

## Technical data sheet

### Stationary 2D-code reader

Part no.: 50134533  
DCR 248i FIX-N1-102-R3-P

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Part number code
- Notes
- Accessories



Figure can vary



## Technical data

### Basic data

|        |          |
|--------|----------|
| Series | DCR 200i |
| Chip   | CMOS     |

### Special version

|                 |                     |
|-----------------|---------------------|
| Special version | Polarization filter |
|-----------------|---------------------|

### Functions

|                    |  |
|--------------------|--|
| Software functions | Reading of 1D codes<br>Reading of 2D codes |
|--------------------|--|

### Read data

|                      |  |
|----------------------|--|
| Code types, readable | 2/5 Interleaved<br>Aztec<br>Codabar<br>Code 128<br>Code 32<br>Code 39<br>Code 93<br>Data Matrix Code<br>EAN 128<br>EAN 8/13<br>GS1 Databar<br>GS1 Databar Omnidirectional<br>GS1 Databar QR code<br>GS1 Databar Stacked<br>PDF417<br>Pharma Code<br>QR code<br>UPC |
|----------------------|--|

### Optical data

|                               |                  |
|-------------------------------|------------------|
| Reading distance              | 40 ... 120 mm    |
| Light source                  | LED, Red         |
| Transmitted-signal shape      | Pulsed           |
| Camera resolution, horizontal | 1,280 px         |
| Camera resolution, vertical   | 960 px           |
| Modulus size                  | 0.127 ... 0.5 mm |
| Electronic shutter speed      | 0.068 ... 5 ms   |
| Camera type                   | Monochrome       |

### Electrical data

|                    |   |
|--------------------|---|
| Protective circuit | Polarity reversal protection<br>Short circuit protected |
|--------------------|---|

### Performance data

|                           |                 |
|---------------------------|-----------------|
| Supply voltage $U_B$      | 18 ... 30 V, DC |
| Average power consumption | 8 W             |

### Inputs

|                                    |            |
|------------------------------------|------------|
| Number of digital switching inputs | 1 Piece(s) |
|------------------------------------|------------|

### Switching inputs

|              |    |
|--------------|----|
| Voltage type | DC |
|--------------|----|

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                         |        |
|-------------------------|--------|
| Voltage type            | DC     |
| Switching current, max. | 100 mA |

### Switching output 1

|                     |                      |
|---------------------|----------------------|
| Switching element   | MOSFET semiconductor |
| Switching principle | +24 V switching      |

### Inputs/outputs selectable

|                                     |            |
|-------------------------------------|------------|
| Number of inputs/outputs selectable | 2 Piece(s) |
| Voltage type, outputs               | DC         |
| Voltage type, inputs                | DC         |

### Interface

|      |                                    |
|------|------------------------------------|
| Type | RS 232, RS 422, Ethernet, PROFINET |
|------|------------------------------------|

### RS 232

|                       |                      |
|-----------------------|----------------------|
| Function              | Process              |
| Transmission speed    | 4,800 ... 115,200 Bd |
| Data format           | Adjustable           |
| Start bit             | 1                    |
| Data bit              | 8                    |
| Stop bit              | 1                    |
| Parity                | None                 |
| Transmission protocol | <STX><data><CR><LF>  |
| Data encoding         | ASCII<br>Binary      |

### RS 422

|                    |                      |
|--------------------|----------------------|
| 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       |
| Data encoding      | ASCII<br>Binary      |

### Ethernet

|                       |                                   |
|-----------------------|-----------------------------------|
| Architecture          | Client<br>Server                  |
| Address assignment    | DHCP<br>Manual address assignment |
| Transmission speed    | 10 / 100 Mbit/s                   |
| Function              | Process                           |
| Switch functionality  | None                              |
| Transmission protocol | TCP/IP, UDP                       |

### Profinet

|                    |             |
|--------------------|-------------|
| Function           | Process     |
| Conformance class  | B           |
| Protocol           | PROFINET RT |
| Transmission speed | 100 Mbit/s  |

### Service interface

|      |          |
|------|----------|
| Type | Ethernet |
|------|----------|

### Ethernet

|          |         |
|----------|---------|
| Function | Service |
|----------|---------|

## Technical data

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
|-----------------------|------------|

#### Connection 1

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

#### Connection 2

|                    |                         |
|--------------------|-------------------------|
| Function           | Configuration interface |
|                    | Data interface          |
| Type of connection | Connector               |
| 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                        |
| Metal housing         | Diecast aluminum               |
| Plastic housing       | PC                             |
| Lens cover material   | Glass with polarization filter |
| 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

