2D/3D Profile Sensor

MLWL253 **LASER**

Part Number

- **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.
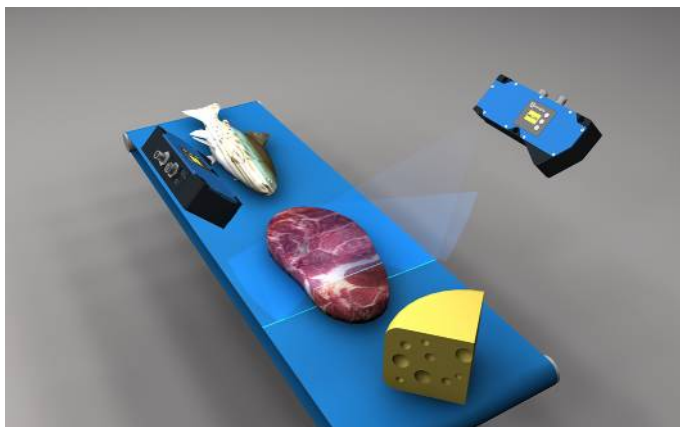
Technical Data

Optical Data	
Working range Z	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)	3R
Max. Ambient Light	5000 Lux

Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	300 mA
Measuring Rate	175...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	1710276-000

| 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	1120 g
Web server	yes

Configurable as PNP/NPN/Push-Pull	●	
Switchable to NC/NO		●

|		
Connection Diagram No.	**1022**	**1023**
Control Panel No.	**X2**	**A22**
Suitable Connection Equipment No.	**50**	**87**
Suitable Mounting Technology No.		**343**

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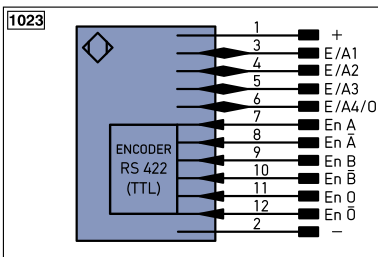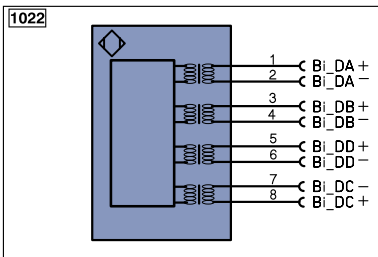
Complementary Products

Control Unit
Cooling Unit ZLWK006
Protective Screen Retainer ZLWS006
Software
Switch ZAC45FN01

Ctrl. Panel

A22

68
85
78
4a

X2

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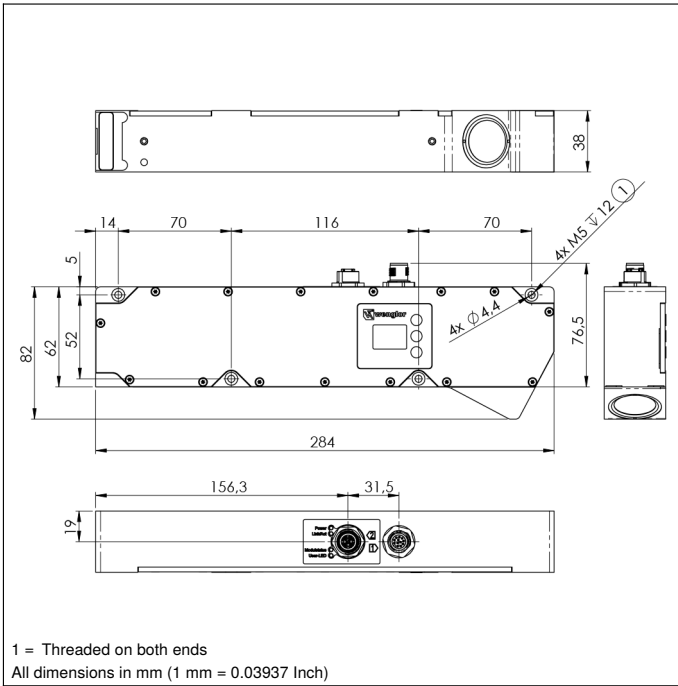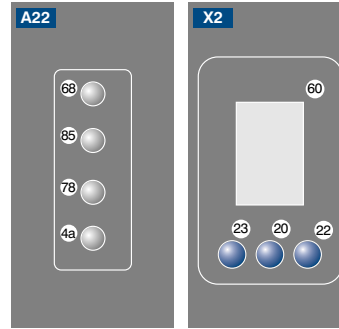
20 = Enter Button
22 = UP Button
23 = Down Button
4a = User LED
60 = Display
68 = Supply Voltage Indicator
78 = Module status
85 = Link/Act LED

