2D/3D Profile Sensor

MLWL233

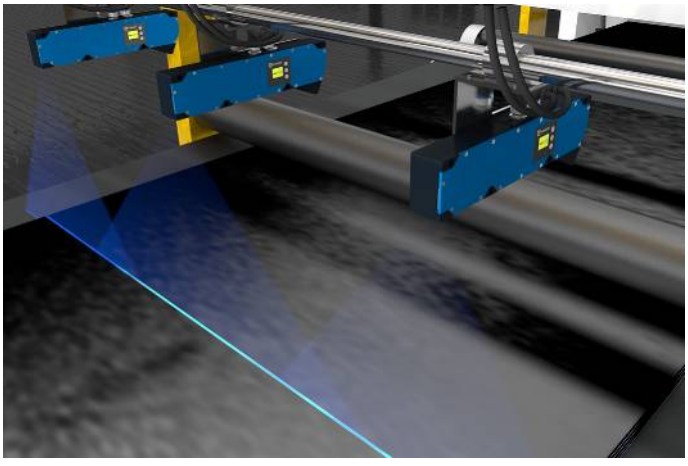
Part Number

weCat3D



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

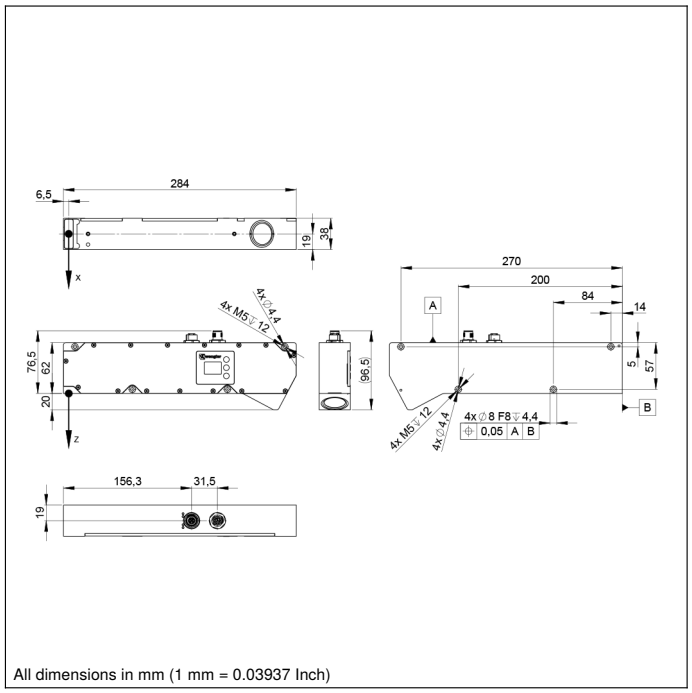


Technical Data

Optical Data	
Working range Z	300...1000 mm
Measuring range Z	700 mm
Measuring range X	280...830 mm
Linearity Deviation	175 µm
Resolution Z	27...162 µm
Resolution X	181...446 µm
Light Source	Laser (blue)
Wavelength	405 nm
Service Life (T = +25 °C)	20000 h
Laser Class (EN 60825-1)	2M
Environmental conditions	
Ambient temperature	0...45 °C
Storage temperature	-20...70 °C
Max. Ambient Light	5000 Lux
EMC	DIN EN 61000-6-2; 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	1710273-000
Mechanical Data	
Housing Material	Aluminum, anodised
Degree of Protection	IP67
Connection	M12 × 1; 12-pin
Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.
Optic Cover	Glass
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	152,93 a
Web server	yes
Push-Pull	●
Connection Diagram No.	1022, 1034
Control Panel No.	X2, A22
Suitable Connection Equipment No.	50, 87
Suitable Mounting Technology No.	343

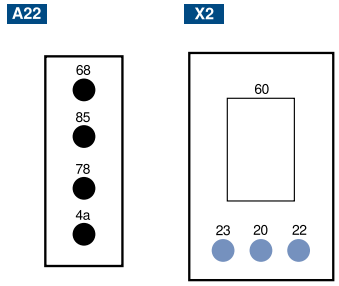
Complementary Products

Connection cables
Control Unit
Cooling Unit ZLWK006
Protective Screen Retainer ZLWS006
Software
Switch EHSS001

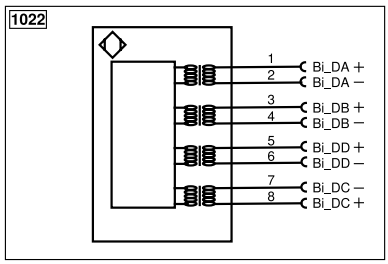


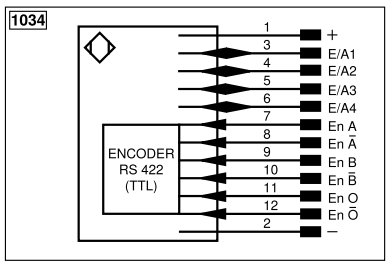
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel



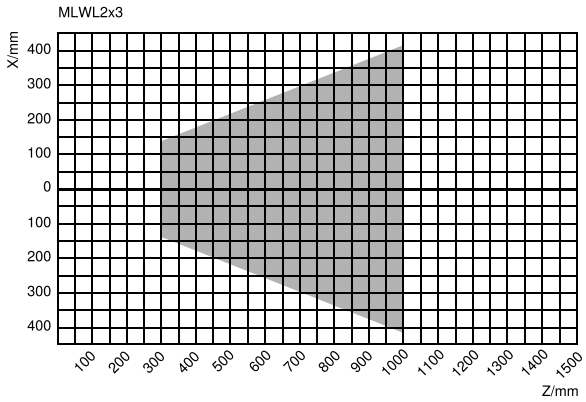
20 = Enter key
22 = Up key
23 = Down key
4a = User LED
60 = display
68 = supply voltage indicator
78 = Module status
85 = Link/Act LED





Legend					
+	Supply Voltage +	nc	Not connected	EN_{RS422}	Encoder B/B̄ (TTL)
–	Supply Voltage 0 V	U	Test Input	EN_A	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	EN_B	Encoder B
A	Switching Output (NO)	W	Trigger Input	A_{MIN}	Digital output MIN
Ā	Switching Output (NC)	W–	Ground for the Trigger Input	A_{MAX}	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	A_{OK}	Digital output OK
V̄	Contamination/Error Output (NC)	O–	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	A_{MV}	Valve Output	O_{LT}	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY–	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
IO-Link	IO-Link	Rx+/–	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/–	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(–)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/–	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
$EN_{0\ RS422}$	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN_{ARS422}	Encoder A/Ā (TTL)		

Measuring field X, Z



Z = Working distance
X = Measuring Range

Specifications are subject to change without notice V1-20.02.2024