

## Technical data sheet

### Vision sensor

Part no.: 50154860

IVS 1158i AD0804-102-M4-S-TMEC



For illustration purposes only

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EtherNet/IP<sup>®</sup>  
certification mark

Ethernet



## Technical data

### Basic data

|        |                     |
|--------|---------------------|
| Series | IVS 1100i           |
| Imager | Sony global shutter |

### Functions

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Software functions | Counting: surfaces, edges, forms                                   |
|                    | Locate: surface, edge, form                                        |
|                    | Measuring: angle, circle, distance, point-to-point, point-to-line  |
|                    | Parts detection: brightness, contrast, surface pixels, edge pixels |

### Optical data

|                               |                                         |
|-------------------------------|-----------------------------------------|
| Reading distance              | 50 ... 2,000 mm                         |
| Light source                  | LED, red / white, internally switchable |
| Transmitted-signal shape      | Pulsed                                  |
| Camera resolution, horizontal | 1,440 px                                |
| Camera resolution, vertical   | 1,080 px                                |
| Focal length                  | 8 mm                                    |
| Electronic shutter speed      | 0.025 ... 2 ms                          |
| Camera type                   | Monochrome                              |

### Electrical data

|                    |                              |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
|                    | Short circuit protected      |

#### Performance data

|                         |                  |
|-------------------------|------------------|
| Supply voltage $U_B$    | 18 ... 30 V, DC  |
| Power consumption, max. | 24 W, at 24 V DC |

#### Inputs

|                                    |            |
|------------------------------------|------------|
| Number of digital switching inputs | 3 Piece(s) |
|------------------------------------|------------|

#### Switching inputs

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

#### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 5 Piece(s) |
|-------------------------------------|------------|

#### Switching outputs

|                         |                        |
|-------------------------|------------------------|
| Voltage type            | DC                     |
| Switching current, max. | 100 mA                 |
| Switching voltage       | high: $\geq(U_B - 2V)$ |
|                         | low: $\leq 2 V$        |

#### Switching output 1

|                     |                      |
|---------------------|----------------------|
| Switching element   | MOSFET semiconductor |
| Switching principle | Push-pull            |

#### Switching output 2

|                     |                      |
|---------------------|----------------------|
| Switching element   | MOSFET semiconductor |
| Switching principle | Push-pull            |

#### Switching output 3

|                     |                      |
|---------------------|----------------------|
| Switching element   | MOSFET semiconductor |
| Switching principle | Push-pull            |

#### Switching output 4

|                     |                      |
|---------------------|----------------------|
| Switching element   | MOSFET semiconductor |
| Switching principle | Push-pull            |

### Interface

|      |                       |
|------|-----------------------|
| Type | EtherNet IP, Ethernet |
|------|-----------------------|

#### EtherNet IP

|                      |                           |
|----------------------|---------------------------|
| Address assignment   | DHCP                      |
|                      | Manual address assignment |
| Function             | Process                   |
| Switch functionality | None                      |
| Transmission speed   | 10 Mbit/s                 |
|                      | 100 Mbit/s                |

#### Ethernet

|                       |                                            |
|-----------------------|--------------------------------------------|
| 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, Telnet, FTP/SFTP, Ethernet/IP |

### Connection

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

#### Connection 1

|                    |                |
|--------------------|----------------|
| Function           | 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           | Data interface  |
|                    | Ethernet, input |
| Type of connection | Connector       |
| Thread size        | M12             |
| Type               | Female          |
| Material           | Metal           |
| No. of pins        | 8 -pin          |
| Encoding           | X-coded         |

### Mechanical data

|                       |                              |
|-----------------------|------------------------------|
| Design                | Cubic                        |
| Dimension (W x H x L) | 45 mm x 85 mm x 35 mm        |
| Housing material      | Metal                        |
| Metal housing         | Aluminium, anodized          |
| Lens cover material   | Plastic / PMMA               |
| Net weight            | 165 g                        |
| Housing color         | Silver                       |
| Type of fastening     | Mounting thread              |
|                       | Via optional mounting device |

### Operation and display

|                       |                        |
|-----------------------|------------------------|
| Number of LEDs        | 3 Piece(s)             |
| Type of configuration | Vision Studio software |

## Technical data

### Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | 0 ... 50 °C   |
| Ambient temperature, storage       | -20 ... 70 °C |
| Relative humidity (non-condensing) | 90 %          |

