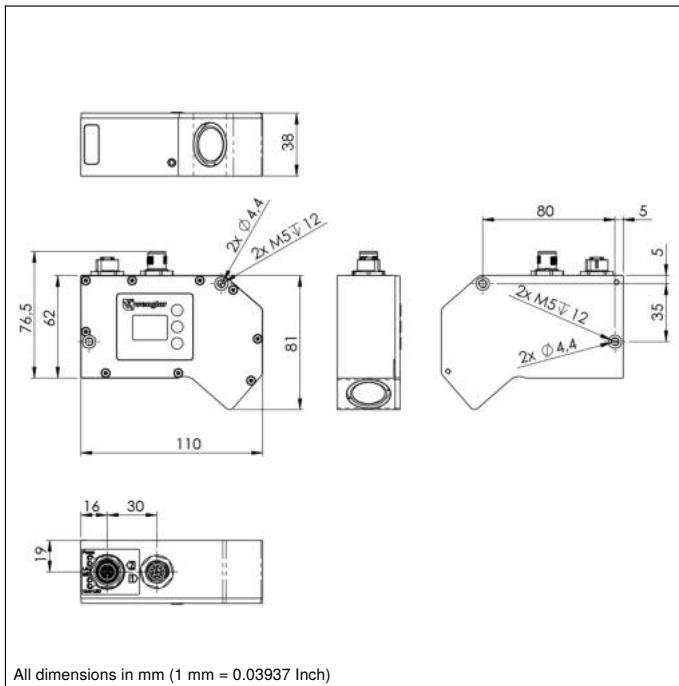
## Technical Data

| Optical Data                       |                                     |
|------------------------------------|-------------------------------------|
| Working range Z                    | 70...130 mm                         |
| Measuring range Z                  | 60 mm                               |
| Measuring range X                  | 30...52 mm                          |
| Linearity Deviation                | 15 µm                               |
| Resolution Z                       | 2...4,9 µm                          |
| Resolution X                       | 17...26 µm                          |
| Light Source                       | Laser (blue)                        |
| Wavelength                         | 450 nm                              |
| Laser Class (EN 60825-1)           | 3B                                  |
| Max. Ambient Light                 | 5000 Lux                            |
| Electrical Data                    |                                     |
| Supply Voltage                     | 18...30 V DC                        |
| Current Consumption (Ub = 24 V)    | 1000 mA                             |
| Measuring Rate                     | 175...6000 /s                       |
| Subsampling                        | 350...6000 /s                       |
| Temperature Range                  | 0...45 °C                           |
| Storage temperature                | -20...70 °C                         |
| 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               | 1710272-000                         |
| Mechanical Data                    |                                     |
| Housing Material                   | Aluminum                            |
| Degree of Protection               | IP67                                |
| Connection                         | M12 × 1; 12-pin                     |
| Type of Connection Ethernet        | M12 × 1; 8-pin, X-cod.              |
| Optic Cover                        | Glass                               |
| Weight                             | 480 g                               |
| Web server                         | yes                                 |
| Configurable as PNP/NPN/Push-Pull  | <input checked="" type="checkbox"/> |
| Switchable to NC/NO                | <input checked="" type="checkbox"/> |
| Connection Diagram No.             | <b>1022</b> <b>1034</b>             |
| Control Panel No.                  | <b>X2</b> <b>A22</b>                |
| Suitable Connection Equipment No.  | <b>50</b> <b>87</b>                 |
| Suitable Mounting Technology No.   | <b>343</b>                          |

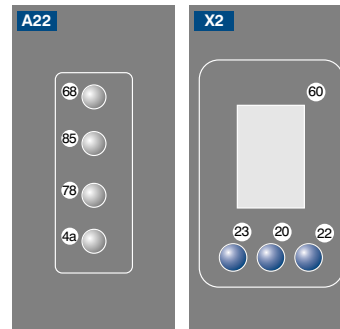
Display brightness may decrease with age. This does not result in any impairment of the sensor function.

