

# VISOR® V20 Robotic +Z Advanced, medium field of view

Vision sensor for object detection, presence check, completeness check, measurement and positioning tasks



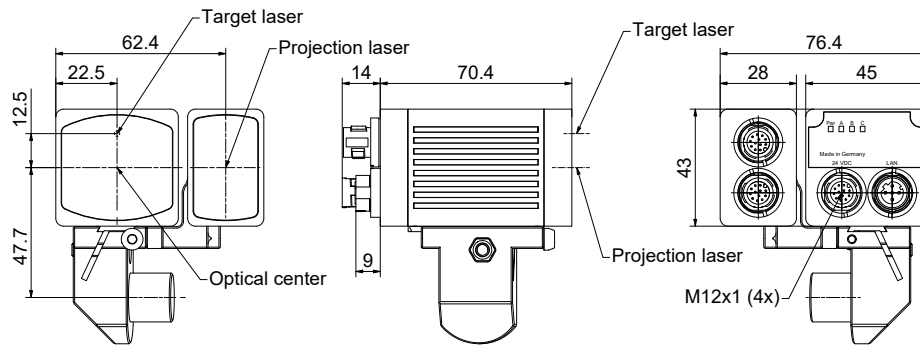
## PRODUCT HIGHLIGHTS

- Simple calibration methods for robotics applications
- Integrated distance measurement
- Result offset 3D for direct gripper point transmission to robot
- Easy adjustment of the work plane
- Target Mark technology provides 3D object poses in no time

Optical data		Functions	
Resolution	1440 x 1080 Pixel	Number of jobs/detectors	Max. 255/max. 255
Imaging chip CMOS	1/2.9", monochrome/color	Detectors	Position tracking; X/Y and orientation; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Target Mark 3D:</b> 3D pose determination; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Result processing:</b> - <b>Math:</b> checking and calculating with results from detectors <b>Detector Distance Point:</b> Determination of the distance to a measurement object
Integrated lens, focal length [mm]	12 (medium)		
Pixel size	3.45 µm x 3.45 µm		
Focus	Motorized		
Integrated illumination	Red LED (625 nm)		
Minimum field of view X x Y and operating range	Two-dimensional evaluation: Field of view size and working distance can be calculated with SensoPart's SensoCalc calculator: <a href="https://sensocalc.sensopart.com/">https://sensocalc.sensopart.com/</a> Distance measurement: 150 mm ... 2500 mm		
Light spot	Distance for 150 mm: 2 mm x 5 mm Distance for 2500 mm: 5 mm x 6 mm		
Measuring frequency Distance measurement	≤ 100 Hz		
Type of light (IEC 60825-1)	Target Laser: Red, 655 nm, class 1 Projection laser: Red 635 nm, class 2 can be switched off LED: red 630 nm (RG0, EN 62471)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	24 V DC (18 ... 30V DC) <sup>1</sup>	Dimensions	76.4 mm x 45 mm x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	< 14 s	Material, front screen	Plastic
Warm-up time	≤ 20 min	Ambient temperature: operation	0 ... +40 °C <sup>2</sup>
Temperature drift	0,01 %/K	Ambient temperature: storage	-20 ... +60 °C <sup>2</sup>
Outputs	PNP/NPN (switchable)	Weight	Approx. 490 g
Max. output current (per output)	50 mA, 100 mA (pin 12)	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V/Low < 3V	Vibration resistance	EN 60068-2-6
Input resistance	> 20 kΩ	Shock resistance	EN 60068-2-27
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port		
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

<sup>1</sup> Max. ripple < 5 V<sub>s</sub>    <sup>2</sup> 80 % air humidity, noncondensing

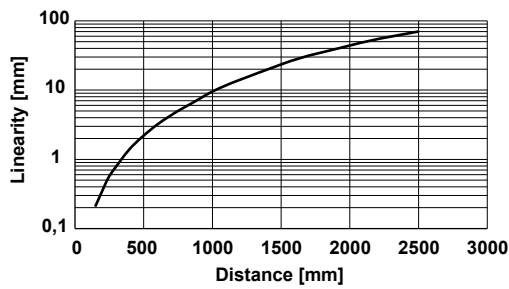
VISOR® vision sensor



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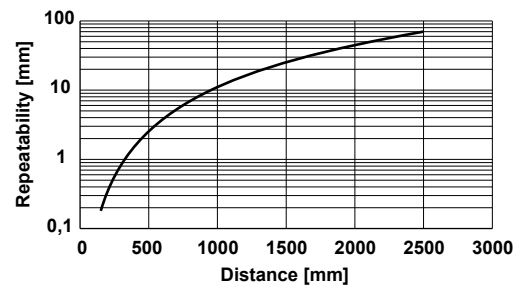
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Linearity



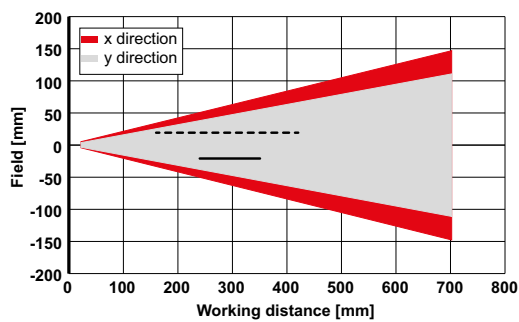
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Repeatability



155-03673

Field of view V20, medium



155-03099

- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories
Red	V20-RO-A3-R-M-M2-AL-P1-40	632-91181	<ul style="list-style-type: none"> <li>Connection cables</li> <li>Illumination</li> <li>Brackets</li> <li>Interface accessories</li> <li>Target Marks</li> </ul>
			<a href="http://www.sensopart.com/en/accessories">www.sensopart.com/en/accessories</a>