2D/3D Profile Sensor

MLWL255 Part Number



LASER

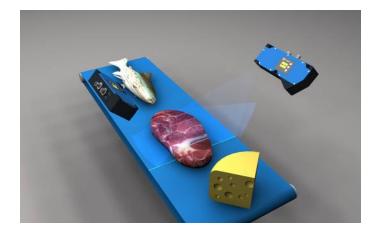
- Blue light for applications on metal, organic or semi-transparent materials
- Increased resistance to extraneous light and high speed
- Optimized profile quality thanks to HDR function
- Precise measuring range resolution X (> 2000 measuring points)
- Up to 12 million measuring points per second

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

| Working range Z10002500 mmMeasuring range X8501300 mmLinearity Deviation375 µmResolution Z92439 µmResolution X5051095 µmLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sIPDA Accession Number1710276-000Mechanical DataIIIFDA Accession Number1967Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.Control Panel No.Suitable Connection Equipment No.Suitable Connection Equipment No.Source Represent No.Suitable Connection Equipment No.Suitable Connection Equipment No.Suitable Connection Equipment No.Suitable Connection Equipment No. <td< th=""><th>Optical Data</th><th></th></td<> | Optical Data | |
|--|------------------------------------|------------------------|
| Measuring range Z1500 mmMeasuring range X8501300 mmLinearity Deviation375 µmResolution Z92439 µmResolution X5051095 µmLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | • | 10002500 mm |
| Measuring range X8501300 mmLinearity Deviation375 µmResolution Z92439 µmResolution X5051095 µmLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)2000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical Data300 mASupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | | |
| Linearity Deviation $375 \ \mu m$ Resolution Z92439 \ \mu mResolution X5051095 \ \mu mLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical Data $300 \ mA$ Measuring Rate1756000 /sTemperature Range $045 \ ^{\circ}C$ Storage temperature-2070 \ ^{\circ}CInputs/Outputs4Switching Output Voltage Drop<1,5 V | | 8501300 mm |
| Resolution Z92439 μ mResolution X5051095 μ mLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical DataSupply VoltageSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | | |
| Resolution X5051095 µmLight SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop<1,5 V | | |
| Light SourceLaser (blue)Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical DataSupply VoltageSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Resolution X | |
| Wavelength405 nmService Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical DataSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop<1,5 V | Light Source | • |
| Service Life (T = +25 °C)20000 hLaser Class (EN 60825-1)3RMax. Ambient Light5000 LuxElectrical DataSupply VoltageSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | - | |
| Max. Ambient Light5000 LuxElectrical DataSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | - | 20000 h |
| Electrical DataSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Laser Class (EN 60825-1) | 3R |
| Supply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Max. Ambient Light | 5000 Lux |
| Current Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop<1,5 V | Electrical Data | |
| Measuring Rate1756000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Supply Voltage | 1830 V DC |
| Temperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Current Consumption (Ub = 24 V) | 300 mA |
| Storage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V | Measuring Rate | 1756000 /s |
| Inputs/Outputs4Switching Output Voltage Drop<1,5 V | Temperature Range | 045 °C |
| Switching Output Voltage Drop< 1,5 VSwitching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataHousing MaterialHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullID22Switchable to NC/NO1022Connection Diagram No.1022Control Panel No.X2A22 | Storage temperature | -2070 °C |
| Switching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataHousing MaterialHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.1022 1023Control Panel No.X2 A22 | Inputs/Outputs | 4 |
| Short Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataHousing MaterialHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.1022 1023Control Panel No.X2 A22 | Switching Output Voltage Drop | < 1,5 V |
| Reverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataImage: ConnectionHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullImage: Connection Diagram No.Switchable to NC/NOImage: Connection Diagram No.Connection Diagram No.Image: Connection Diagram No.X2A22 | Switching Output/Switching Current | 100 mA |
| Overload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataImage: Constant of the second | Short Circuit Protection | yes |
| InterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataIIIHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullI022Switchable to NC/NOI022Connection Diagram No.1022Control Panel No.X2A22 | Reverse Polarity Protection | yes |
| Baud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1710276-000Mechanical DataImage: Constraint of the second | Overload Protection | yes |
| Protection ClassIIIFDA Accession Number1710276-000Mechanical DataHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.1022 1023Control Panel No.X2 A22 | Interface | Ethernet TCP/IP |
| FDA Accession Number1710276-000Mechanical DataImage: Constraint of the system of the syste | Baud Rate | 100/1000 Mbit/s |
| 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 2620 g Web server yes Configurable as PNP/NPN/Push-Pull | Protection Class | III |
| Housing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.1022Control Panel No.X2A22 | FDA Accession Number | 1710276-000 |
| Degree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-Pull | Mechanical Data | |
| ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-cod.Optic CoverGlassWeight2620 gWeb serveryesConfigurable as PNP/NPN/Push-PullSwitchable to NC/NOConnection Diagram No.1022 1023Control Panel No.X2 A22 | Housing Material | Aluminum |
| Type of Connection Ethernet M12 × 1; 8-pin, X-cod. Optic Cover Glass Weight 2620 g Web server yes Configurable as PNP/NPN/Push-Pull | Degree of Protection | IP67 |
| Optic Cover Glass Weight 2620 g Web server yes Configurable as PNP/NPN/Push-Pull • Switchable to NC/NO • Connection Diagram No. 1022 1023 Control Panel No. X2 A22 | Connection | M12 × 1; 12-pin |
| Weight 2620 g Web server yes Configurable as PNP/NPN/Push-Pull • Switchable to NC/NO • Connection Diagram No. 1022 1023 Control Panel No. X2 A22 | Type of Connection Ethernet | M12 × 1; 8-pin, X-cod. |
| Web server yes Configurable as PNP/NPN/Push-Pull • Switchable to NC/NO • Connection Diagram No. 1022 Control Panel No. X2 | Optic Cover | Glass |
| Configurable as PNP/NPN/Push-Pull Switchable to NC/NO Connection Diagram No. Control Panel No. X2 | Weight | 2620 g |
| Switchable to NC/NO Connection Diagram No. 1022 Control Panel No. X2 | Web server | yes |
| Switchable to NC/NO Connection Diagram No. 1022 Control Panel No. X2 | Configurable as PNP/NPN/Push-Pull | |
| Control Panel No. X2 A22 | - | Ŭ. |
| Control Panel No. X2 A22 | Connection Diagram No. | 1022 1023 |
| | | |
| | Suitable Connection Equipment No. | |

