# MLWL235

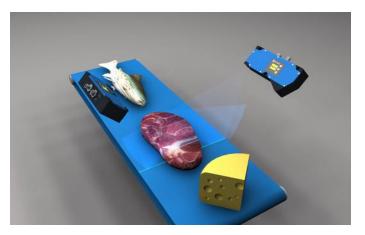
**LASER** 

Part Number



- 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**

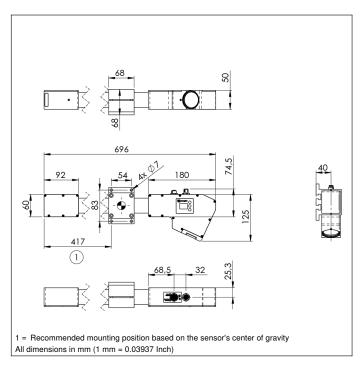
Optical Data         Working range Z         10002500 mm           Measuring range Z         1500 mm           Measuring range X         8501300 mm           Linearity Deviation         375 μm           Resolution Z         92439 μm           Resolution X         5051095 μm           Light Source         Laser (blue)           Wavelength         405 nm           Service Life (T = +25 °C)         20000 h           Laser Class (EN 60825-1)         2M           Max. Ambient Light         5000 Lux           Electrical Data         Supply Voltage           Supply Voltage         1830 V DC           Current Consumption (Ub = 24 V)         300 mA           Measuring Rate         1756000 /s           Temperature Range         045 °C           Storage temperature         -2070 °C           Inputs/Outputs         4           Switching Output Voltage Drop         < 1,5 V           Switching Output/Switching Current         100 mA           Short Circuit Protection         yes           Overload Protection         yes           Overload Protection         yes           Interface         Ethernet TCP/IP           Baud Rate         100	Technical Data	
Measuring range Z       1500 mm         Measuring range X       8501300 mm         Linearity Deviation       375 μm         Resolution Z       92439 μm         Resolution X       5051095 μm         Light Source       Laser (blue)         Wavelength       405 nm         Service Life (T = +25 °C)       20000 h         Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data       5000 Lux         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °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       M12 × 1; 12-pin	Optical Data	
Measuring range X       8501300 mm         Linearity Deviation       375 μm         Resolution Z       92439 μm         Resolution X       5051095 μm         Light Source       Laser (blue)         Wavelength       405 nm         Service Life (T = +25 °C)       20000 h         Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data       300 mA         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       <1,5 V	Working range Z	10002500 mm
Linearity Deviation 375 μm  Resolution Z 92439 μm  Resolution X 5051095 μm  Light Source Laser (blue)  Wavelength 405 nm  Service Life (T = +25 °C) 20000 h  Laser Class (EN 60825-1) 2M  Max. Ambient Light 5000 Lux  Electrical Data  Supply Voltage 1830 V DC  Current Consumption (Ub = 24 V) 300 mA  Measuring Rate 1756000 /s  Temperature Range 045 °C  Storage temperature -2070 °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 1710273-000  Mechanical Data  Housing Material Aluminum  Degree of Protection Elpero Glass  Weight 2620 g  Web server yes  Configurable as PNP/NPN/Push-Pull  Switchale to NC/NO  Connection Diagram No.  10022 1023  X2 A22	Measuring range Z	1500 mm
Resolution Z       92439 μm         Resolution X       5051095 μm         Light Source       Laser (blue)         Wavelength       405 nm         Service Life (T = +25 °C)       20000 h         Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data       5000 Lux         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       < 1,5 V	Measuring range X	8501300 mm
Resolution X       5051095 μm         Light Source       Laser (blue)         Wavelength       405 nm         Service Life (T = +25 °C)       20000 h         Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data       5000 Lux         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       < 1,5 V	Linearity Deviation	375 <i>μ</i> m
Light Source  Wavelength  Service Life (T = +25 °C)  Laser Class (EN 60825-1)  Max. Ambient Light  Supply Voltage  Current Consumption (Ub = 24 V)  Measuring Rate  Temperature Range  Sutching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Wechanical Data  Housing Mate  Housing Mate  Housing Mate  1756000 /s  1830 V DC  300 mA  1756000 /s  300 mA  Measuring Rate  1756000 /s  1776000 /s  1776000 /s  1776000 /s  1830 V DC  2070 °C  18070 °C  19070	Resolution Z	92439 <i>μ</i> m
Wavelength       405 nm         Service Life (T = +25 °C)       20000 h         Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data       300 mA         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       < 1,5 V	Resolution X	5051095 μm
