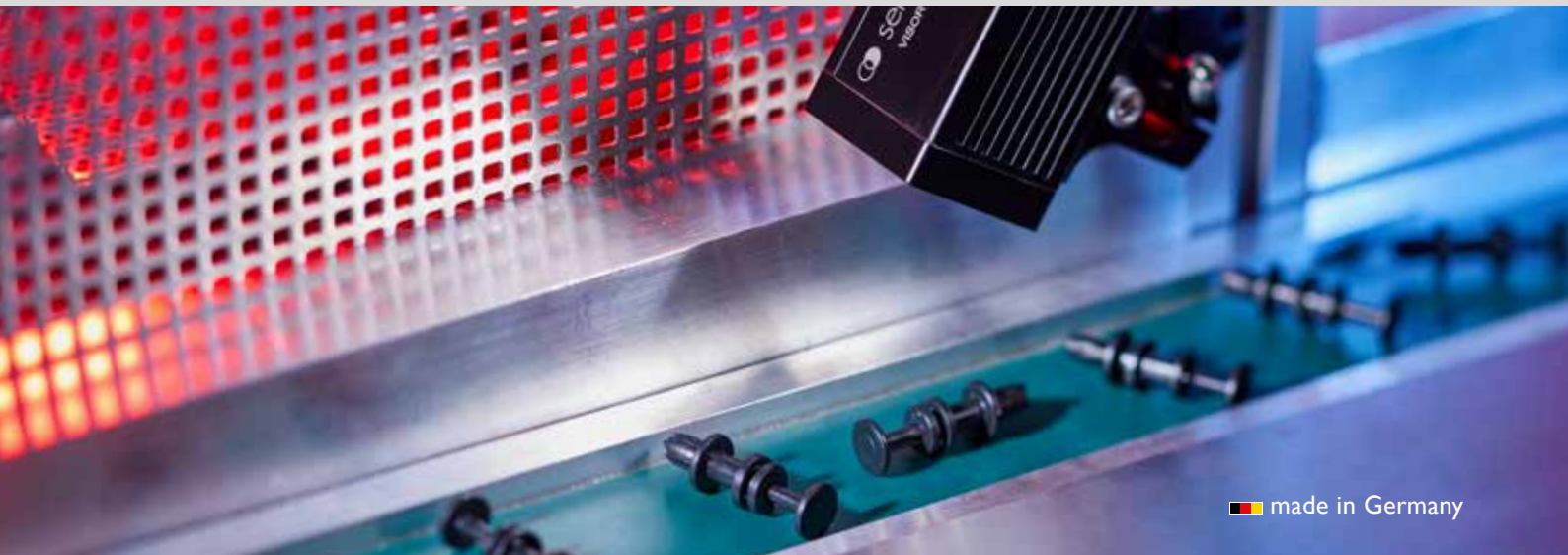
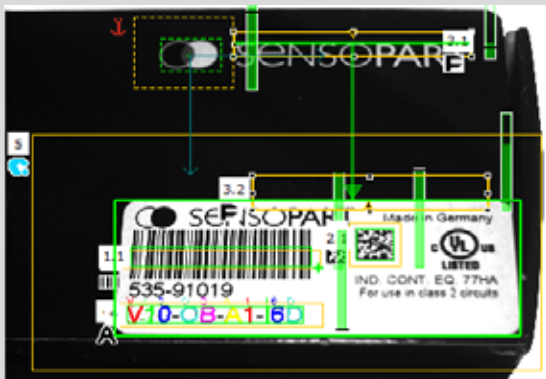


# VISOR® Allround

Advanced allround vision sensor for complex inspection tasks.



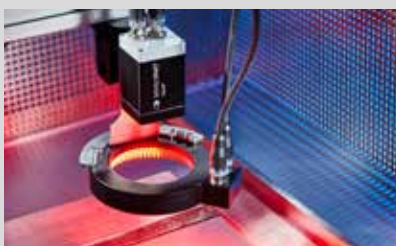
made in Germany



**VISOR® Allround – Object detection in color plus identification united in one device.**  
The VISOR® Allround is the latest member in the VISOR family and a real multi-talent among vision sensors. In the new allround version, the device unites the functions of the object sensor (i.e. calibration, pattern matching, contour, calliper, BLOB) with the powerful tools of the code reader (bar code, datamatrix and optical character recognition).

## HIGHLIGHTS OF VISOR® ALLROUND

- All evaluations ("Detectors") of VISOR® Object and VISOR® Code Reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Powerful color detection of version with color chip
- EtherNet/IP PROFINET (conformance class B), EtherNet (TCP/IP) supported
- Multishot function reveals minimal height differences and suppresses printed markings
- Calibration function for measurement tasks and robotics applications



**The one with a BLOB:**  
With the new 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.

**VISOR® Allround – Object detection in color plus identification united in one device.**

The VISOR® Allround is the latest member in the VISOR® family and a real multi-talent among vision sensors. In the new allround version, the device unites the functions of the object sensor (i.a. calibration, pattern matching, contour, calliper, BLOB) with the powerful tools of the code reader (bar code, datamatrix and optical character recognition). When feeding parts in correct alignment or positioning components, additional data matrix codes for example can now also be read. With a resolution of up to 5 megapixel even the smallest details are reliably detected and evaluated.

In addition to the monochrome version, the VISOR® Allround is also available as a color version with up to 5 megapixel. Thus additional “Detectors” are available for color evaluation. Even the subtlest nuances in shade can be reliably detected. The relevant object colors, for example, can be taught-in quite simply by push of a button or - thanks to the intuitive color histogram - set graphically for each channel in the color space. The authorised color tolerances can be defined by the user.

VISOR® Allround – Product Overview					
	Product variant	Resolution	Focal Length	Integrated illumination	Page
V50x-ALL-P3-C-2	Professional	2560 x 1936 mono/color	C-Mount	None	74
V20x-ALL-A3-xxx	Advanced	1440 x 1080 mono/color	Wide	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	76
V20x-ALL-A3-xxx			Medium	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	78
V20x-ALL-A3-xxx			Narrow	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	80
V20x-ALL-A3-C-2			C-Mount	None	82
V20x-ALL-P3-xxx	Professional	1440 x 1080 mono/color	Wide	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	84
V20x-ALL-P3-xxx			Medium	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	86
V20x-ALL-P3-xxx			Narrow	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	88
V20x-ALL-P3-C-2			C-Mount	None	90
V10x-ALL-A3-xxx	Advanced	800 x 600 mono/color	Wide	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	92
V10x-ALL-A3-xxx			Medium	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	94
V10x-ALL-A3-xxx			Narrow	White, red <sup>1</sup> or infrared <sup>1</sup> LEDs	96
V10x-ALL-A3-C-2			C-Mount	None	98

<sup>1</sup> only with monochrome version

# VISOR® V50 Allround Professional, C-Mount

Combines VISOR® Object Color, Code Reader and Robotic



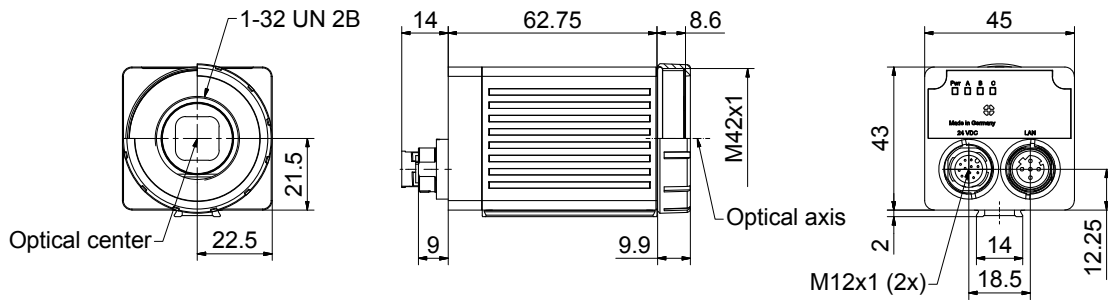
## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Detection of differences in height in the pseudo height image with multishot technology
- User-friendly configuration and viewer software with graded user rights and online help

