

VISOR® Code Reader

Reads whatever is printed, dot-peened and lasered.



The VISOR® Code Reader from SensoPart easily reads barcodes of numerous types as well as printed and directly marked data matrix codes according to the ECC200 standard, regardless of the carrier materials (metal, plastic, paper, glass). The sensor even easily deciphers skewed or distorted codes, or those on to convex, reflective or transparent surfaces.

Built-in early warning system: the VISOR® Code Reader evaluates the quality of your printed and directly marked data matrix codes on the basis of standardised quality parameters according to ISO and AIM standards.

The VISOR® Code Reader Standard offers suitable tools for easily readable barcodes and data matrix codes (e.g. printed). The Advanced or Professional versions provide high-performance reading algorithms for difficult codes (e.g. directly marked).

HIGHLIGHTS OF VISOR® CODE READER

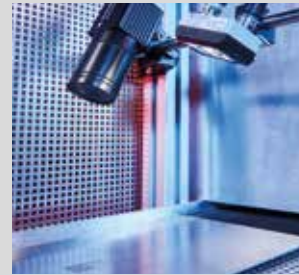
- Reliably reads barcodes as well as printed and directly marked data matrix codes, and even several codes simultaneously and mixed 1D/2D codes
- Supplementary object detection for characteristics other than codes
- Evaluation of quality parameters according to ISO/IEC 15415 and AIM DPM 2006
- Flexible definition of output data (header; trailer; user data)
- String comparison with message via the digital switching output
- EtherNet/IP PROFINET (conformance class B), EtherNet (TCP/IP) supported
- Comprehensive options for archiving images and data
- Optical character recognition



Printed barcodes



Code on shiny metallic surface



Dot-peened code with external lighting



*A lot of information in a small space:
up to 2,334 ASCII symbols (7 bit) or
3,116 digits can be coded with an
ECC-200 data matrix code.*

VISOR® Code Reader – product overview					
	Product variant	Resolution	Focal length	Integrated lighting	Page
V20-CR-A3-xxx	Advanced	1440 × 1080	wide	White, red or infrared LEDs	228
V20-CR-A3-xxx	Advanced		medium	White, red or infrared LEDs	230
V20-CR-A3-xxx	Advanced		narrow	White, red or infrared LEDs	232
V20-CR-A3-C-2	Advanced		C-mount	None	234
V20-CR-P3-xxx	Professional	1440 × 1080	wide	White, red or infrared LEDs	236
V20-CR-P3-xxx	Professional		medium	White, red or infrared LEDs	238
V20-CR-P3-xxx	Professional		narrow	White, red or infrared LEDs	240
V20-CR-P3-C-2	Professional		C-mount	None	242
V10-CR-S3-xxx	Standard	800 × 600	wide	White, red or infrared LEDs	244
V10-CR-S3-xxx	Standard		medium	White, red or infrared LEDs	246
V10-CR-S3-xxx	Standard		narrow	White, red or infrared LEDs	248
V10-CR-A3-xxx	Advanced	800 × 600	wide	White, red or infrared LEDs	250
V10-CR-A3-xxx	Advanced		medium	White, red or infrared LEDs	252
V10-CR-A3-xxx	Advanced		narrow	White, red or infrared LEDs	254
V10-CR-A3-C-2	Advanced		C-mount	None	256
V10-CR-P3-xxx	Professional	800 × 600	wide	White, red or infrared LEDs	258
V10-CR-P3-xxx	Professional		medium	White, red or infrared LEDs	260
V10-CR-P3-xxx	Professional		narrow	White, red or infrared LEDs	262
V10-CR-P3-C-2	Professional		C-mount	None	264


VISOR® V20 Code Reader Advanced, wide field of view

Multi-Code Reader for 1D and 2D codes

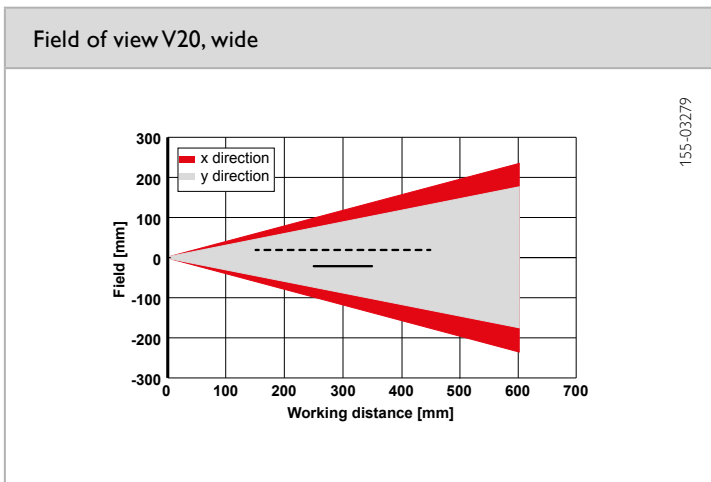
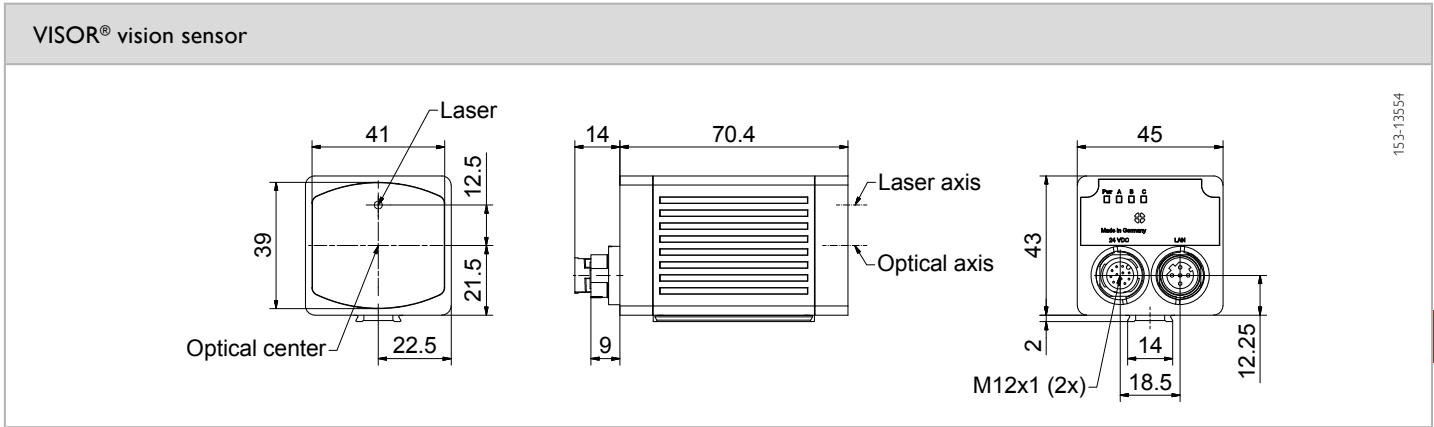


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, PDF 417, GS1
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), infrared (850 nm) 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 _B	18 ... 30V DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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 VISOR® V20-CR-Advanced	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	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

illumination	Part number	Article number	Accessories	
White	V20-CR-A3-W-W-M2-L	632-91045	Connection cables	From Page A-46
White	V20-CR-A3-W-WD-M2-L	632-91094	Illumination	From Page A-33
Red	V20-CR-A3-R-W-M2-L	632-91048	Brackets	From Page A-4
Red	V20-CR-A3-R-WD-M2-L	632-91096	Interface accessories	From Page A-53
Infrared	V20-CR-A3-I-W-M2-L	632-91051		
Infrared	V20-CR-A3-I-WD-M2-L	632-91098		


VISOR® V20 Code Reader Advanced, medium field of view

Multi-Code Reader for 1D and 2D codes

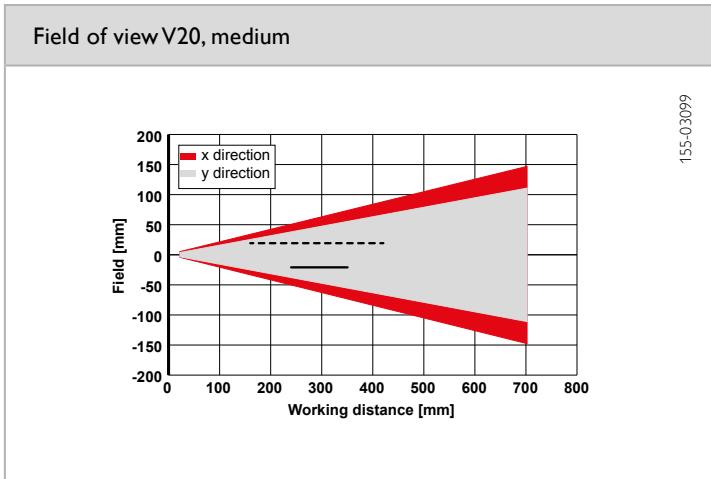
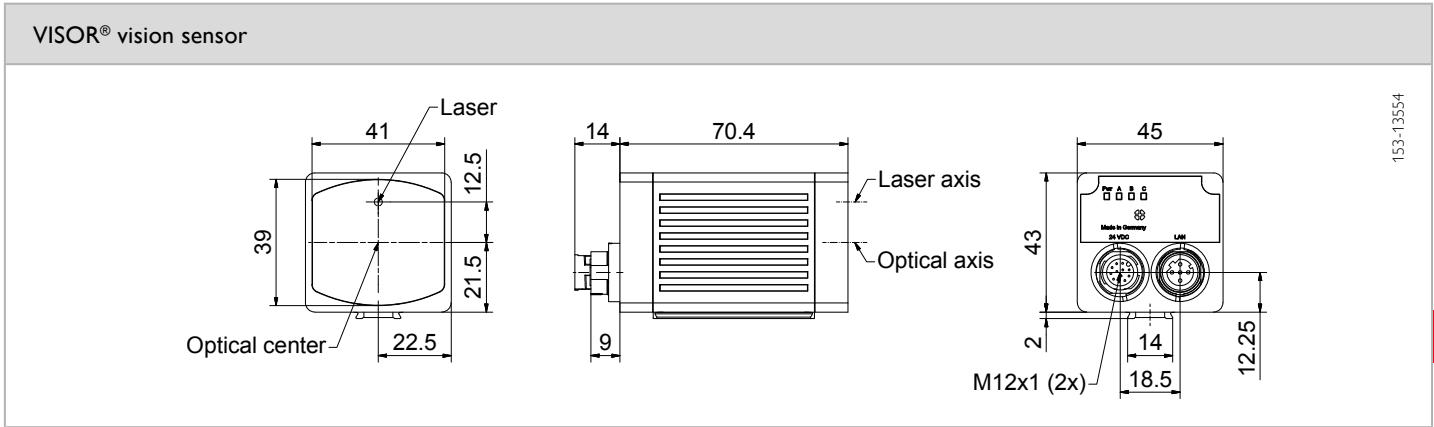


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
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- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1440 × 1080 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, PDF 417, GS1
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V20-CR-A3-W-M-M2-L	632-91046	Connection cables	From Page A-46
White	V20-CR-A3-W-MD-M2-L	632-91095	Illumination	From Page A-33
Red	V20-CR-A3-R-M-M2-L	632-91049	Brackets	From Page A-4
Red	V20-CR-A3-R-MD-M2-L	632-91078	Interface accessories	From Page A-53
Infrared	V20-CR-A3-I-M-M2-L	632-91052		
Infrared	V20-CR-A3-I-MD-M2-L	632-91099		


VISOR® V20 Code Reader Advanced, narrow field of view

Multi-Code Reader for 1D and 2D codes

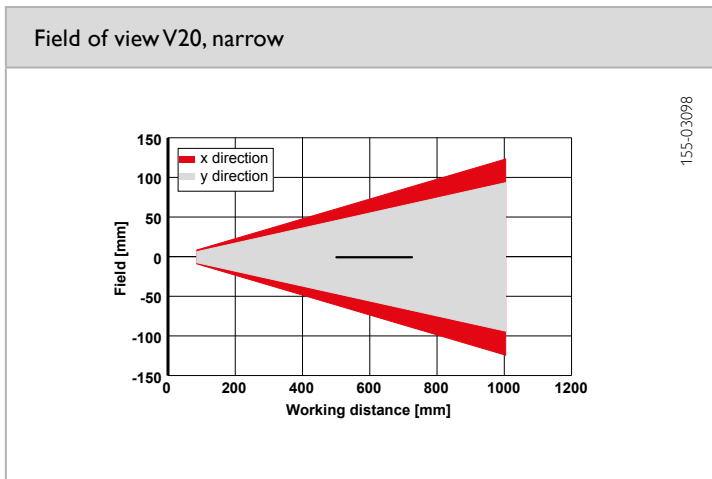
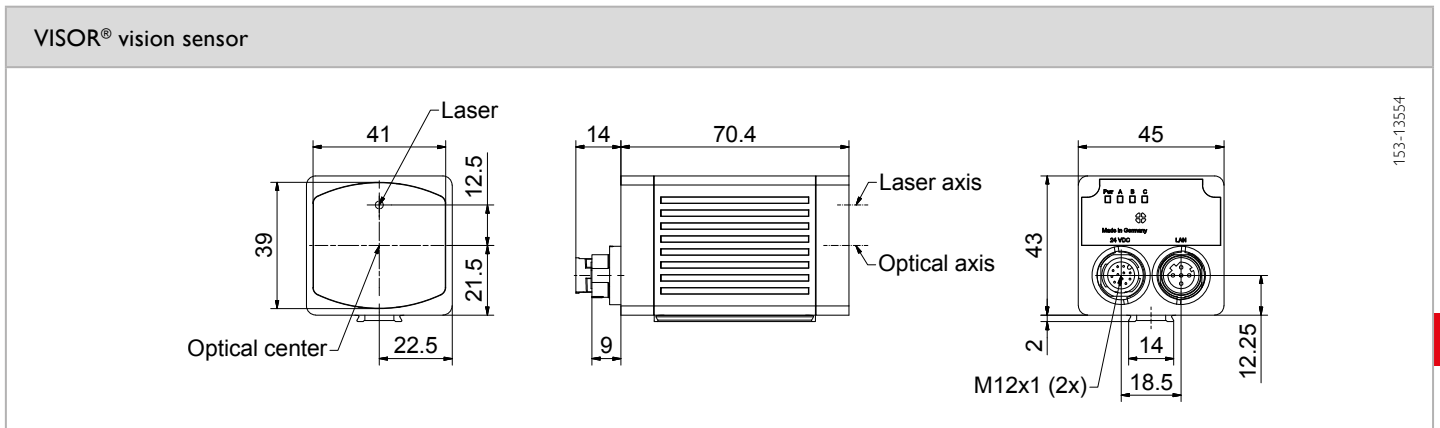


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1440 × 1080 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, PDF 417, GS1
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



— Normal depth of field

illumination	Part number	Article number	Accessories	
White	V20-CR-A3-W-N-M2-L	632-91047	Connection cables	From Page A-46
Red	V20-CR-A3-R-N-M2-L	632-91050	Illumination	From Page A-33
Infrared	V20-CR-A3-I-N-M2-L	632-91053	Brackets	From Page A-4
			Interface accessories	From Page A-53

VISOR® V20 Code Reader Advanced, C-Mount

Multi-Code Reader for 1D and 2D codes



PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, PDF 417, GS1
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 _B	18 ... 30V DC ¹	Dimensions	70,4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ²
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ³
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Versorgung und I/O M12, 12-polig, Ethernet M12, 4-polig,
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	✓		

¹ Max. ripple < 5V_{SS} ² only with protective casing ³ 80 % air humidity, noncondensing