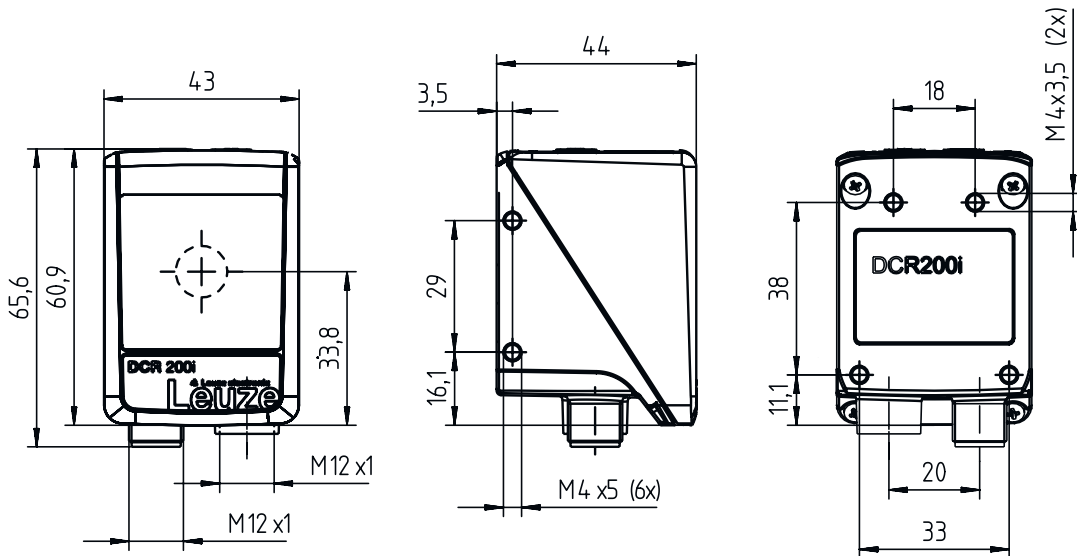
|   |                         |
|---|-------------------------|
| Degree of protection  | IP 65                   |
| Protection class  | III                     |
| Certifications  | c UL US                 |
| Test procedure for EMC in accordance with standard              | EN 61000-6-2            |
|   | 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 5.1.4          | 27280103 |
| eCl@ss 8.0            | 27280103 |
| eCl@ss 9.0            | 27280103 |
| eCl@ss 10.0           | 27280103 |
| eCl@ss 11.0           | 27280103 |
| ETIM 5.0              | EC002550 |
| ETIM 6.0              | EC002999 |
| ETIM 7.0              | EC002999 |

# Dimensioned drawings

All dimensions in millimeters



## Electrical connection

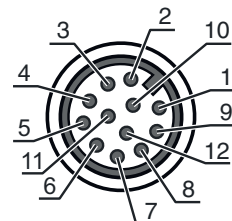
### Connection 1

### PWR / SWIO

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

### Pin Pin assignment

| 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                  |



# Electrical connection

## Connection 2

## HOST

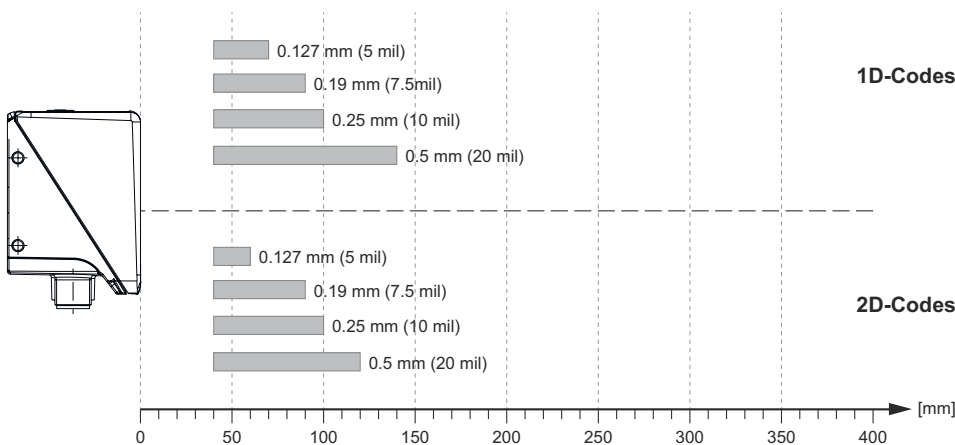
|                    |   |
|--------------------|---|
| Function           | Configuration interface<br>Data interface |
| Type of connection | Connector                                 |
| Thread size        | M12                                       |
| Type               | Female                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