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; <b>Pattern matching, contour, 3D contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>1</sup> : output of color values; <b>Color area</b> <sup>1</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>1</sup> : finding the most similar colors; <b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors
Integrated lens, focal length [mm]	C-Mount		
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 <sub>B</sub>	18 ... 30V DC <sup>2</sup>	Dimensions	70,4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 <sup>3</sup>
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	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibrationsfestigkeit	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Schockfestigkeit	EN 60068-2-27
Encoder	✓		

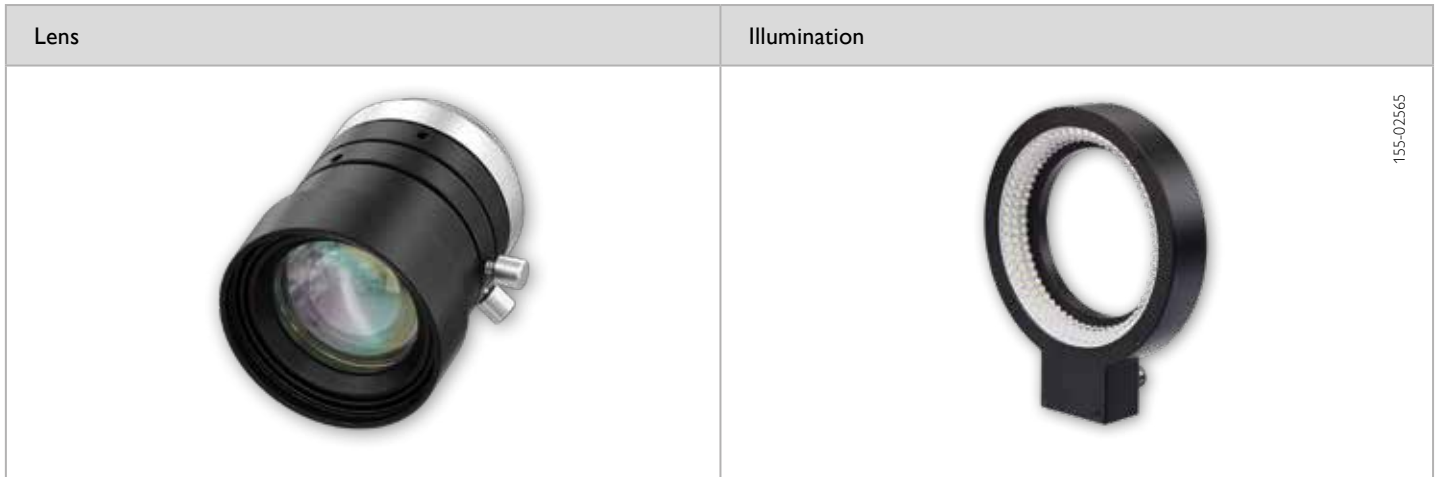
<sup>1</sup> Color hardware    <sup>2</sup> max. ripple < 5V<sub>SS</sub>    <sup>3</sup> only with protective casing    <sup>4</sup> 80 % air humidity, noncondensing

VISOR® vision sensor C-Mount



153-13555

3



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
-	LM 100 W DF	532-51098

	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
<b>Focal length</b>	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
<b>Article number</b>	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories	
V50-ALL-P3-C-2	635-91006	Connection cables	From Page A-38
V50C-ALL-P3-C-2	635-91009	Illumination	From Page A-27
		Lenses	From Page A-25
		Brackets	From Page A-4
		Interface accessories	From Page A-38


# VISOR® V20 Allround Advanced, wide field of view

Combines VISOR® Object Color, Code Reader

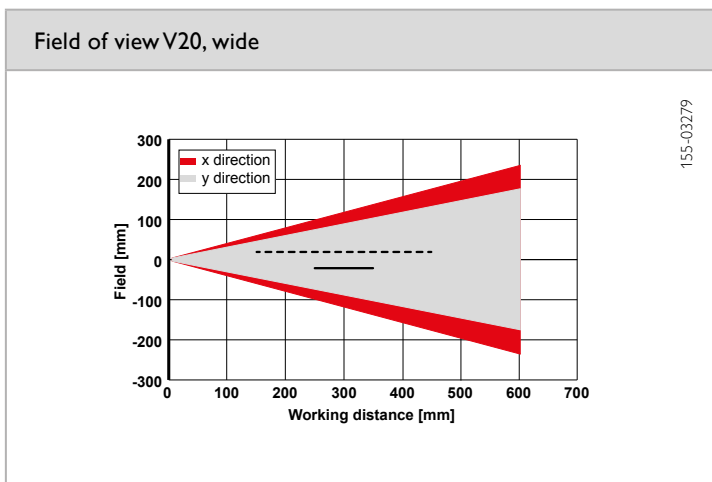
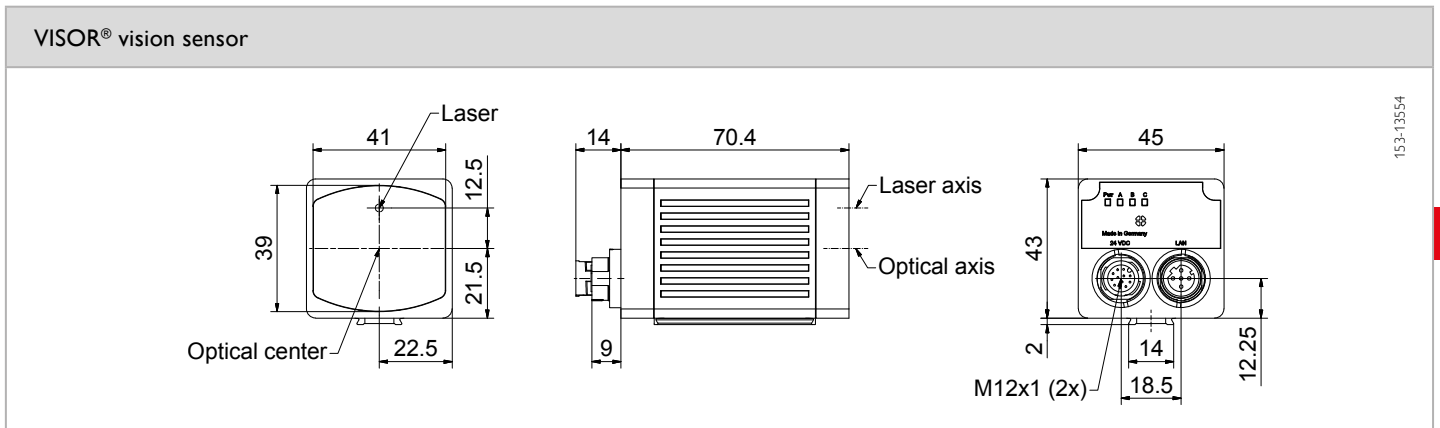


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise determination of X/Y position, orientation and tracking
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- Detection of differences in height in the pseudo height image with multishot technology

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; <b>Pattern matching, contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>2</sup> : output of color values; <b>Color area</b> <sup>2</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>2</sup> : finding the most similar colors <b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors		
Integrated lens, focal length [mm]	6.5 (wide)				
Pixel size	3.45 µm x 3.45 µm				
Focus	Motorized				
Adjustment range	10 mm to infinity				
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs				
Minimum field of view, X x Y	6 x 4 mm				
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)				
Electrical data				Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30V DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>		
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>		
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g		
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin		
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6		
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27		
Encoder	✓				

<sup>1</sup> Not color hardware   <sup>2</sup> color hardware   <sup>3</sup> max. ripple < 5 V<sub>SS</sub>   <sup>4</sup> 80 % air humidity, noncondensing



