



Figure can vary

**Part no.: 50134531**  
**DCR 248i FIX-F2-102-R3-G**  
**Stationary 2D-code reader**



**RS232**

**RS422**

Ethernet



## Contents

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## Technical data

<b>Basic data</b>	
Series	DCR 200i
Chip	CMOS
<b>Functions</b>	
Software functions	Reading of 1D codes Reading of 2D codes
<b>Read data</b>	
Code types, readable	2/5 Interleaved Aztec Codabar Code 128 Code 32 Code 39 Code 93 Data Matrix Code EAN 128 EAN 8/13 GS1 Databar GS1 Databar Omnidirectional GS1 Databar QR code GS1 Databar Stacked PDF417 Pharma Code QR code UPC
<b>Optical data</b>	
Reading distance	70 ... 360 mm
Light source	LED, Red
Transmitted-signal shape	Pulsed
Camera resolution, horizontal	1,280 px
Camera resolution, vertical	960 px
Module size	0.19 ... 0.5 mm
Electronic shutter speed	0.068 ... 5 ms
Camera type	Monochrome
<b>Electrical data</b>	
Protective circuit	Polarity reversal protection Short circuit protected
<b>Performance data</b>	
Supply voltage $U_B$	18 ... 30 V, DC
Average power consumption	8 W
<b>Inputs</b>	
Number of digital switching inputs	1 Piece(s)
<b>Switching inputs</b>	
Voltage type	DC

<b>Outputs</b>	
Number of digital switching outputs	1 Piece(s)
<b>Switching outputs</b>	
Voltage type	DC
Switching current, max.	100 mA
<b>Switching output 1</b>	
Switching element	MOSFET semiconductor,
Switching principle	+24 V switching
<b>Inputs/outputs selectable</b>	
Number of inputs/outputs selectable	2 Piece(s)
Voltage type, outputs	DC
Voltage type, inputs	DC

<b>Interface</b>	
Type	RS 232, RS 422, Ethernet, PROFINET
<b>RS 232</b>	
Function	Process
Transmission speed	4,800 ... 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	8 data bits
Stop bit	1 stop bit
Parity	None
Transmission protocol	<STX><data><CR><LF>
Data encoding	ASCII Binary
<b>RS 422</b>	
Function	Process
Transmission speed	4,800 ... 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	7, 8 data bits
Stop bit	1, 2 stop bits
Parity	Adjustable
Data encoding	ASCII Binary
<b>Ethernet</b>	
Architecture	Client Server
Address assignment	DHCP Manual address assignment
Transmission speed	10 / 100 Mbit/s
Function	Process
Switch functionality	None
Transmission protocol	TCP/IP , UDP
<b>Profinet</b>	
Function	Process
Conformance class	B
Protocol	PROFINET RT
Transmission speed	100 Mbit/s

**Service interface**

Type

**Ethernet**
**Connection**

Number of connections 2 Piece(s)

**Connection 1**

Type of connection	Connector
Function	Data interface Signal IN Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Metal
No. of pins	12 -pin
Encoding	A-coded

**Connection 2**

Type of connection	Connector
Function	Configuration interface Data interface
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

**Mechanical data**

Design	Cubic
Dimension (W x H x L)	43 mm x 61 mm x 44 mm
Housing material	Metal Plastic, Diecast aluminum, PC
Lens cover material	Glass
Net weight	120 g
Housing color	Silver
Type of fastening	Mounting thread Via optional mounting device

**Operation and display**

Type of display	LED
Number of LEDs	10 Piece(s)
Type of configuration	Configuration codes Teach-in Via web browser
Operational controls	Button(s)
Function of the operational control	Adjustment mode Auto-setup Trigger

**Environmental data**

Ambient temperature, operation	0 ... 45 °C
Ambient temperature, storage	-20 ... 70 °C
Relative humidity (non-condensing)	90 %

