2D/3D Profile Sensor

Part Number

- 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.

MLWL203 LASER

Technical Data

Working range Z 3001000 mm Measuring range X 280830 mm Linearity Deviation 175 µm Resolution Z 27162 µm Resolution X 181446 µm Light Source Laser (red) Wavelength 660 nm Laser Class (EN 60825-1) 1M Max. Ambient Light 5000 Lux Electrical Data 2000 Lux Supply Voltage 1830 V DC Current Consumption (Ub = 24 V) 300 mA Measuring Rate 1756000 /s Subsampling 3506000 /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 100/100 Mbit/s Protection Class III FDA Accession Number 1610573-000	Optical Data	
Measuring range X280830 mmLinearity Deviation175 µmResolution Z27162 µmResolution X181446 µmLight SourceLaser (red)Wavelength660 nmLaser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Working range Z	3001000 mm
Linearity Deviation175 μ mResolution Z27162 μ mResolution X181446 μ mLight SourceLaser (red)Wavelength660 nmLaser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Measuring range Z	700 mm
Resolution Z $27162 \ \mu m$ Resolution X $181446 \ \mu m$ Light SourceLaser (red)Wavelength $660 \ nm$ Laser Class (EN 60825-1) $1M$ Max. Ambient Light $5000 \ Lux$ Electrical Data $5000 \ Lux$ Supply Voltage $1830 \ V DC$ Current Consumption (Ub = 24 V) $300 \ mA$ Measuring Rate $1756000 \ /s$ Subsampling $3506000 \ /s$ Temperature Range $045 \ ^{\circ}C$ Storage temperature $-2070 \ ^{\circ}C$ Inputs/Outputs 4 Switching Output Voltage Drop $< 1,5 \ V$ Switching Output/Switching Current $100 \ mA$ Short Circuit ProtectionyesReverse Polarity ProtectionyesInterfaceEthernet TCP/IPBaud Rate $100/1000 \ Mbit/s$ Protection ClassIIIFDA Accession Number $1610573-000$ Mechanical DataAluminumDegree of ProtectionIP67Connection Mitz x 1; 12-pinMitz x 1; 8-pin, X-codOpti CoverGlassWeight1120 g	Measuring range X	280830 mm
Resolution X181446 µmLight SourceLaser (red)Wavelength660 nmLaser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical Data5000 LuxSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop<1,5 V	Linearity Deviation	175 <i>µ</i> m
Light SourceLaser (red)Wavelength660 nmLaser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical Data1830 V DCSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop<1,5 V	Resolution Z	27162 μm
Wavelength660 nmLaser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical Data	Resolution X	181446 <i>µ</i> m
Laser Class (EN 60825-1)1MMax. Ambient Light5000 LuxElectrical DataSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 VSwitching Output Voltage Drop< 1,5 VSwitching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-codeOptic CoverGlassWeight1120 g	Light Source	Laser (red)
Max. Ambient Light5000 LuxElectrical Data1830 V DCSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Wavelength	660 nm
Boot andElectrical DataSupply Voltage1830 V DCCurrent Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Laser Class (EN 60825-1)	1M
Supply Voltage 1830 V DC Current Consumption (Ub = 24 V) 300 mA Measuring Rate 1756000 /s Subsampling 3506000 /s Temperature Range 045 ° C Storage temperature -2070 ° C Inputs/Outputs 4 Switching Output Voltage Drop < 1,5 V	Max. Ambient Light	5000 Lux
Current Consumption (Ub = 24 V)300 mAMeasuring Rate1756000 /sSubsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Electrical Data	
Measuring Rate 1756000 /sSubsampling 3506000 /sTemperature Range $045 ^{\circ}C$ Storage temperature $-2070 ^{\circ}C$ Inputs/Outputs 4 Switching Output Voltage Drop $< 1,5 ^{\vee}V$ Switching Output/Switching Current $100 ^{\circ}MA$ Short Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate $100/1000 ^{\circ}Mbit/s$ Protection ClassIIIFDA Accession Number 1610573.000 Mechanical DataIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Supply Voltage	1830 V DC
Subsampling3506000 /sTemperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Current Consumption (Ub = 24 V)	300 mA
Temperature Range045 °CStorage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Measuring Rate	1756000 /s
Storage temperature-2070 °CInputs/Outputs4Switching Output Voltage Drop< 1,5 V	Subsampling	3506000 /s
Inputs/Outputs4Inputs/Outputs4Switching Output Voltage Drop<1,5 V	Temperature Range	045 °C
Switching Output Voltage Drop< 1,5 VSwitching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataIP67Housing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Storage temperature	-2070 °C
Switching Output/Switching Current100 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataHousing MaterialHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Inputs/Outputs	4
Short Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataHousing MaterialHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Switching Output Voltage Drop	< 1,5 V
Reverse Polarity ProtectionyesOverload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataImage: State S	Switching Output/Switching Current	100 mA
Overload ProtectionyesInterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataHuminumHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Short Circuit Protection	yes
InterfaceEthernet TCP/IPBaud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical Data1Housing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Reverse Polarity Protection	yes
Baud Rate100/1000 Mbit/sProtection ClassIIIFDA Accession Number1610573-000Mechanical DataImage: State of the state of th	Overload Protection	yes
Protection ClassIIIFDA Accession Number1610573-000Mechanical Data1610573-000Housing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	Interface	Ethernet TCP/IP
FDA Accession Number1610573-000Mechanical DataImage: State of ProtectionHousing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coordOptic CoverGlassWeight1120 g	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-coord Optic Cover Glass Weight 1120 g	Protection Class	111
Housing MaterialAluminumDegree of ProtectionIP67ConnectionM12 × 1; 12-pinType of Connection EthernetM12 × 1; 8-pin, X-coorOptic CoverGlassWeight1120 g	FDA Accession Number	1610573-000
Degree of Protection IP67 Connection M12 × 1; 12-pin Type of Connection Ethernet M12 × 1; 8-pin, X-coc Optic Cover Glass Weight 1120 g	Mechanical Data	
Connection M12 × 1; 12-pin Type of Connection Ethernet M12 × 1; 8-pin, X-coc Optic Cover Glass Weight 1120 g	Housing Material	Aluminum
Type of Connection Ethernet M12 × 1; 8-pin, X-coc Optic Cover Glass Weight 1120 g	Degree of Protection	IP67
Optic Cover Glass Weight 1120 g	Connection	M12 × 1; 12-pin
Weight 1120 g	Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.
	Optic Cover	Glass
Web server yes	Weight	1120 g
	Web server	yes
Configurable as PNP/NPN/Push-Pull	Configurable as PNP/NPN/Push-Pull	
Switchable to NC/NO		Ŏ
Connection Diagram No. 1022 1034	Connection Diagram No.	1022 1034
Control Panel No. X2 A22	Control Panel No.	
Suitable Connection Equipment No. 50 87	Suitable Connection Equipment No.	50 87
Suitable Mounting Technology No. 343	Suitable Mounting Technology No.	343