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



Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V20-ALL-A3-W-W-M2-L	632-91026	Connection cables
Red	V20-ALL-A3-R-W-M2-L	632-91023	Illumination
Infrared	V20-ALL-A3-I-W-M2-L	632-91020	Brackets
White	V20C-ALL-A3-W-W-M2-L	632-91030	Interface accessories

From Page A-38  
 From Page A-27  
 From Page A-4  
 From Page A-38




# VISOR® V20 Allround Advanced, medium field of view

Combines VISOR® Object Color, Code Reader

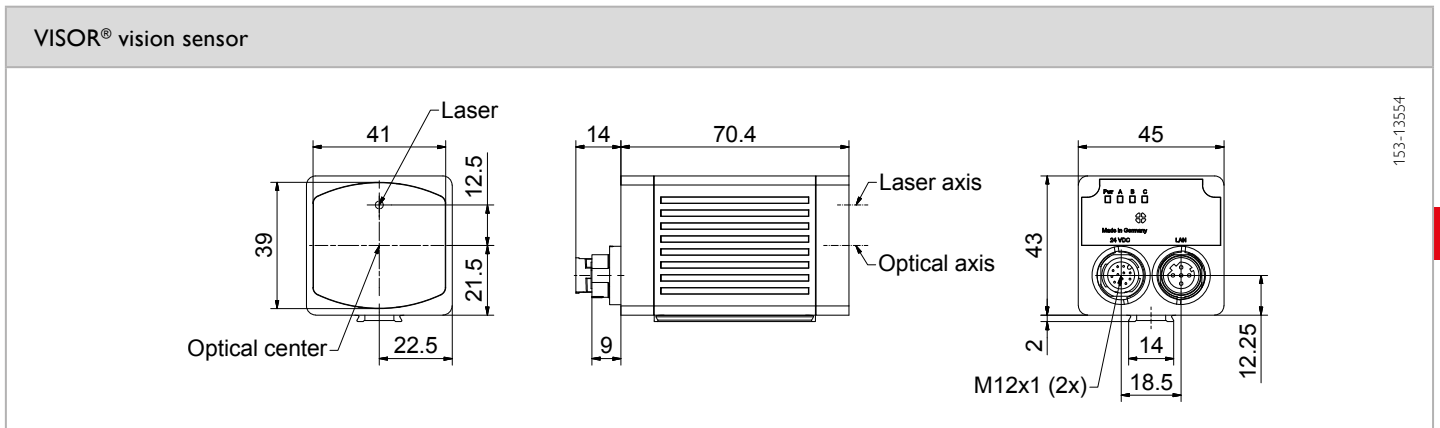


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise determination of X/Y position, orientation and tracking
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- Detection of differences in height in the pseudo height image with multishot technology

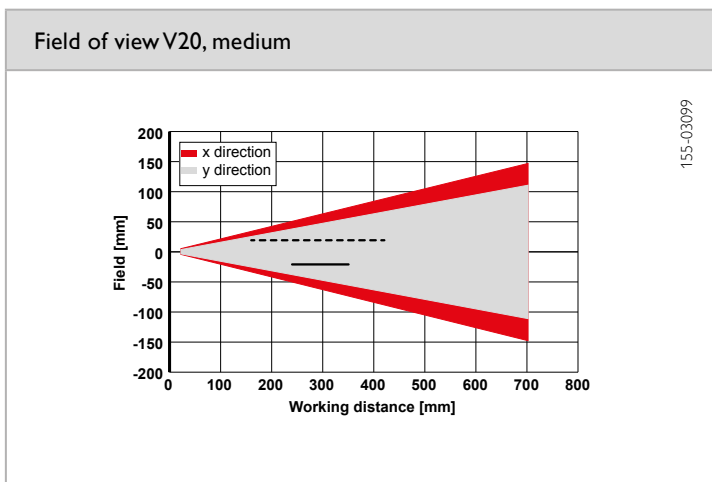
Optical data		Functions	
Resolution	1440 × 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking: X/Y and orientation; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>2</sup>:</b> output of color values; <b>Color field<sup>2</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>2</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	12 (medium)		
Pixel size	3.45 µm × 3.45 µm		
Focus	Motorized		
Adjustment range	25 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X × Y	10 × 8 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>b</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>b</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>b</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



153-13554

3



155-03099

- Increased depth of field
- Normal depth of field



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V20-ALL-A3-W-M-M2-L	632-91024	Connection cables
Red	V20-ALL-A3-R-M-M2-L	632-91021	Illumination
Infrared	V20-ALL-A3-I-M-M2-L	632-91018	Brackets
White	V20C-ALL-A3-W-M-M2-L	632-91028	Interface accessories




# VISOR® V20 Allround Advanced, narrow field of view

Combines VISOR® Object Color, Code Reader

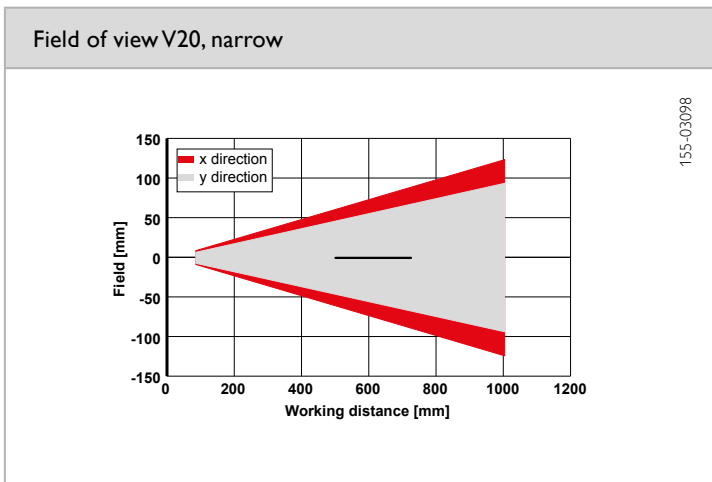
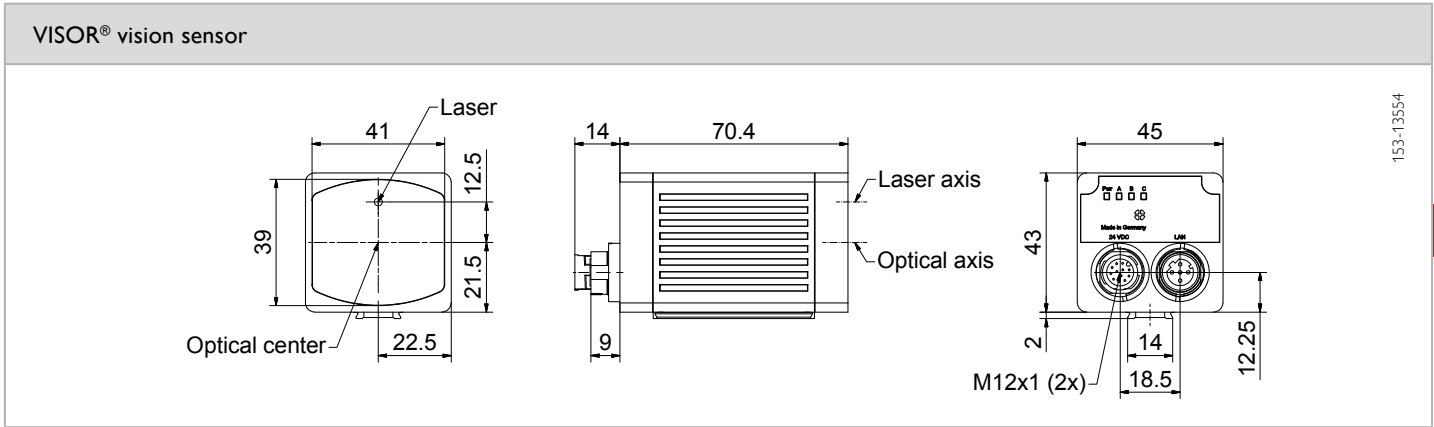


