

VISOR® Object

Detects the right part in the wrong place and vice versa.



The one with a BLOB: With the BLOB detector (Binary Large Object), the VISOR® detects even small differences between objects, counts parts or detects whether a part is face up or face down.



The same or not the same?
The VISOR® detects even the smallest of color nuances more reliably than the human eye. This allows, for example, the detection of color deviations or the sorting of parts by color.

HIGHLIGHTS OF VISOR® OBJECT

- Detectors for presence and completeness checks, position control and simple measurement tasks
- Precise position determination: x/y-position and orientation
- Easy to use calibration for measuring tasks. Conversion into mm and correction of distortion and perspective
- Improved object detection through additional color information
- Extensive logic and calculation functions allow the complete evaluation directly on the sensor
- Flexible definition of output data
- EtherNet/IP PROFINET (conformance class B), EtherNet (TCP/IP) supported
- Comprehensive possibilities for archiving images and data

Objects that sometimes appear in unexpected positions and have complex shapes and details – classic switching sensors would be completely overwhelmed by such detection tasks. Not the VISOR® Object from SensoPart: it always maintains its overview, detecting defective parts, parts in the wrong position, wrong orientation, wrong sequence or a combination of them all – in an instant. The comprehensive calibration functions range from a simple scaling factor to the correction of image and lens distortions at a mouse click. With its highly precise position and orientation detection, our VISOR® Object is one of the best in its class.

Seven detectors plus position detection

An expansive range of detectors is available for inspection tasks and evaluations: pattern matching, contour detection, calliper, BLOB, brightness, grey threshold and contrast detection. Position tracking offers reliable detection of those features that do not repeatedly appear in the original position taught. All evaluations take place relative to the current part position and orientation, without them having to be defined for every possible position of an individual feature. The color version features detectors for color detection, enabling VISOR® to also distinguish between the finest nuances in shade. This powerful tool allows you to solve even demanding applications confidently!

VISOR® Object – Product overview					
	Product variant	Resolution	Field of view	Integrated illumination	Page
V50-OB-A3-xxx	Advanced	2560 x 1936 mono/color	Wide	White, red ¹ or infrared ¹ LEDs	67
V50-OB-A3-xxx			Medium	White, red ¹ or infrared ¹ LEDs	69
V50x-OB-A3-C-2			C-mount	None	71
V20x-OB-A3-xxx	Advanced	1440 x 1080 mono/color	Wide	White, red ¹ or infrared ¹ LEDs	73
V20x-OB-A3-xxx			Medium	White, red ¹ or infrared ¹ LEDs	75
V20x-OB-A3-xxx			Narrow	White, red ¹ or infrared ¹ LEDs	77
V20x-OB-A3-C-2			C-mount	None	79
V10x-OB-S3-xxx			Wide	White, red ¹ or infrared ¹ LEDs	81
V10x-OB-S3-xxx	Standard	800 x 600 mono/color	Medium	White, red ¹ or infrared ¹ LEDs	83
V10x-OB-S3-xxx			Narrow	White, red ¹ or infrared ¹ LEDs	85
V10x-OB-A3-xxx			Wide	White, red ¹ or infrared ¹ LEDs	87
V10x-OB-A3-xxx	Advanced	800 x 600 mono/color	Medium	White, red ¹ or infrared ¹ LEDs	89
V10x-OB-A3-xxx			Narrow	White, red ¹ or infrared ¹ LEDs	91
V10x-OB-A3-C-2			C-mount	None	93

¹ Only with monochrome version

VISOR® V50 Object Advanced, wide field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

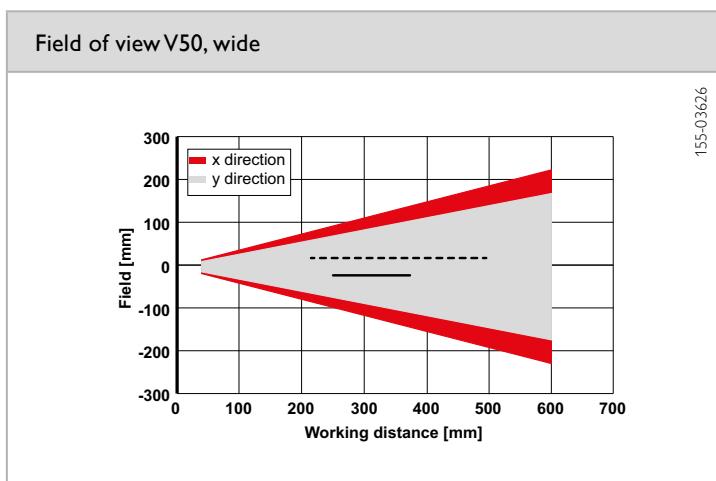
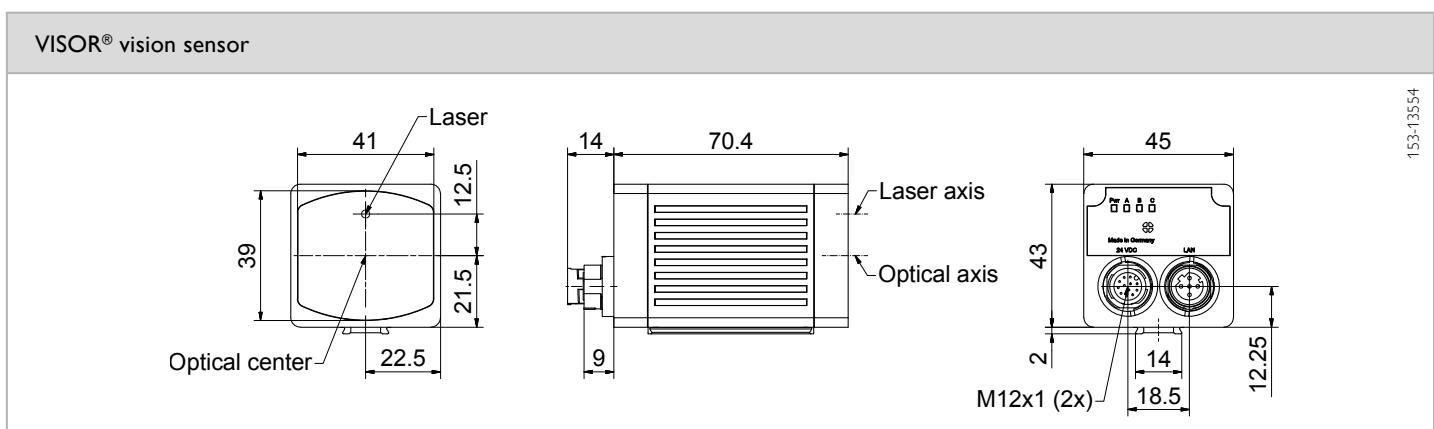
Optical data		Functions	
Resolution	2560 x 1936 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/1.8", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value²: output of color values; Color area²: area inspection of colors, with selectable tolerance; Color list²: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing

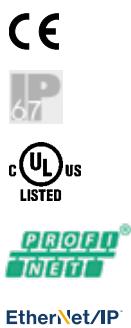


— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V50-OB-A3-W-W-M2-L	635-91010	Connection cables	www.sensopart.com/en/accessories
Red	V50-OB-A3-R-W-M2-L	635-91012	Illumination	
Infrared	V50-OB-A3-I-W-M2-L	635-91014	Brackets	
White	V50C-OB-A3-W-W-M2-L	635-91017	Interface accessories	
White	V50-OB-A3-W-WD-M2-L	635-91066		
Red	V50-OB-A3-R-WD-M2-L	635-91067		
Infrared	V50-OB-A3-I-WD-M2-L	635-91068		

VISOR® V50 Object Advanced, medium field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