VISOR® V20 Code Reader Professional, wide field of view

Multi Code Reader for 1D and 2D codes and OCR

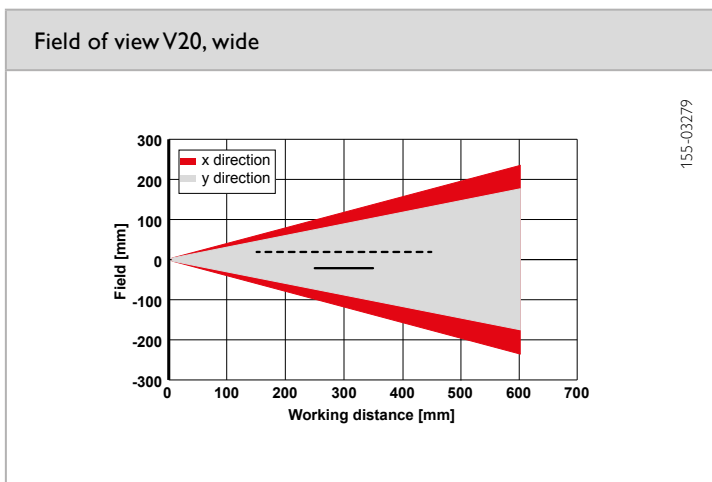
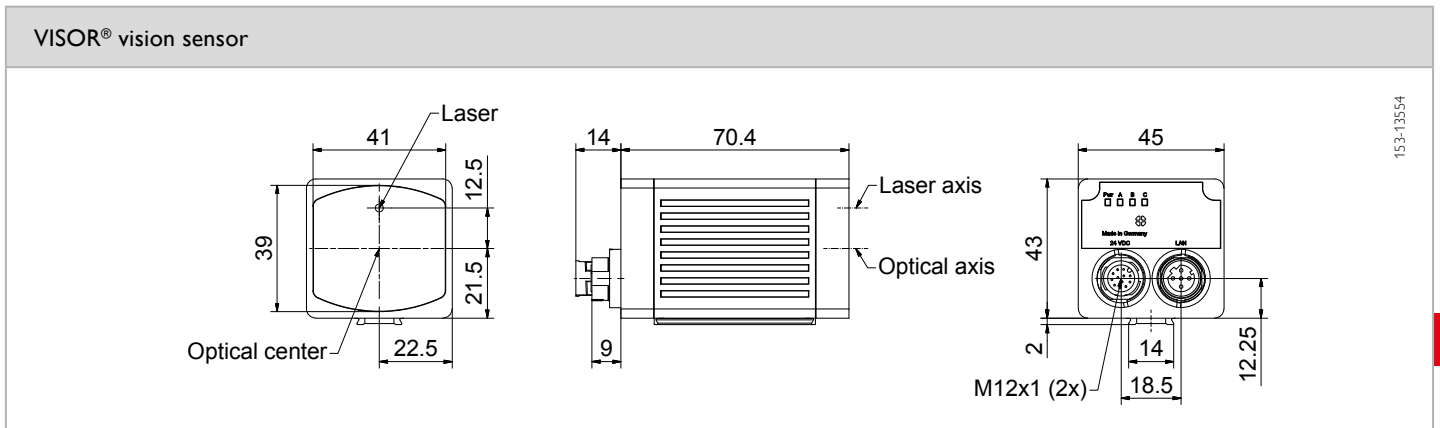


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours;
Integrated lens, focal length [mm]	6.5 (wide)		Grey threshold, Brightness: evaluation of brightness;
Pixel size	3.45 µm x 3.45 µm		Contrast: evaluation of contrast;
Focus	Motorized		Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
Adjustment range	10 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm), infrared (850 nm) 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 _B	18 ... 30V DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	✓		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V20-CR-P3-W-W-M2-L	632-91079	Connection cables	From Page A-46
White	V20-CR-P3-W-WD-M2-L	632-91082	Illumination	From Page A-33
Red	V20-CR-P3-R-W-M2-L	632-91084	Brackets	From Page A-4
Red	V20-CR-P3-R-WD-M2-L	632-91087	Interface accessories	From Page A-53
Infrared	V20-CR-P3-I-W-M2-L	632-91089		
Infrared	V20-CR-P3-I-WD-M2-L	632-91092		


VISOR® V20 Code Reader Professional, medium field of view

Multi Code Reader for 1 D und 2 D Codes and OCR

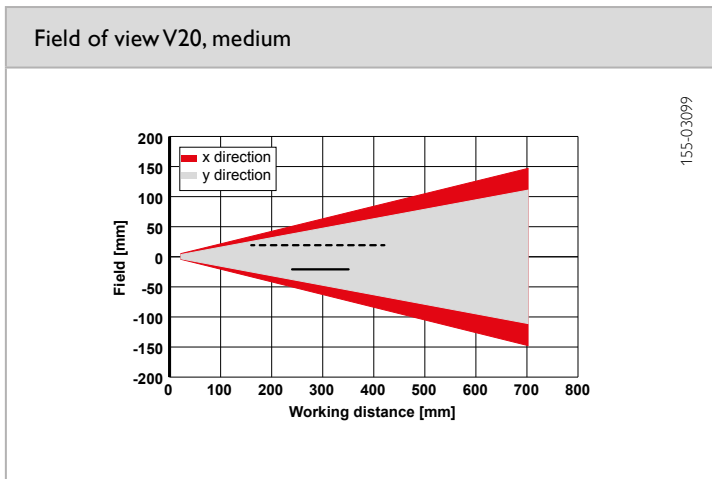
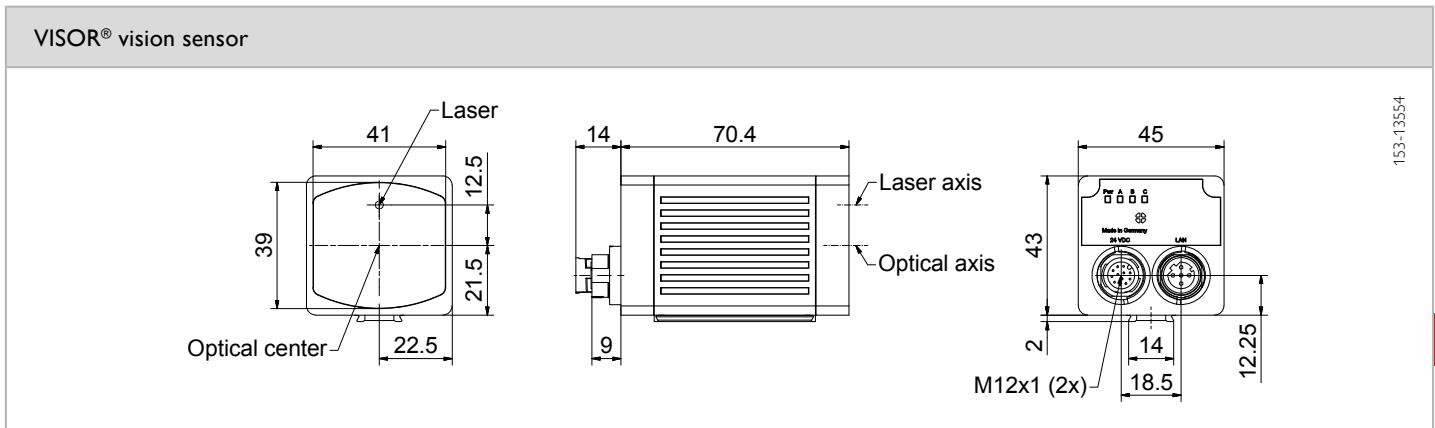


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- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	1440 × 1080 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours; Grey threshold, Brightness: evaluation of brightness; Contrast: evaluation of contrast; Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

illumination	Part number	Article number	Accessories	
White	V20-CR-P3-W-M-M2-L	632-91080	Connection cables	From Page A-46
White	V20-CR-P3-W-MD-M2-L	632-91083	Illumination	From Page A-33
Red	V20-CR-P3-R-M-M2-L	632-91085	Brackets	From Page A-4
Red	V20-CR-P3-R-MD-M2-L	632-91088	Interface accessories	From Page A-53
Infrared	V20-CR-P3-I-M-M2-L	632-91090		
Infrared	V20-CR-P3-I-MD-M2-L	632-91093		


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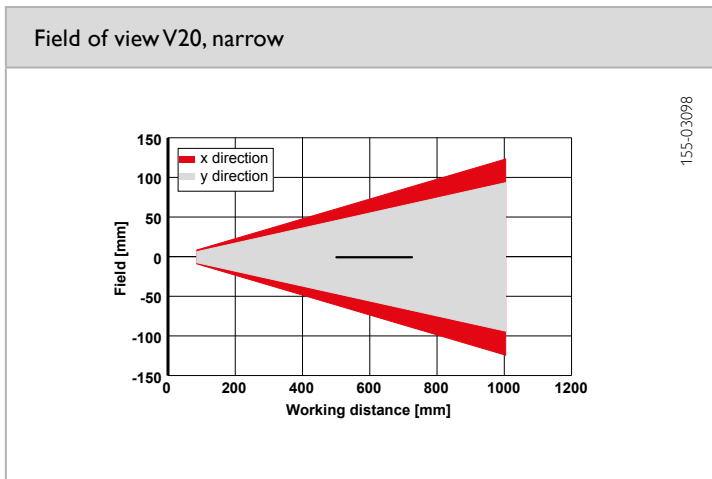
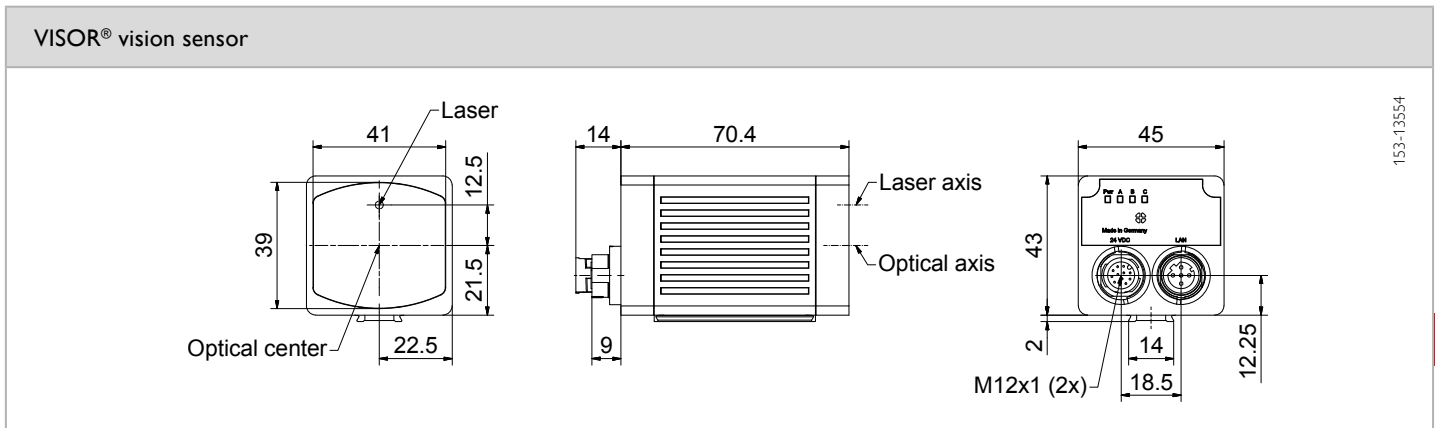


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Optical data		Functions	
Resolution	1440 × 1080 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours; Grey threshold, Brightness: evaluation of brightness; Contrast: evaluation of contrast; Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1 V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin
Interfaces VISOR® V20-CR-Advanced	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	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



— Normal depth of field

illumination	Part number	Article number	Accessories	
White	V20-CR-P3-W-N-M2-L	632-91081	Connection cables	From Page A-46
Red	V20-CR-P3-R-N-M2-L	632-91086	Illumination	From Page A-33
Infrared	V20-CR-P3-I-N-M2-L	632-91091	Brackets	From Page A-4
			Interface accessories	From Page A-53

VISOR® V20 Code Reader Professional, C-Mount

Multi Code Reader for 1 D und 2 D Codes and OCR



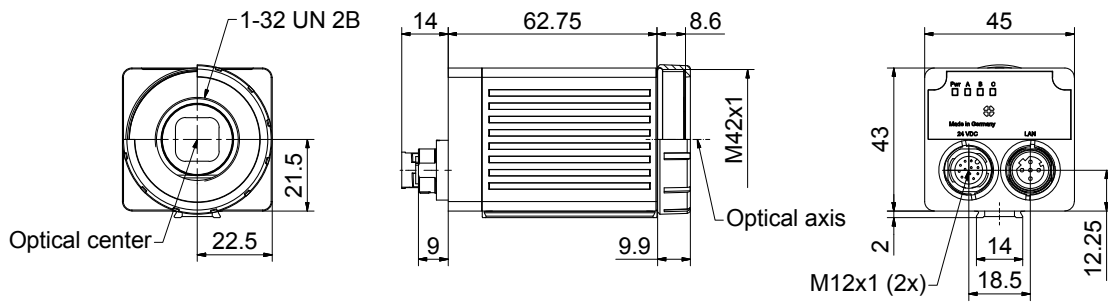
PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	1440 x 1080 pixels	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/2.9", monochrome	Detectors	Position tracking; X/Y and orientation; Pattern matching / Contour: teach-in and detection of patterns and contours;
Integrated lens, focal length [mm]	C-mount		Grey threshold, Brightness: evaluation of brightness;
Pixel size	3,45 µm x 3,45 µm		Contrast: evaluation of contrast;
Focus	Manual		Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
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 ¹	Dimensions	70,4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ²
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ³
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -1V / Low < 3V	Weight	Approx. 200 g
Input resistance	> 20 kΩ	Plug connections	Versorgung und I/O M12, 12-polig, Ethernet M12, 4-polig,
Interfaces VISOR® V20-CR-Advanced	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	✓		

¹ Max. ripple < 5V_{SS} ² only with protective casing ³ 80 % air humidity, noncondensing

Vision-Sensor VISOR® C-mount



153-13555

4



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

	LO C 8	LO C 12	LO C 16	LO C 25	LO C 35	LO C 50	LO C 75
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51513	526-51514	526-51515	526-51516	526-51525	526-51113	526-51116

Part number	Article number	Accessories										
V20-CR-P3-C-2	632-91134	<table border="1"> <tr> <td>Connection cables</td> <td>From Page A-46</td> </tr> <tr> <td>Illumination</td> <td>From Page A-33</td> </tr> <tr> <td>Lenses</td> <td>From Page A-28</td> </tr> <tr> <td>Brackets</td> <td>From Page A-4</td> </tr> <tr> <td>Interface accessories</td> <td>From Page A-53</td> </tr> </table>	Connection cables	From Page A-46	Illumination	From Page A-33	Lenses	From Page A-28	Brackets	From Page A-4	Interface accessories	From Page A-53
Connection cables	From Page A-46											
Illumination	From Page A-33											
Lenses	From Page A-28											
Brackets	From Page A-4											
Interface accessories	From Page A-53											