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise determination of X/Y position, orientation and tracking
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- Detection of differences in height in the pseudo height image with multishot technology

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; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>2</sup>:</b> output of color values; <b>Color field<sup>2</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>2</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	20 (narrow)		
Pixel size	3.45 µm × 3.45 µm		
Focus	Motorized		
Adjustment range	100 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X × Y	18 × 14 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



— Normal depth of field



Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V20-ALL-A3-W-N-M2-L	632-91025	Connection cables
Red	V20-ALL-A3-R-N-M2-L	632-91022	Illumination
Infrared	V20-ALL-A3-I-N-M2-L	632-91019	Brackets
White	V20C-ALL-A3-W-N-M2-L	632-91029	Interface accessories
			From Page A-38
			From Page A-27
			From Page A-4
			From Page A-38

# VISOR® V20 Allround Advanced, C-Mount

Combines VISOR® Object Color, Code Reader



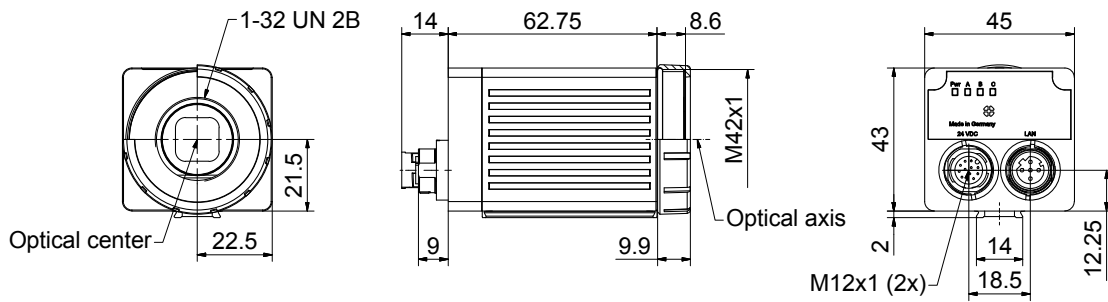
## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units at a mouse click
- Precise determination of X/Y position, orientation and tracking
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- Detection of differences in height in the pseudo height image with multishot technology

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; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>1</sup>:</b> output of color values; <b>Color area<sup>1</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>1</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	C-mount		
Pixel size	3,45 µm x 3,45 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 <sub>b</sub>	18 ... 30V DC <sup>2</sup>	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 <sup>3</sup>
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	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>b</sub> -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibrationsfestigkeit	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Schockfestigkeit	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Color hardware    <sup>2</sup> max. ripple < 5V<sub>SS</sub>    <sup>3</sup> only with protective casing    <sup>4</sup> 80 % air humidity, noncondensing

Vision-Sensor VISOR® C-mount



153-13555

3



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
-	LM 100 W DF	532-51098

	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
<b>Focal length</b>	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
<b>Article number</b>	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories
V20-ALL-A3-C-2	632-91017	Connection cables
V20C-ALL-A3-C-2	632-91027	Illumination
		Lenses
		Brackets
		Interface accessories


# VISOR® V20 Allround Professional, wide field of view

Combines VISOR® Object Color, Code Reader and Robotic

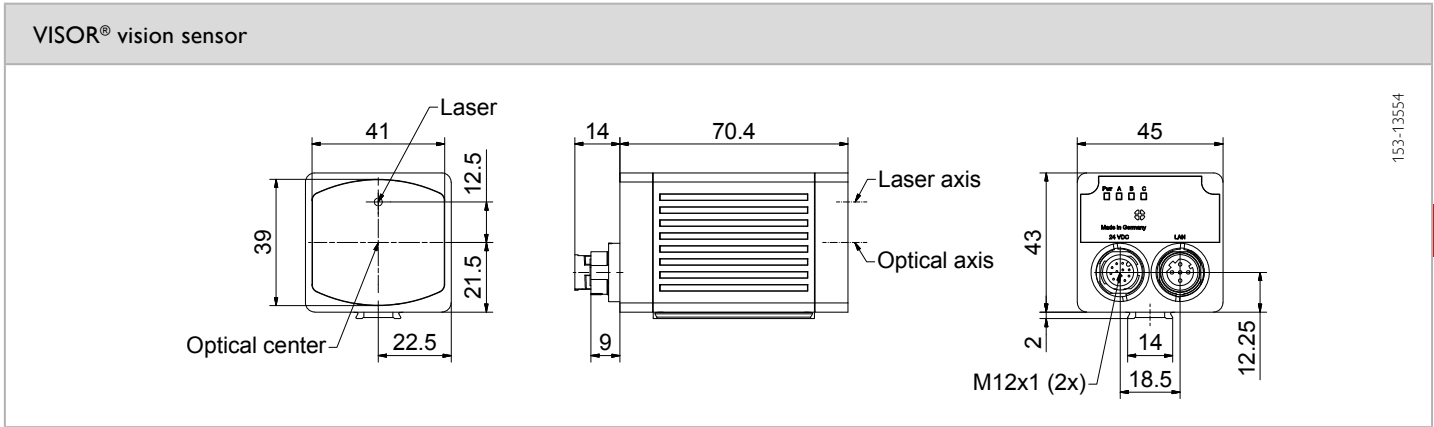


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Detection of differences in height in the pseudo height image with multishot technology
- User-friendly configuration and viewer software with graded user rights and online help

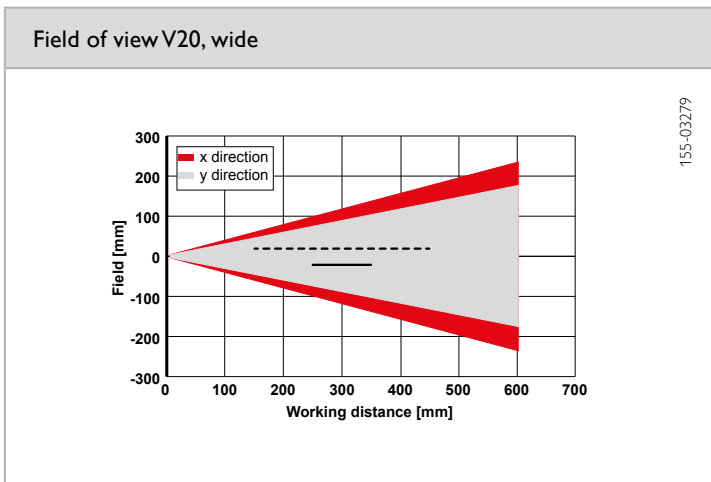
Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking; X/Y and orientation; <b>Pattern matching, contour, 3D contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>2</sup> : output of color values; <b>Color field</b> <sup>2</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>2</sup> : finding the most similar colors; <b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors
Integrated lens, focal length [mm]	6.5 (wide)		
Pixel size	3.45 µm x 3.45 µm		
Focus	Motorized		
Adjustment range	10 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X x Y	6 x 4 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V, Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



153-13554

3



155-03279

- Increased depth of field
- \_\_\_\_\_ Normal depth of field



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
-	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories	
White	V20-ALL-P3-W-W-M2-L	632-91012	Connection cables	From Page A-38
Red	V20-ALL-P3-R-W-M2-L	632-91010	Illumination	From Page A-27
Infrared	V20-ALL-P3-I-W-M2-L	632-91007	Brackets	From Page A-4
White	V20C-ALL-P3-W-W-M2-L	632-91016	Interface accessories	From Page A-38