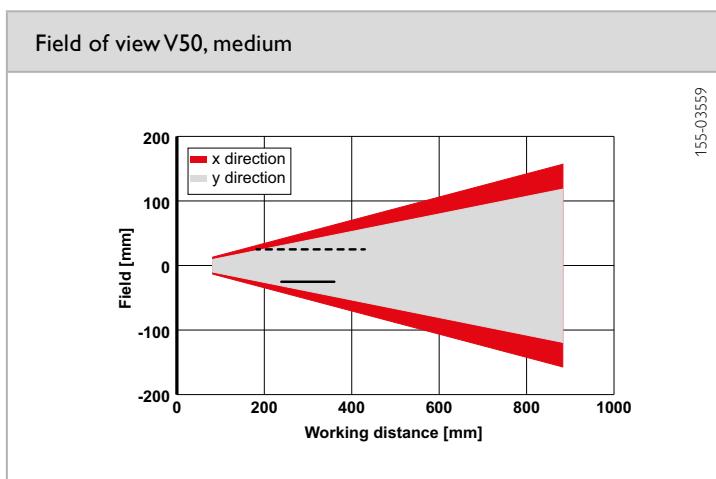
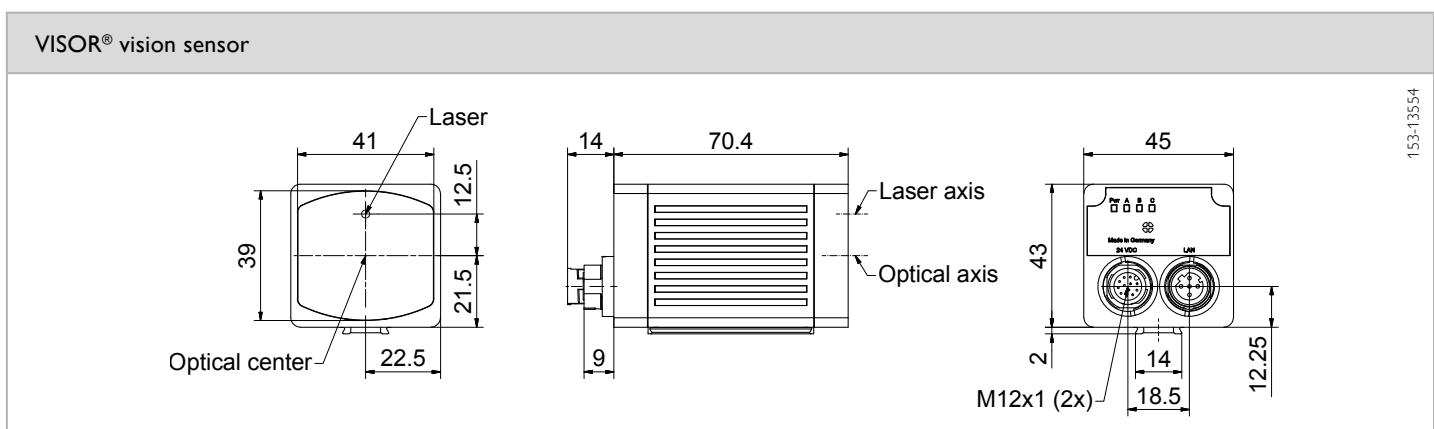
Optical data	Functions
<p>Resolution</p> <p>Imaging chip CMOS</p> <p>Integrated lens, focal length [mm]</p> <p>Pixel size</p> <p>Focus</p> <p>Adjustment range</p> <p>Integrated illumination</p> <p>Minimum field of view, X × Y</p> <p>Target laser</p>	<p>2560 × 1936 pixels 1/1.8", monochrome / color</p> <p>20 (medium)</p> <p>2.8 µm × 2.8 µm</p> <p>Motorized</p> <p>100 mm to infinity</p> <p>White (4500 K), red (625 nm)¹, infrared (850 nm)¹ LEDs</p> <p>32 × 24 mm</p> <p>Laser: red (655 nm) class 1 (IEC 60825-1)</p>
	<p>Number of jobs / detectors</p> <p>Detectors</p> <p>Max. 255 / max. 255</p> <p>Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value²: output of color values; Color area²: area inspection of colors, with selectable tolerance; Color list²: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors</p>
Electrical data	Mechanical data
<p>Operating voltage, +U_B</p> <p>Current consumption (without I/O)</p> <p>Protective circuits</p> <p>Power On Delay</p> <p>Outputs</p> <p>Max. output current (per output)</p> <p>Switching threshold inputs incl. encoder</p> <p>Input resistance</p> <p>Interfaces</p> <p>Inputs/outputs</p> <p>Encoder</p>	<p>18 ... 30 DC³</p> <p>≤ 300 mA</p> <p>Reverse-polarity protection, U_B / short-circuit protection of all outputs</p> <p>Approx. 13 s after Power on</p> <p>PNP/NPN (switchable)</p> <p>50 mA, 100 mA (pin 12)</p> <p>PNP/NPN</p> <p>High > U_B-1V / Low < 3V</p> <p>> 20 kΩ</p> <p>Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port</p> <p>2 inputs, 2 outputs, 6 selectable inputs/outputs</p> <p>✓</p>
	<p>Dimensions</p> <p>Enclosure rating</p> <p>Material, housing</p> <p>Material, front screen</p> <p>Ambient temperature: operation</p> <p>Ambient temperature: storage</p> <p>Weight</p> <p>Plug connections</p> <p>Vibration resistance</p> <p>Shock resistance</p> <p>70.4 × 45 × 45 mm (without plug)</p> <p>IP 67 & IP 65</p> <p>Aluminium, die-cast, RoHS compliant</p> <p>Plastic</p> <p>0 ... +50 °C⁴</p> <p>-20 ... +60 °C⁴</p> <p>Approx. 200 g</p> <p>Supply and I/O M12, 12-pin, Ethernet M12, 4-pin</p> <p>EN 60068-2-6</p> <p>EN 60068-2-27</p>

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



--- Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V50-OB-A3-W-M-M2-L	635-91011	Connection cables	www.sensopart.com/en/accessories
Red	V50-OB-A3-R-M-M2-L	635-91013	Illumination	
Infrared	V50-OB-A3-I-M-M2-L	635-91015	Brackets	
White	V50C-OB-A3-W-M-M2-L	635-91018	Interface accessories	
White	V50-OB-A3-W-MD-M2-L	635-91051		
Red	V50-OB-A3-R-MD-M2-L	635-91052		
Infrared	V50-OB-A3-I-MD-M2-L	635-91053		

VISOR® V50 Object Advanced, C-mount

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

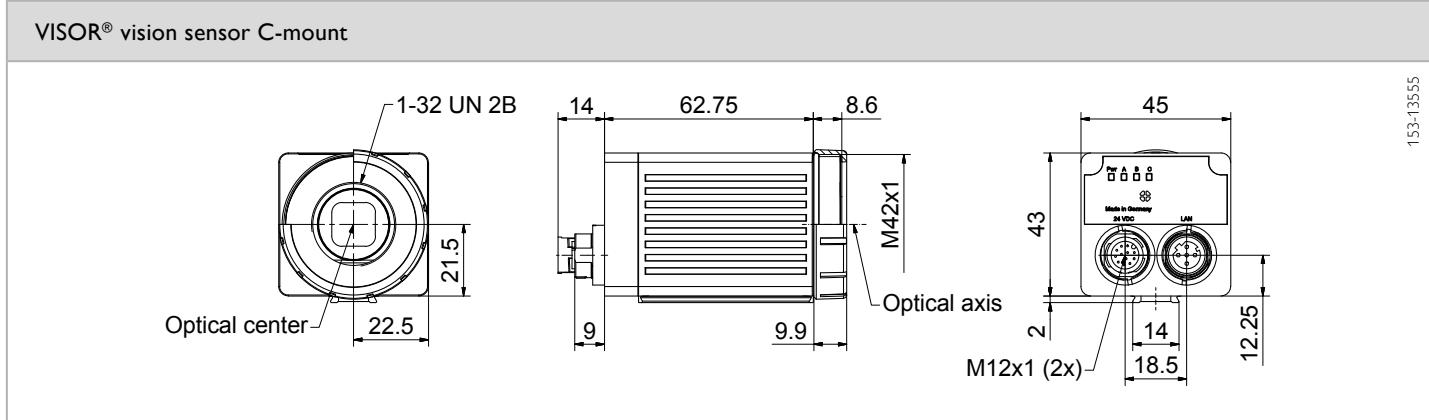
Optical data		Functions	
Resolution	2560 x 1936 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/1.8", monochrome / color	Detectors	
Integrated lens, focal length [mm]	C-mount	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value¹: output of color values; Color area¹: area inspection of colors, with selectable tolerance; Color list¹: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors	
Pixel size	2.8 µm x 2.8 µm		
Focus	Manual		
Adjustment range	Dependent on lens		
Integrated illumination	None		
Minimum field of view, X x Y	Dependent on lens		
Target laser	No		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30V DC ²	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ³
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Color hardware