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

Complementary Products

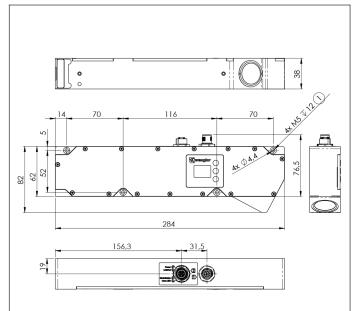
Control Unit Cooling Unit ZLWK006 Protective Screen Retainer ZLWS006 Software

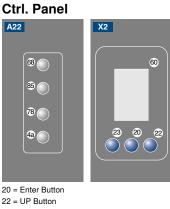
Switch EHSS001



weCat3D

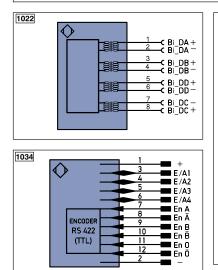






- 23 = Down Button
- 4a = User LED
- 60 = Display
- 68 = Supply Voltage Indicator 78 = Module status
- 85 = Link/Act LED

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



Legen	d		PŤ	Platinum measuring resistor
+	Supply Voltage +		nc	not connected
-	Supply Voltage 0 V		U	Test Input
~	Supply Voltage (AC Voltage)		Ū	Test Input inverted
A	Switching Output	(NO)	W	Trigger Input
Ā	Switching Output	(NC)	W -	Ground for the Trigger Input
V	Contamination/Error Output	(NO)	0	Analog Output
V	Contamination/Error Output	(NC)	0-	Ground for the Analog Output
E	Input (analog or digital)		BZ	Block Discharge
т	Teach Input		Awv	Valve Output
Z	Time Delay (activation)		а	Valve Control Output +
S	Shielding		b	Valve Control Output 0 V
RxD	Interface Receive Path		SY	Synchronization
TxD	Interface Send Path		SY-	Ground for the Synchronization
RDY	Ready		E+	Receiver-Line
GND	Ground		S+	Emitter-Line
CL	Clock		÷	Grounding
E/A	Output/Input programmable		SnR	Switching Distance Reduction
0	IO-Link		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet		Tx+/-	Ethernet Send Path
IN	Safety Input		Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output		La	Emitted Light disengageable
Signal	Signal Output		Mag	Magnet activation
BI_D+/-	Ethernet Gigabit bidirect. data	a line (A-D)	RES	Input confirmation
ENO RS422	Encoder 0-pulse 0-0 (TTL)		EDM	Contactor Monitoring

inum measuring resistor		Encoder A/Ā (TTL)
connected	ENBR5422	Encoder B/B (TTL)
Input	ENa	Encoder A
Input inverted	ENв	Encoder B
ger Input	Amin	Digital output MIN
und for the Trigger Input	Амах	Digital output MAX
log Output	Аок	Digital output OK
und for the Analog Output	SY In	Synchronization In
ck Discharge	SY OUT	Synchronization OUT
e Output	OLT	Brightness output
e Control Output +	м	Maintenance
e Control Output 0 V	rsv	reserved
chronization	Wire Co	olors according to IEC 60757
und for the Synchronization	BK	Black
eiver-Line	BN	Brown
tter-Line	RD	Red
unding	OG	Orange
tching Distance Reduction	YE	Yellow
ernet Receive Path	GN	Green
ernet Send Path	BU	Blue
rfaces-Bus A(+)/B(-)	VT	Violet
tted Light disengageable	GY	Grey
net activation	WH	White
It confirmation	PK	Pink
tactor Monitoring	GNYE	Green/Yellow
5		

Measuring field X, Z