# VISOR® V20 Allround Professional, medium field of view

Combines VISOR® Object Color, Code Reader and Robotic



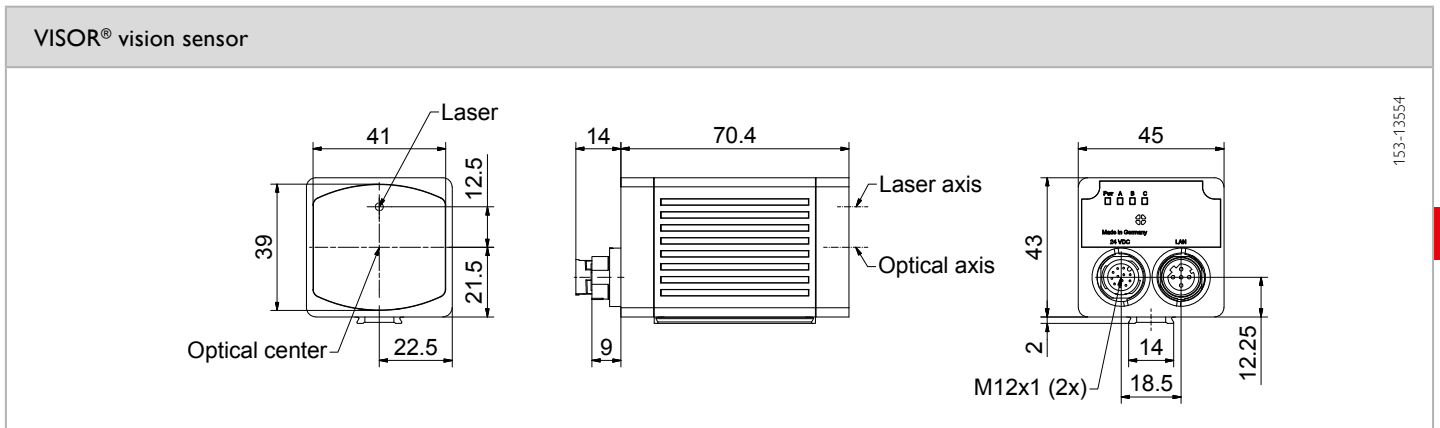
## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Detection of differences in height in the pseudo height image with multishot technology
- User-friendly configuration and viewer software with graded user rights and online help

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; <b>Pattern matching, contour, 3D contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>2</sup> : output of color values; <b>Color field</b> <sup>2</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>2</sup> : finding the most similar colors; <b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors
Integrated lens, focal length [mm]	12 (medium)		
Pixel size	3.45 µm x 3.45 µm		
Focus	Motorized		
Adjustment range	25 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X x Y	10 x 8 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP / NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

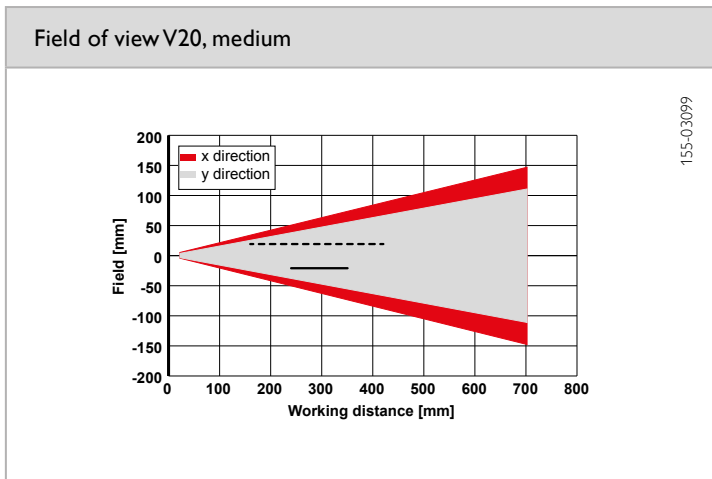
<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing





153-13554

3



155-03099

- Increased depth of field
- Normal depth of field



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V20-ALL-P3-W-M-M2-L	632-91000	Connection cables
Red	V20-ALL-P3-R-M-M2-L	632-91008	Illumination
Infrared	V20-ALL-P3-I-M-M2-L	632-91005	Brackets
White	V20C-ALL-P3-W-M-M2-L	632-91014	Interface accessories

# VISOR® V20 Allround Professional, narrow field of view

Combines VISOR® Object Color, Code Reader and Robotic

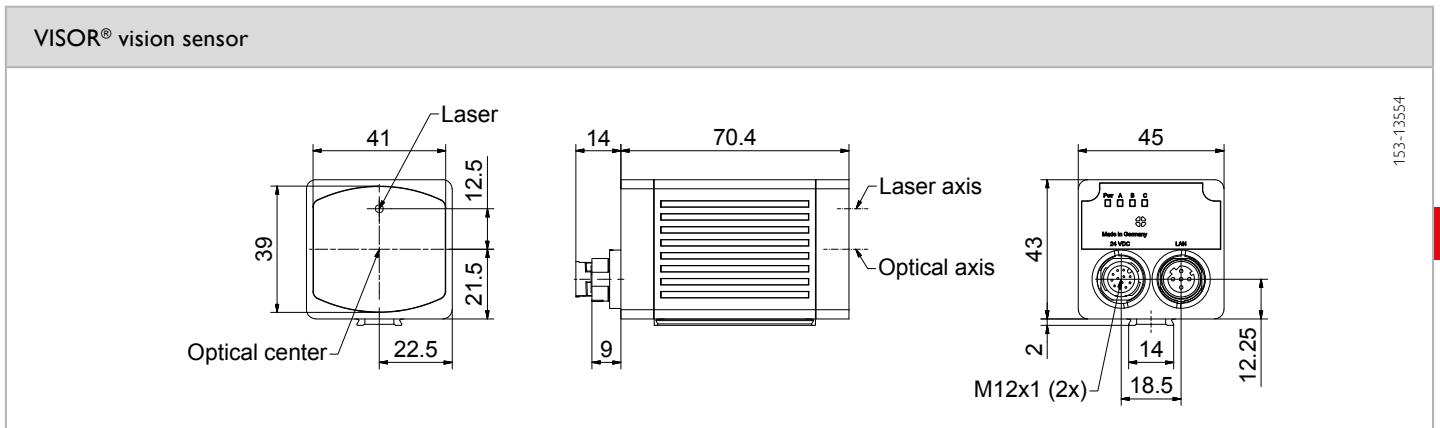


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Detection of differences in height in the pseudo height image with multishot technology
- User-friendly configuration and viewer software with graded user rights and online help

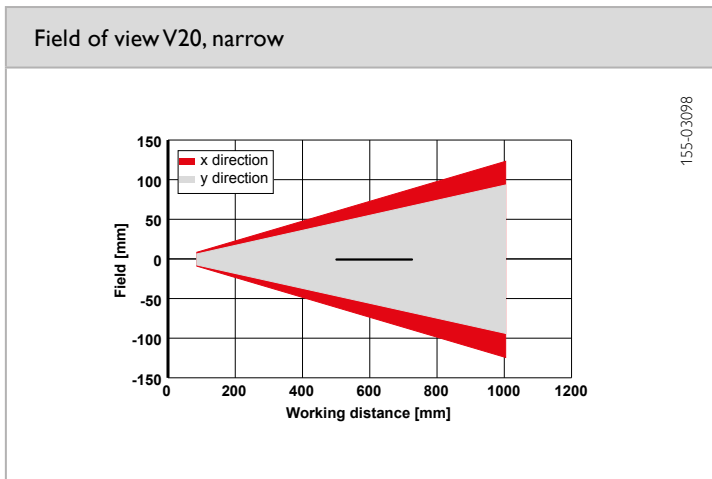
Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome / color	Detectors	Position tracking; X/Y and orientation; <b>Pattern matching, contour, 3D contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>2</sup> : output of color values; <b>Color area</b> <sup>2</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>2</sup> : finding the most similar colors; <b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors
Integrated lens, focal length [mm]	20 (narrow)		
Pixel size	3.45 µm x 3.45 µm		
Focus	Motorized		
Adjustment range	100 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X x Y	18 x 14 mm		
Target laser	Laser: red (635 nm) class 1 ⚠ (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30V DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