² Max. ripple < 5V_{ss}

³ Only with protective casing

⁴ 80 % air humidity, noncondensing



Part number	Article number
LPTVxx-G37.5	651-01006
LPTVxx-25.0	651-01007

	LOC-08-HD-30.5x0.5	LOC-12-HD-27x0.5	LOC-16-HD-27x0.5	LOC-25-HD-27x0.5	LOC-35-HD-27x0.5	LOC-50-HD-27x0.5	LOC-75-HD-34x0.5
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories	
V50-OB-A3-C-2	635-91016	Connection cables	www.sensopart.com/en/accessories
V50C-OB-A3-C-2	635-91019	Illumination Lenses Brackets Interface accessories	

VISOR® V20 Object Advanced, wide field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 1.5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

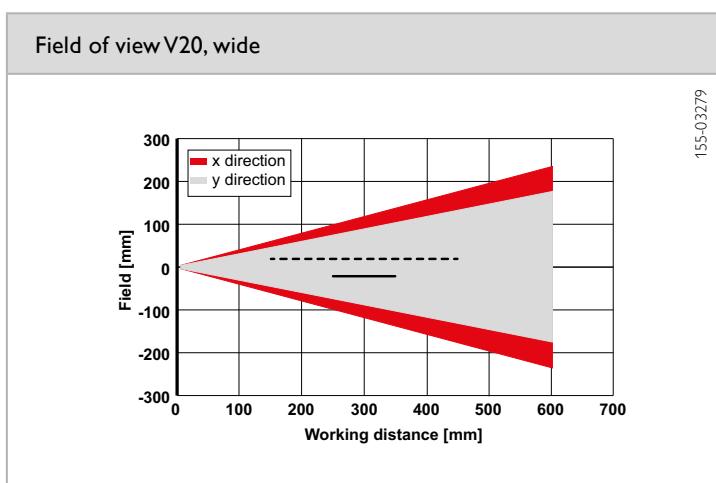
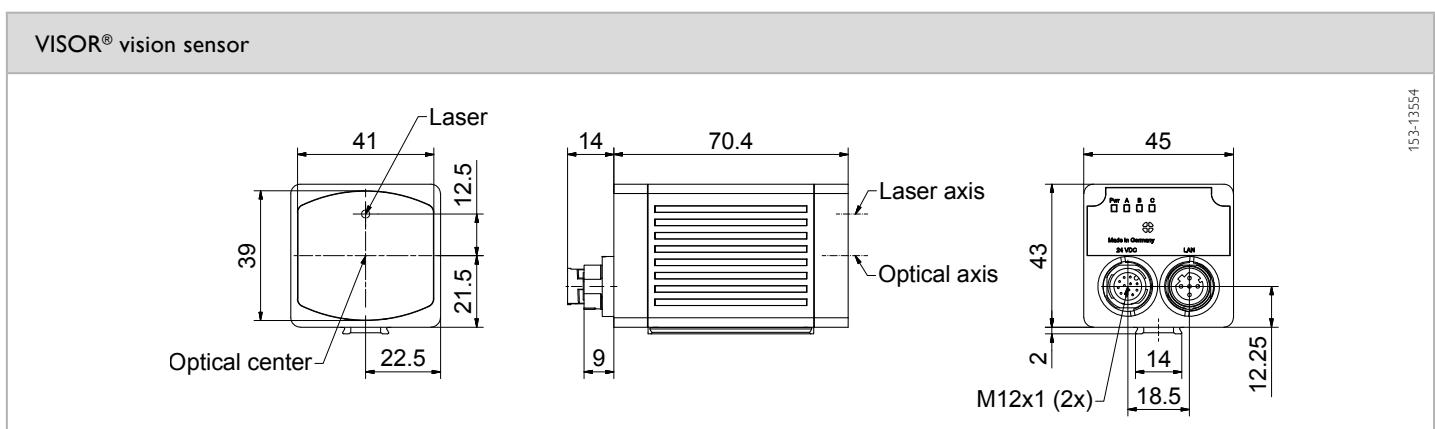
Optical data		Functions	
Resolution	1440 × 1080 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value²: output of color values; Color area²: area inspection of colors, with selectable tolerance; Color list²: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30V DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories
White	V20-OB-A3-W-W-M2-L	632-91031	Connection cables
Red	V20-OB-A3-R-W-M2-L	632-91034	Illumination
Infrared	V20-OB-A3-I-W-M2-L	632-91037	Brackets
White	V20C-OB-A3-W-W-M2-L	632-91041	Interface accessories
			www.sensopart.com/en/accessories

VISOR® V20 Object Advanced, medium field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 1.5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

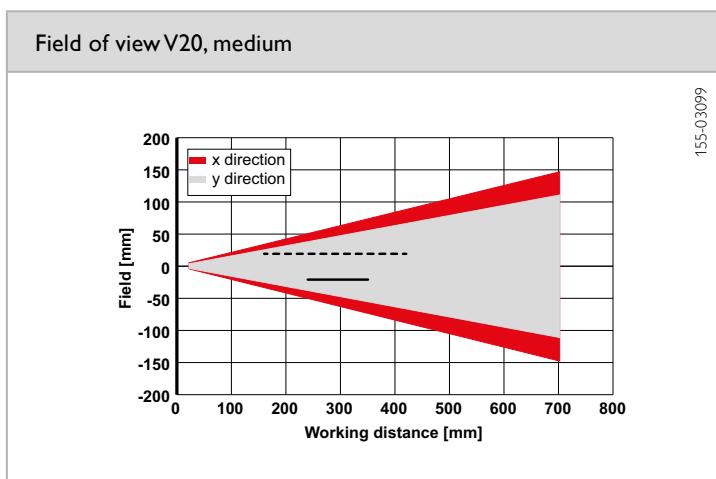
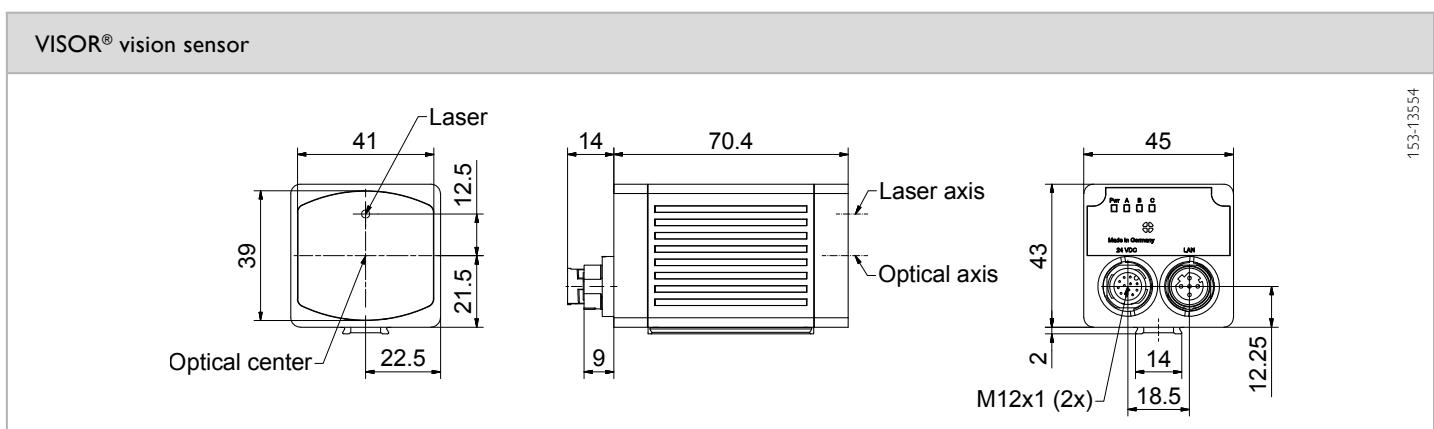
Optical data	Functions
Resolution Imaging chip CMOS Integrated lens, focal length [mm] Pixel size Focus Adjustment range Integrated illumination Minimum field of view, X x Y Target laser	1440 x 1080 pixels 1/2.9", monochrome / color 12 (medium) 3.45 µm x 3.45 µm Motorized 25 mm to infinity White (4500 K), red (625 nm) ¹ , infrared (850 nm) ¹ LEDs 10 x 8 mm Laser: red (655 nm) class 1 (IEC 60825-1)
	Number of jobs / detectors Detectors Max. 255 / max. 255 Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value²: output of color values; Color area²: area inspection of colors, with selectable tolerance; Color list²: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors
Electrical data	Mechanical data
Operating voltage, +U _B Current consumption (without I/O) Protective circuits Power On Delay Outputs Max. output current (per output) Switching threshold inputs incl. encoder Input resistance Interfaces Inputs/outputs Encoder	Dimensions Enclosure rating Material, housing Material, front screen Ambient temperature: operation Ambient temperature: storage Weight Plug connections Vibration resistance Shock resistance 70.4 x 45 x 45 mm (without plug) IP 67 & IP 65 Aluminium, die-cast, RoHS compliant Plastic 0 ... +50 °C ⁴ -20 ... +60 °C ⁴ Approx. 200 g Supply and I/O M12, 12-pin, Ethernet M12, 4-pin EN 60068-2-6 EN 60068-2-27