### Certifications

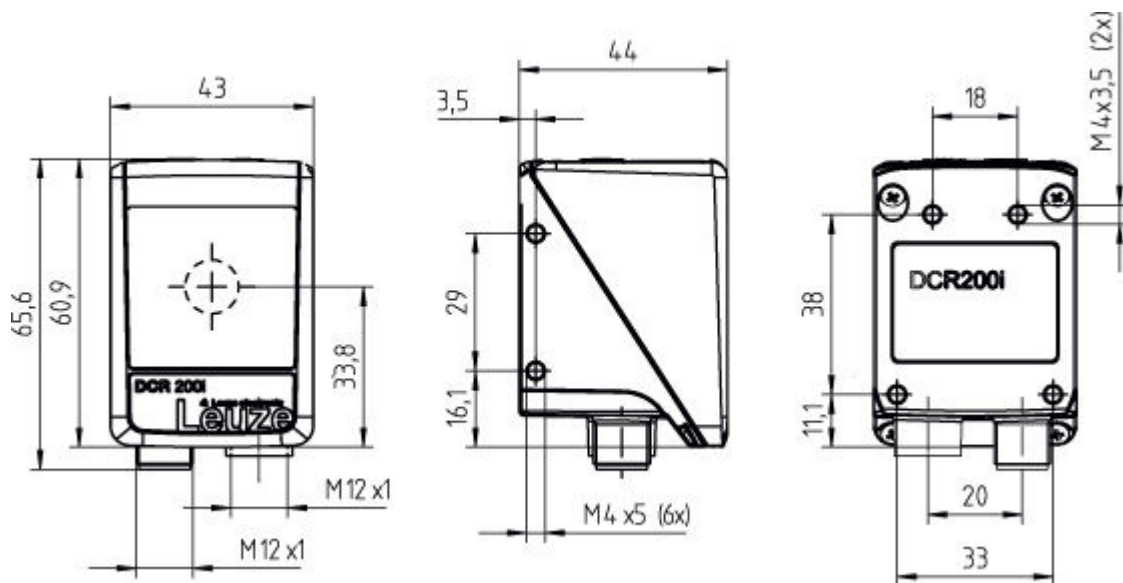
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 61000-6-2 EN 61000-6-4
Test procedure for continuous shock in accordance with standard	IEC 60068-2-29, test Eb
Test procedure for vibration in accordance with standard	IEC 60068-2-6, test Fc

### Classification

Customs tariff number	84719000
eCl@ss 8.0	27280103
eCl@ss 9.0	27280103
ETIM 5.0	EC002999
ETIM 6.0	EC002999

## Dimensioned drawings

All dimensions in millimeters



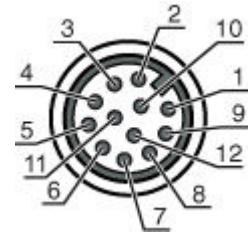
## Electrical connection

Connection 1	PWR / SWIO
Type of connection	Connector
Function	Data interface Signal IN Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Metal
No. of pins	12 -pin

**Part no.: 50134531 – DCR 248i FIX-F2-102-R3-G – Stationary 2D-code reader**

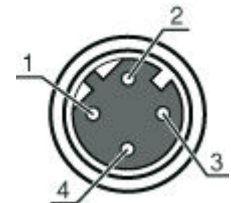
Connection 1	PWR / SWIO
Encoding	A-coded

Pin	Pin assignment
1	VIN
2	GNDIN
3	SWIN 1
4	SWOUT 2
5	FE
6	GND RS 232 / GND RS 422
7	Rx-
8	Tx-
9	RxD/Rx+
10	TxD/Tx+
11	SWIO 3
12	SWIO 4



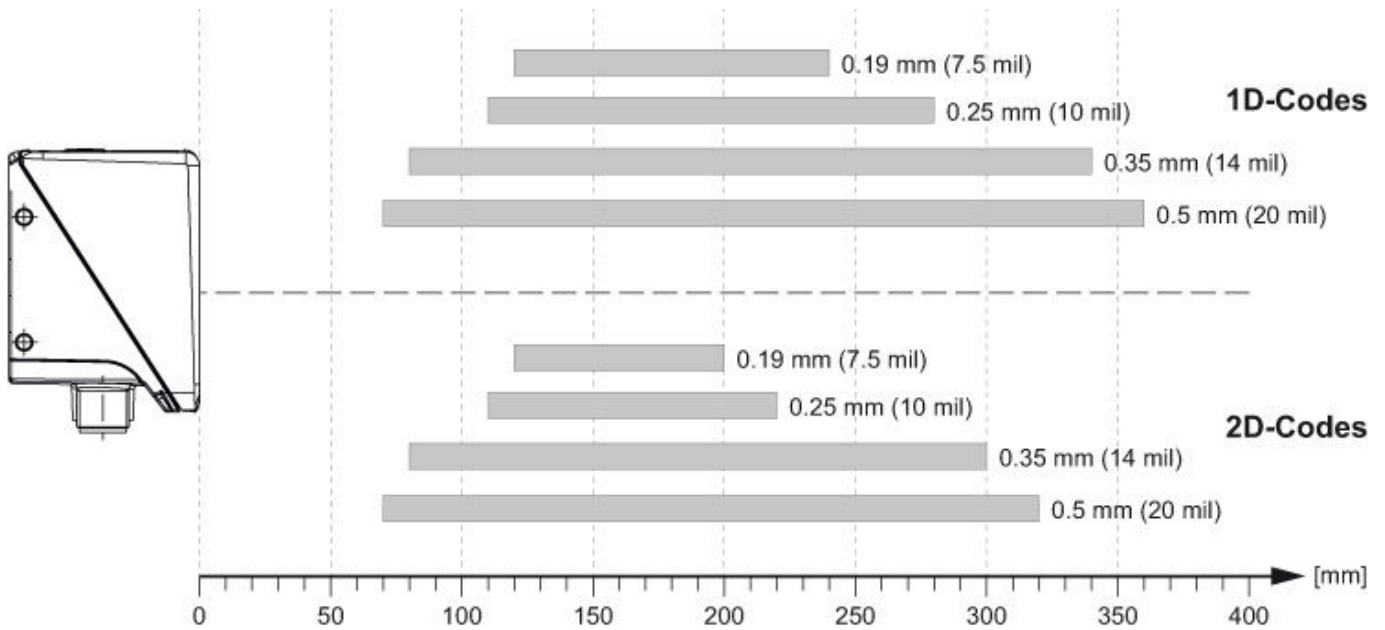
Connection 2	HOST
Type of connection	Connector
Function	Configuration interface Data interface
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

