# 2D/3D Profile Sensor

MLSL245
Part Number

weCat3D

- **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.
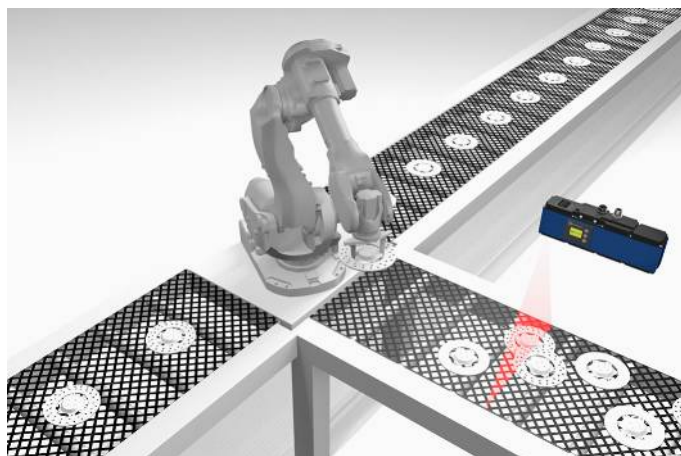

Technical Data

| Optical Data	
Working range Z	280...1280 mm
Measuring range Z	1000 mm
Measuring range X	200...850 mm
Linearity Deviation	500 μm
Resolution Z	40...570 μm
Resolution X	190...760 μm
Light Source	Laser (red)
Wavelength	660 nm
Service Life (T = +25 °C)	20000 h
Laser Class (EN 60825-1)	3R
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	200...4000 /s
Subsampling	800...4000 /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	1710963-000
Mechanical Data	
Housing Material	Aluminum, powder-coated
Housing Material	Plastic, ABS
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, PMMA
Web server	yes
Push-Pull	●
Connection Diagram No.	1022 1025 1034
Control Panel No.	X2 A26
Suitable Connection Equipment No.	50 87 89
Suitable Mounting Technology No.	343

Complementary Products

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

Ctrl. Panel

A26

68
85
78
4a
7a

X2

60
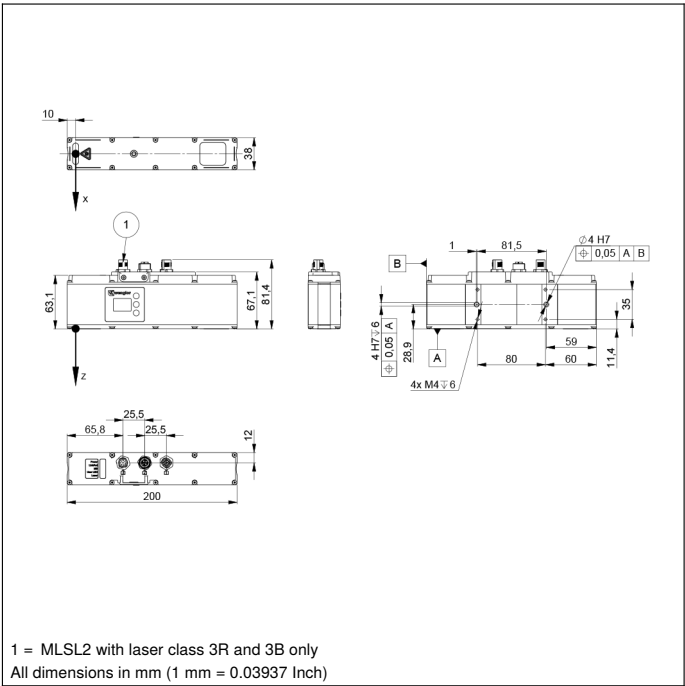
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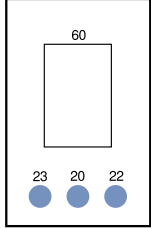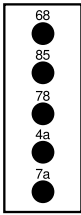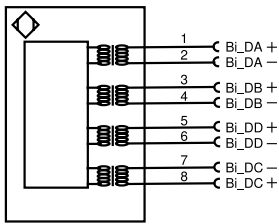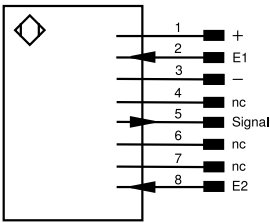
20 = Enter key
22 = Up key
23 = Down key
4a = User LED
60 = display
68 = supply voltage indicator
78 = Module status
7a = Laser (MLSL2 with laser class 3R and 3B only)
85 = Link/Act LED

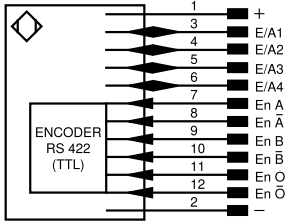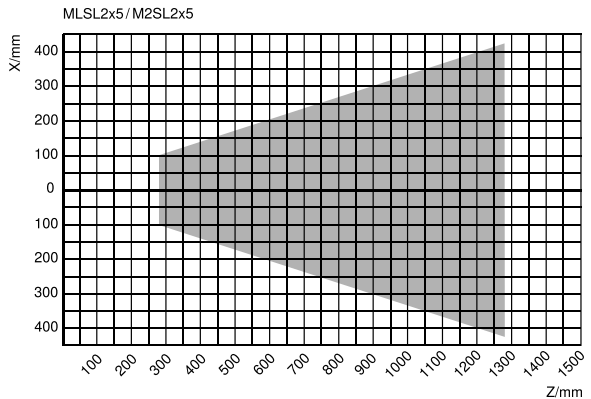1 = MLSL2 with laser class 3R and 3B only
All dimensions in mm (1 mm = 0.03937 Inch)

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 +

1025

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

1034

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 O
12 En Ō
2 −

ENCODER RS 422 (TTL)

Legend

+	Supply Voltage +	nc	Not connected	EN$_{BRS422}$	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	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
EN0 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

MLSL2x5 / M2SL2x5

Z = Working distance
X = Measuring Range

UK CA   CE   LASER CLASS 3R EN 60825-1   RoHS   III   c(UL)us LISTED IND. CONT. EQ 72HL / 6169727 For use in class 2 circuits