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories
White	V20-OB-A3-W-M-M2-L	632-91032	Connection cables
Red	V20-OB-A3-R-M-M2-L	632-91035	Illumination
Infrared	V20-OB-A3-I-M-M2-L	632-91038	Brackets
White	V20C-OB-A3-W-M-M2-L	632-91042	Interface accessories
			www.sensopart.com/en/accessories

VISOR® V20 Object Advanced, narrow field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 1.5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

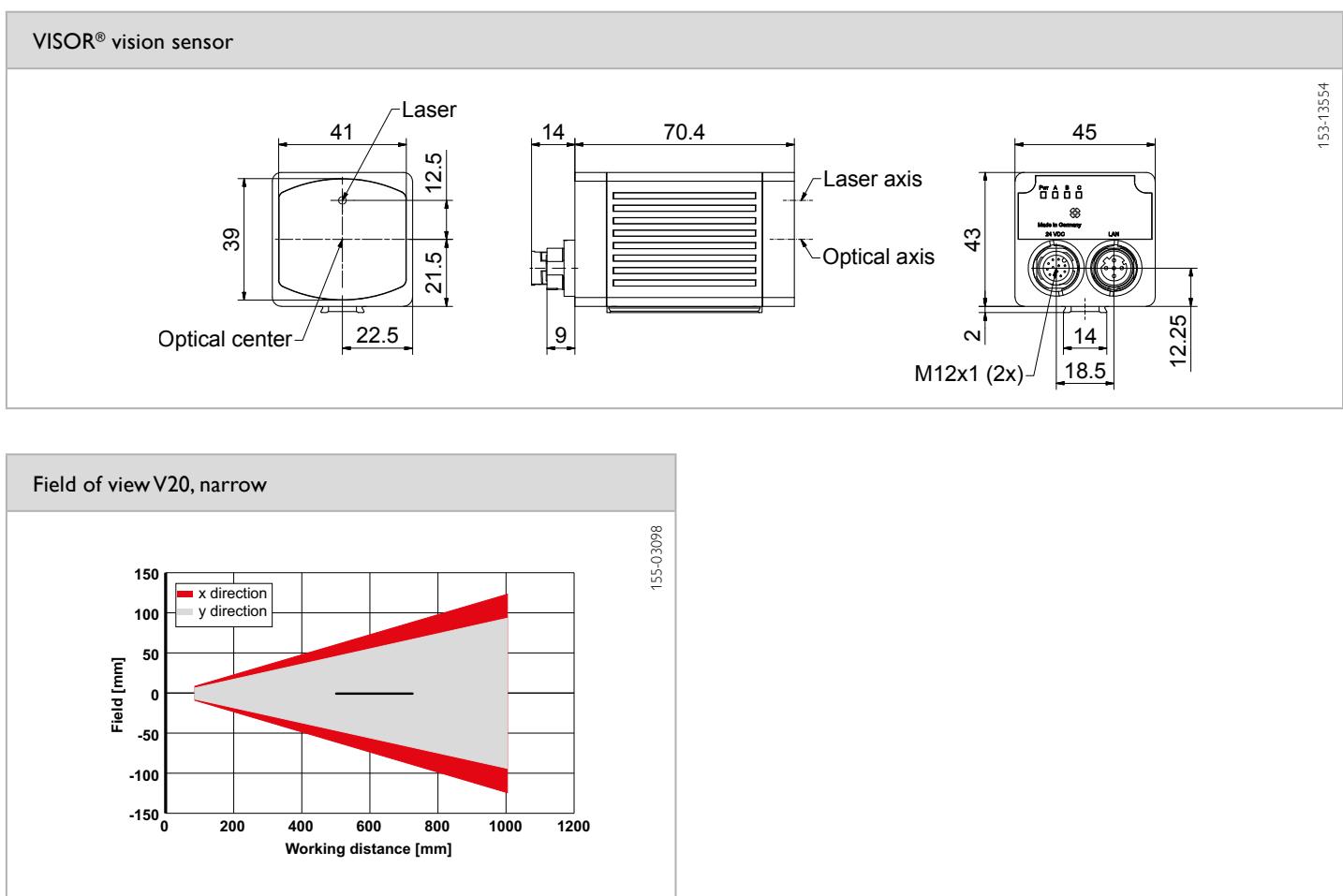
Optical data		Functions	
Resolution	1440 × 1080 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value²: output of color values; Color area²: area inspection of colors, with selectable tolerance; Color list²: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



Illumination	Part number	Article number	Accessories
White	V20-OB-A3-W-N-M2-L	632-91033	www.sensopart.com/en/accessories
Red	V20-OB-A3-R-N-M2-L	632-91036	
Infrared	V20-OB-A3-I-N-M2-L	632-91039	
White	V20C-OB-A3-W-N-M2-L	632-91043	

VISOR® V20 Object Advanced, C-mount

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Object detection with 1.5 megapixel chip
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

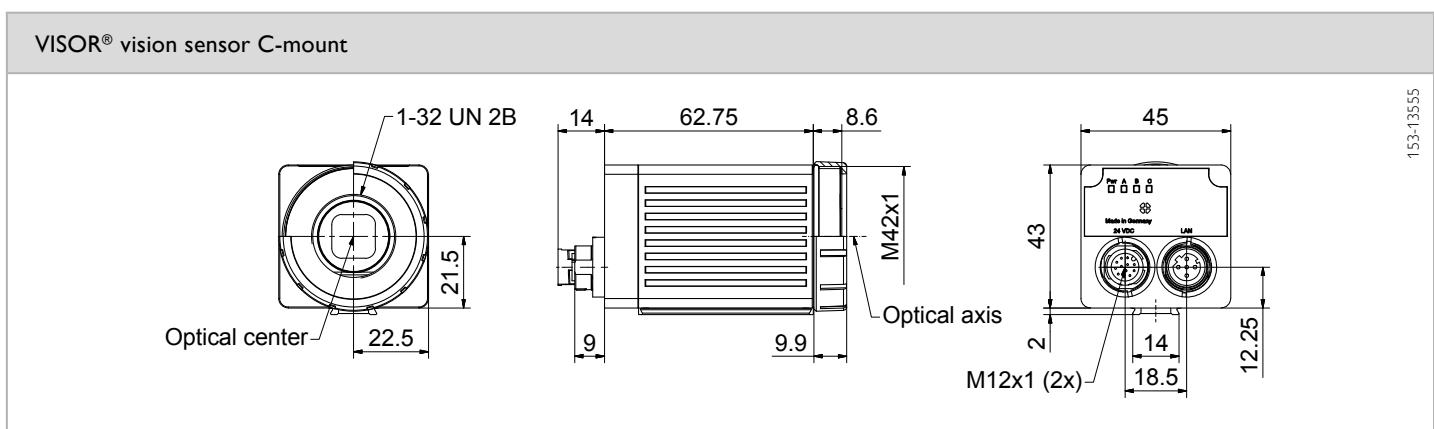
Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color value¹: output of color values; Color area¹: area inspection of colors, with selectable tolerance; Color list¹: finding the most similar colors; Result processing: Math: checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30V DC ²	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ³
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Color hardware

