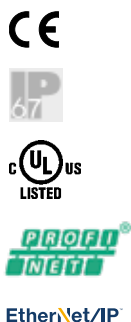# VISOR® V50 Robotic Professional, wide field of view

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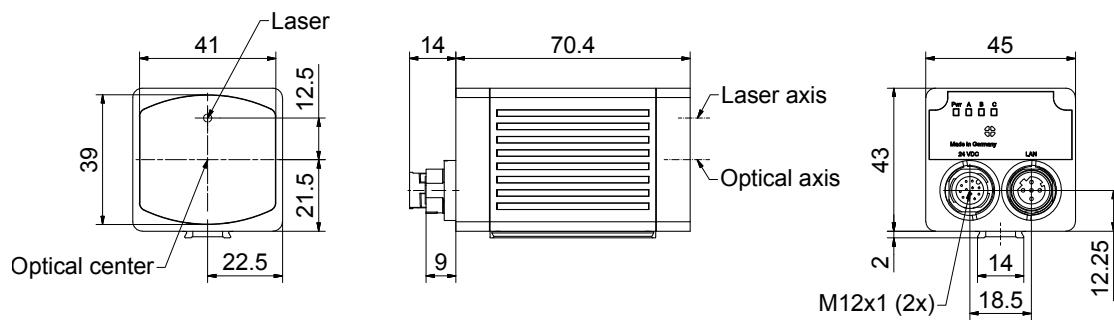

PRODUCT HIGHLIGHTS

- Calibration methods tailored to the application
- 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
- Can be used for all common 2D codes (ECC 200 data matrix) , common 1D barcodes and OCR

Optical data

Resolution	2560 × 1936 Pixel
Imaging chip CMOS	1/1.8'', monochrome / color
Integrated lens, focal length [mm]	9.6 (wide)
Pixel size	2.8 µm × 2.8 µm
Focus	Motorized
Adjustment range	40 mm to infinity
Integrated illumination	White (5000 K), red (635 nm)[1], infrared (850 nm)[1] LEDs
Minimum field of view, X × Y	32 × 24 mm
Target laser	Laser: red (635 nm) class 1 ⚠ (IEC 60825-1)

Functions

Number of jobs / detectors	Max. 255 / max. 255
Detectors	Position tracking: X/Y and orientation; **Pattern matching, contour, 3D contour:** teach-in and detection of patterns and contours; **Target Mark 3D:** 3D pose determination; **Calliper:** distance between edges; **BLOB, grey threshold, brightness:** evaluation of brightness; **Contrast:** evaluation of contrast; **Barcode:** reading 1D barcodes; EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, ECC200 GS1, pharm code, codabar; **Datacode:** reading 2D codes: ECC200 (GS1), QR code (GS1), Micro QR code, Aztec code (GS1), PDF 417; **OCR:** reading of fonts; **Result processing: Text, Math:** checking and calculating with results from detectors

Electrical data

Operating voltage, +U$_B$	18 ... 30 DC[3]
Current consumption (without I/O)	≤ 300 mA
Protective circuits	Reverse-polarity protection, U$_B$ / short-circuit protection of all outputs
Power On Delay	Approx. 13 s after Power on
Outputs	PNP/NPN (switchable)
Max. output current (per output)	50 mA, 100 mA (pin 12)
Switching threshold inputs incl. encoder	PNP / NPN High > U$_B$-1 V / Low < 3 V
Input resistance	> 20 kΩ
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs
Encoder	✓

Mechanical data

Dimensions	70.4 × 45 × 45 mm (without plug)
Enclosure rating	IP 67 & IP 65
Material, housing	Aluminium, die-cast, RoHS compliant
Material, front screen	Plastic
Ambient temperature: operation	0 … +50 °C[4]
Ambient temperature: storage	-20 … +60 °C[4]
Weight	Approx. 200 g
Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Vibration resistance	EN 60068-2-6
Shock resistance	EN 60068-2-27

[1] Not color hardware   [2] Color hardware   [3] Max. ripple < 5 V$_s$ [4] 80 % air humidity, noncondensing

VISOR® vision sensor
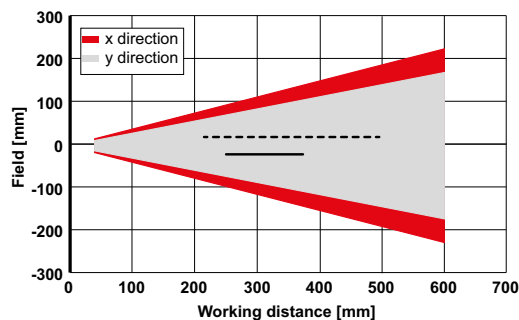
3

41 Laser
12.5
39
21.5
22.5
Optical center

14 70.4 Laser axis
Optical axis
9

45
43
2 14 12.25
M12x1 (2x) 18.5

Field of view V50, wide

Field [mm]
300
200
100
0
-100
-200
-300

x direction
y direction

0 100 200 300 400 500 600 700
Working distance [mm]

- - - - - Increased depth of field

────── Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V50-RO-P3-W-W-M2-L	635-91034	Connection cables	www.sensopart.com/en/accessories
Red	V50-RO-P3-R-W-M2-L	635-91036	Illumination	
Infrared	V50-RO-P3-I-W-M2-L	635-91038	Brackets	
White	V50C-RO-P3-W-W-M2-L	635-91041	Interface accessories	
			Target Marks	