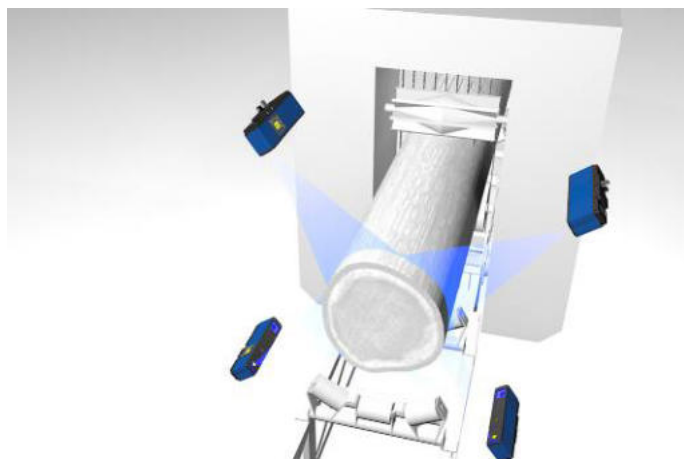# 2D/3D Profile Sensor

MLSL256 LASER

Part Number

- **Blue light for applications on metal, organic or semi-transparent materials**
- **Compact, lightweight design – even suitable for robot applications**
- **Precise measuring range resolution X (> 1200 measuring points)**
- **Up to 3.6 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.
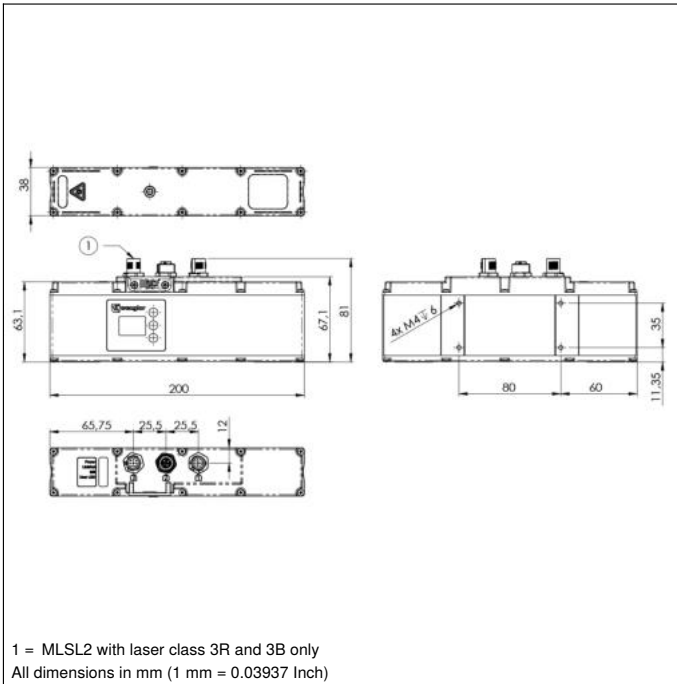
Technical Data

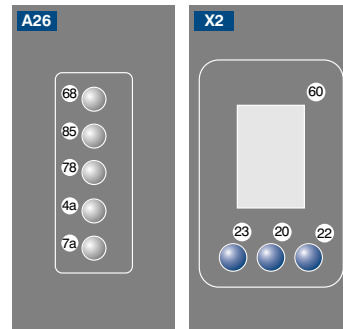| Optical Data	
Working range Z	300...1500 mm
Measuring range Z	1200 mm
Measuring range X	250...1350 mm
Linearity Deviation	600 μm
Resolution Z	60...990 μm
Resolution X	270...1170 μm
Light Source	Laser (blue)
Wavelength	405 nm
Laser Class (EN 60825-1)	3R
Max. Ambient Light	5000 Lux
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	300 mA
Measuring Rate	200...4000 /s
Subsampling	800...4000 /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	1711167-000
Mechanical Data	
Housing Material	Aluminium; Plastic
Degree of Protection	IP67
Connection	M12 × 1; 12-pin
Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.
Connection: external 24 V laser circuit	M12 × 1; 8-pin
Optic Cover	Plastic
Weight	550 g
Web server	yes
Configurable as PNP/NPN/Push-Pull	●
Switchable to NC/NO	●
Connection Diagram No.	1022 1025 1034
Control Panel No.	X2 A26
Suitable Connection Equipment No.	50 87 89
Suitable Mounting Technology No.	343