² Max. ripple < 5V_{ss}

³ Only with protective casing

⁴ 80 % air humidity, noncondensing



Part number	Article number
LPTVxx-G37.5	651-01006
LPTVxx-25.0	651-01007

	LOC-08-HD- 30.5x0.5	LOC-12-HD- 27x0.5	LOC-16-HD- 27x0.5	LOC-25-HD- 27x0.5	LOC-35-HD- 27x0.5	LOC-50-HD- 27x0.5	LOC-75-HD- 34x0.5
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories	
V20-OB-A3-C-2	632-91040	Connection cables	www.sensopart.com/en/accessories
V20C-OB-A3-C-2	632-91044	Illumination Lenses Brackets Interface accessories	

VISOR® V10 Object Standard, wide field of view

Vision sensor for object detection, simple presence and completeness checks



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Efficient part detection and tracking
- Precise position determination: X/Y-position and orientation
- Comprehensive logic functions for digital switching outputs

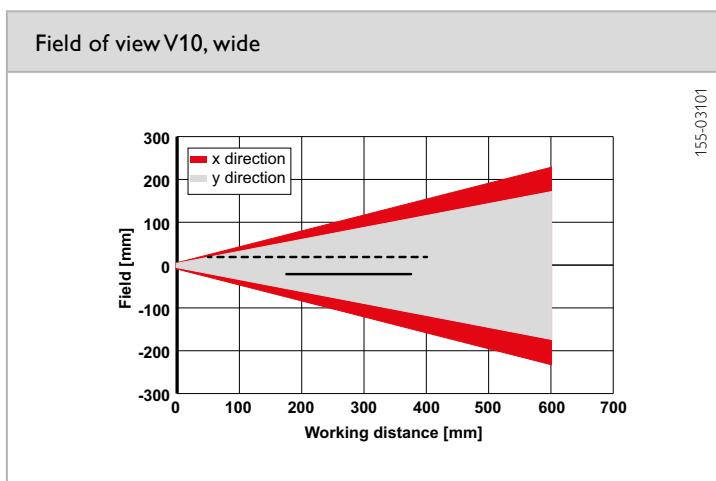
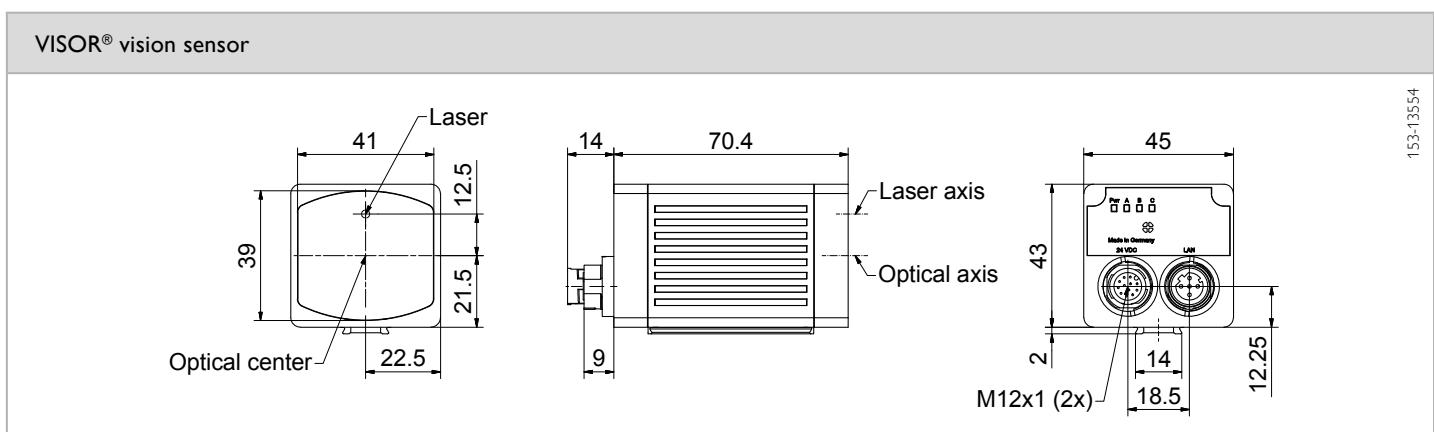
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	32 / 32
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; Grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color area²: area inspection of colors, with selectable tolerance
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 4 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	No	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories
White	V10-OB-S3-W-W-M2	631-91043	Connection cables
Red	V10-OB-S3-R-W-M2	631-91045	Illumination
Infrared	V10-OB-S3-I-W-M2	631-91047	Brackets
White	V10C-OB-S3-W-W-M2	631-91049	Interface accessories

VISOR® V10 Object Standard, medium field of view

Vision sensor for object detection, simple presence and completeness checks



EtherNet/IP

PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Efficient part detection and tracking
- Precise position determination: X/Y-position and orientation
- Comprehensive logic functions for digital switching outputs

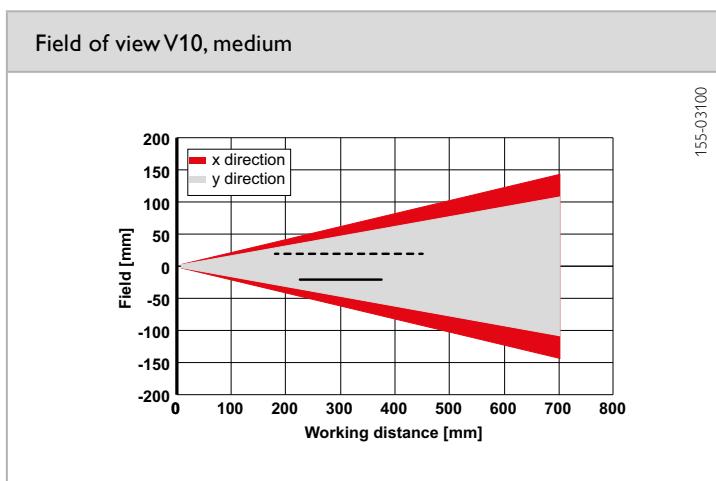
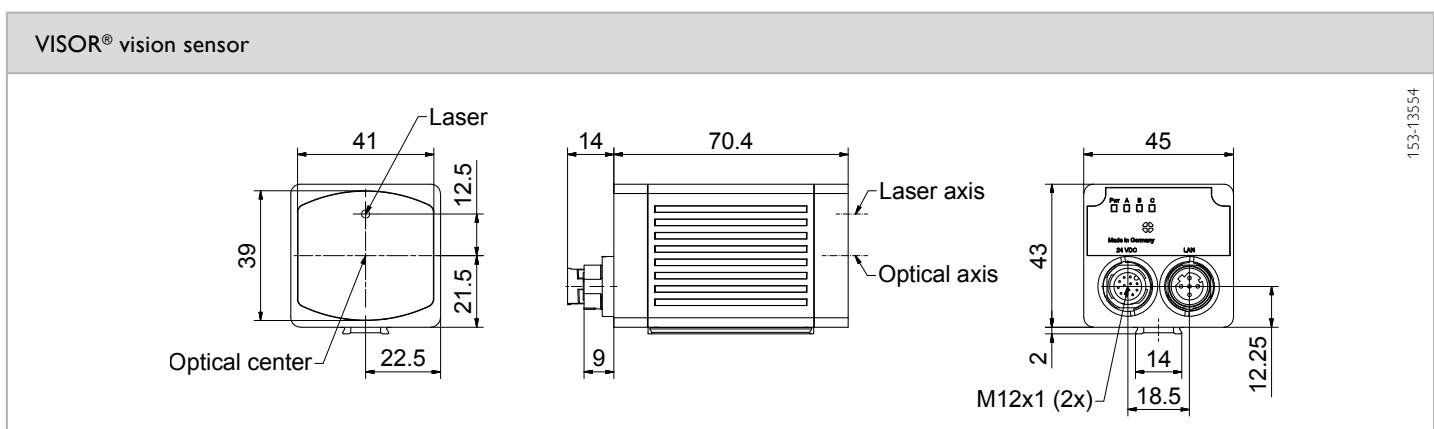
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	32 / 32
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour: teach-in and detection of patterns and contours; Calliper: distance between edges; Grey threshold, brightness: evaluation of brightness; Contrast: evaluation of contrast; Color area²: area inspection of colors, with selectable tolerance
Integrated lens, focal length [mm]	9.6 (medium)		
Pixel size	4.8 µm × 4.8 µm		
Focus	Motorized		
Adjustment range	12 mm to infinity		
Integrated illumination	White (4500 K), red (625 nm) ¹ , infrared (850 nm) ¹ LEDs		
Minimum field of view, X × Y	7 × 3 mm		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 4 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	No	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{SS}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories
White	V10-OB-S3-W-M-M2	631-91044	Connection cables
Red	V10-OB-S3-R-M-M2	631-91046	Illumination
Infrared	V10-OB-S3-I-M-M2	631-91048	Brackets
White	V10C-OB-S3-W-M-M2	631-91050	Interface accessories