### Certifications

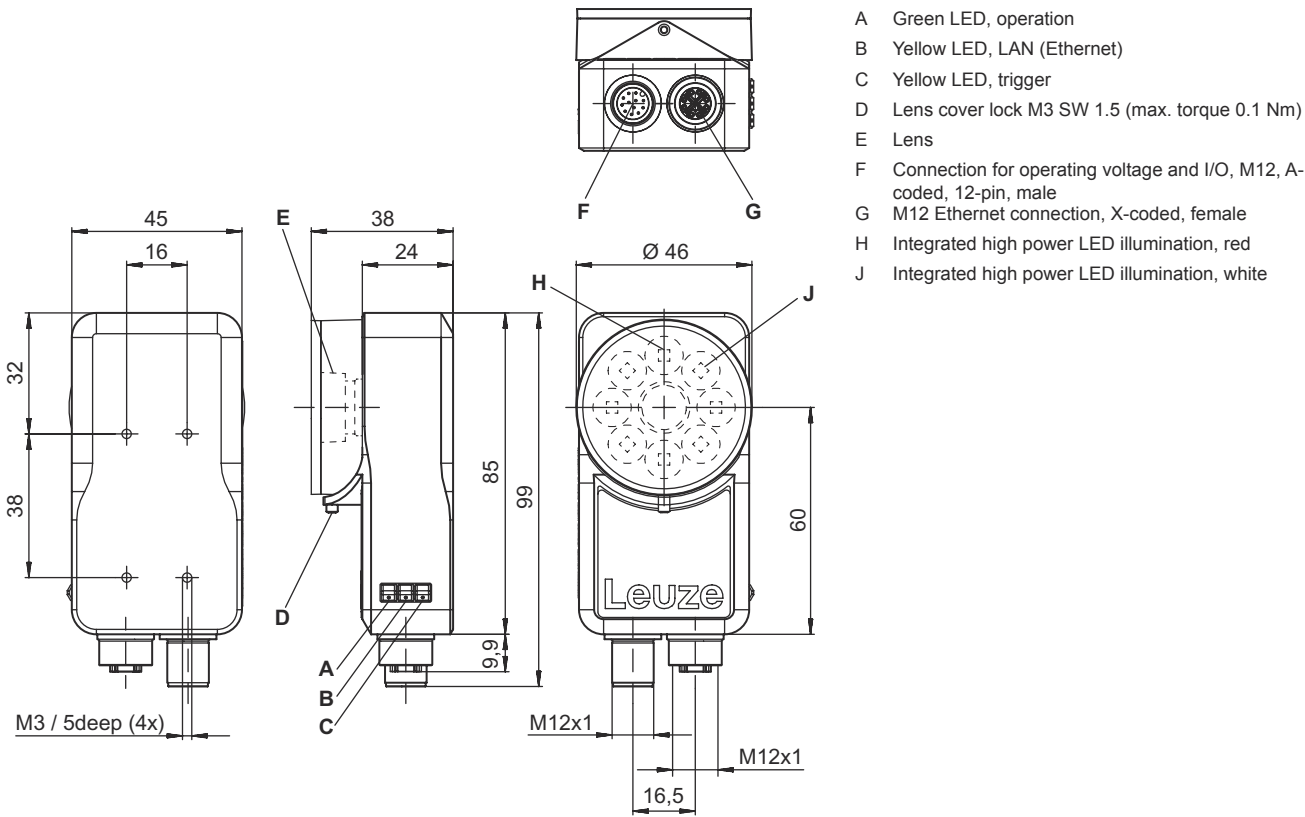
|                                                                 |                                                            |
|-----------------------------------------------------------------|------------------------------------------------------------|
| Degree of protection                                            | IP 67, EN 60529 with various connectors or screwed-on caps |
| Protection class                                                | III                                                        |
| Approvals                                                       | c UL US                                                    |
| Test procedure for EMC in accordance with standard              | EN 61000-6-2<br>EN 61000-6-3                               |
| Test procedure for continuous shock in accordance with standard | IEC 60068-2-27, test Ea                                    |
| Test procedure for vibration in accordance with standard        | IEC 60068-2-6, test Fc                                     |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 90318020 |
| ECLASS 5.1.4          | 27310101 |
| ECLASS 8.0            | 27310101 |
| ECLASS 9.0            | 27310201 |
| ECLASS 10.0           | 27310101 |
| ECLASS 11.0           | 27310101 |
| ECLASS 12.0           | 27310101 |
| ECLASS 13.0           | 27310101 |
| ECLASS 14.0           | 27310101 |
| ECLASS 15.0           | 27310101 |
| ECLASS 16.0           | 27310101 |
| ETIM 5.0              | EC002550 |
| ETIM 6.0              | EC002550 |
| ETIM 7.0              | EC002550 |
| ETIM 8.0              | EC002550 |
| ETIM 9.0              | EC002550 |
| ETIM 10.0             | EC002550 |

Dimensioned drawings

All dimensions in millimeters

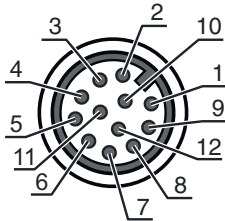


Electrical connection

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | 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        |

| Pin | Pin assignment   | Conductor color |
|-----|------------------|-----------------|
| 1   | IN 0             | Brown           |
| 2   | IN 1             | Blue            |
| 3   | OUT 2            | White           |
| 4   | OUT 3            | Green           |
| 5   | READY            | Pink            |
| 6   | COMMON INTERFACE | Yellow          |
| 7   | VIN              | Black           |
| 8   | GND              | Gray            |
| 9   | n.c.             | Red             |
| 10  | Trigger IN       | Violet          |
| 11  | OUT 0            | gray / pink     |
| 12  | OUT 1            | red / blue      |

