



Laser light sensor VLE700-F280-B12-1200

- Height profile output
- Area image output
- Resolution 1280 x 960 pixel
- Intelligent exposure time control
- Laser class 1, eyesafe

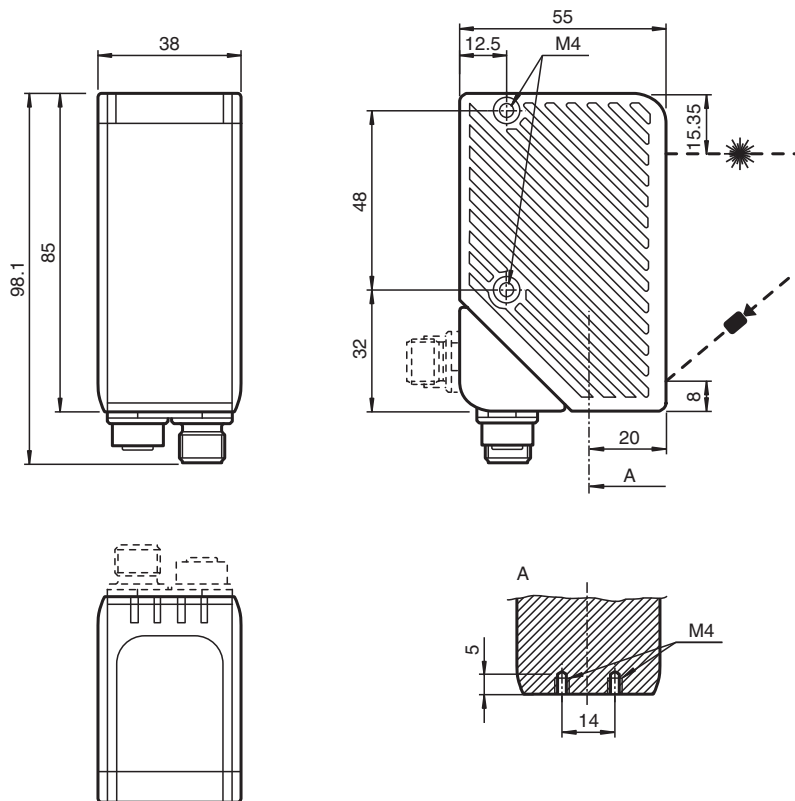
Laser light sensor for profile matching; Resolution: 1280 x 960 Pixel; Measuring range: X = 60 ... 345 mm, Z = 100 ... 700 mm; Scan rate: 30 s-1; Ethernet TCP/IP interface



Function

The SmartRunner Explorer is based on the innovative SmartRunner technology and outputs both height profiles and area images. SmartRunner technology combines the light-sectioning method for acquiring height profiles with the acquisition of area images via the integrated area illumination. In the light sectioning method, a laser line is projected onto an object. This is captured at a specific angle by a camera. A height profile is then created using the triangulation principle. This laser technology enables reliable height profile recording on different surfaces.

Dimensions



Technical Data

General specifications

Measuring range X = 60 ... 345 mm ; Z = 100 ... 700 mm

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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PF PEPPERL+FUCHS

Technical Data

Light source		laser diode
Light type		red laser + Integrated LED lightning red 650 nm
Laser nominal ratings		
Note		VISIBLE LASER RADIATION , DO NOT STARE INTO BEAM DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
Laser class		1
Wave length		Measuring laser: 660 nm
Pulse length		Measuring laser: 0.5 ms
Maximum optical power output		Measuring laser: 15 mW
Laser monitoring		The safety system switches off the laser when the laser current is too high
Scan rate		30 s ⁻¹
Resolution		X>0.1 mm; Z>0.2 mm at 100 mm distance X>0.3 mm; Z>2.0 mm at 400 mm distance X>0.5 mm; Z>5 mm at 700 mm distance
Nominal ratings		
Camera		
Number of pixels		1280 x 960 pixels
Functional safety related parameters		
MTTF _d		20 a
Mission Time (T _M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green
Diagnostics indicator		LED yellow / red
Function indicator		Trigger: LED yellow
Control elements		2 push-buttons
Electrical specifications		
Operating voltage	U _B	24 V ± 20 % , PELV
No-load supply current	I ₀	max. 250 mA
Power consumption	P ₀	max. 6 W , Outputs without load
Interface		
Interface type		Ethernet
Protocol		TCP/IP
Transfer rate		100 MBit/s
Input		
Input voltage		24 V
Number/Type		External triggering + 1 Input
Switching threshold		low: < 2.5 V, high: > 8 V
Compliance with standards and directives		
Standard conformity		
Noise immunity		EN 61000-6-2:2005
Emitted interference		EN 61000-6-4:2007/A1:2011
Degree of protection		EN 60529
Shock and impact resistance		EN 60068-2-27:2009
Laser class		IEC 60825-1:2007
Approvals and certificates		
CCC approval		CCC approval / marking not required for products rated ≤36 V
Approvals		CE
Ambient conditions		
Operating temperature		-20 ... 45 °C (-4 ... 113 °F) , (noncondensing; prevent icing on the lens!)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Degree of protection		IP67