1 = Threaded on both ends
All dimensions in mm (1 mm = 0.03937 Inch)

1022

1	Bi_DA +
2	Bi_DA −
3	Bi_DB +
4	Bi_DB −
5	Bi_DD +
6	Bi_DD −
7	Bi_DC −
8	Bi_DC +

1023

ENCODER RS 422 (TTL)

1	+
3	E/A1
4	E/A2
5	E/A3
6	E/A4/O
7	En A
8	En Ā
9	En B
10	En B̄
11	En 0
12	En 0̄
2	−

Legend

+	Supply Voltage +	PT	Platinum measuring resistor	ENA	Encoder A
−	Supply Voltage 0 V	nc	not connected	ENB	Encoder B
~	Supply Voltage (AC Voltage)	U	Test Input	AMIN	Digital output MIN
A	Switching Output (NO)	Ū	Test Input inverted	AMAX	Digital output MAX
Ā	Switching Output (NC)	W	Trigger Input	AOK	Digital output OK
V	Contamination/Error Output (NO)	O	Analog Output	SY In	Synchronization In
V̄	Contamination/Error Output (NC)	O−	Ground for the Analog Output	SY OUT	Synchronization OUT
E	Input (analog or digital)	BZ	Block Discharge	OLT	Brightness output
T	Teach Input	AMV	Valve Output	M	Maintenance
Z	Time Delay (activation)	a	Valve Control Output +	rsv	reserved
S	Shielding	b	Valve Control Output 0 V		
RxD	Interface Receive Path	SY	Synchronization		Wire Colors according to DIN IEC 757
TxD	Interface Send Path	E+	Receiver-Line		
RDY	Ready	S+	Emitter-Line	BK	Black
GND	Ground	⏚	Grounding	BN	Brown
CL	Clock	SnR	Switching Distance Reduction	RD	Red
E/A	Output/Input programmable	Rx+/−	Ethernet Receive Path	OG	Orange
⬙	IO-Link	Tx+/−	Ethernet Send Path	YE	Yellow
PoE	Power over Ethernet	Bus	Interfaces-Bus A(+)/B(−)	GN	Green
IN	Safety Input	La	Emitted Light disengageable	BU	Blue
OSSD	Safety Output	Mag	Magnet activation	VT	Violet
Signal	Signal Output	RES	Input confirmation	GY	Grey
Bi_D+/−	Ethernet Gigabit bidirect. data line (A-D)	EDM	Contactor Monitoring	WH	White
EN0RS422	Encoder 0-pulse 0-0̄ (TTL)	ENARS422	Encoder A/Ā (TTL)	PK	Pink
		ENBRS422	Encoder B/B̄ (TTL)	GNYE	Green/Yellow

Measuring field X, Z

MLWL2x3
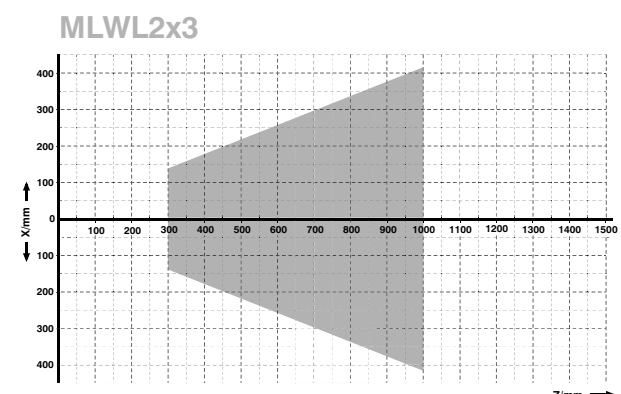
Z = Working distance

X = Measuring Range

LASER CLASS 3R
EN60825-1

RoHS