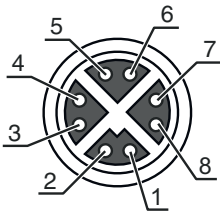


Electrical connection

Connection 2

|                    |                 |
|--------------------|-----------------|
| Function           | Data interface  |
|                    | Ethernet, input |
| Type of connection | Connector       |
| Thread size        | M12             |
| Type               | Female          |
| Material           | Metal           |
| No. of pins        | 8 -pin          |
| Encoding           | X-coded         |

| Pin | Pin assignment |
|-----|----------------|
| 1   | LAN A+         |
| 2   | LAN A-         |
| 3   | LAN B+         |
| 4   | LAN B-         |
| 5   | LAN D+         |
| 6   | LAN D-         |
| 7   | LAN C-         |
| 8   | LAN C+         |



Part number code

Part designation: IVS XXXXX YYAAAA BBB CD E FG

|       |                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IVS   | <b>Operating principle</b><br>IVS: Vision Sensor for inspection tasks                                                                                               |
| XXXXX | <b>Series/interface (integrated fieldbus technology)</b><br>1158i: Ethernet/IP, Ethernet TCP/IP + FTP, SFTP                                                         |
| YY    | <b>Focus position</b><br>AD: adjustable (manually)                                                                                                                  |
| AAAA  | <b>Optics model</b><br>08: focal length 8 mm<br>04: diaphragm f/4.0                                                                                                 |
| BBB   | <b>Beam exit</b><br>102: front                                                                                                                                      |
| C     | <b>Illumination</b><br>M: multicolor                                                                                                                                |
| D     | <b>Resolution range</b><br>4: 1440 x 1080 pixels                                                                                                                    |
| E     | <b>lens cover</b>                                                                                                                                                   |
| F     | T: toolset                                                                                                                                                          |
| GGG   | <b>Version</b><br>PRD: presence detection<br>MEC: presence detection, measuring, counting<br>ALL: presence detection, measuring, counting, 1D/2D-code reading + DPM |

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.

## Further information

- The specified core colors apply when using connection cables from Leuze.

## Accessories

### Connection technology - Connection cables

|  | Part no. | Designation        | Article          | Description                                                                                                                                                                                                                      |
|--|----------|--------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130282 | KD S-M12-CA-P1-050 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR  |
|  | 50134943 | KD S-M12-CW-P1-050 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Angled, Female, A-coded, 12 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

### Connection technology - Interconnection cables

|  | Part no. | Designation                 | Article               | Description                                                                                                                                                                                                                             |
|--|----------|-----------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50137380 | KSS GB-M12-8A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, X-coded, 8 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR                                              |
|  | 50136188 | KSS GB-M12-8W-RJ45-A-P7-050 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Angled, Male, X-coded, 8 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

## Accessories

### Mounting technology - Mounting brackets

|                                                                                   | Part no. | Designation | Article         | Description                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|----------|-------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50121433 | BT 300 W    | Mounting device | Contains: 4x M4 x 10 screw, 2x M6 x 10 screws, 4x M3 x 8 screw<br>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: Adjustable<br>Material: Metal |

### Mounting technology - Swivel mounts

|                                                                                  | Part no. | Designation  | Article         | Description                                                                                           |
|----------------------------------------------------------------------------------|----------|--------------|-----------------|-------------------------------------------------------------------------------------------------------|
|  | 50149698 | BTK IVS 1048 | Mounting device | Fastening, at system: Screw type<br>Mounting bracket, at device: Spherical head<br>Material: Aluminum |

## Lenses

|                                                                                    | Part no. | Designation    | Article | Description                                                 |
|------------------------------------------------------------------------------------|----------|----------------|---------|-------------------------------------------------------------|
|  | 50148541 | Lens S-M12-4F4 | Lens    | Suitable for: IVS 1000i & DCR 1000i<br>Focal length: 3.6 mm |

## Illuminations

|                                                                                    | Part no. | Designation              | Article      | Description                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------|----------|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50148123 | IL BA 012/130 RD 301 L D | Illumination | Type of article: LED bar lighting with switchable constant light<br>Suitable for: IVS 1000i & DCR 1000i<br>Special version: Protective cover, lenticular<br>Functions: Continuous operation<br>Light source: LED, Red<br>Opening angle, max.: 18 °<br>Housing material: Metal<br>Type of fastening: Via optional mounting device, Mounting thread |
|  | 50148131 | IL SP 021/014 300        | Illumination | Type of article: LED spotlight<br>Suitable for: IVS 1000i & DCR 1000i<br>Functions: Triggered operation, Integrated power control<br>Light source: LED, Red<br>Opening angle, max.: 14 °<br>Housing material: Metal<br>Type of fastening: Mounting thread, Via optional mounting device                                                           |

#### Note



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