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Technical Data

Connection	8-pin, M12 x 1 connector (supply + Inputs/Outputs) + 4-pin, M12x1 socket, D-coded (LAN) ; can be rotated 90° ;
Material	
Housing	PC/ABS
Optical face	Plastic pane
Mass	approx. 125 g
Tightening torque, fastening screws	max. 2 Nm
Dimensions	
Height	85 mm
Width	38 mm
Depth	55 mm
General information	
Note	<p>Security Instructions:</p> <ul style="list-style-type: none"> - Read the operating instructions before attempting commissioning - Installation, connection and adjustments should only be undertaken by specialist personnel - Not a safety component in accordance with the EU Machinery Directive

Connection Assignment

<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>IN Trigger</td></tr> <tr><td>2</td><td>+UB</td></tr> <tr><td>3</td><td>n.c.</td></tr> <tr><td>4</td><td>n.c.</td></tr> <tr><td>5</td><td>n.c.</td></tr> <tr><td>6</td><td>n.c.</td></tr> <tr><td>7</td><td>GND</td></tr> <tr><td>8</td><td>n.c.</td></tr> </tbody> </table>	Pin	Signal	1	IN Trigger	2	+UB	3	n.c.	4	n.c.	5	n.c.	6	n.c.	7	GND	8	n.c.	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>TX+ Ethernet</td></tr> <tr><td>2</td><td>RX+ Ethernet</td></tr> <tr><td>3</td><td>TX- Ethernet</td></tr> <tr><td>4</td><td>RX- Ethernet</td></tr> </tbody> </table>	Pin	Signal	1	TX+ Ethernet	2	RX+ Ethernet	3	TX- Ethernet	4	RX- Ethernet
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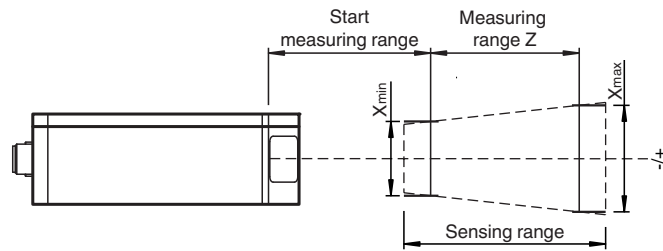
Assembly

	<table border="1"> <tbody> <tr><td>1</td><td>READY</td><td>green/red</td></tr> <tr><td>2</td><td>POWER</td><td>green</td></tr> <tr><td>3</td><td>RESULT</td><td>-</td></tr> <tr><td>4</td><td>TRIGGER</td><td>yellow</td></tr> <tr><td>5</td><td>n.c.</td><td>-</td></tr> <tr><td>6</td><td>n.c.</td><td>-</td></tr> <tr><td>7</td><td>LINK</td><td>green</td></tr> <tr><td>8</td><td>RX/TX</td><td>yellow</td></tr> </tbody> </table>	1	READY	green/red	2	POWER	green	3	RESULT	-	4	TRIGGER	yellow	5	n.c.	-	6	n.c.	-	7	LINK	green	8	RX/TX	yellow
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Installation Conditions

Measuring range



Safety Information



LASERLICHT
LASER LIGHT

LASER KLASSE 1
CLASS 1 LASER PRODUCT

Safety Information

Laser Class 1 Information

The irradiation can lead to irritation especially in a dark environment. Do not point at people!

Maintenance and repairs should only be carried out by authorized service personnel!

Attach the device so that the warning is clearly visible and readable.

The warning accompanies the device and should be attached in immediate proximity to the device.

Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.