153-13554

3



155-03098

— Normal depth of field



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V20-ALL-P3-W-N-M2-L	632-91011	Connection cables
Red	V20-ALL-P3-R-N-M2-L	632-91009	Illumination
Infrared	V20-ALL-P3-I-N-M2-L	632-91006	Brackets
White	V20C-ALL-P3-W-N-M2-L	632-91015	Interface accessories
			From Page A-38
			From Page A-27
			From Page A-4
			From Page A-38

# VISOR® V20 Allround Professional, C-Mount

Combines VISOR® Object Color, Code Reader and Robotic

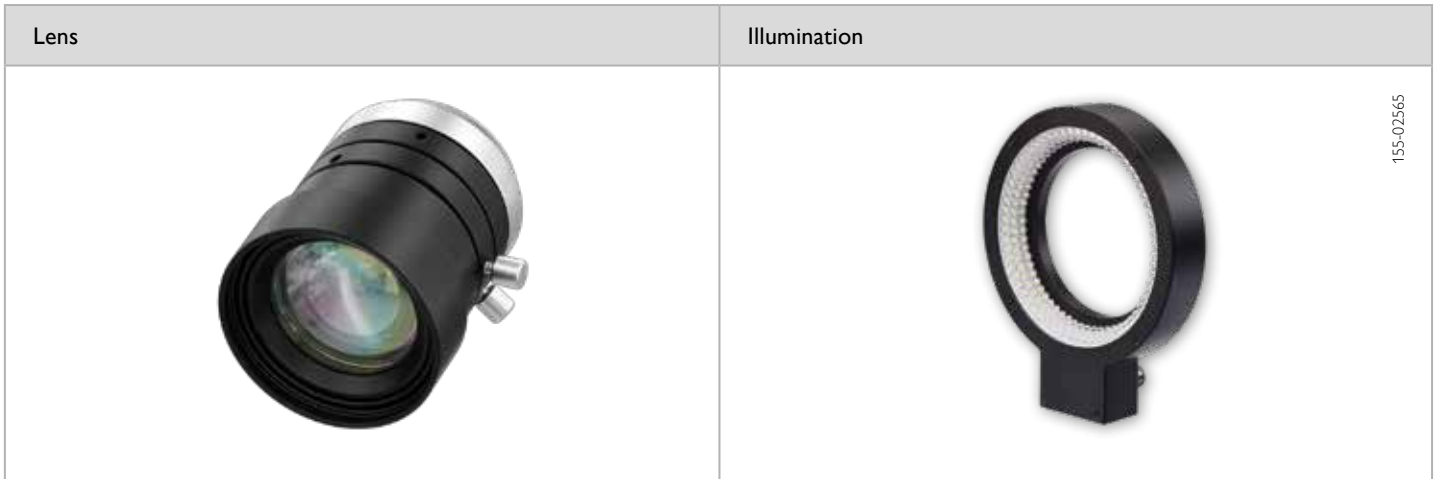
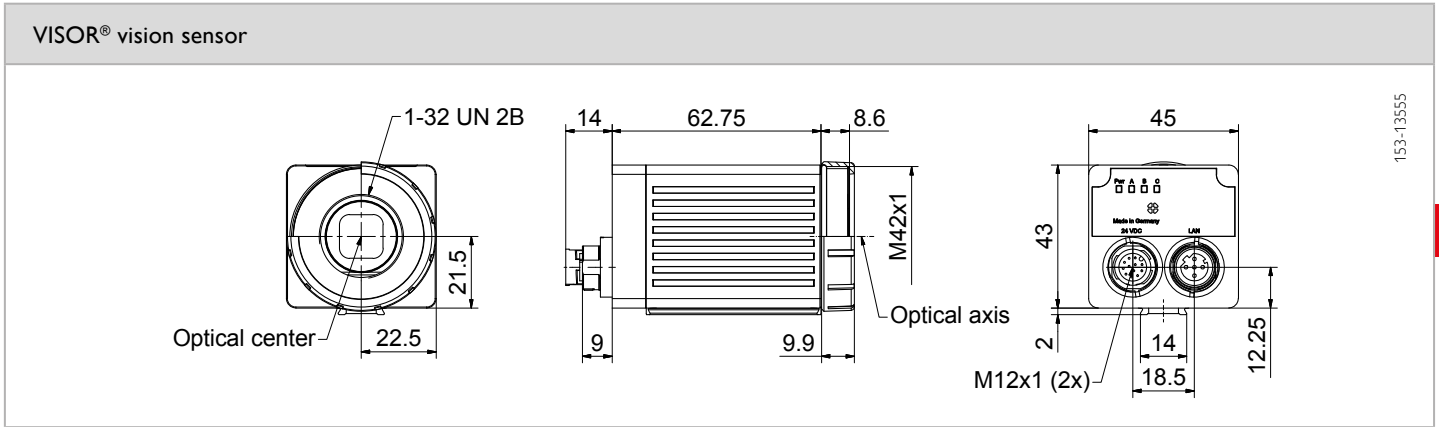


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 5 megapixel chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Detection of differences in height in the pseudo height image with multishot technology
- User-friendly configuration and viewer software with graded user rights and online help

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; <b>Pattern matching, contour, 3D contour</b> : teach-in and detection of patterns and contours; <b>Calliper</b> : distance between edges; <b>BLOB, grey threshold, brightness</b> : evaluation of brightness; <b>Contrast</b> : evaluation of contrast; <b>Color value</b> <sup>1</sup> : output of color values; <b>Color area</b> <sup>1</sup> : area inspection of colors, with selectable tolerance; <b>Color list</b> <sup>1</sup> : finding the most similar colors
Integrated lens, focal length [mm]	C-mount		<b>Barcode</b> : reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode</b> : reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR</b> : reading of fonts; <b>Result processing: Text, Math</b> : checking and calculating with results from detectors
Pixel size	3,45 µm x 3,45 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 <sub>B</sub>	18 ... 30V DC <sup>2</sup>	Dimensions	70,4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 <sup>3</sup>
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	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibrationsfestigkeit	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Schockfestigkeit	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Color hardware    <sup>2</sup> max. ripple < 5V<sub>SS</sub>    <sup>3</sup> only with protective casing    <sup>4</sup> 80 % air humidity, noncondensing



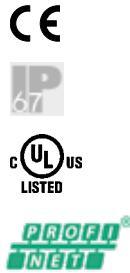
Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
-	LM 100 W DF	532-51098

	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
<b>Focal length</b>	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
<b>Article number</b>	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories
V20-ALL-P3-C-2	632-91004	Connection cables
V20C-ALL-P3-C-2	632-91013	Illumination
		Lenses
		Brackets
		Interface accessories
		From Page A-38
		From Page A-27
		From Page A-25
		From Page A-4
		From Page A-38