VISOR® V10 Object Standard, narrow field of view

Vision sensor for object detection, simple presence and completeness checks



EtherNet/IP

PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Efficient part detection and tracking
- Precise position determination: X/Y-position and orientation
- Comprehensive logic functions for digital switching outputs

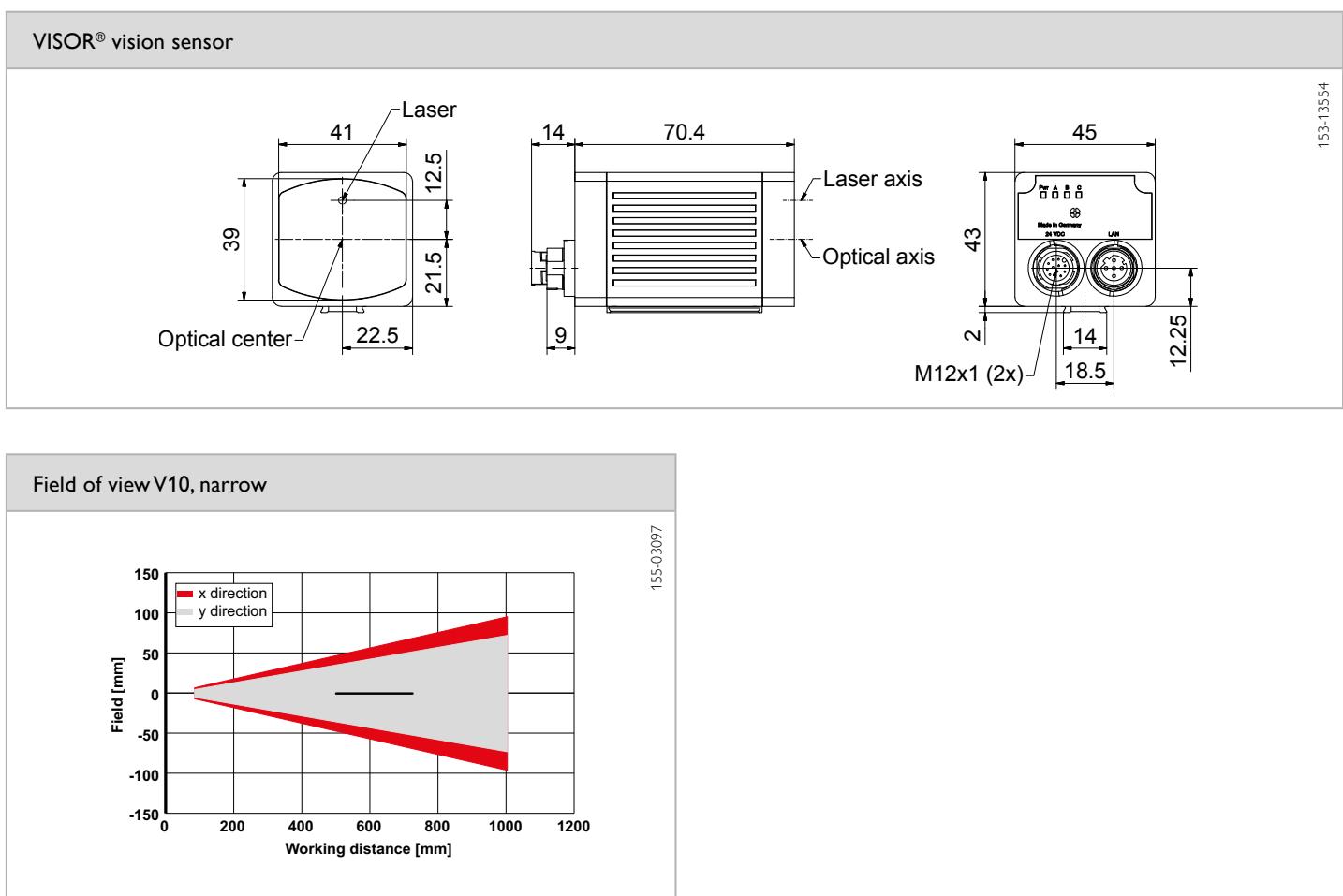
Optical data	Functions
Resolution	800 × 600 pixels
Imaging chip CMOS	1/3.6", monochrome / color
Integrated lens, focal length [mm]	20 (narrow)
Pixel size	4.8 µm × 4.8 µm
Focus	Motorized
Adjustment range	100 mm to infinity
Integrated illumination	White (4500 K), red (625 nm) ¹ , infrared (850 nm) ¹ LEDs
Minimum field of view, X × Y	14 × 10 mm
Electrical data	Mechanical 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 -1V / Low < 3V > 20 kΩ
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb
Interfaces	2 inputs, 2 outputs, 4 selectable inputs/outputs
Inputs/outputs	No
Encoder	

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{SS}

⁴ 80 % air humidity, noncondensing



Illumination	Part number	Article number	Accessories
White	V10-OB-S3-W-N-M2	631-91116	Connection cables Illumination Brackets Interface accessories
Red	V10-OB-S3-R-N-M2	631-91115	
Infrared	V10-OB-S3-I-N-M2	631-91114	
White	V10C-OB-S3-W-N-M2	631-91113	