Service Life (T = +25 °C)         20000 h           Laser Class (EN 60825-1)         2M           Max. Ambient Light         5000 Lux           Electrical Data           Supply Voltage         1830 V DC           Current Consumption (Ub = 24 V)         300 mA           Measuring Rate         1756000 /s           Temperature Range         045 °C           Storage temperature         -2070 °C           Inputs/Outputs         4           Switching Output Voltage Drop         < 1,5 V	Light Source	Laser (blue)
Laser Class (EN 60825-1)       2M         Max. Ambient Light       5000 Lux         Electrical Data         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       < 1,5 V	Wavelength	405 nm
Max. Ambient Light         5000 Lux           Electrical Data           Supply Voltage         1830 V DC           Current Consumption (Ub = 24 V)         300 mA           Measuring Rate         1756000 /s           Temperature Range         045 °C           Storage temperature         -2070 °C           Inputs/Outputs         4           Switching Output Voltage Drop         < 1,5 V	Service Life (T = +25 °C)	20000 h
Electrical Data         Supply Voltage       1830 V DC         Current Consumption (Ub = 24 V)       300 mA         Measuring Rate       1756000 /s         Temperature Range       045 °C         Storage temperature       -2070 °C         Inputs/Outputs       4         Switching Output Voltage Drop       < 1,5 V	Laser Class (EN 60825-1)	2M
Supply Voltage 1830 V DC Current Consumption (Ub = 24 V) 300 mA  Measuring Rate 1756000 /s Temperature Range 045 °C Storage temperature -2070 °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 Interface Ethernet TCP/IP Baud Rate 100/1000 Mbit/s Protection Class III FDA Accession Number 1710273-000  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 2620 g Web server yes  Configurable as PNP/NPN/Push-Pull Switchable to NC/NO Connection Diagram No.  1022 1023 X2 A22	Max. Ambient Light	5000 Lux
Current Consumption (Ub = 24 V)  Measuring Rate  Temperature Range  O45 °C  Storage temperature  -2070 °C  Inputs/Outputs  4  Switching Output Voltage Drop  Short Circuit Protection  Ves  Reverse Polarity Protection  Ves  Overload Protection  Interface  Baud Rate  Protection Class  FDA Accession Number  Housing Material  Degree of Protection  Connection  Type of Connection Ethernet  Optic Cover  Web server  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	Electrical Data	
Measuring Rate Temperature Range O45 °C Storage temperature -2070 °C Inputs/Outputs 4 Switching Output Voltage Drop Storage Polarity Protection Reverse Polarity Protection Ves Baud Rate Protection Class FDA Accession Number Housing Material Degree of Protection Type of Connection Ethernet Mile X 1; 8-pin, X-cod. Optic Cover Weight Switchable to NC/NO Connection Diagram No. Control Panel No.  17045 °C 045 °C 0	Supply Voltage	1830 V DC
Temperature Range  Storage temperature  -2070 °C  Inputs/Outputs  4  Switching Output Voltage Drop  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  yes  Interface  Baud Rate  Protection Class  FDA Accession Number  Housing Material  Degree of Protection  Type of Connection Ethernet  Optic Cover  Weight  Connection Diagram No.  Connection Diagram No.  Connection Diagram No.  Control Panel No.	Current Consumption (Ub = 24 V)	300 mA
Storage temperature Inputs/Outputs  Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  yes  Interface  Baud Rate  Protection Class  FDA Accession Number  T100/1000 Mbit/s  FDA Accession Number  T10273-000  Mechanical Data  Housing Material  Degree of Protection  IP67  Connection  M12 × 1; 12-pin  Type of Connection Ethernet  Optic Cover  Weight  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  1022 1023  Control Panel No.	Measuring Rate	1756000 /s
Inputs/Outputs  Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  yes  Interface  Baud Rate  100/1000 Mbit/s  Protection Class  III  FDA Accession Number  1710273-000  Mechanical Data  Housing Material  Degree of Protection  IP67  Connection  Type of Connection Ethernet  Optic Cover  Glass  Weight  Web server  Yes  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  1022 1023  X2 A22	Temperature Range	045 °C
Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  yes  Interface  Baud Rate  Protection Class  FDA Accession Number  I710273-000  Mechanical Data  Housing Material  Degree of Protection  IP67  Connection  Type of Connection Ethernet  Optic Cover  Weight  Switchable to NC/NO  Connection Diagram No.  Control Panel No.  100 mA  10	Storage temperature	-2070 °C
Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Unterface  Baud Rate  Baud Rate  Protection Class  FDA Accession Number  Mechanical Data  Housing Material  Degree of Protection  Connection  Type of Connection Ethernet  Optic Cover  Weight  Web server  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	Inputs/Outputs	4
Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Overload Protection  Interface  Baud Rate  Protection Class  FDA Accession Number  T710273-000  Mechanical Data  Housing Material  Degree of Protection  Connection  Type of Connection Ethernet  Optic Cover  Weight  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	Switching Output Voltage Drop	< 1,5 V
Reverse Polarity Protection  Overload Protection  Overload Protection  Interface  Baud Rate  Protection Class  FDA Accession Number  T710273-000  Mechanical Data  Housing Material  Degree of Protection  Connection  Type of Connection Ethernet  Optic Cover  Weight  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	Switching Output/Switching Current	100 mA
Overload Protection  Interface  Baud Rate  Baud Rate  Protection Class  FDA Accession Number  Interface  III  Aluminum  IP67  Connection  IP67  IP67	Short Circuit 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 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 Switchable to NC/NO Connection Diagram No. 1022 1023 Control Panel No.	Reverse Polarity Protection	yes
Baud Rate         100/1000 Mbit/s           Protection Class         III           FDA Accession Number         1710273-000           Mechanical Data         Housing Material           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         Switchable to NC/NO           Connection Diagram No.         1022 1023           Control Panel No.         X2 A22	Overload Protection	yes
Protection Class         III           FDA Accession Number         1710273-000           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         2620 g           Web server         yes           Configurable as PNP/NPN/Push-Pull           Switchable to NC/NO         Connection Diagram No.           Connection Diagram No.         1022         1023           Control Panel No.         X2         A22	Interface	Ethernet TCP/IP
FDA Accession Number         1710273-000           Mechanical Data         Aluminum           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         Switchable to NC/NO           Connection Diagram No.         1022 1023           Control Panel No.         X2 A22	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 Switchable to NC/NO Connection Diagram No. 1022 1023 Control Panel No.	Protection Class	III
Housing Material  Degree of Protection  IP67  Connection  M12 × 1; 12-pin  Type of Connection Ethernet  Optic Cover  Glass  Weight  2620 g  Web server  yes  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	FDA Accession Number	1710273-000
Degree of Protection  Connection  M12 × 1; 12-pin  M12 × 1; 8-pin, X-cod.  Optic Cover  Glass  Weight  2620 g  Web server  yes  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.	Mechanical Data	
Connection  M12 × 1; 12-pin  Type of Connection Ethernet  Optic Cover  Glass  Weight  2620 g  Web server  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.  M12 × 1; 12-pin  M12 ×	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  Switchable to NC/NO  Connection Diagram No.  Control Panel No.  M12 × 1; 8-pin, X-cod.  Glass  1022 glass  1023 glass  1024 glass  1025 glass  1026 glass  2620 g	Degree of Protection	IP67
Optic Cover  Optic Cover  Glass  Weight  2620 g  Web server  yes  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.  Glass  1020 g	Connection	M12 × 1; 12-pin
Weight 2620 g  Web server yes  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  Connection Diagram No.  Control Panel No.  2620 g  yes  1020 g  yes	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.  Control Panel No.  yes  1022 1023 22 422	Optic Cover	Glass
Configurable as PNP/NPN/Push-Pull Switchable to NC/NO  Connection Diagram No.  Control Panel No.  1022 1023  X2 A22	Weight	2620 g
Switchable to NC/NO  Connection Diagram No.  Control Panel No.  1022 1023  X2 A22	Web server	yes
Connection Diagram No.         1022 1023           Control Panel No.         X2 A22	Configurable as PNP/NPN/Push-Pull	•
Control Panel No. X2 A22	Switchable to NC/NO	
Control Panel No. X2 A22	Connection Diagram No.	1022 1023
Suitable Connection Equipment No. 50 87		
	Suitable Connection Equipment No.	50 87