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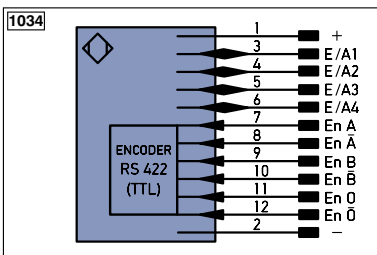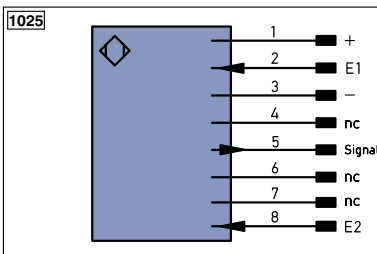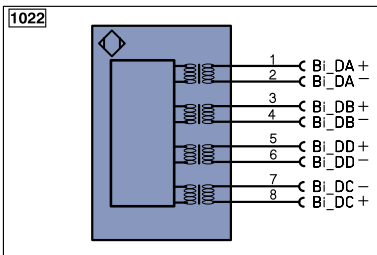
Complementary Products

Control Unit
Cooling Unit ZLSK001
Protective Screen Retainer ZLSS002
Software
Switch EHSS001

1 = MLSL2 with laser class 3R and 3B only
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

A26

X2

20 = Enter Button
22 = UP Button
23 = Down Button
4a = User LED
60 = Display
68 = Supply Voltage Indicator
78 = Module status
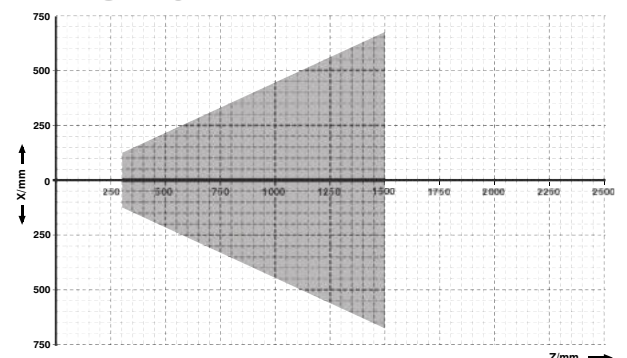7a = Laser (MLSL2 with laser class 3R and 3B only)
85 = Link/Act LED

1022

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

1025

Pin	Signal
1	+
2	E1
3	−
4	nc
5	Signal
6	nc
7	nc
8	E2

1034

ENCODER RS 422 (TTL)

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

Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN$_{ARS422}$	Encoder A/Ā (TTL)
−	Supply Voltage 0 V	nc	not connected	EN$_{BRS422}$	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN$_A$	Encoder A
A	Switching Output (NO)	Ū	Test Input inverted	EN$_B$	Encoder B
Ā	Switching Output (NC)	W	Trigger Input	A$_{MIN}$	Digital output MIN
V	Contamination/Error Output (NO)	W−	Ground for the Trigger Input	A$_{MAX}$	Digital output MAX
V̄	Contamination/Error Output (NC)	O	Analog Output	A$_{OK}$	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)	A$_{MW}$	Valve Output	O$_{LT}$	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	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
EN$_{0RS422}$	Encoder 0-pulse 0-Ō (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactor Monitoring	GNYE	Green/Yellow

Measuring field X, Z

MLSL2x6

Z = Working distance

X = Measuring Range