# VISOR® V10 Allround Advanced, wide field of view

Combines VISOR® Object Color, Code Reader

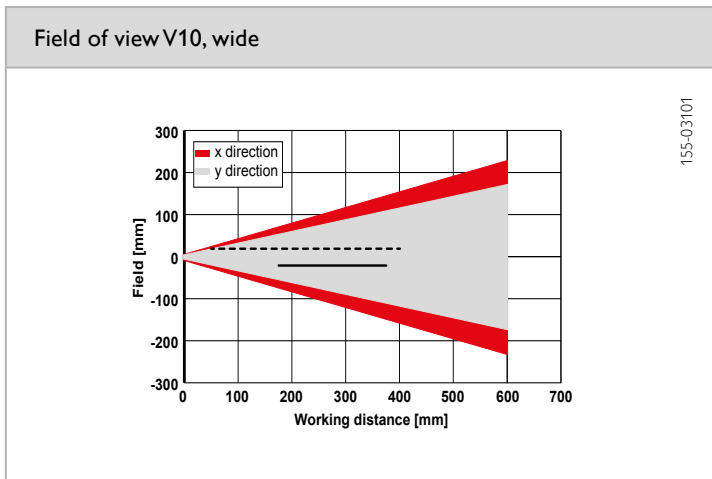
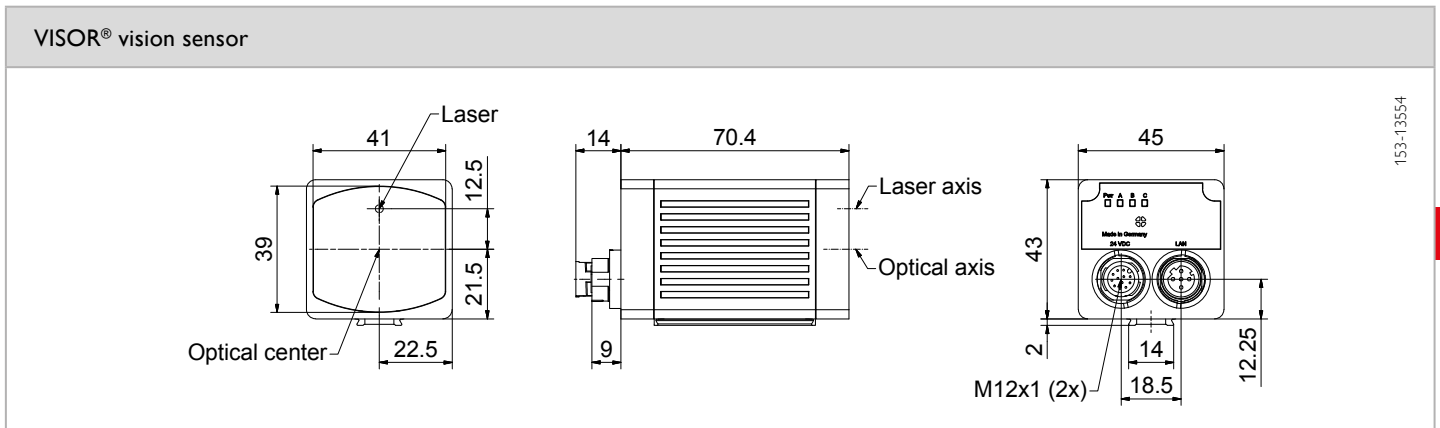


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Efficient part detection and tracking
- Real-world engineering units at a mouse click
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- User-friendly configuration and viewer software with graded user rights and online help

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; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>2</sup>:</b> output of color values; <b>Color area<sup>2</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>2</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> 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 (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X × Y	2 × 1 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



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



Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V10-ALL-A3-W-W-M2-L	631-91004	Connection cables
Red	V10-ALL-A3-R-W-M2-L	631-91007	Illumination
Infrared	V10-ALL-A3-I-W-M2-L	631-91010	Brackets
White	V10C-ALL-A3-W-W-M2-L	631-91041	Interface accessories



# VISOR® V10 Allround Advanced, medium field of view

Combines VISOR® Object Color, Code Reader

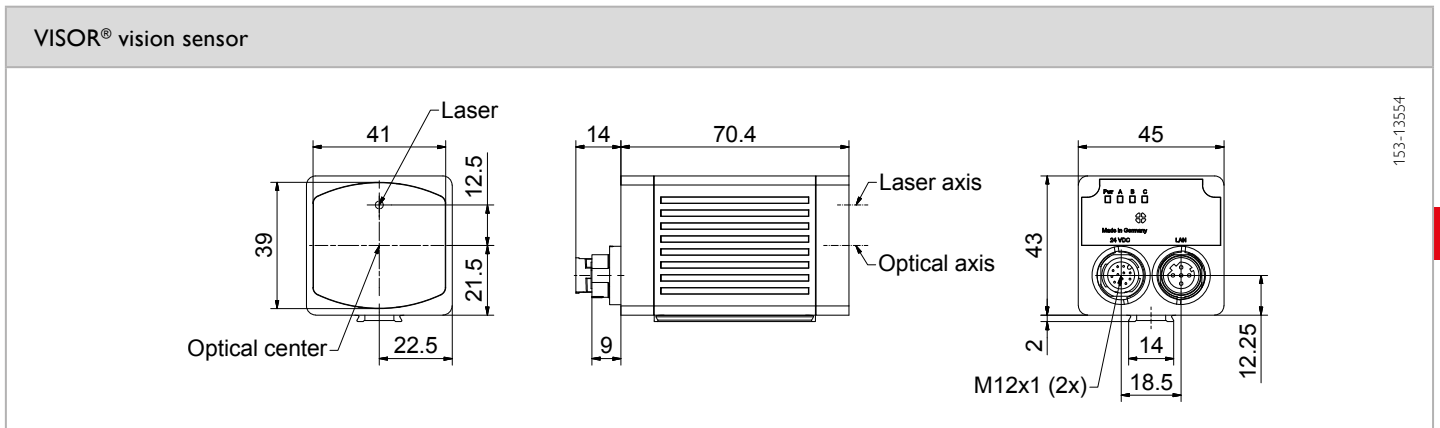


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Efficient part detection and tracking
- Real-world engineering units at a mouse click
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- User-friendly configuration and viewer software with graded user rights and online help

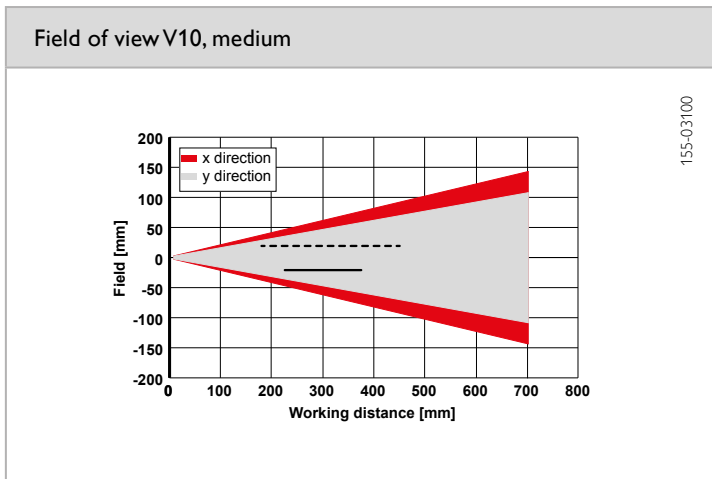
Optical data		Functions	
Resolution	800 x 600 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome / color	Detectors	Position tracking; X/Y and orientation; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, Grey threshold, Brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>2</sup>:</b> output of color values; <b>Color area<sup>2</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>2</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	9.6 (medium)		
Pixel size	4.8 µm x 4.8 µm		
Focus	Motorized		
Adjustment range	12 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X x Y	7 x 3 mm		
Target laser	Laser: red (635 nm) class 1 ⚠ (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



153-13554

3



155-03100

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



155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V10-ALL-A3-W-M-M2-L	631-91005	Connection cables
Red	V10-ALL-A3-R-M-M2-L	631-91008	Illumination
Infrared	V10-ALL-A3-I-M-M2-L	631-91029	Brackets
White	V10C-ALL-A3-W-M-M2-L	631-91038	Interface accessories