VISOR® V10 Code Reader Standard, wide field of view

Reading of 1D and 2D codes

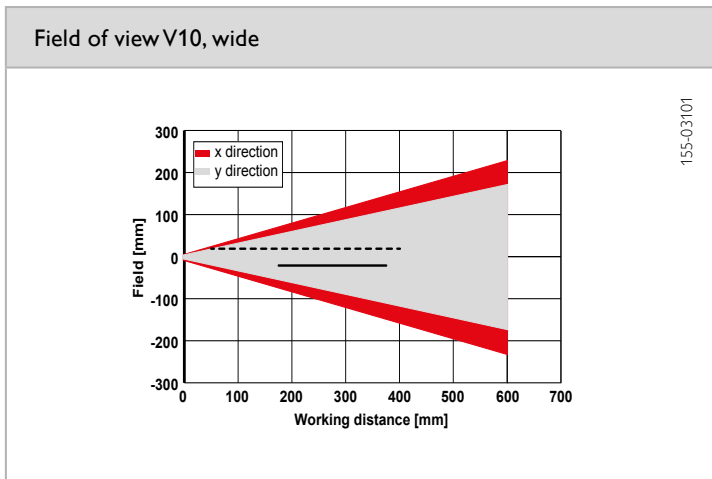
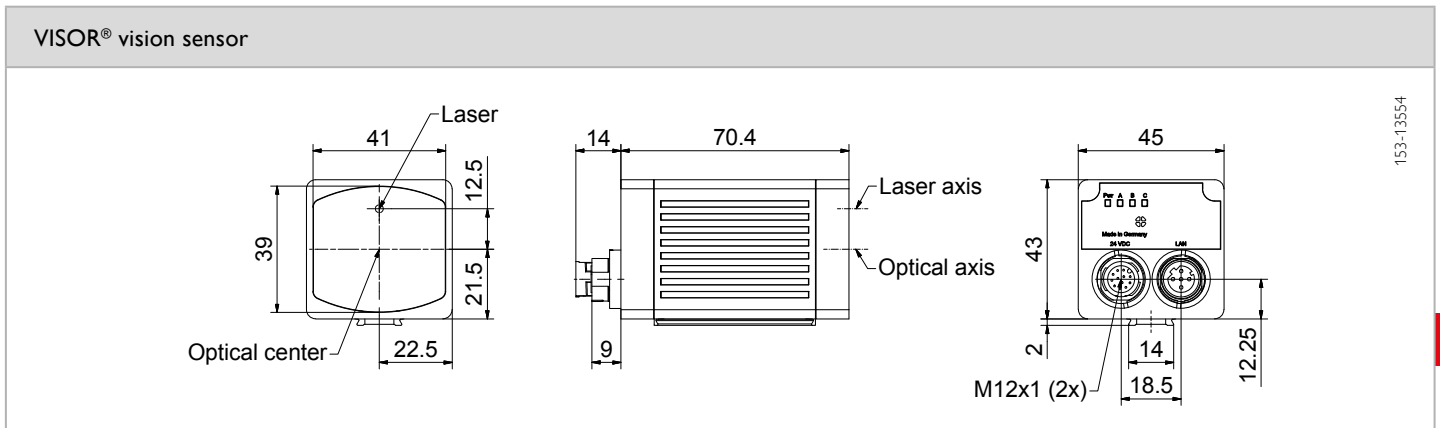


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 × 600 Pixel	Number of jobs / detectors	8 / 32
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) LEDs		
Minimum field of view, X × Y	2 × 1 mm		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 4 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	No		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-S3-W-W-M2	631-91061	Connection cables	From Page A-46
White	V10-CR-S3-W-WD-M2	631-91000	Illumination	From Page A-33
Red	V10-CR-S3-R-W-M2	631-91064	Brackets	From Page A-4
Red	V10-CR-S3-R-WD-M2	631-91066	Interface accessories	From Page A-53
Infrared	V10-CR-S3-I-W-M2	631-91069		
Infrared	V10-CR-S3-I-WD-M2	631-91040		

VISOR® V10 Code Reader Standard, medium field of view

Reading of 1D and 2D codes

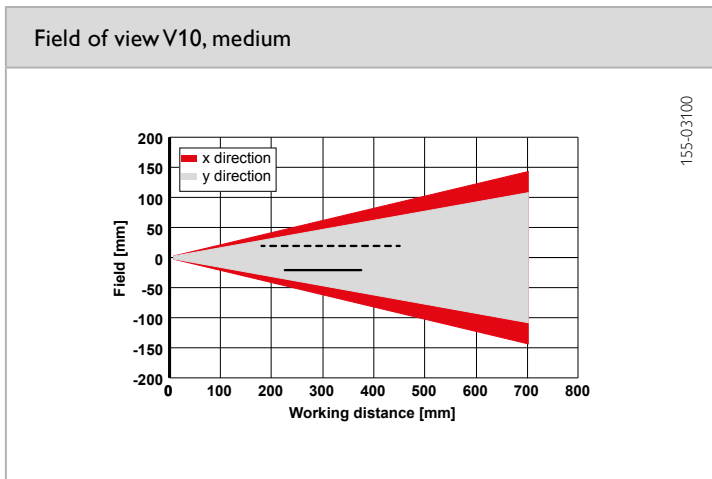
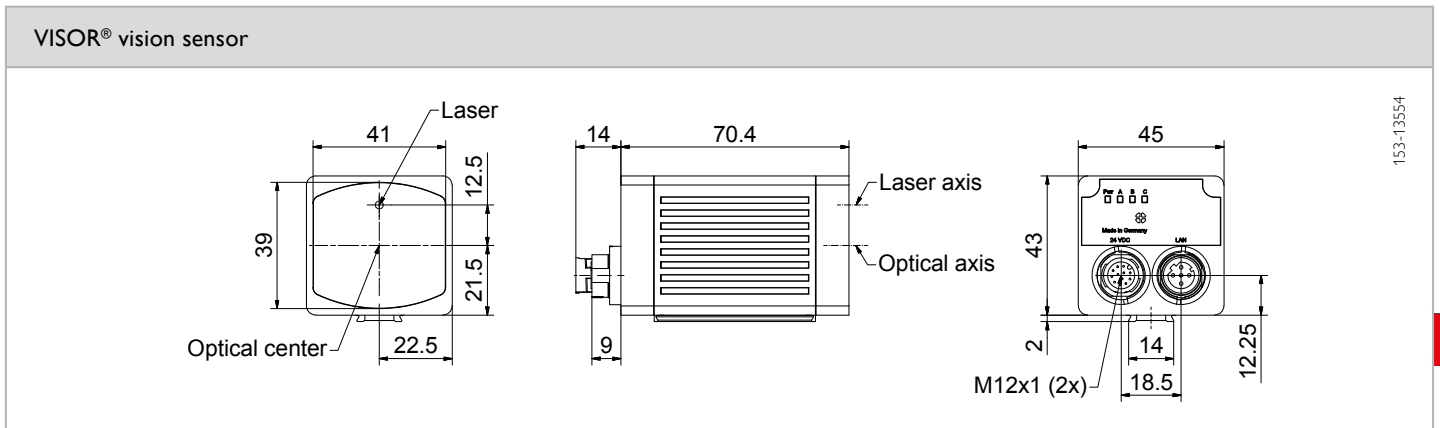


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	8 / 32
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) LEDs		
Minimum field of view, X x Y	7 x 3 mm		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	Vibration resistance	EN 60068-2-6
Inputs/outputs	2 inputs, 2 outputs, 4 selectable inputs/outputs	Shock resistance	EN 60068-2-27
Encoder	No		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-S3-W-M-M2	631-91062	Connection cables	From Page A-46
White	V10-CR-S3-W-MD-M2	631-91037	Illumination	From Page A-33
Red	V10-CR-S3-R-M-M2	631-91065	Brackets	From Page A-4
Red	V10-CR-S3-R-MD-M2	631-91067	Interface accessories	From Page A-53
Infrared	V10-CR-S3-I-M-M2	631-91070		
Infrared	V10-CR-S3-I-MD-M2	631-91071		

VISOR® V10 Code Reader Standard, narrow field of view

Reading of 1D and 2D codes

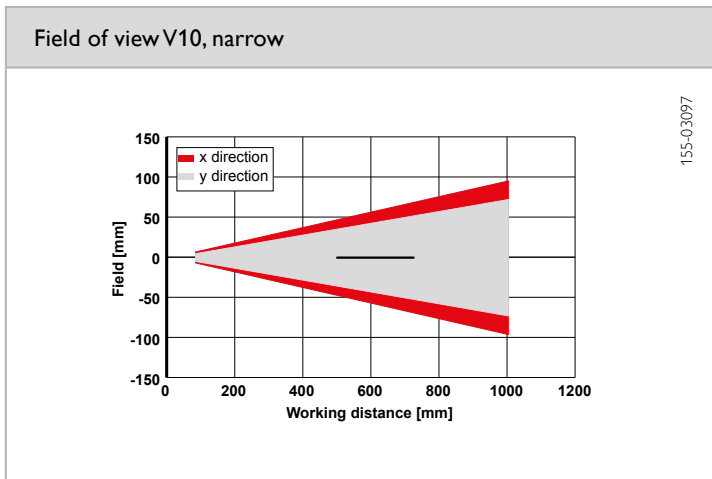
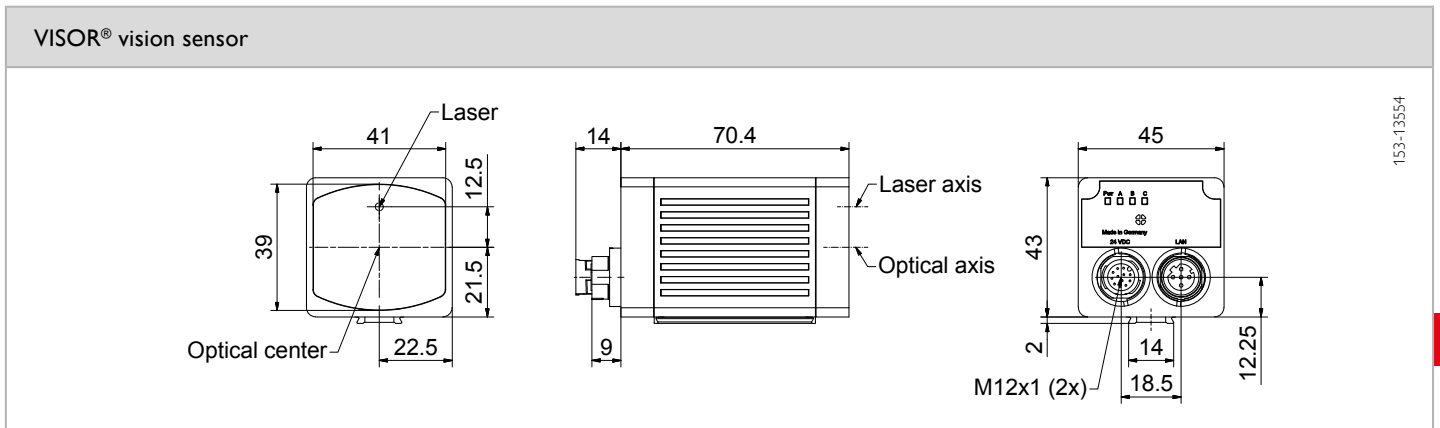


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	8 / 32
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Data code: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) LEDs		
Minimum field of view, X x Y	14 x 10 mm		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	Vibration resistance	EN 60068-2-6
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 4 selectable inputs/outputs		
Encoder	No		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



— Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-S3-W-N-M2	631-91063	Connection cables	From Page A-46
Red	V10-CR-S3-R-N-M2	631-91068	Illumination	From Page A-33
Infrared	V10-CR-S3-I-N-M2	631-91072	Brackets	From Page A-4
			Interface accessories	From Page A-53


VISOR® V10 Code Reader Advanced, wide field of view

Multi-Code Reader for 1D and 2D codes

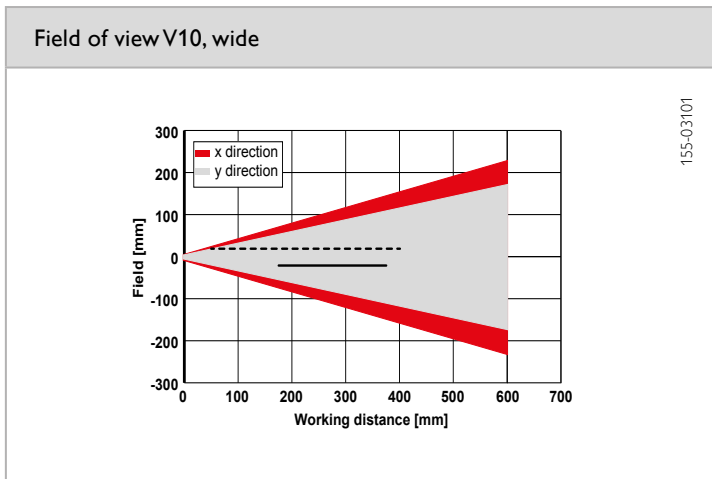
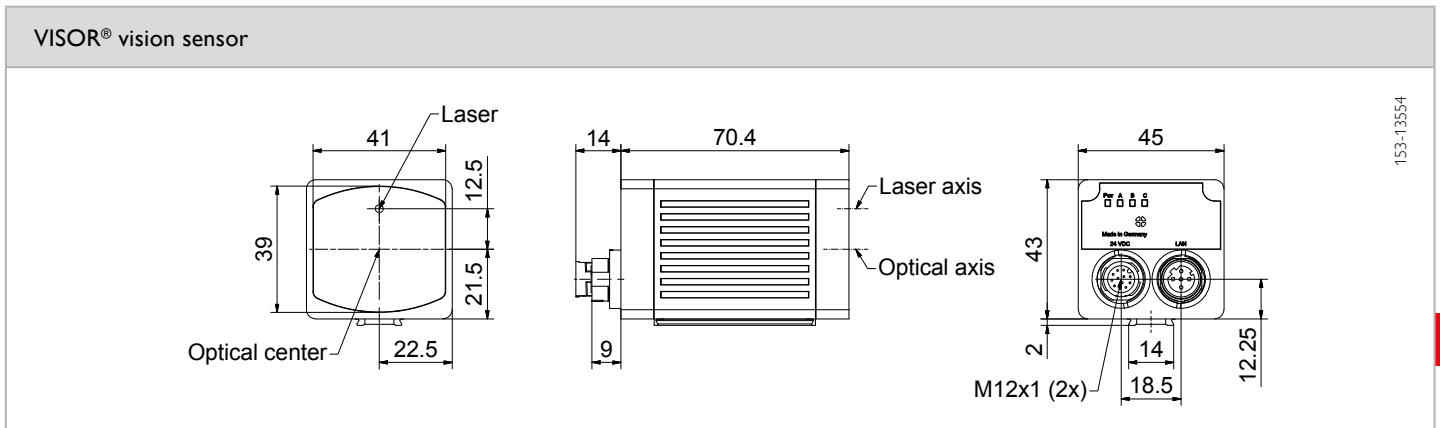


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 × 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



----- Increased depth of field
 _____ Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-A3-W-W-M2-L	631-91051	Connection cables	From Page A-46
White	V10-CR-A3-W-WD-M2-L	631-91035	Illumination	From Page A-33
Red	V10-CR-A3-R-W-M2-L	631-91054	Brackets	From Page A-4
Red	V10-CR-A3-R-WD-M2-L	631-91033	Interface accessories	From Page A-53
Infrared	V10-CR-A3-I-W-M2-L	631-91057		
Infrared	V10-CR-A3-I-WD-M2-L	631-91031		


VISOR® V10 Code Reader Advanced, medium field of view

Multi-Code Reader for 1 D und 2 D Codes

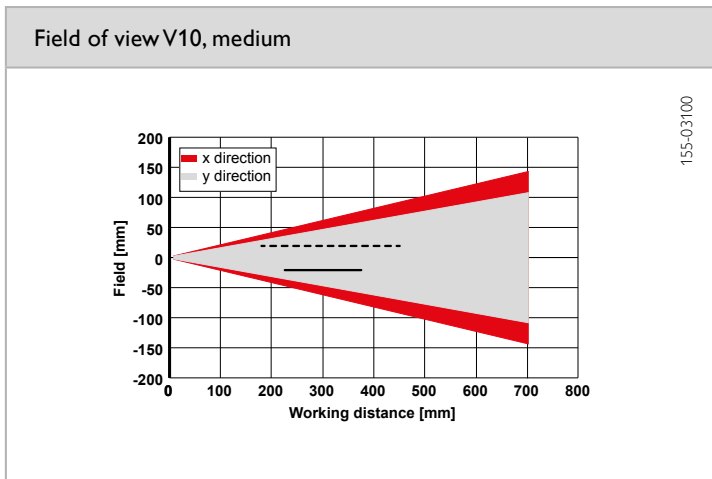
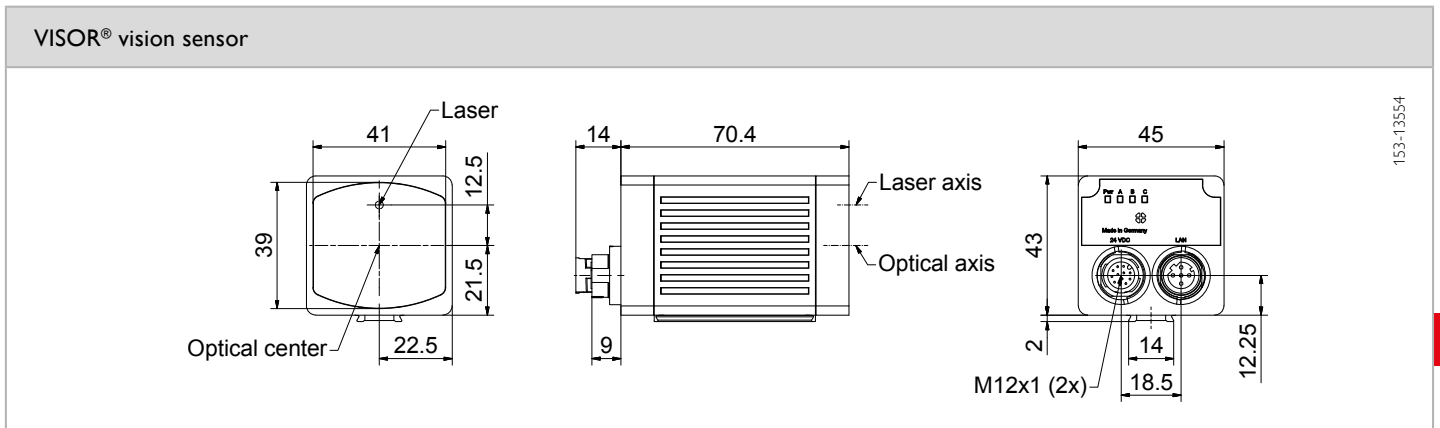


