



## 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

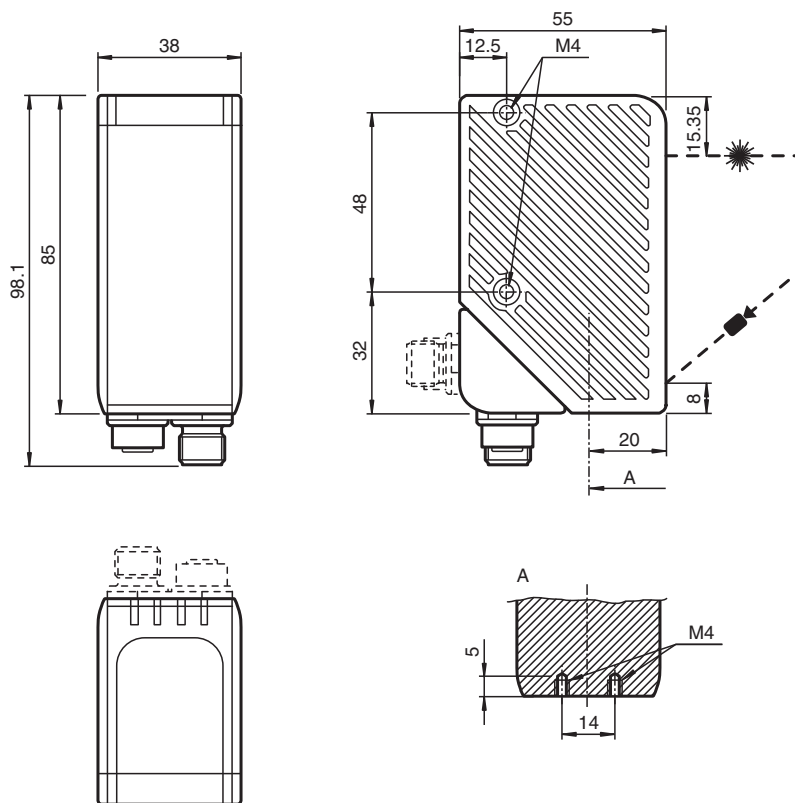
Laser light sensor for profile matching; Resolution: 1280 x 960 Pixel; Measuring range: X = 60 ... 345 mm, Z = 100 ... 700 mm; Scan rate: 30 s-1; Ethernet TCP/IP interface



### 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 section 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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## 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	
Beam divergence	± 16 °	
Pulse length	< 3 ms	
Repetition rate	< 30 Hz	
Maximum optical power output	15 mW	
max. pulse energy	< 4.5 µJ	
Laser monitoring	The safety system switches off the laser when the laser current is too high	
Scan rate	30 s <sup>-1</sup>	
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	
<b>Nominal ratings</b>		
Camera		
Number of pixels	1280 x 960 pixels	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	20 a	
Mission Time (T <sub>M</sub> )	10 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
Operation indicator	LED green	
Diagnostics indicator	LED yellow / red	
Function indicator	Trigger: LED yellow	
Control elements	2 push-buttons	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	24 V ± 20 % , PELV
No-load supply current	I <sub>0</sub>	max. 250 mA
Power consumption	P <sub>0</sub>	max. 6 W , Outputs without load
<b>Interface</b>		
Interface type	Ethernet	
Protocol	TCP/IP	
Transfer rate	100 MBit/s	
<b>Input</b>		
Input voltage	24 V	
Number/Type	External triggering	
Switching threshold	low: < 2.5 V, high: > 8 V	
<b>Compliance with standards and directives</b>		
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 60825-1:2014	
<b>Approvals and certificates</b>		
CCC approval	CCC approval / marking not required for products rated ≤36 V	
Approvals	CE	
<b>Ambient conditions</b>		
Operating temperature	-20 ... 45 °C (-4 ... 113 °F) , (noncondensing; prevent icing on the lens!)	

## Technical Data

Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
<b>Mechanical specifications</b>	
Degree of protection	IP67
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
<b>Dimensions</b>	
Height	85 mm
Width	38 mm
Depth	55 mm
<b>General information</b>	
Note	<p><b>Security Instructions:</b></p> <ul style="list-style-type: none"> <li>- Read the operating instructions before attempting commissioning</li> <li>- Installation, connection and adjustments should only be undertaken by specialist personnel</li> <li>- Not a safety component in accordance with the EU Machinery Directive</li> </ul>

## Connection Assignment

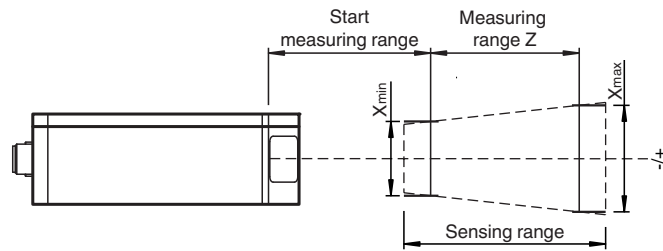
Pin	Signal	Pin	Signal
1	IN Trigger	1	TX+ Ethernet
2	+UB	2	RX+ Ethernet
3	n.c.	3	TX- Ethernet
4	n.c.	4	RX- Ethernet
5	n.c.		
6	n.c.		
7	GND		
8	n.c.		

## Assembly

	<table border="1"> <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> </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.