weCat3D

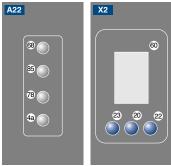
Display brightness may decrease with age. This does not result in any impairment of the

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

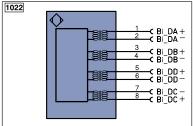


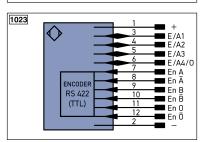


## Ctrl. Panel



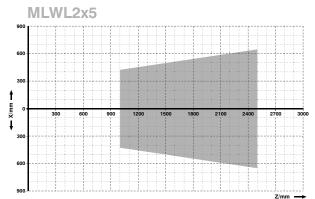
- 20 = Enter Button
- 22 = UP Button
- 23 = Down Button
- 4a = User LED
- 60 = Display
- 68 = Supply Voltage Indicator
- 78 = Module status
- 85 = Link/Act LED





Leger	nd		PT	Platinum measuring resistor	ENA	Encoder A
+	Supply Voltage +		nc	not connected	ENв	Encoder B
-	Supply Voltage 0 V		U	Test Input	Amin	Digital output MIN
~	Supply Voltage (AC Voltage)		Ū	Test Input inverted	Амах	Digital output MAX
Α	Switching Output	(NO)	W	Trigger Input	Аок	Digital output OK
Ā	Switching Output	(NC)	0	Analog Output	SY In	Synchronization In
٧	Contamination/Error Output	(NO)	0-	Ground for the Analog Output	SY OUT	Synchronization OUT
V	Contamination/Error Output	(NC)	BZ	Block Discharge	OLT	Brightness output
E	Input (analog or digital)		Awv	Valve Output	М	Maintenance
Т	Teach Input		а	Valve Control Output +	rsv	reserved
Z	Time Delay (activation)		b	Valve Control Output 0 V		
S	Shielding		SY	Synchronization		Colors according to
RxD	Interface Receive Path		E+	Receiver-Line	DIN IE	C 757
TxD	Interface Send Path		S+	Emitter-Line	BK	Black
RDY	Ready		±	Grounding	BN	Brown
GND	Ground		SnR	Switching Distance Reduction	RD	Red
CL	Clock		Rx+/-	Ethernet Receive Path	OG	Orange
E/A	Output/Input programmable		Tx+/-	Ethernet Send Path	YE	Yellow
•	IO-Link		Bus	Interfaces-Bus A(+)/B(-)	GN	Green
PoE	Power over Ethernet		La	Emitted Light disengageable	BU	Blue
IN	Safety Input		Mag	Magnet activation	VT	Violet
OSSD	Safety Output		RES	Input confirmation	GY	Grey
Signal	Signal Output		EDM	Contactor Monitoring		White
BI_D+/-	Ethernet Gigabit bidirect. data	line (A-D)	ENARS42	Encoder A/Ā (TTL)	PK	Pink
ENors42	2 Encoder 0-pulse 0-0 (TTL)			Encoder B/B (TTL)	GNYE	Green/Yellow

## Measuring field X, Z





X = Measuring Range