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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 VISOR® V20-CR-Advanced	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	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-A3-W-M-M2-L	631-91052	Connection cables	From Page A-46
White	V10-CR-A3-W-MD-M2-L	631-91034	Illumination	From Page A-33
Red	V10-CR-A3-R-M-M2-L	631-91055	Brackets	From Page A-4
Red	V10-CR-A3-R-MD-M2-L	631-91032	Interface accessories	From Page A-53
Infrared	V10-CR-A3-I-M-M2-L	631-91058		
Infrared	V10-CR-A3-I-MD-M2-L	631-91028		


VISOR® V10 Code Reader Advanced, narrow field of view

Multi-Code Reader for 1 D und 2 D Codes

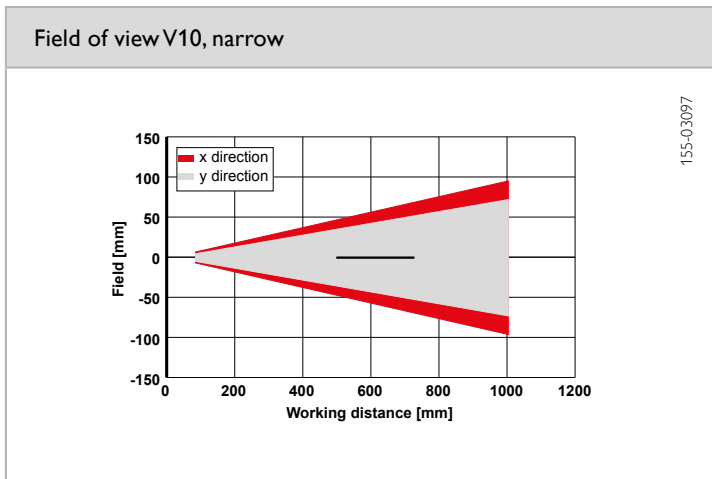
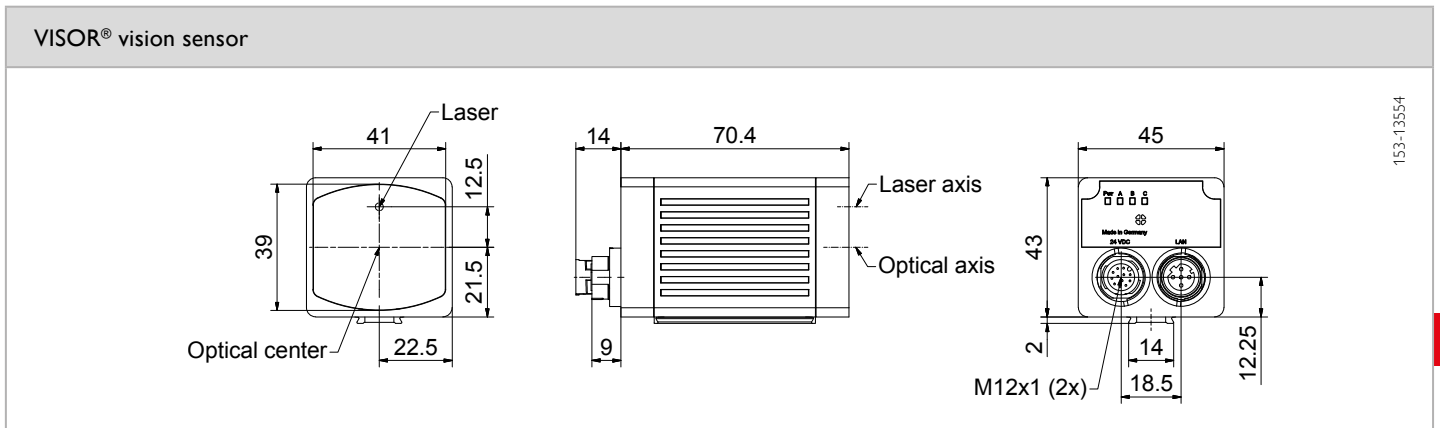


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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 VISOR® V20-CR-Advanced	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	✓		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, noncondensing



— Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-A3-W-N-M2-L	631-91053	Connection cables	From Page A-46
Red	V10-CR-A3-R-N-M2-L	631-91056	Illumination	From Page A-33
Infrared	V10-CR-A3-I-N-M2-L	631-91059	Brackets	From Page A-4
			Interface accessories	From Page A-53

VISOR® V10 Code Reader Advanced, C-Mount

Multi-Code Reader for 1D und 2D Codes

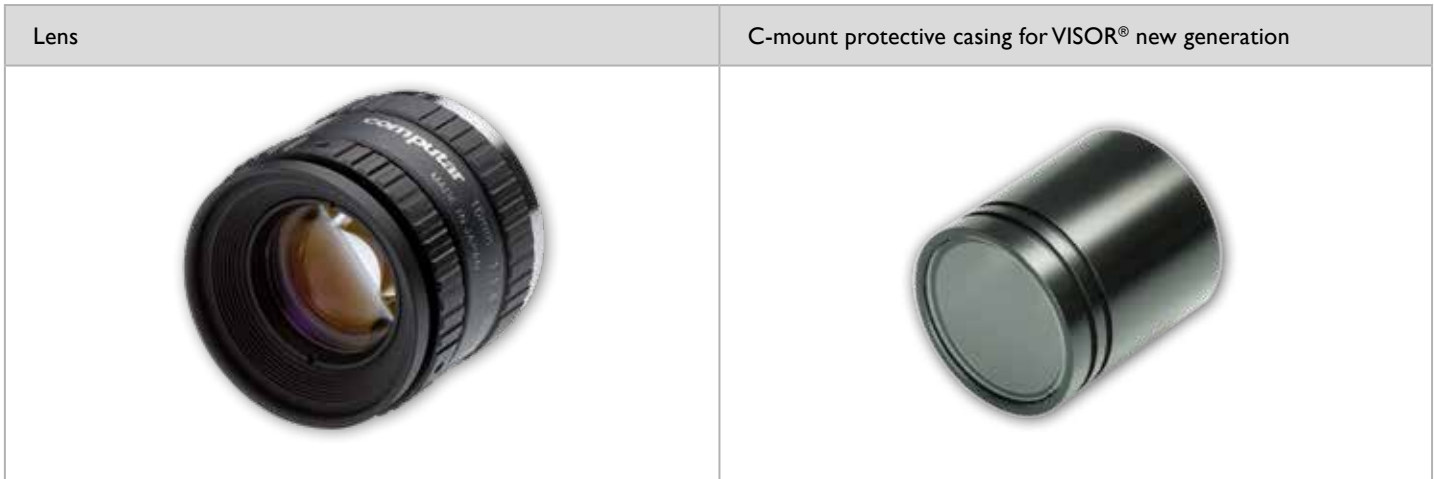
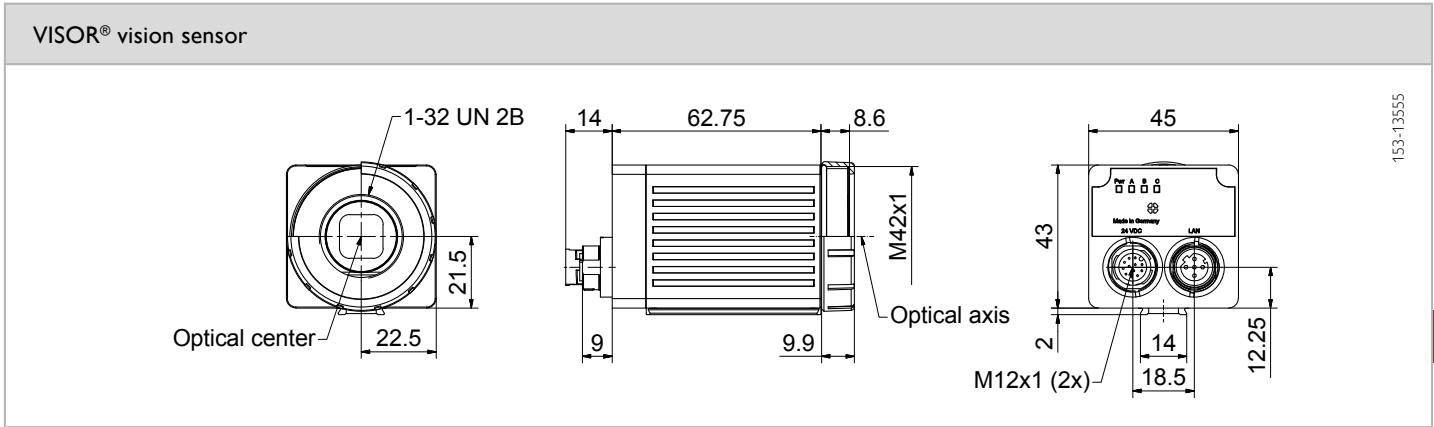


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Barcode: reading of 1D barcodes: EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; Datacode: reading of 2D barcodes: ECC200, QR-Code, PDF 417, ECC200 GS1
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	None		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ¹	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ²
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ³
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	✓		

¹ Max. ripple < 5 V_{SS} ² only with protective casing ³ 80 % air humidity, noncondensing



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

	LO C 8	LO C 12	LO C 16	LO C 25	LO C 35	LO C 50	LO C 75
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51513	526-51514	526-51515	526-51516	526-51525	526-51113	526-51116

Part number	Article number	Accessories
V10-CR-A3-C-2	631-91060	<ul style="list-style-type: none"> Connection cables Illumination Lenses Brackets Interface accessories
		<ul style="list-style-type: none"> From Page A-46 From Page A-33 From Page A-28 From Page A-4 From Page A-53


VISOR® V10 Code Reader Professional, wide field of view

Multi-Code Reader for 1D und 2D Codes und OCR

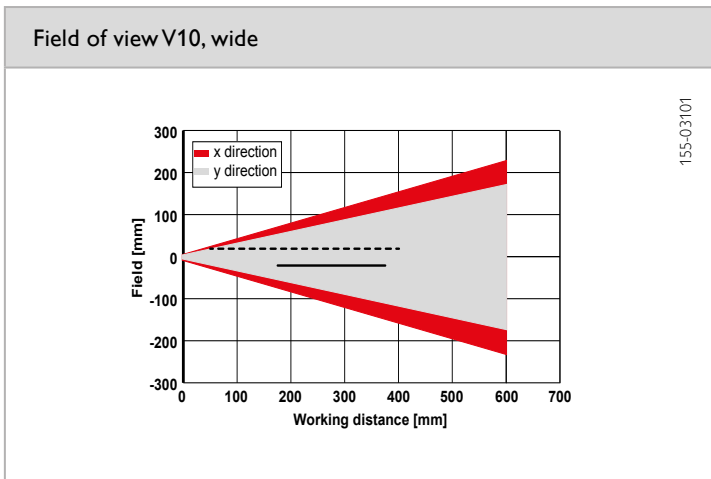
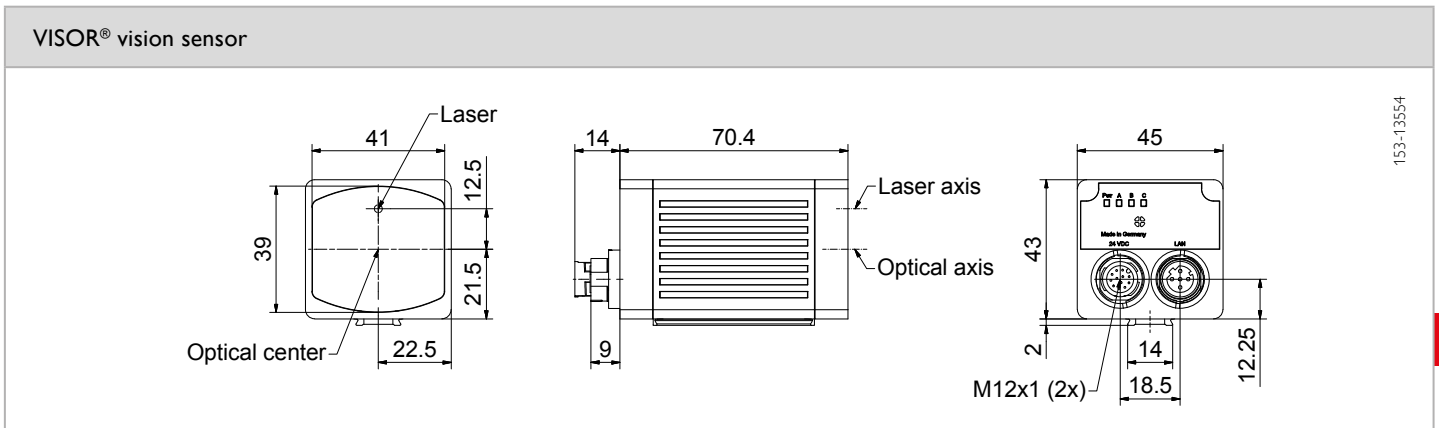


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours; Grey threshold, Brightness: evaluation of brightness; Contrast: evaluation of contrast; Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
Integrated lens, focal length [mm]	5.2 (wide)		
Pixel size	4.8 µm x 4.8 µm		
Focus	Motorized		
Adjustment range	0 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm), infrared (850 nm) LEDs		
Minimum field of view, X x Y	2 x 1 mm		
Target laser	Laser: red (635 nm) class 1  (IEC 60825-1)		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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
VISOR® V20-CR-Advanced		Shock resistance	EN 60068-2-27
Inputs/outputs	2 inputs, 2 outputs, 6 selectable inputs/outputs		
Encoder	✓		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-P3-W-W-M2-L	631-91083	Connection cables	From Page A-46
White	V10-CR-P3-W-WD-M2-L	631-91086	Illumination	From Page A-33
Red	V10-CR-P3-R-W-M2-L	631-91088	Brackets	From Page A-4
Red	V10-CR-P3-R-WD-M2-L	631-91091	Interface accessories	From Page A-53
Infrared	V10-CR-P3-I-W-M2-L	631-91093		
Infrared	V10-CR-P3-I-WD-M2-L	631-91096		