# VISOR® V10 Allround Advanced, narrow field of view

Combines VISOR® Object Color, Code Reader

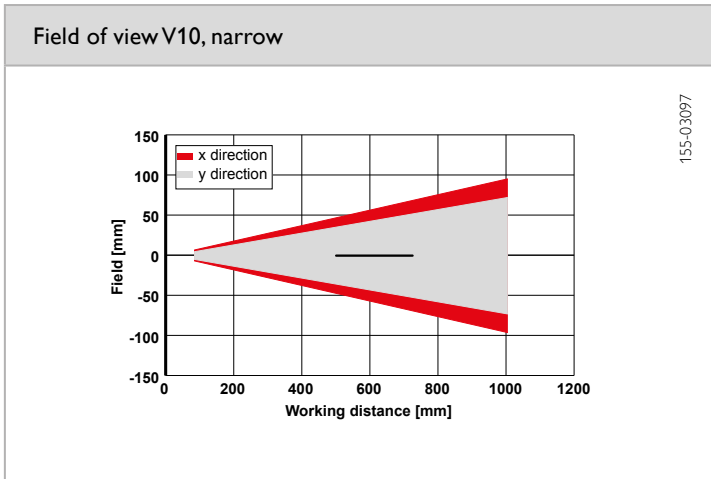
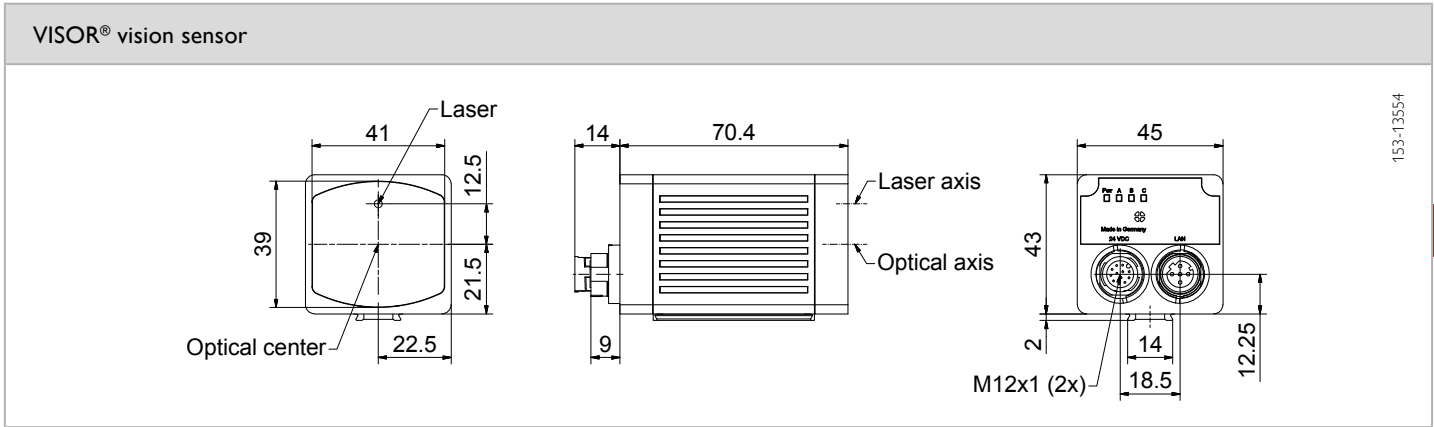


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Efficient part detection and tracking
- Real-world engineering units at a mouse click
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- User-friendly configuration and viewer software with graded user rights and online help

Optical data		Functions	
Resolution	800 x 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; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, grey threshold, brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>2</sup>:</b> output of color values; <b>Color area<sup>2</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>2</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	20 (narrow)		
Pixel size	4.8 µm x 4.8 µm		
Focus	Motorized		
Adjustment range	100 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm) <sup>1</sup> , infrared (850 nm) <sup>1</sup> LEDs		
Minimum field of view, X x Y	14 x 10 mm		
Target laser	Laser: red (635 nm) class 1 ⚠ (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>3</sup>	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 <sub>B</sub> / 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 <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Not color hardware    <sup>2</sup> color hardware    <sup>3</sup> max. ripple < 5V<sub>SS</sub>    <sup>4</sup> 80 % air humidity, noncondensing



— Normal depth of field



Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

Illumination	Part number	Article number	Accessories
White	V10-ALL-A3-W-N-M2-L	631-91006	Connection cables
Red	V10-ALL-A3-R-N-M2-L	631-91009	Illumination
Infrared	V10-ALL-A3-I-N-M2-L	631-91030	Brackets
White	V10C-ALL-A3-W-N-M2-L	631-91039	Interface accessories

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# VISOR® V10 Allround Advanced, C-Mount

Combines VISOR® Object Color, Code Reader

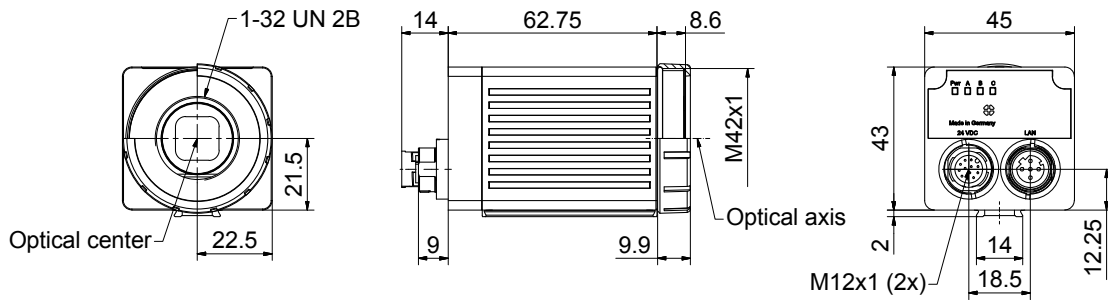


## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Efficient part detection and tracking
- Real-world engineering units at a mouse click
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- User-friendly configuration and viewer software with graded user rights and online help

Optical data		Functions	
Resolution	800 x 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; <b>Pattern matching, contour:</b> teach-in and detection of patterns and contours; <b>Calliper:</b> distance between edges; <b>BLOB, Grey threshold, Brightness:</b> evaluation of brightness; <b>Contrast:</b> evaluation of contrast; <b>Color value<sup>1</sup>:</b> output of color values; <b>Color area<sup>1</sup>:</b> area inspection of colors, with selectable tolerance; <b>Color list<sup>1</sup>:</b> finding the most similar colors; <b>Barcode:</b> reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; <b>Datacode:</b> reading 2D codes: ECC200, QR code, GS1, PDF 417; <b>OCR:</b> reading of fonts; <b>Result processing: Text, Math:</b> checking and calculating with results from detectors
Integrated lens, focal length [mm]	C-mount		
Pixel size	4.8 µm x 4.8 µm		
Focus	Manual		
Adjustment range	Dependent on lens		
Integrated illumination	None		
Minimum field of view, X x Y	Dependent on lens		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	18 ... 30 DC <sup>2</sup>	Dimensions	70,4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 <sup>3</sup>
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	Approx. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C <sup>4</sup>
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C <sup>4</sup>
Switching threshold inputs incl. encoder	PNP/NPN High > U <sub>B</sub> -1 V / Low < 3 V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces	Ethernet (LAN), EtherNet/IP, PROFINET, SensoWeb, Service Port	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	✓		

<sup>1</sup> Color hardware    <sup>2</sup> Max. ripple < 5V<sub>SS</sub>    <sup>3</sup> only with protective casing    <sup>4</sup> 80 % air humidity, noncondensing

**VISOR® vision sensor**


153-13555

3

Lens	Illumination, Multishot

155-02565

Illumination	Part number	Article number
White	LM 100 WWK-24Q4-2L12	532-51096
Red	LM 100 RWK-24Q4-2L12	532-51097
—	LM 100 W DF	532-51098

	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
<b>Focal length</b>	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
<b>Article number</b>	526-51535	526-51536	526-51537	526-51538	526-51539	526-51540	526-51541

Part number	Article number	Accessories
V10-ALL-A3-C-2	631-91003	Connection cables
V10C-ALL-A3-C-2	631-91036	Illumination
		Lenses
		Brackets
		Interface accessories
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