Pin	Pin assignment
1	TD+
2	RD+
3	TD-
4	RD-

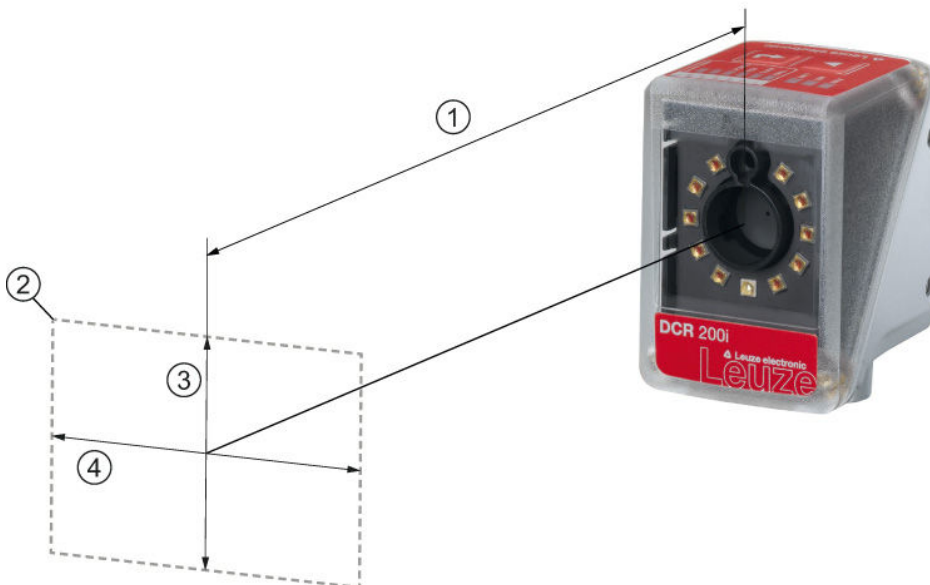


**Diagrams**

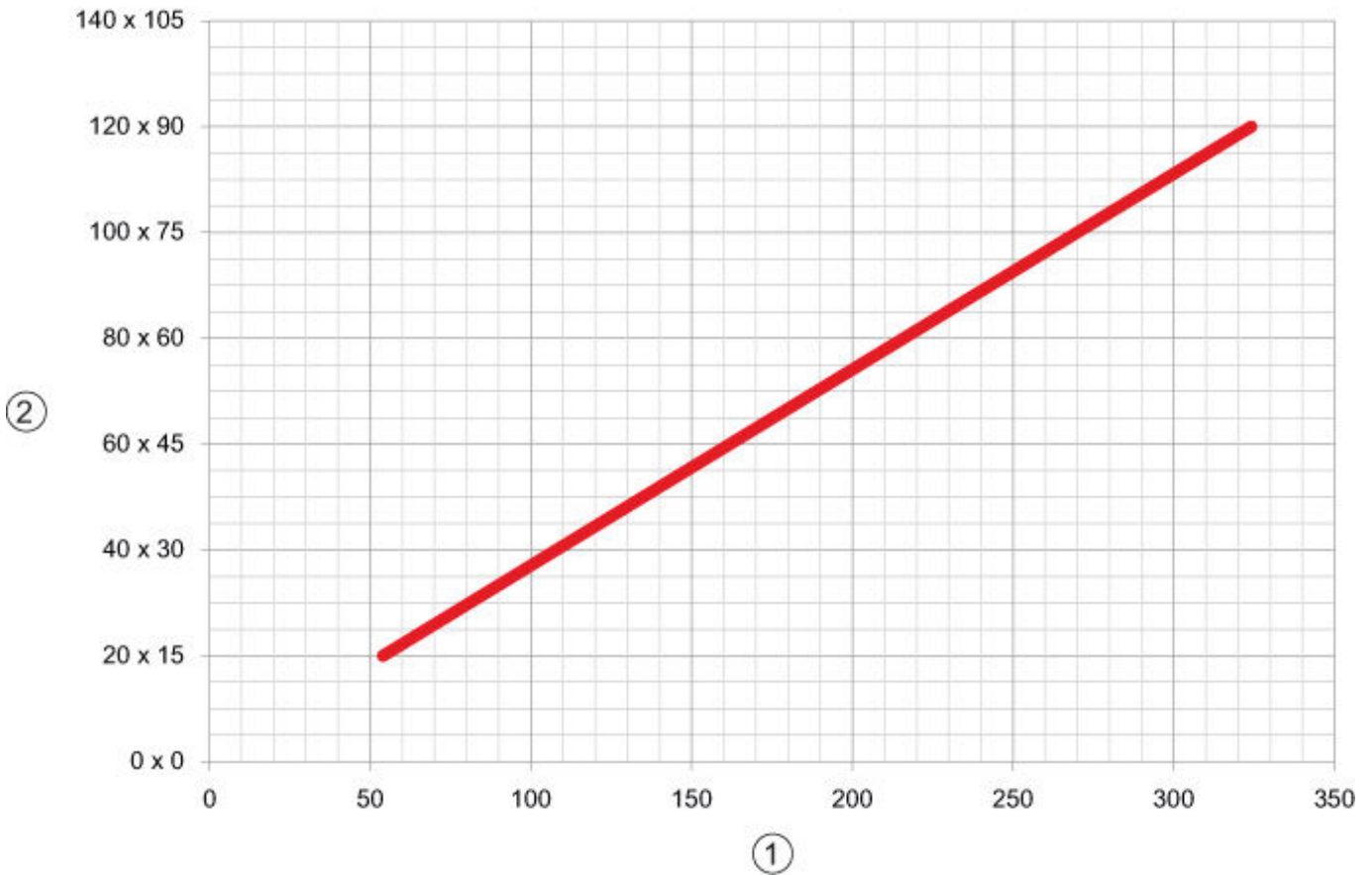
Reading distances



Relationship between camera distance and reading field size



- 1 Camera distance
- 2 Reading field
- 3 Reading field height [mm]
- 4 Reading field width [mm]



- 1 Camera distance [mm]
- 2 Reading field: width x height [mm]

## Operation and display

### LEDs

LED	Display	Meaning	
1	PWR	Off	No supply voltage
		Green, flashing	Initialization
		Green, continuous light	Operational readiness
		Orange, continuous light	Service operation
		Red, flashing	Device OK, warning set
		Red, continuous light	Device error
2	NET	Off	No supply voltage
		Green, flashing	Initialization
		Green, continuous light	Operational readiness
		Red, flashing	Communication error
		Red, continuous light	Network error
3	LINK	Green, continuous light	Ethernet connection is established
		Yellow, flashing	Data exchange active
4	TRIG	Green, flashing	Trigger and display of the read quality
5	AUTO	Green, flashing	Auto-setup and display of the read quality