VISOR® V10 Code Reader Professional, medium field of view

Multi-Code Reader for 1D and 2D codes and OCR

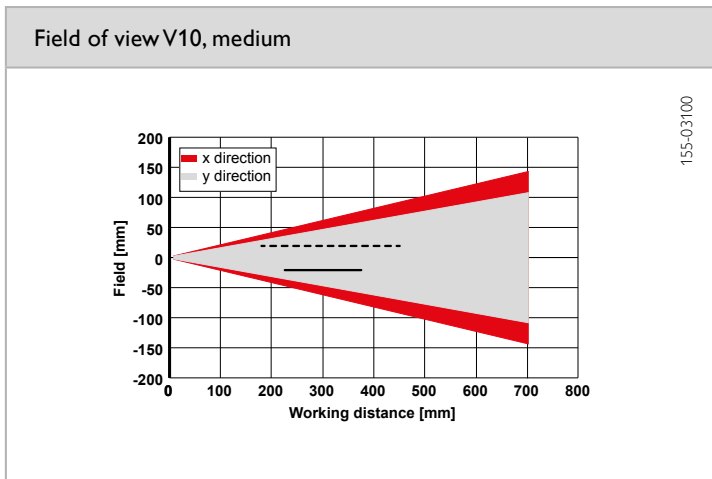
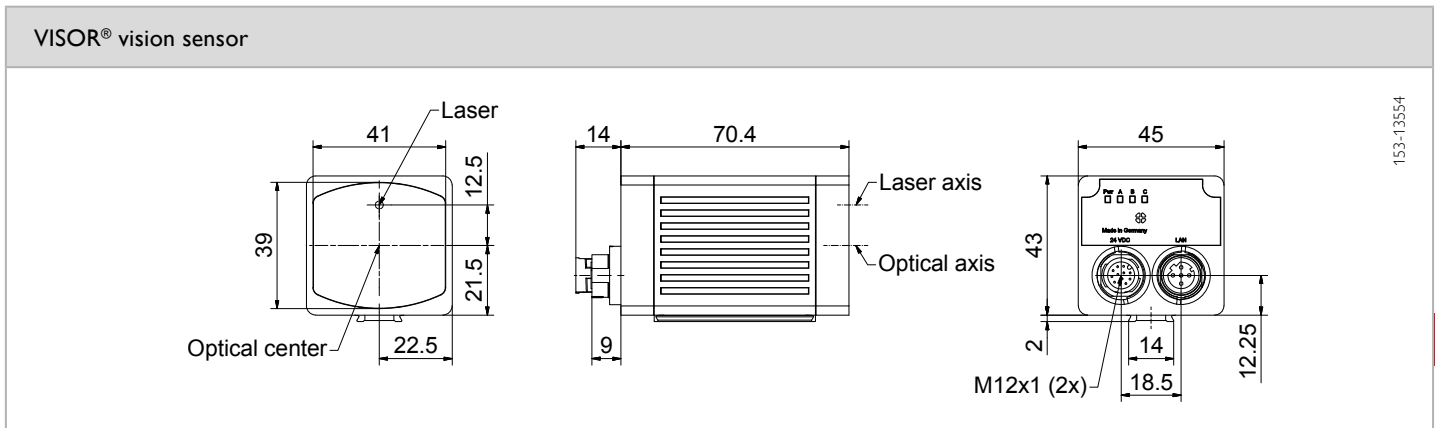


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours;
Integrated lens, focal length [mm]	9.6 (medium)		Grey threshold, Brightness: evaluation of brightness;
Pixel size	4.8 µm x 4.8 µm		Contrast: evaluation of contrast;
Focus	Motorized		Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
Adjustment range	12 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	✓		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



- Increased depth of field
- Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-P3-W-M-M2-L	631-91084	Connection cables	From Page A-46
White	V10-CR-P3-W-MD-M2-L	631-91087	Illumination	From Page A-33
Red	V10-CR-P3-R-M-M2-L	631-91089	Brackets	From Page A-4
Red	V10-CR-P3-R-MD-M2-L	631-91092	Interface accessories	From Page A-53
Infrared	V10-CR-P3-I-M-M2-L	631-91094		
Infrared	V10-CR-P3-I-MD-M2-L	631-91097		


VISOR® V10 Code Reader Professional, narrow field of view

Multi-Code Reader for 1D and 2D codes and OCR

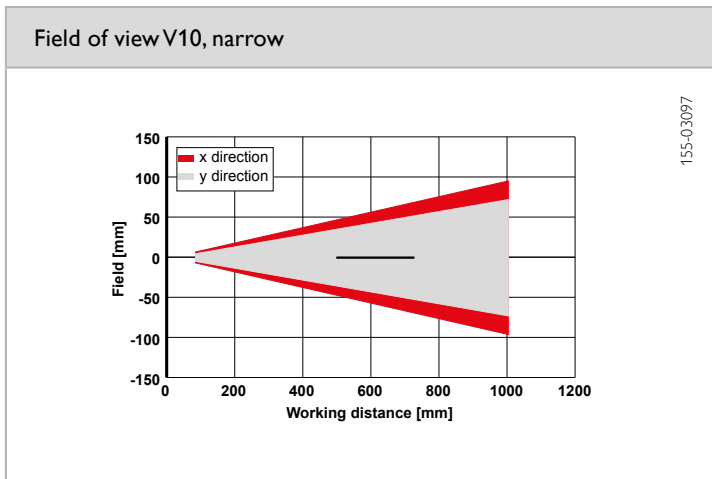
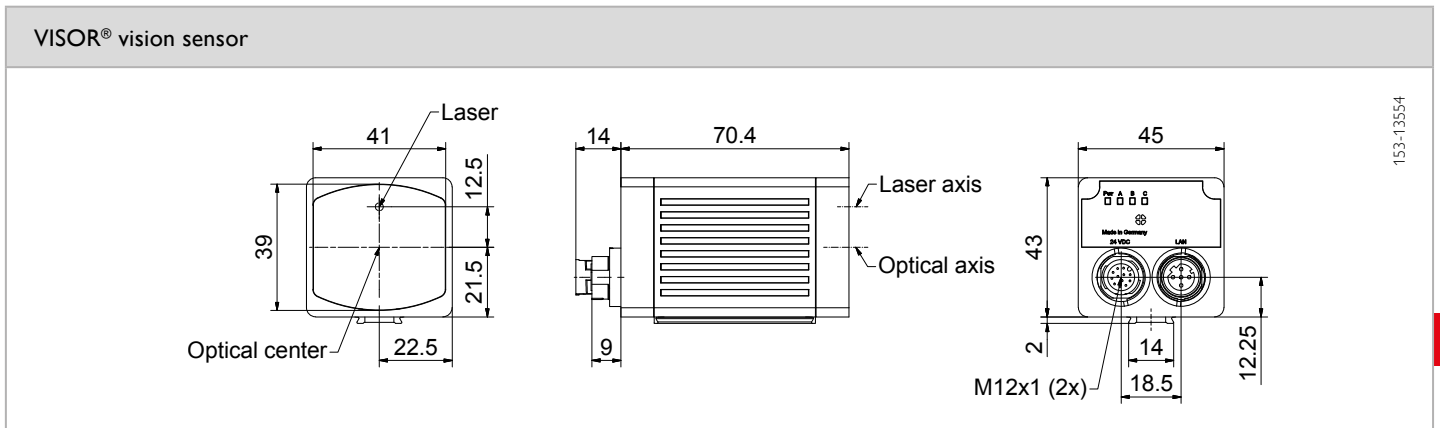


PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours;
Integrated lens, focal length [mm]	20 (narrow)		Grey threshold, Brightness: evaluation of brightness;
Pixel size	4.8 µm x 4.8 µm		Contrast: evaluation of contrast;
Focus	Motorized		Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
Adjustment range	100 mm to infinity		
Integrated illumination	White (5000 K), red (635 nm), infrared (850 nm) 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 _B	18 ... 30 DC ¹	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	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ²
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	✓		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, noncondensing



— Normal depth of field

Illumination	Part number	Article number	Accessories	
White	V10-CR-P3-W-N-M2-L	631-91085	Connection cables	From Page A-46
Red	V10-CR-P3-R-N-M2-L	631-91090	Illumination	From Page A-33
Infrared	V10-CR-P3-I-N-M2-L	631-91095	Brackets	From Page A-4
			Interface accessories	From Page A-53

VISOR® V10 Code Reader Professional, C-Mount

Multi-Code Reader for 1D and 2D codes and OCR



PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass
- Reading OCR fonts

Optical data		Functions	
Resolution	800 x 600 Pixel	Number of jobs / detectors	max. 255 / max. 255
Imaging chip CMOS	1/3.6", monochrome	Detectors	Position tracking: X/Y and orientation; Pattern matching / contour: teach-in and detection of patterns and contours;
Integrated lens, focal length [mm]	C-mount		Grey threshold, Brightness: evaluation of brightness;
Pixel size	4.8 µm x 4.8 µm		Contrast: evaluation of contrast;
Focus	Manual		Barcode: 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; Datacode: reading 2D codes: ECC200, QR code, GS1, PDF 417; OCR: reading of fonts
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 ... 30 DC ¹	Dimensions	70.4 x 45 x 45 mm (without plug)
Current consumption (without I/O)	≤ 300 mA	Enclosure rating	IP 67 & IP 65 ²
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, housing	Aluminium, die-cast, RoHS compliant
Power On Delay	Ca. 13 s after Power on	Material, front screen	Plastic
Outputs	PNP/NPN (switchable)	Ambient temperature: operation	0 ... +50 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Ambient temperature: storage	-20 ... +60 °C ³
Switching threshold inputs incl. encoder	PNP/NPN High > U _B -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	✓		

¹ Max. ripple < 5V_{SS} ² only with protective casing ³ 80 % air humidity, noncondensing

The VISOR® Code Reader reads whatever's printed, dot peened and lasered.

System description

With its integrated object detection, the VISOR® Code Reader is unique in its price segment. The compact sensor reads conventional 1D bar codes, 2D data matrix codes and now also optical characters (OCR). It also has four detectors for object detection (pattern comparison, brightness, grey level and contrast), with which other object features – for example, stamps or logos – can be evaluated in a single reading pass. Codes and object features are even reliably detected with deviations from the taught-in position – using position tracking (optionally activated).

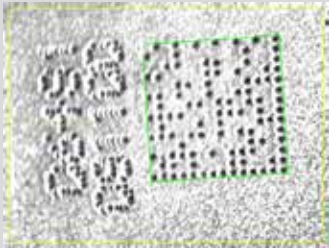
A special image filter with expanded setting options guarantees excellent reading performance even under difficult reading conditions. The test results can largely be evaluated within the sensor itself – with the option of string comparison or regular print-outs – so that there is no need for a PLC or PC connection in many cases. If, however, this proves necessary, it can be easily and flexibly connected using freely available PLC function blocks for Siemens S7, Codesys and Allen Bradley.

With integrated quality parameters complying with ISO and AIM standards, the VISOR® Code Reader also permits the informative evaluation of printed and direct marked 1D and 2D codes. Integrated red, infrared or white light variants provide maximum functional reliability through optimum code illumination.

In addition, the robust, compact and industry-oriented housings guarantee reliability even where space is restricted. Integrated 6 mm or 12 mm optics or C-mount devices also save effort and costs through their optimum adaptation to the most varied of code sizes and operating distances. The new V20 variants also offer a resolution of 1.3 megapixels for particularly small codes or large search areas.

VISOR® Code Reader product variants

Features/sensors	Standard	Advanced
Functions		
V10 resolution in pixels	736 × 480	736 × 480
V20 resolution in pixels	1280 × 1024	1280 × 1024
Image rate per second V10 V20	50 40	50 40
Number of jobs detectors	8 2	max. 255 max. 255
Position tracking	–	✓
Pattern comparison (X-,Y-translation)	–	✓
Grey threshold	–	✓
Contrast	–	✓
Brightness	–	✓
Data code	✓	✓
Bar code	✓	✓
OCR	–	✓
Freeform Tool	–	✓
		<i>(not applicable to 1D & 2D codes)</i>
Interfaces		
Inputs outputs	2 4	2 4
Freely definable switching outputs/inputs, PNP or NPN	2	4
Encoder input	–	✓
I/O expansion	✓	✓
RS422 RS232	✓ ✓	✓ ✓
Ethernet / data transmission	✓	✓
EtherNet / IP	✓	✓
PROFINET	✓	✓
SensoWeb	✓	✓
Lens		
V10: integrated 6 mm 12 mm 25 mm	✓ ✓ ✓	✓ ✓ ✓
V20: integrated 12 mm	✓	✓
C-mount	–	✓
Operation / visualisation		
Viewer software with user guidance	✓	✓
Hierarchised user rights	✓	✓



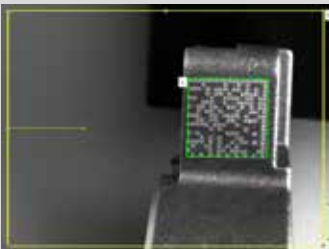
Dot peened code on rough substrate
Code is made legible by powerful reading algorithm. Presence of the nailed imprint in plain text can be checked using object detection.



Low-contrast code
Code is made legible through high tolerance – also towards weakly contrasting codes.



Optical character reading
Dot matrix printing can also be read with OCR.



Code with small "quiet zone"
Even codes with a small quiet zone or damaged finder pattern can be read.



Code reading on solar cells
Even extremely small codes (e.g. on silicon solar cells) or highly reflective codes (e.g. on thin-layer solar cells) can be read.



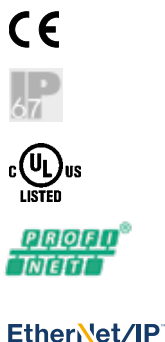
Printed codes on pharmaceutical packaging
ECC200 or bar codes (e.g. EAN 13) can be searched for simultaneously. In addition to code reading, the presence of optical characters can also be checked using object detection.

Special features of the VISOR® Code Reader

- Can be used for all common 2D codes (e.g. ECC 200 data matrix) and common 1D bar codes
- Optimum cost-effectiveness through combination of two functions in one device: code reading and object detection
- High operating dependability through reliable detection of even poorly readable codes under difficult ambient conditions
- Flexible and simple connection to PC and PLC environments due to comprehensive possibilities for archiving pictures and read results, as well as freely available PLC function blocks for Siemens S7, Codesys and Allen Bradley
- Very high flexibility, e.g. also due to reading several similar or different codes in one reading pass
- Reading of optical characters with OCR based on neuronal networks, particularly suitable for point printing

VISOR® V20 Code Reader

Standard vision sensor for code reading, 12 mm



PRODUCT HIGHLIGHTS

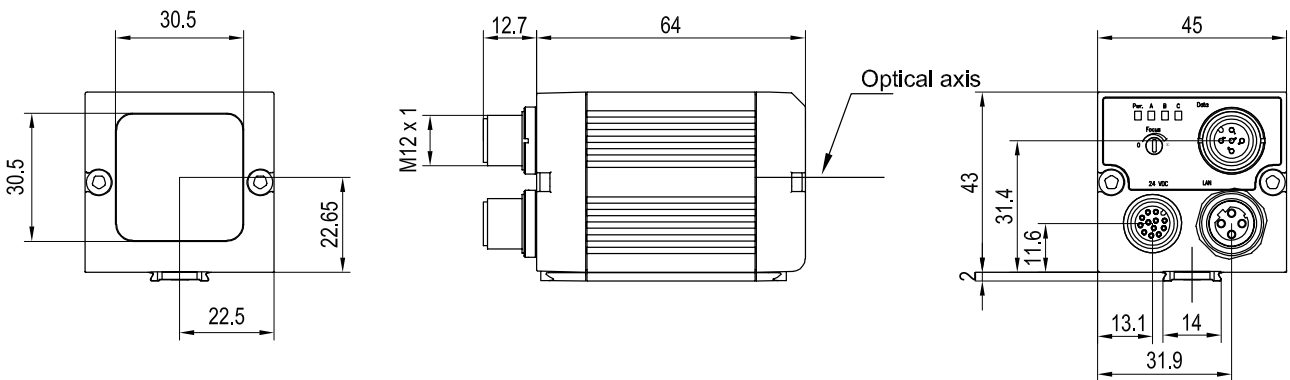
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments

Optical data		Functions	
Resolution	1280 × 1024 pixels	Number of jobs / detectors	8 / 2
CMOS	1/1.8", monochrome	Detectors	Bar code / data code
Integrated lens, focal length	12 mm, adjustable focal position	Properties	Bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes, ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	30 mm to infinity	Typical cycle time ²	Typ. 30 ms bar code Typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X × Y	16 × 13 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 × 45 × 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ³
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connection	Power and I/O M12 12-pin Ethernet M12 4-pin Data M12 5-pin
Input resistance	> 20 kΩ	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4 V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 2 selectable inputs/outputs		