VISOR® V10 Object Advanced, wide field of view

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



EtherNet/IP

PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

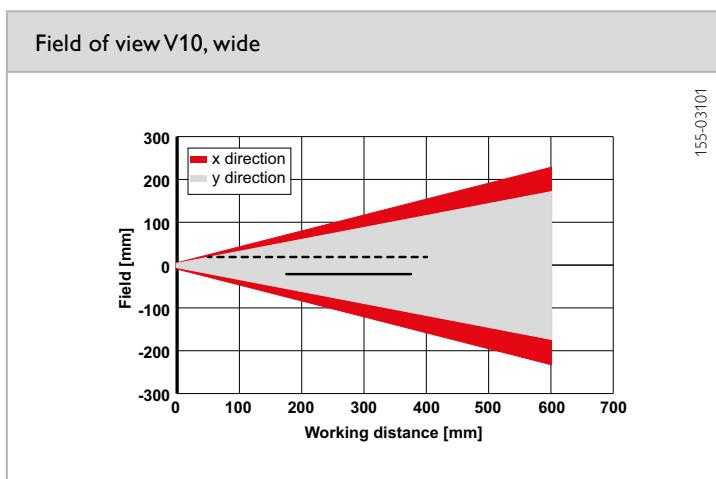
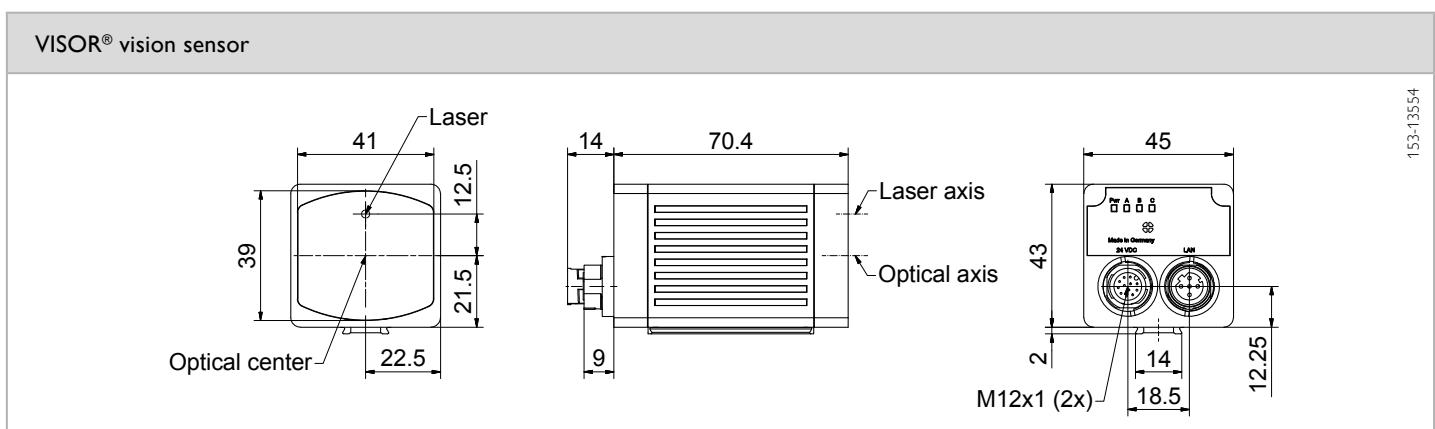
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour : teach-in and detection of patterns and contours; Calliper : distance between edges; BLOB, grey threshold, brightness : evaluation of brightness; Contrast : evaluation of contrast; Color value² : output of color values; Color area² : area inspection of colors, with selectable tolerance; Color list² : finding the most similar colors; Result processing: Math : checking and calculating with results from detectors
Integrated lens, focal length [mm]	5.2 (wide)		
Pixel size	4.8 µm × 4.8 µm		
Focus	Motorized		
Adjustment range	0 mm to infinity		
Integrated illumination	White (4500 K), red (625 nm) ¹ , infrared (850 nm) ¹ LEDs		
Minimum field of view, X × Y	2 × 1 mm		
Target laser	Laser: red (655 nm) class 1		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs	PNP/NPN	Weight	Approx. 200 g
incl. encoder	High > U _B -1V / Low < 3V	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Input resistance	> 20 kΩ	Vibration resistance	EN 60068-2-6
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-OB-A3-W-W-M2-L	631-91014	Connection cables	www.sensopart.com/en/accessories
White	V10-OB-A3-W-WD-M2-L	631-91017	Illumination	
Red	V10-OB-A3-R-WW-M2-L	631-91019	Brackets	
Red	V10-OB-A3-R-WWD-M2-L	631-91022	Interface accessories	
Infrared	V10-OB-A3-I-W-M2-L	631-91024		
Infrared	V10-OB-A3-I-WD-M2-L	631-91027		
White	V10C-OB-A3-W-W-M2-L	631-91013		

VISOR® V10 Object Advanced, medium field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

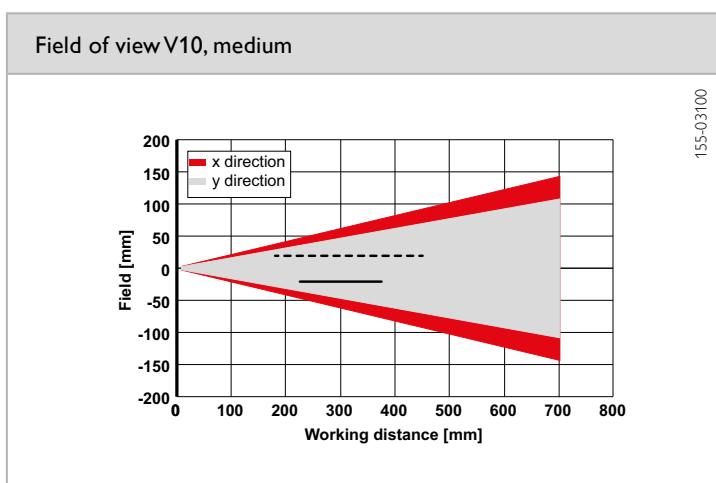
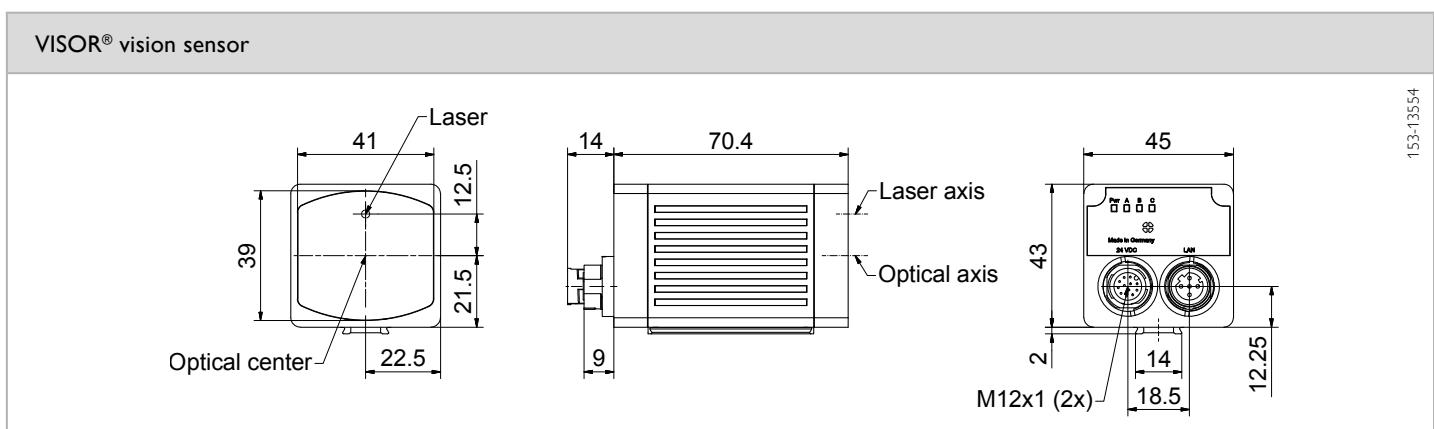
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour : teach-in and detection of patterns and contours; Calliper : distance between edges; BLOB, grey threshold, brightness : evaluation of brightness; Contrast : evaluation of contrast; Color value² : output of color values; Color area² : area inspection of colors, with selectable tolerance; Color list² : finding the most similar colors; Result processing: Math : checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Increased depth of field
 — Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-OB-A3-W-M-M2-L	631-91015	Connection cables	www.sensopart.com/en/accessories
White	V10-OB-A3-W-MD-M2-L	631-91018	Illumination	
Red	V10-OB-A3-R-M-M2-L	631-91020	Brackets	
Red	V10-OB-A3-R-MD-M2-L	631-91023	Interface accessories	
Infrared	V10-OB-A3-I-M-M2-L	631-91025		
Infrared	V10-OB-A3-I-MD-M2-L	631-91012		
White	V10C-OB-A3-W-M-M2-L	631-91011		