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



## Diagrams

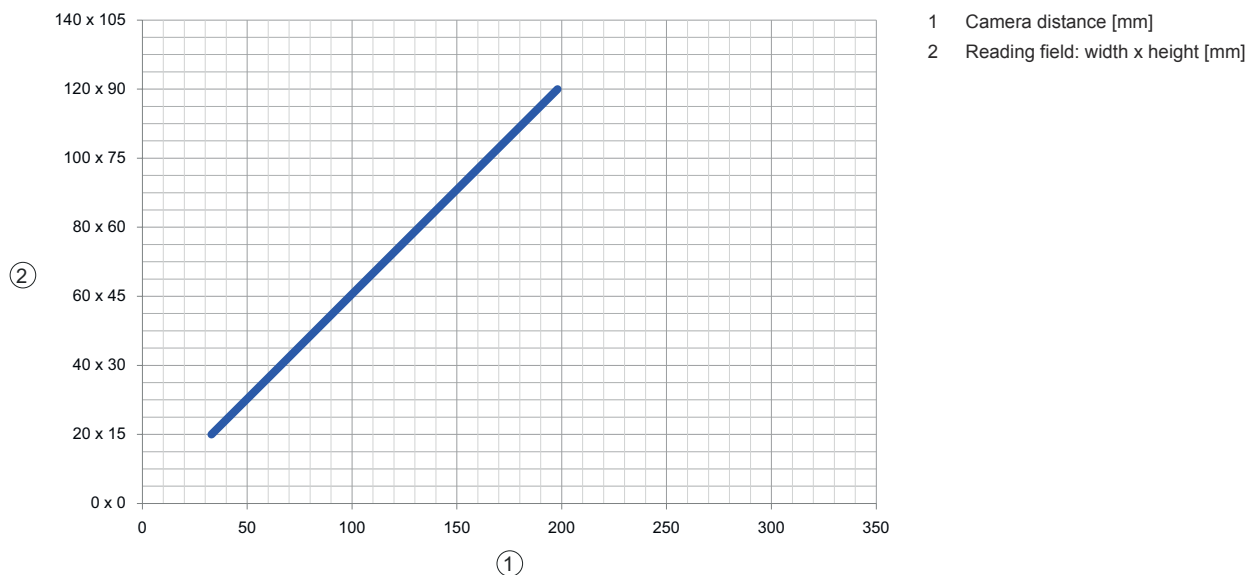
### Reading distances



### Relationship between camera distance and reading field size



# Diagrams



## Operation and display

| 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       |
| 8       | Green, flashing                     | Display of the read quality                    |
| 9       | Green, flashing                     | Display of the read quality                    |
| 10      | Green, flashing (behind lens cover) | Reading successful                             |

## Part number code

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

|      |  |
|------|--|
| DCR  | <b>Operating principle</b><br>DCR: Dual Code Reader  |
| XXXX | <b>Series/interface (integrated fieldbus technology)</b><br>202i: Ethernet TCP/IP, UDP, RS 232/RS 422<br>248i: PROFINET-IO, Ethernet TCP/IP, UDP, RS 232/RS 422<br>202iC: Ethernet TCP/IP, UDP, RS 232/RS 422<br>(IoT / Industry 4.0 connectivity)<br>248iC: PROFINET-IO, Ethernet TCP/IP, UDP, RS 232/RS 422<br>(IoT / Industry 4.0 connectivity) |

## Part number code

|             |  |
|-------------|--|
| <b>YYY</b>  | <b>Equipment</b><br>FIX: Fixed focal length  |
| <b>Z</b>    | <b>Optics</b><br>U: Ultra high density (very close)<br>N: High Density (close)<br>M: Medium Density (medium distance)<br>F: Low Density (remote)<br>L: Ultra low density (very large distance) |
| <b>AAA</b>  | <b>Beam exit</b><br>102: front   |
| <b>B</b>    | <b>Illumination</b><br>R: Red light<br>I: infrared light   |
| <b>C</b>    | <b>Resolution range</b><br>3: 1280 x 960 pixels  |
| <b>D</b>    | <b>Protective screen</b><br>n/a: plastic<br>G: Glass<br>P: Polarization filter   |
| <b>EEEE</b> | <b>Special equipment</b><br>V: Stainless steel housing<br>F001: NPN inputs/outputs<br>F099: OPC-UA function<br>H: with heating<br>Xxxx: customer-specific model                                |

### Note



A list with all available device types can be found on the Leuze 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

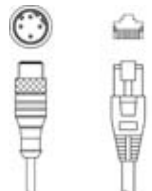
### Connection technology - Connection cables

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


## Accessories

|   | Part no. | Designation         | Article          | Description  |
|---|----------|---------------------|------------------|--|
|  | 50135073 | KS ET-M12-4A-P7-020 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |


## Connection technology - Interconnection cables

|  | Part no. | Designation                 | Article               | Description  |
|--|----------|-----------------------------|-----------------------|--|
|  | 50135080 | KSS ET-M12-4A-RJ45-A-P7-020 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |


## Mounting technology - Mounting brackets

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

## Mounting technology - Rod mounts


|   | Part no. | Designation  | Article         | Description  |
|---|----------|--------------|-----------------|--|
|  | 50132150 | BTU 320M-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

## 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.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.<br>Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment. |



**Accessories**

|  | <b>Part no.</b> | <b>Designation</b> | <b>Article</b>   | <b>Description</b>  |
|--|-----------------|--------------------|------------------|---|
|  | S981019         | CS30-T-110         | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours.<br>Conditions: Price not including travel costs and, if applicable, accommodation expenses.<br>Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure. |

**Note**

A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.