¹ Max. ripple < 5 V_{SS} ² with VGA-resolution (640 × 480 pixels) ³ 80 % air humidity, non-condensing

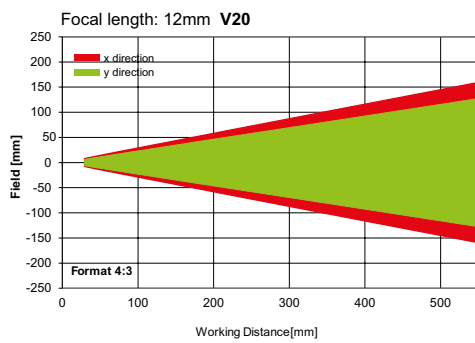
Illumination	Part number	Article number
White	V20-CR-S2-W12	536-91044
Red	V20-CR-S2-R12	536-91045
Infrared	V20-CR-S2-I12	536-91046

VISOR® vision sensor



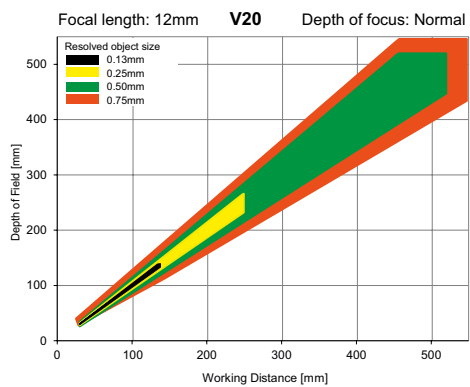
153-00911

Field of view



155-01637

Depth of field: normal



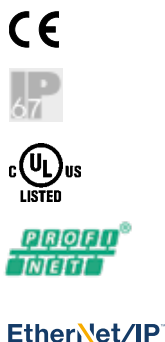
155-01636

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V20 Code Reader

Advanced vision sensor for code reading with object detection, 12 mm



PRODUCT HIGHLIGHTS

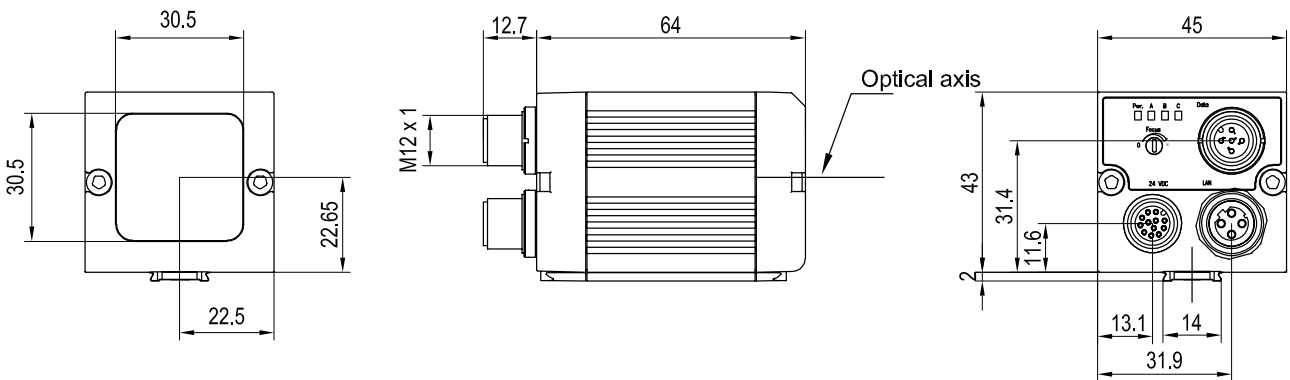
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1280 × 1024 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/1.8", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	12 mm, adjustable focal position	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	30 mm to infinity	Typical cycle time ²	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	White, red, infrared, UV (400 nm) LEDs		
Minimum field of view, X × Y	16 × 13 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 × 45 × 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ³
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connection	Power and I/O M12 12-pin Ethernet M12 4-pin Data M12 5-pin
Input resistance	> 20 kΩ	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4 V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² with VGA-resolution (640 × 480 pixels) ³ 80 % air humidity, non-condensing

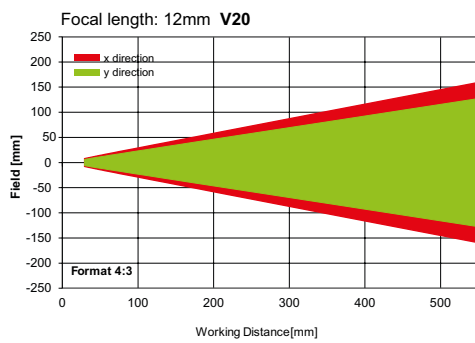
Illumination	Part number	Article number
White	V20-CR-A2-W12	536-91001
Red	V20-CR-A2-R12	536-91002
Infrared	V20-CR-A2-I12	536-91003
UV (400 nm)	V20-CR-A2-U12	536-91019

VISOR® vision sensor



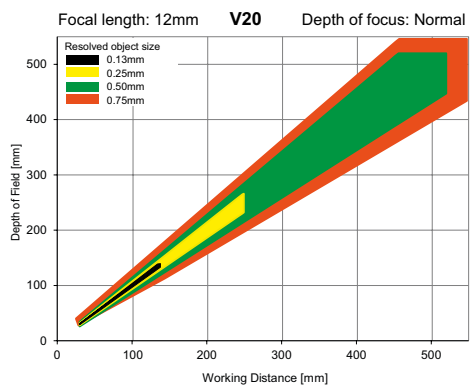
153-00911

Field of view



155-01637

Depth of field: normal



155-01636

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V20 Code Reader Color

Advanced vision sensor for code reading with object detection, 12 mm



CE

IP 67

UL LISTED

PROFINET

EtherNet/IP

PRODUCT HIGHLIGHTS

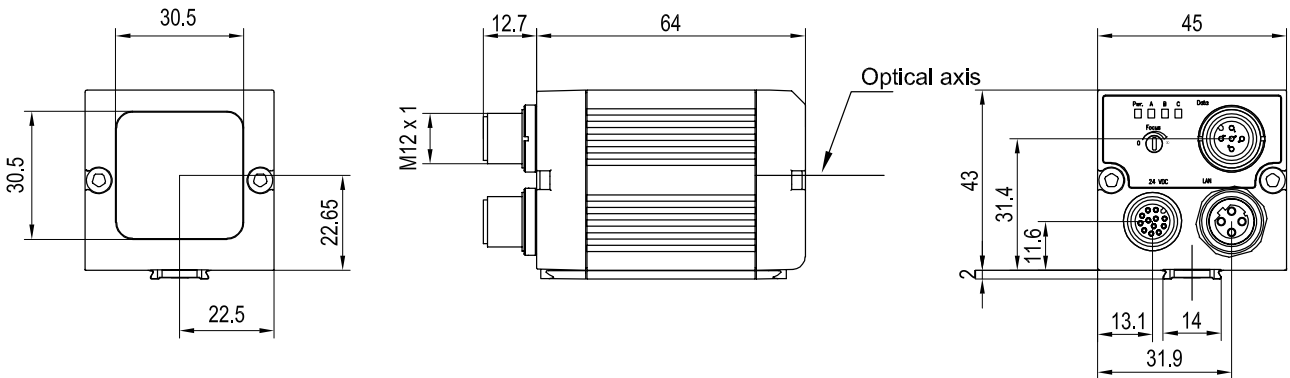
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Code reading of color image
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1280 × 1024 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/1.8", color	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	12 mm, adjustable focal position	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	30 mm to infinity	Typical cycle time ²	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	White LEDs		
Minimum field of view, X × Y	16 × 13 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4V DC ¹	Dimensions	65 × 45 × 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ³
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connection	Power and I/O M12 12-pin Ethernet M12 4-pin Data M12 5-pin
Input resistance	> 20 kΩ	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² with VGA-resolution (640 × 480 pixels) ³ 80 % air humidity, non-condensing

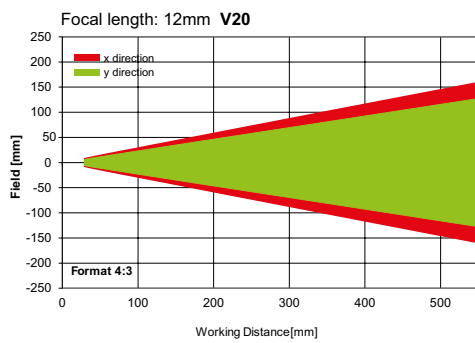
Illumination	Part number	Article number
White	V20C-CR-A2-W12	536-91026

VISOR® vision sensor



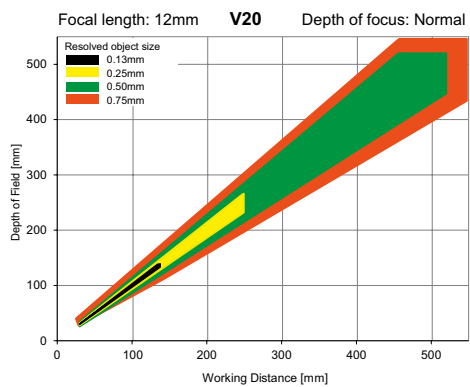
153-00911

Field of view



155-01637

Depth of field: normal



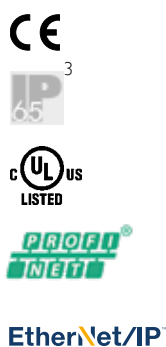
155-01636

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V20 Code Reader

Advanced vision sensor for code reading with object detection, C-mount



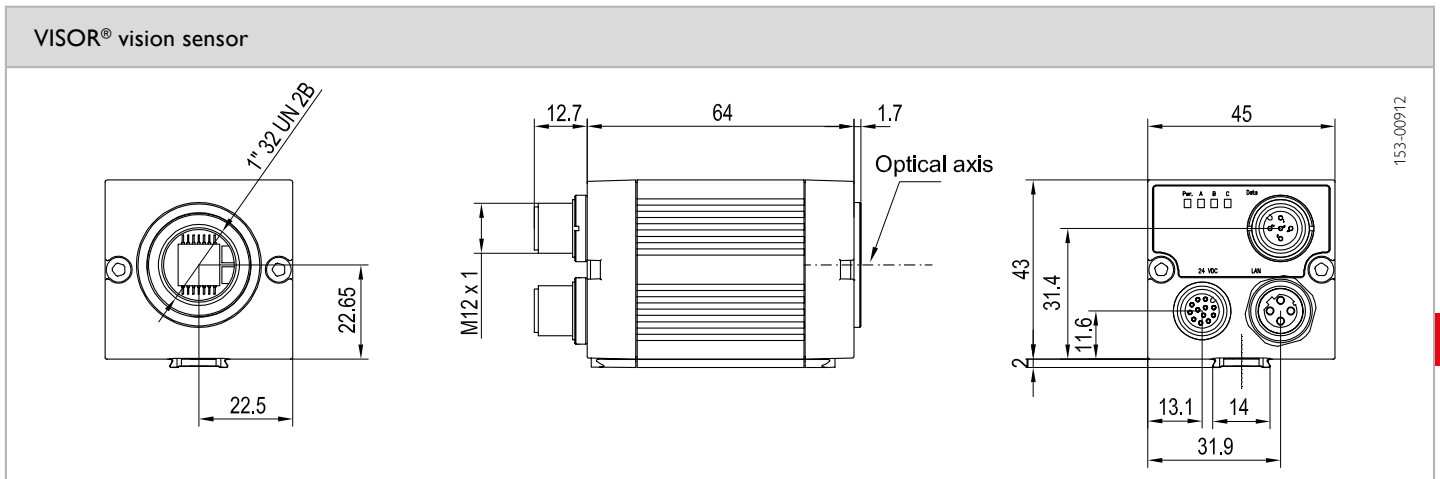
PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	1280 × 1024 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/1.8", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	C-mount	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	Dependent on lens	Typical cycle time ²	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	None		
Minimum field of view, X × Y	Dependent on lens		
Electrical data		Mechanical data	
Operating voltage, +U _b	18 ... 26.4 V DC ¹	Dimensions	65 × 45 × 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 65 ³
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _b / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ⁴
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ⁴
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _b -1 V, Low < 3 V	Plug connection	Power and I/O M12 12-pin Ethernet M12 4-pin Data M12 5-pin
Input resistance	> 20 kΩ	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4 V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² With VGA-resolution (640 × 480 Pixel) ³ With LPT45 C-mount protective casing ⁴ 80 % air humidity, non-condensing

Part number	Article number
V20-CR-A2-C	536-91000



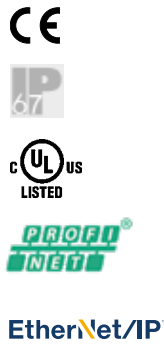
	LO C 8	LO C 12	LO C 16	LO C 25	LO C 35	LO C 50	LO C 75
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51513	526-51514	526-51515	526-51516	526-51525	526-51113	526-51116

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Lenses	From Page A-28
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Standard vision sensor for code reading, 6 mm



PRODUCT HIGHLIGHTS

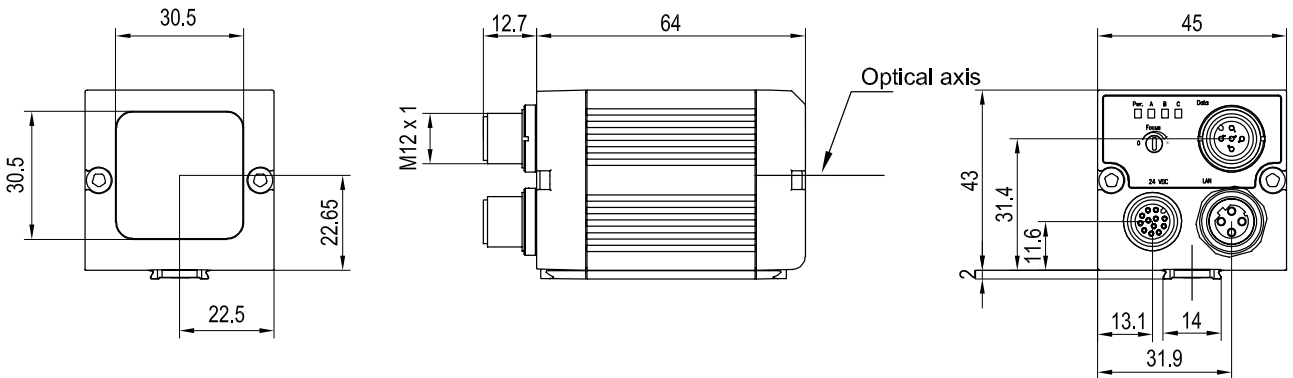
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	8 / 2
CMOS	1/3", monochrome	Detectors	Bar code / data code
Integrated lens, focal length	6 mm, adjustable focal position	Properties	UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes, ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	6 mm to infinity	Typical cycle time	Typ. 30 ms bar code Typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X x Y	5 x 4 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1V, Low < 3V	Plug connection	Power and I/O M12, 12pin Ethernet M12, 4pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 2 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, non-condensing

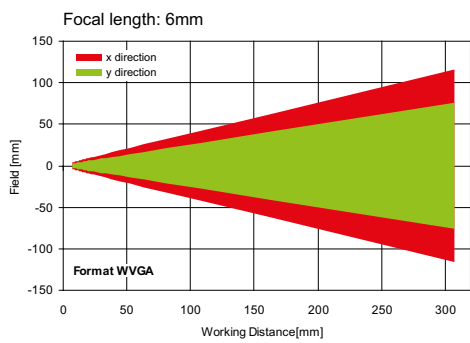
Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-S1-W6	535-91034
White	Enhanced	V10-CR-S1-W6D	535-91036
Red	Normal	V10-CR-S1-R6	535-91038
Red	Enhanced	V10-CR-S1-R6D	535-91040
Infrared	Normal	V10-CR-S1-I6	535-91042
Infrared	Enhanced	V10-CR-S1-I6D	535-91044