## Complementary Products

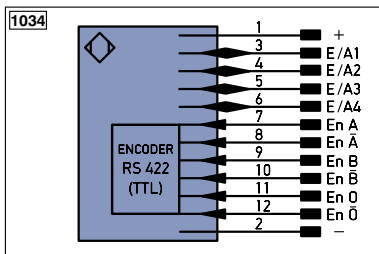
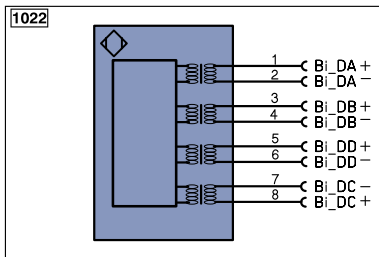
|                                    |
|------------------------------------|
| Control Unit                       |
| Cooling Unit ZLWK001               |
| Protective Screen Retainer ZLWS001 |
| Software                           |
| Switch EHSS001                     |



## Ctrl. Panel



- 20 = Enter Button
- 22 = UP Button
- 23 = Down Button
- 4a = User LED
- 60 = Display
- 68 = Supply Voltage Indicator
- 78 = Module status
- 85 = Link/Act LED



## Legend

|          |                                            |       |                                |                                    |                     |
|----------|--------------------------------------------|-------|--------------------------------|------------------------------------|---------------------|
| +        | Supply Voltage +                           | PT    | Platinum measuring resistor    | ENAR5422                           | Encoder A/Ä (TTL)   |
| -        | Supply Voltage 0 V                         | nc    | not connected                  | ENB5422                            | Encoder B/ß (TTL)   |
| ~        | Supply Voltage (AC Voltage)                | U     | Test Input                     | ENa                                | Encoder A           |
| A        | Switching Output (NO)                      | U     | Test Input inverted            | ENb                                | Encoder B           |
| Ä        | Switching Output (NC)                      | W     | Trigger Input                  | AMIN                               | Digital output MIN  |
| V        | Contamination/Error Output (NO)            | W-    | Ground for the Trigger Input   | AMAX                               | Digital output MAX  |
| Ṽ        | Contamination/Error Output (NC)            | O     | Analog Output                  | AOK                                | Digital output OK   |
| E        | Input (analog or digital)                  | O-    | Ground for the Analog Output   | SY_in                              | Synchronization In  |
| T        | Teach Input                                | BZ    | Block Discharge                | SY_OUT                             | Synchronization OUT |
| Z        | Time Delay (activation)                    | AWV   | Valve Output                   | OLT                                | Brightness output   |
| S        | Shielding                                  | a     | Valve Control Output +         | M                                  | Maintenance         |
| RxD      | Interface Receive Path                     | b     | Valve Control Output 0 V       | rsv                                | reserved            |
| TxD      | Interface Send Path                        | SY    | Synchronization                | Wire Colors according to IEC 60757 |                     |
| RDY      | Ready                                      | SY-   | Ground for the Synchronization | BK                                 | Black               |
| GND      | Ground                                     | E+    | Receiver-Line                  | BN                                 | Brown               |
| CL       | Clock                                      | S+    | Emitter-Line                   | RD                                 | Red                 |
| E/A      | Output/Input programmable                  | ±     | Grounding                      | OG                                 | Orange              |
| IO-Link  | IO-Link                                    | SnR   | Switching Distance Reduction   | YE                                 | Yellow              |
| PoE      | Power over Ethernet                        | Rx+/- | Ethernet Receive Path          | GN                                 | Green               |
| IN       | Safety Input                               | Tx+/- | Ethernet Send Path             | BU                                 | Blue                |
| OSSD     | Safety Output                              | Bus   | Interfaces-Bus A(+)/B(-)       | VT                                 | Violet              |
| Signal   | Signal Output                              | La    | Emitted Light disengageable    | GY                                 | Grey                |
| BI_D+/-  | Ethernet Gigabit bidirect. data line (A-D) | Mag   | Magnet activation              | WH                                 | White               |
| EN0.5422 | Encoder 0-pulse 0-0 (TTL)                  | RES   | Input confirmation             | PK                                 | Pink                |
|          |                                            | EDM   | Contact Monitoring             | GNYE                               | Green/Yellow        |

## Measuring field X, Z