6	ADJ	Green, flashing	Alignment mode and display of the read quality
7	TEACH	Green, flashing	Teach-in and display of the read quality



Part no.: 50134531 – DCR 248i FIX-F2-102-R3-G – Stationary 2D-code reader

## Part number code

Part designation: DCR XXX YYY-Z-AAA-BC-D-EEEE

DCR	<b>Operating principle:</b> DCR: Dual Code Reader
XXXX	<b>Series/interface (integrated fieldbus technology):</b> 202i: Ethernet TCP/IP, UDP, RS 232/RS 422 248i: PROFINET-IO, Ethernet TCP/IP, UDP, RS 232/RS 422
YYY	<b>Equipment:</b> FIX: Fixed focal length
Z	<b>Optics:</b> U: Ultra high density (very close) N: High Density (close) M: Medium Density (medium distance) F: Low Density (remote) L: Ultra low density (very large distance)
AAA	<b>Beam exit:</b> 102: front
B	<b>Illumination:</b> R: Red light
C	<b>Resolution range:</b> 3: 1280 x 960 pixels
D	<b>Protective screen:</b> n/a: Plastic G: Glass P: Polarization filter
EEEE	<b>Special equipment:</b> V: Stainless steel housing F001: NPN inputs/outputs H: with heating

### Note

A list with all available device types can be found on the Leuze electronic website at [www.leuze.com](http://www.leuze.com).