VISOR® vision sensor



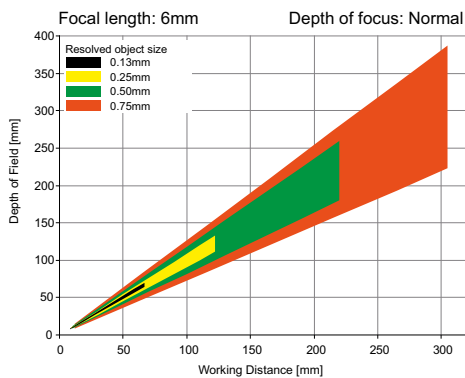
153-00911

Field of view



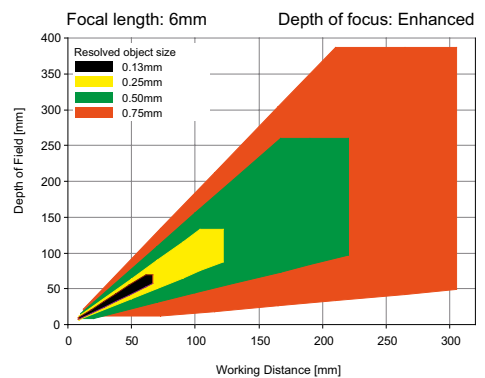
155-01422

Depth of field: normal



155-01409

Depth of field: enhanced



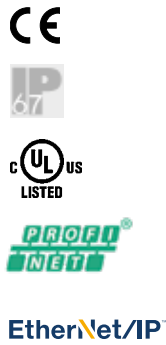
155-01421

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Standard vision sensor for code reading, 12 mm



PRODUCT HIGHLIGHTS

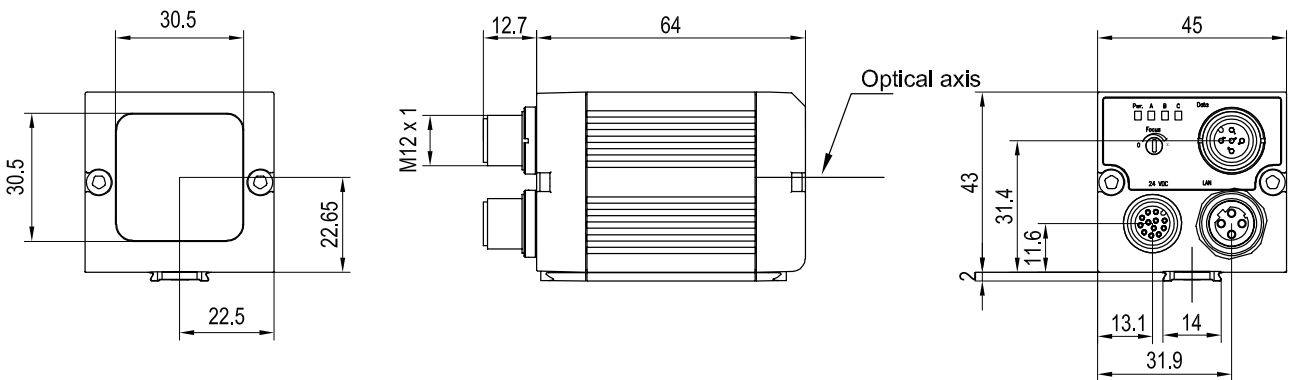
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	8 / 2
CMOS	1/3", monochrome	Detectors	Bar code / data code
Integrated lens, focal length	12 mm, adjustable focal position	Properties	Bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes, ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	30 mm to infinity	Typical cycle time	Typ. 30 ms bar code Typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X x Y	8 x 6 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1V, Low < 3V	Plug connection	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 2 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² 80 % air humidity, non-condensing

Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-S1-W12	535-91035
White	Enhanced	V10-CR-S1-W12D	535-91037
Red	Normal	V10-CR-S1-R12	535-91039
Red	Enhanced	V10-CR-S1-R12D	535-91041
Infrared	Normal	V10-CR-S1-I12	535-91043
Infrared	Enhanced	V10-CR-S1-I12D	535-91045

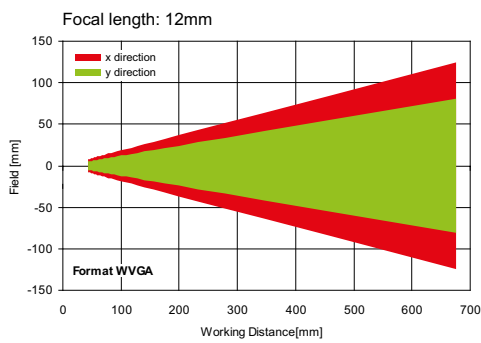
VISOR® vision sensor



153-00911

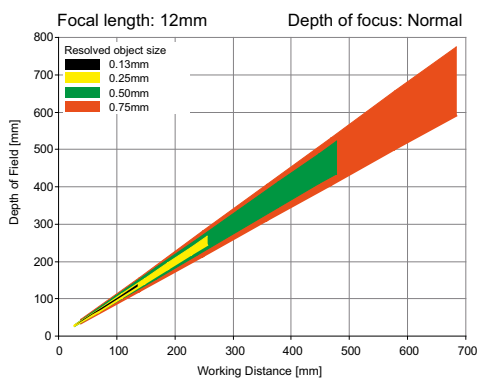
4

Field of view



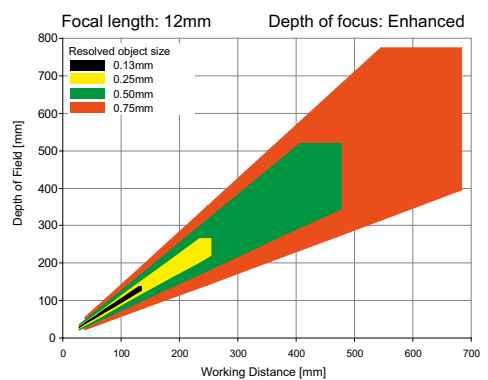
155-01423

Depth of field: normal



155-01410

Depth of field: enhanced



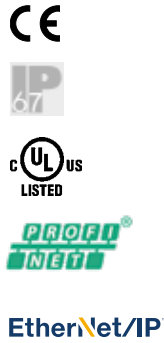
155-01411

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Standard vision sensor for code reading, 25 mm



PRODUCT HIGHLIGHTS

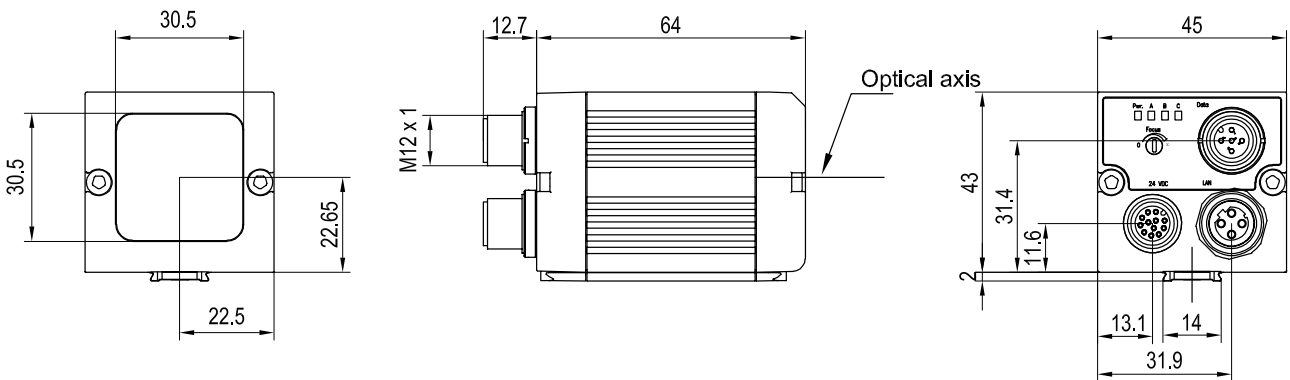
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	8 / 2
CMOS	1/3", monochrome	Detectors	Bar code / data code
Integrated lens, focal length	25 mm, adjustable focal position	Properties	Bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes, ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	140 mm to infinity	Typical cycle times	Typ. 30 ms bar code Typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X x Y	18 x 14 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _b	18 ... 26.4V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _b / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _b -1V, Low < 3V	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, non-condensing

Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-S2-W25	535-91088
Red	Normal	V10-CR-S2-R25	535-91089
Infrared	Normal	V10-CR-S2-I25	535-91090

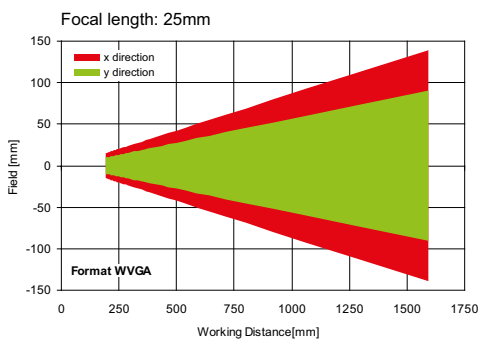
VISOR® vision sensor



153-00911

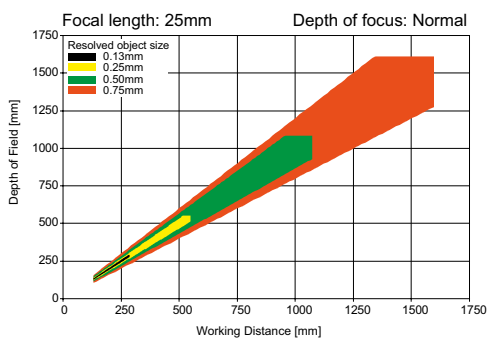
4

Field of view



155-01424

Depth of field: normal



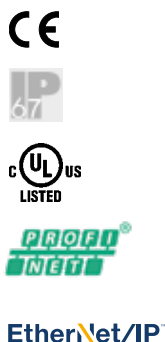
155-01412

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Advanced vision sensor for code reading with object detection, 6 mm



PRODUCT HIGHLIGHTS

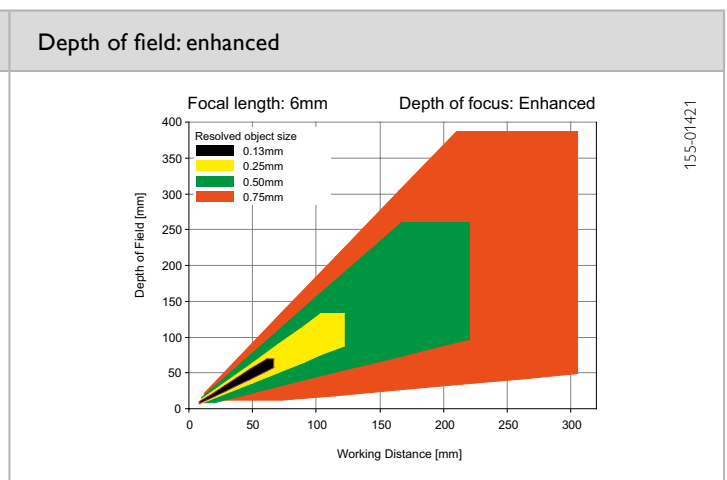
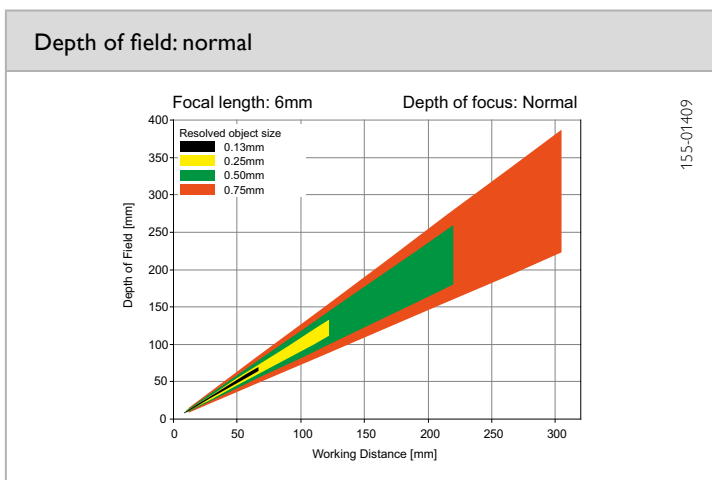
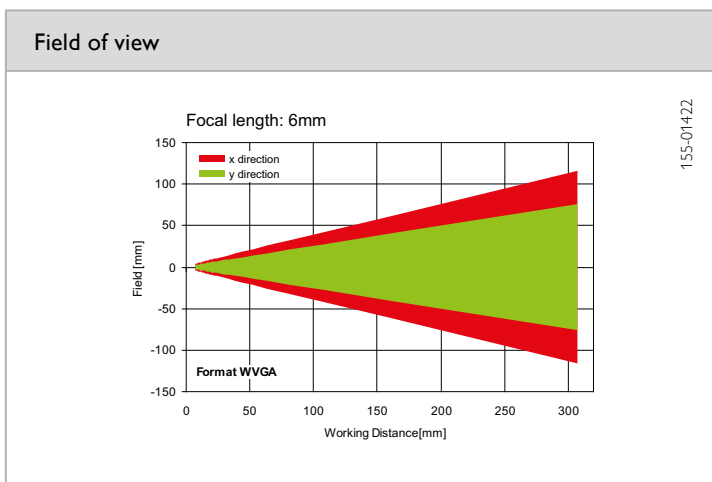
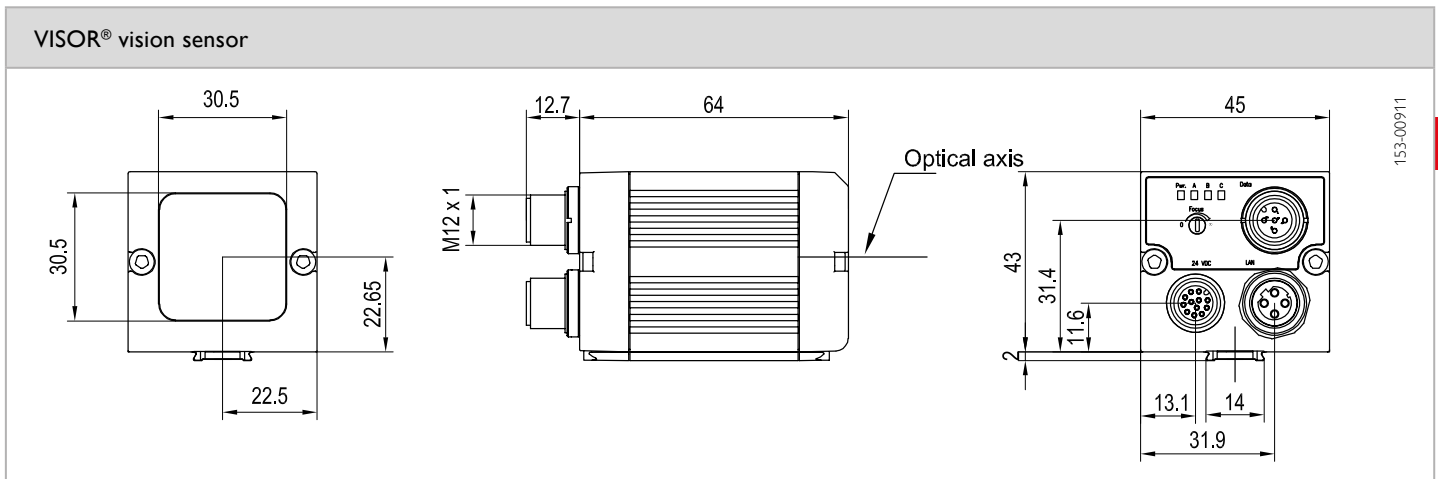
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/3", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	6 mm, adjustable focal position	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrasts; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes, ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	6 mm to infinity	Typical cycle time	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X x Y	5 x 4 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connection	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4 V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, non-condensing

Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-A1-W6	535-91021
White	Enhanced	V10-CR-A1-W6D	535-91023
Red	Normal	V10-CR-A1-R6	535-91025
Red	Enhanced	V10-CR-A1-R6D	535-91027

Illumination	Depth of field	Part number	Article number
Infrared	Normal	V10-CR-A1-I6	535-91029
Infrared	Enhanced	V10-CR-A1-I6D	535-91031

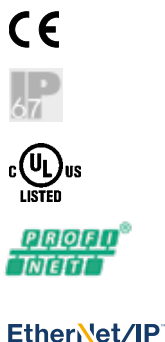


Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Advanced vision sensor for code reading with object detection, 12 mm



PRODUCT HIGHLIGHTS

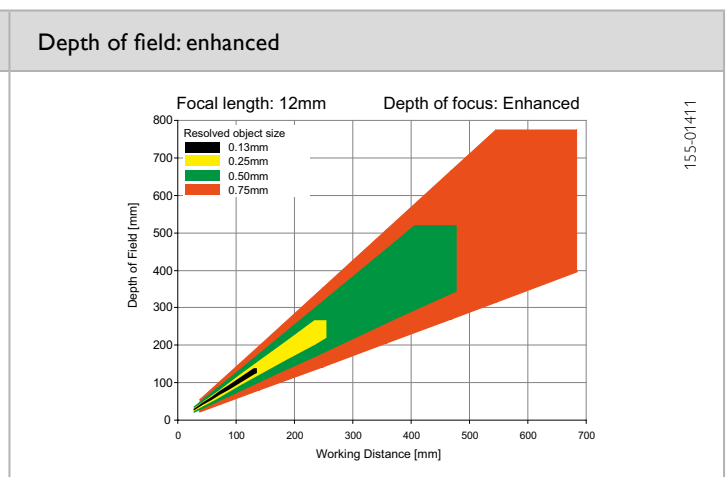
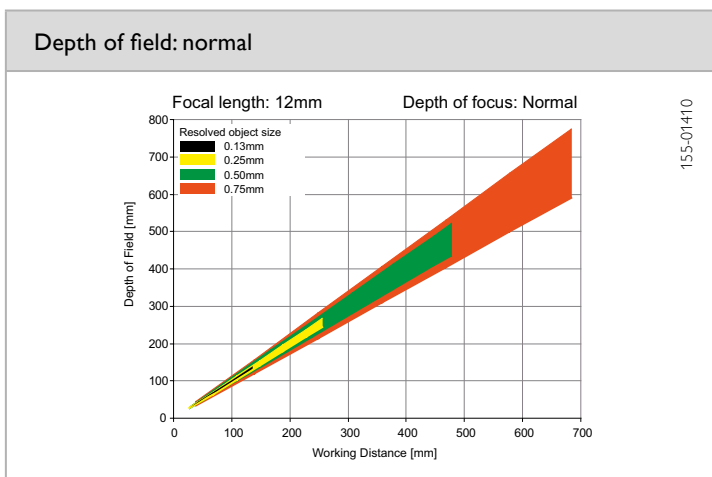
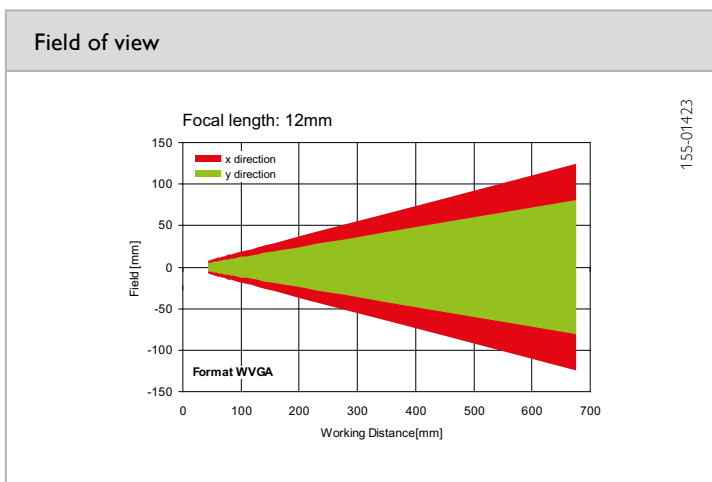
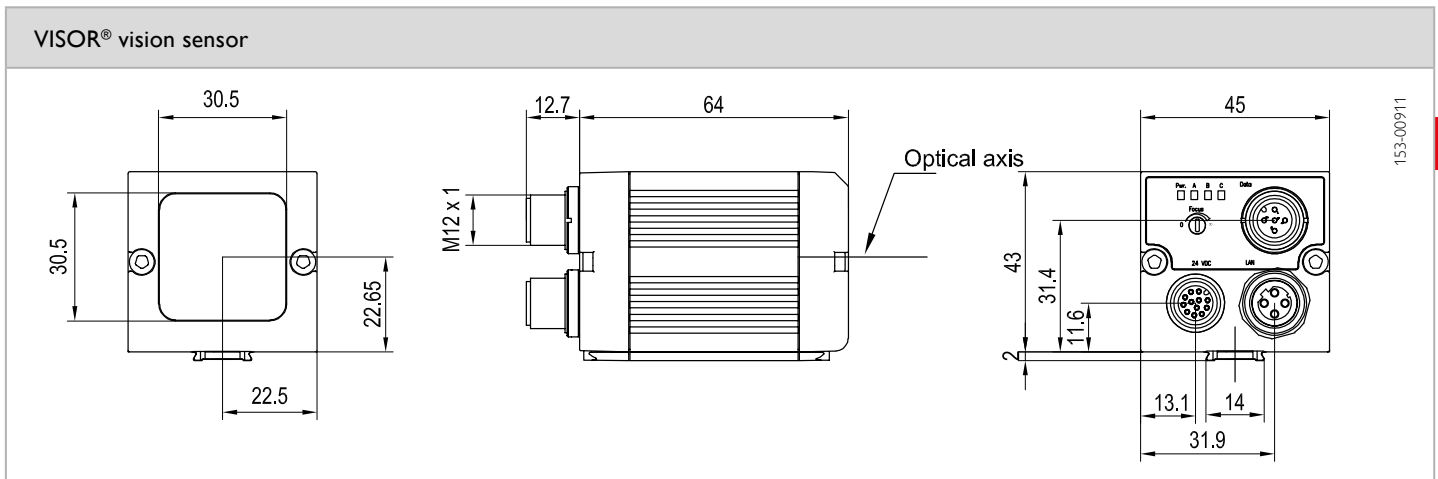
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/3", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	12 mm, adjustable focal position	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	30 mm to infinity	Typical cycle time	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X x Y	8 x 6 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connection	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4 V		
Interfaces	Ethernet (LAN), RS422, RS232 EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, non-condensing

Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-A1-W12	535-91022
White	Enhanced	V10-CR-A1-W12D	535-91024
Red	Normal	V10-CR-A1-R12	535-91026
Red	Enhanced	V10-CR-A1-R12D	535-91028

Illumination	Depth of field	Part number	Article number
Infrared	Normal	V10-CR-A1-I12	535-91030
Infrared	Enhanced	V10-CR-A1-I12D	535-91032

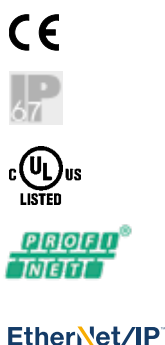


Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Brackets	From Page A-4
Interface accessories	From Page A-53

VISOR® V10 Code Reader

Advanced vision sensor code reading with object detection, 25 mm



PRODUCT HIGHLIGHTS

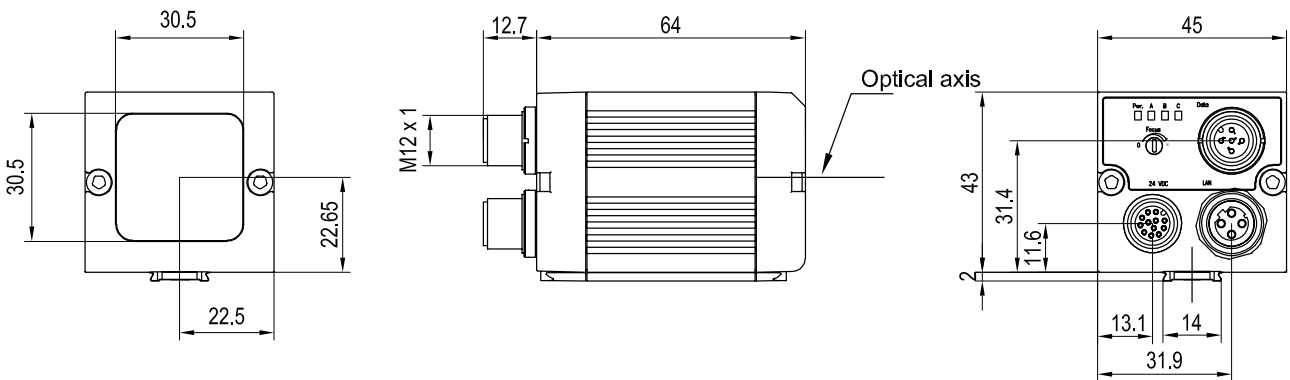
- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	736 × 480 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/3", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	25 mm, adjustable focal position	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	140 mm to infinity	Typical cycle times	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	White, red, infrared LEDs		
Minimum field of view, X × Y	18 × 14 mm ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 26.4 V DC ¹	Dimensions	65 × 45 × 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 67
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ²
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ²
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _B -1 V, Low < 3 V	Plug connections	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4V		
Interfaces	Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5 V_{SS} ² 80 % air humidity, non-condensing

Illumination	Depth of field	Part number	Article number
White	Normal	V10-CR-A2-W25	535-91084
Red	Normal	V10-CR-A2-R25	535-91085
Infrared	Normal	V10-CR-A2-I25	535-91086

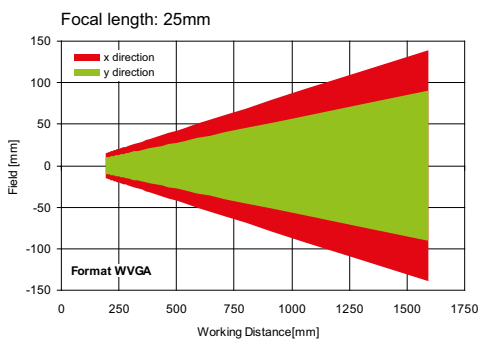
VISOR® vision sensor



153-00911

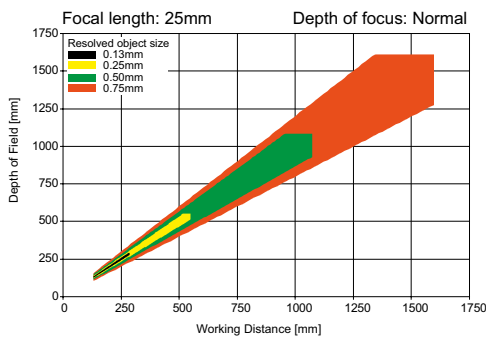
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Field of view



155-01424

Depth of field: normal



155-01412

Accessories

Connection cables

From Page A-46

Illumination

From Page A-33

Brackets

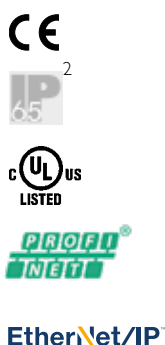
From Page A-4

Interface accessories

From Page A-53

VISOR® V10 Code Reader

Advanced vision sensor for code reading with object detection, C-mount



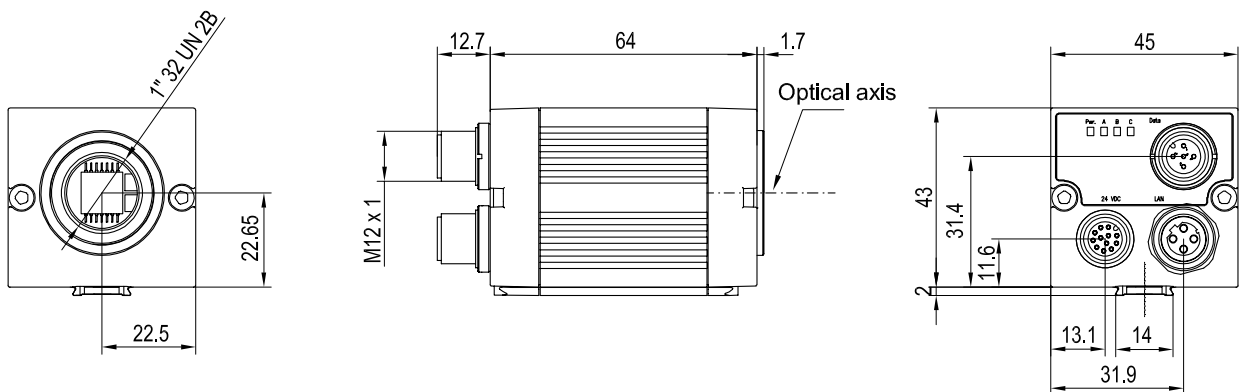
PRODUCT HIGHLIGHTS

- Can be used for all common 2D codes (ECC 200 data matrix) and common 1D bar codes
- Combination of two functions in one device: code reading and object detection
- Reliable detection of even poorly readable codes under difficult ambient conditions
- Comprehensive tools for flexible and easy connection to PC and PLC environments
- Reading of several similar or differing types of codes in one reading pass

Optical data		Functions	
Resolution	736 x 480 pixels	Number of jobs / detectors	max. 255 / max. 255
CMOS	1/3", monochrome	Detectors	Pattern comparison, contrast, brightness, grey level, bar code, data code, OCR
Integrated lens, focal length	C-mount	Properties	X/Y position tracking; pattern comparison: teach-in and pattern detection; grey level, brightness: evaluation of brightness; contrast: evaluation of contrast; bar code: reading of 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, Code 32, Code 39, Code 93, Code 128, GS1, Pharmacode, Codabar; data code: reading of 2D codes: ECC200, QR code, PDF 417, ECC200 GS1
Adjustment range	Dependent on lens	Typical cycle time	Typ. 20 ms pattern comparison; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey level; typ. 30 ms bar code; typ. 40 ms data code
Integrated illumination	None		
Minimum field of view, X x Y	Dependent on lens		
Electrical data		Mechanical data	
Operating voltage, +U _b	18 ... 26.4V DC ¹	Dimensions	65 x 45 x 45 mm (without plug)
Current consumption (without illumination and I/O)	≤ 120 mA	Enclosure rating	IP 65 ²
Current consumption (without I/O)	≤ 200 mA	Material, housing	Aluminium, plastic
Protective circuits	Reverse-polarity protection, U _b / short-circuit protection of all outputs	Material, front screen	Plastic
Power On Delay	Ca. 13 s after Power on	Ambient temperature: operation	0 ... +50 °C ³
Outputs	PNP / NPN (switchable)	Ambient temperature: storage	-20 ... +60 °C ³
Max. output current (per output)	50 mA, 100 mA (pin 12)	Weight	Ca. 160 g
Inputs	PNP/NPN High > U _b -1 V, Low < 3 V	Plug connection	Supply and I/O M12, 12-pin Ethernet M12, 4-pin Data M12, 5-pin
Input resistance	> 20 kOhm	Vibration and impact resistance	EN 60947-5-2
Encoder input	High > 4V		
Interfaces	Ethernet (LAN), RS422, RS232 EtherNet/IP, PROFINET, SensoWeb		
Inputs/outputs	2 inputs, 4 outputs, 4 selectable inputs/outputs		

¹ Max. ripple < 5V_{SS} ² With LPT45 C-mount protective casing ³ 80 % air humidity, non-condensing

Part number	Article number
V10-CR-A1-C	535-91033

VISOR® vision sensor


153-00912

4

Lens


	LO C 8	LO C 12	LO C 16	LO C 25	LO C 35	LO C 50	LO C 75
Focal length	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm
Article number	526-51513	526-51514	526-51515	526-51516	526-51525	526-51113	526-51116

Accessories

Connection cables	From Page A-46
Illumination	From Page A-33
Lenses	From Page A-28
Brackets	From Page A-4
Interface accessories	From Page A-53