VISOR® V10 Object Advanced, narrow field of view

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

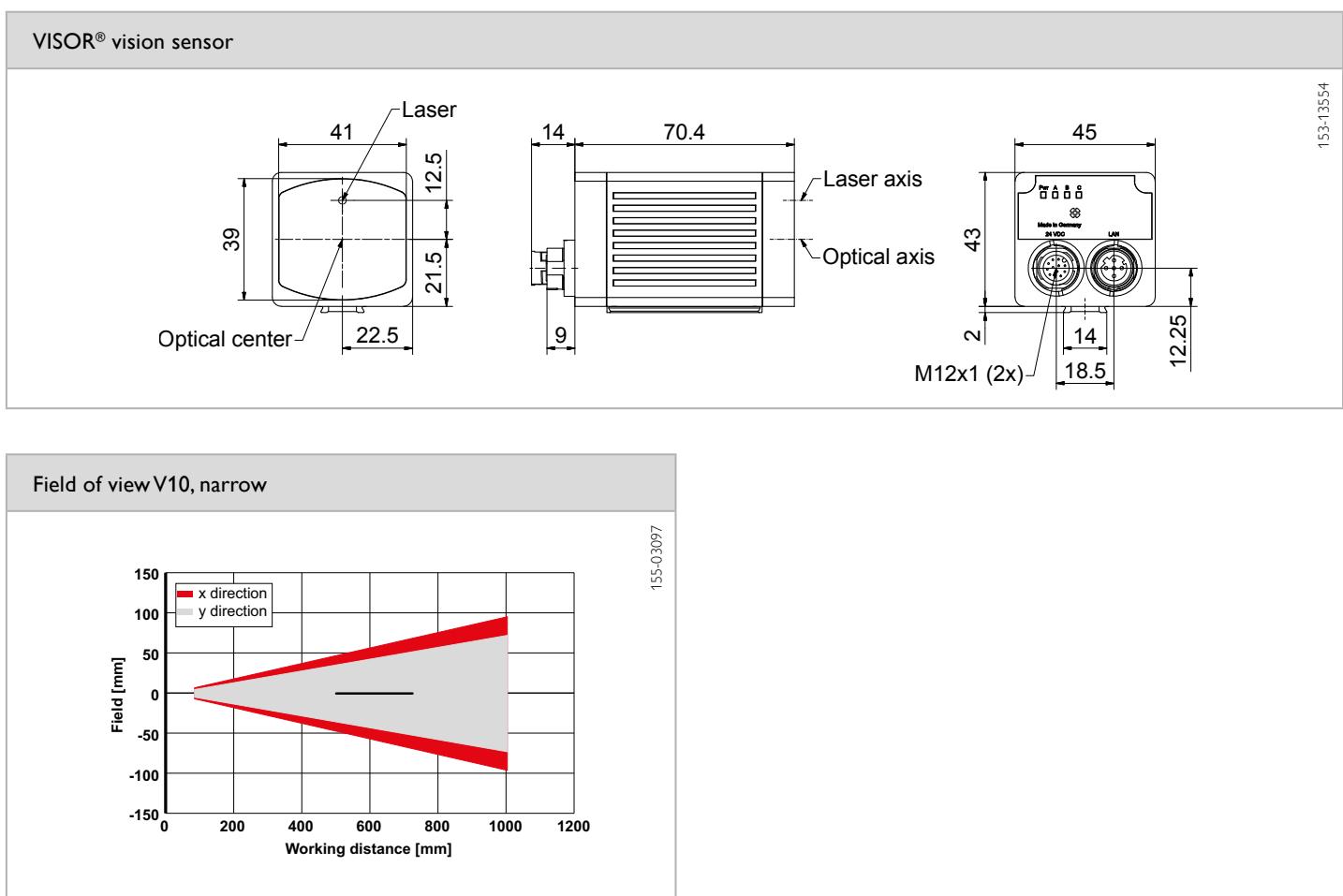
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour : teach-in and detection of patterns and contours; Calliper : distance between edges; BLOB, grey threshold, brightness : evaluation of brightness; Contrast : evaluation of contrast; Color value : output of color values; Color area ² : area inspection of colors, with selectable tolerance; Color list ² : finding the most similar colors; Result processing: Math : checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ³	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Not color hardware

² Color hardware

³ Max. ripple < 5 V_{ss}

⁴ 80 % air humidity, noncondensing



— Normal depth of field

Illumination	Part number	Article number	Accessories
White	V10-OB-A3-W-N-M2-L	631-91016	Connection cables
Red	V10-OB-A3-R-N-M2-L	631-91021	Illumination
Infrared	V10-OB-A3-I-N-M2-L	631-91026	Brackets
White	V10C-OB-A3-W-N-M2-L	631-91002	Interface accessories
			www.sensopart.com/en/accessories

VISOR® V10 Object Advanced, C-mount

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



PRODUCT HIGHLIGHTS

- User-friendly configuration and viewer software with hierarchical user rights
- Detectors for object detection
- Real-world engineering units at a mouse click
- Precise position determination: X/Y-position and orientation
- Comprehensive logic and calculation functions for maximum flexibility
- Encoder input

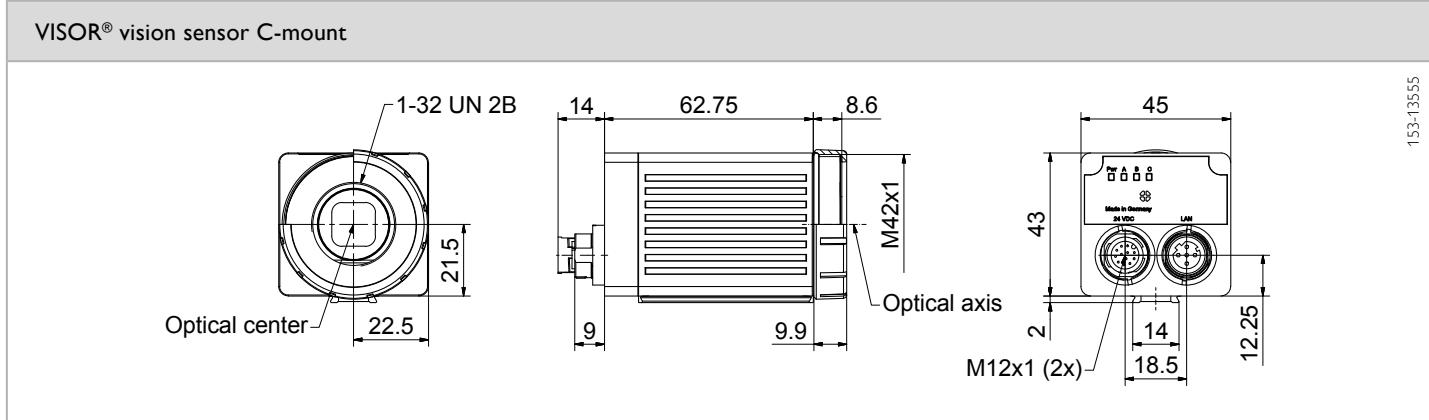
Optical data		Functions	
Resolution	800 × 600 pixels	Number of jobs / detectors	Max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking: X/Y and orientation; Pattern matching, contour : teach-in and detection of patterns and contours; Calliper : distance between edges; BLOB, grey threshold, brightness : evaluation of brightness; Contrast : evaluation of contrast; Color value¹ : output of color values; Color area¹ : area inspection of colors, with selectable tolerance; Color list¹ : finding the most similar colors; Result processing: Math : checking and calculating with results from detectors
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ²	Dimensions	70.4 × 45 × 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ³
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ⁴
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V > 20 kΩ	Weight	Approx. 200 g
Input resistance	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Plug connections	Supply and I/O M12, 12-pin, Ethernet M12, 4-pin
Interfaces	2 inputs, 2 outputs, 6 selectable inputs/outputs	Vibration resistance	EN 60068-2-6
Inputs/outputs	✓	Shock resistance	EN 60068-2-27
Encoder			

¹ Color hardware

² Max. ripple < 5V_{ss}

³ Only with protective casing

⁴ 80 % air humidity, noncondensing



Part number	Article number
LPTVxx-G37.5	651-01006
LPTVxx-25.0	651-01007

	LOC-08-HD-30.5x0.5	LOC-12-HD-27x0.5	LOC-16-HD-27x0.5	LOC-25-HD-27x0.5	LOC-35-HD-27x0.5	LOC-50-HD-27x0.5	LOC-75-HD-34x0.5
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories	
V10-OB-A3-C-2	631-91001	Connection cables	www.sensopart.com/en/accessories
V10C-OB-A3-C-2	631-91042	Illumination Lenses Brackets Interface accessories	