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

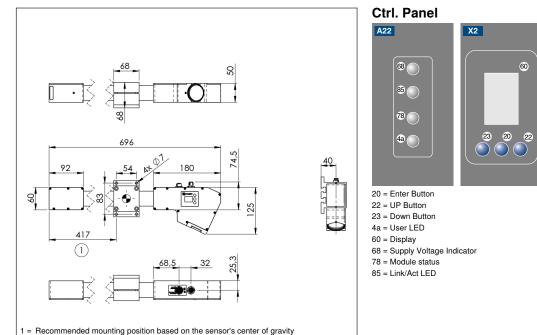


Complementary Products

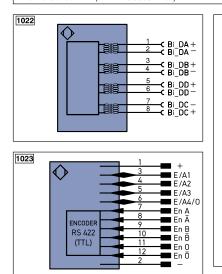
Control Unit Cooling Unit ZLWK003 Protective Screen Retainer ZLWS003 Software Switch ZAC45FN01

weCat3D





All dimensions in mm (1 mm = 0.03937 Inch)



| Legen | d | | PŤ | |
|-------------------------------------|---------------------------------|--------------|------|--|
| + | Supply Voltage + | | nc | |
| - | Supply Voltage 0 V | | U | |
| ~ | Supply Voltage (AC Voltage) | | Ū | |
| А | Switching Output | (NO) | W | |
| Ā | Switching Output | (NC) | 0 | |
| V | Contamination/Error Output | (NO) | 0- | |
| V | Contamination/Error Output | (NC) | ΒZ | |
| E | Input (analog or digital) | | Awv | |
| Т | Teach Input | | а | |
| Z | Time Delay (activation) | | b | |
| S | Shielding | | SY | |
| RxD | Interface Receive Path | | E+ | |
| TxD | Interface Send Path | | S+ | |
| RDY | Ready | | ÷ | |
| GND | Ground | | SnR | |
| CL | Clock | | Rx+ | |
| E/A | Output/Input programmable | | Tx+ | |
| ۲ | IO -Link | | Bus | |
| PoE | Power over Ethernet | | La | |
| IN | Safety Input | | Mag | |
| OSSD | Safety Output | | RES | |
| Signal | Signal Output | | EDM | |
| BI_D+/- | Ethernet Gigabit bidirect. data | a line (A-D) | ENAR | |
| ENorsez Encoder 0-pulse 0-0 (TTL) E | | | | |

| | Test Input | Amin | Digital output MIN |
|---------|------------------------------|---|---------------------|
| | Test Input inverted | Амах | Digital output MAX |
| | Trigger Input | Аок | Digital output OK |
| | Analog Output | SY In | Synchronization In |
| | Ground for the Analog Output | SY OUT | Synchronization OUT |
| | Block Discharge | OLT | Brightness output |
| v | Valve Output | м | Maintenance |
| | Valve Control Output + | rsv | reserved |
| | Valve Control Output 0 V | | |
| | Synchronization | Wire Colors according to DIN IEC 757 | |
| | Receiver-Line | | |
| | Emitter-Line | BK | Black |
| | Grounding | BN | Brown |
| R | Switching Distance Reduction | RD | Red |
| +/- | Ethernet Receive Path | OG | Orange |
| +/- | Ethernet Send Path | YE | Yellow |
| | Interfaces-Bus A(+)/B(-) | GN | Green |
| | Emitted Light disengageable | BU | Blue |
| 3 | Magnet activation | VT | Violet |
| | Input confirmation | GY | Grey |
| 4 | Contactor Monitoring | WH | White |
| AR5422 | Encoder A/Ā (TTL) | PK | Pink |
| BR\$422 | Encoder B/B (TTL) | GNYE | Green/Yellow |
| | | | |

Platinum measuring resistor not connected

ENA Encoder A

ENB Encoder B