## Notes

### Observe intended use!




























- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

## Accessories

### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130281	KD S-M12-CA-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR

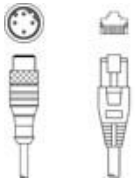
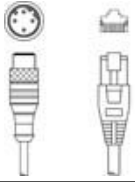
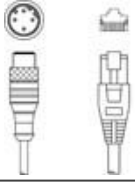
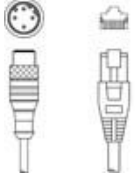
**Part no.: 50134531 – DCR 248i FIX-F2-102-R3-G – Stationary 2D-code reader**

	Part no.	Designation	Article	Description
  	50130282	KD S-M12-CA-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
  	50130283	KD S-M12-CA-P1-100	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
  	50134943	KD S-M12-CW-P1-050	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
  	50135073	KS ET-M12-4A-P7-020	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
  	50135074	KS ET-M12-4A-P7-050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
  	50135075	KS ET-M12-4A-P7-100	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
  	50135076	KS ET-M12-4A-P7-150	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
  	50135077	KS ET-M12-4A-P7-300	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 30,000 mm Sheathing material: PUR
  	50134942	KS ET-M12-4W-P7-050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Angled, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR


## Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50132488	KB JST-M12A-12P-50	Interconnection cable	
	50137694	KDS S-M12-CA-M12-5A-P1-004-23X	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable, crossed: Connection 1, pin 2 <-> connection 2, pin 3 Cable length: 400 mm Sheathing material: PUR
	50130284	KDS S-M12-CA-M12-CA-P1-020	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50130285	KDS S-M12-CA-M12-CA-P1-050	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50130286	KDS S-M12-CA-M12-CA-P1-100	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50137077	KSS ET-M12-4A-M12-4A-P7-020	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 1,000 mm Sheathing material: PUR
	50137078	KSS ET-M12-4A-M12-4A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 1,000 mm Sheathing material: PUR
	50137079	KSS ET-M12-4A-M12-4A-P7-100	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50137080	KSS ET-M12-4A-M12-4A-P7-150	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
	50135080	KSS ET-M12-4A-RJ45-A-P7-020	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR



**Part no.: 50134531 – DCR 248i FIX-F2-102-R3-G – Stationary 2D-code reader**

	Part no.	Designation	Article	Description
	50135081	KSS ET-M12-4A-RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50135082	KSS ET-M12-4A-RJ45-A-P7-100	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50135083	KSS ET-M12-4A-RJ45-A-P7-150	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
	50135084	KSS ET-M12-4A-RJ45-A-P7-300	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 30,000 mm Sheathing material: PUR

**Mounting technology - Mounting brackets**

	Part no.	Designation	Article	Description
	50132151	BT 320M	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal





**Mounting technology - Rod mounts**

	Part no.	Designation	Article	Description
	50132150	BTU 320M-D12	Mounting system	Contains: 4x M4 x 6 screws Design of mounting device: Mounting system Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50132453	BTU 320M-D12-RL70	Mounting system	Contains: 4x M4 x 6 screws Design of mounting device: Mounting system Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Turning, 360°, Adjustable, Clampable Material: Metal



**General**

	Part no.	Designation	Article	Description
	50132562	AC-RL-70/40-Diff	Vision component	

**Part no.: 50134531 – DCR 248i FIX-F2-102-R3-G – Stationary 2D-code reader**

	Part no.	Designation	Article	Description
	50131462	Cover DCR 200i	Cover hood	Housing material: Plastic Optics cover: Plastic
	50131461	Cover DCR 200i-G	Cover hood	Housing material: Plastic Optics cover: Glass
	50131460	Cover DCR 200i-P	Cover hood	Housing material: Plastic Optics cover: Glass with polarization filter
	50131459	Diffusor DCR 200i	Film	
	50132511	RL-70/ 40r-003-M12	Illumination	

**Services**

	Part no.	Designation	Article	Description
	S981014	CS30-S-110	Start-up support	Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.
	S981019	CS30-T-110	Product training	Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.