

## Technical data sheet

### Vision sensor

Part no.: 50147800

IVS 1048i ADJ-8F4-102-M4-TALL



For illustration purposes only

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Ethernet



## Technical data

### Basic data

Series	IVS 1000i
Imager	Sony global shutter

### Functions

Software functions	Count codes
	Counting: surfaces, edges, forms
	Detect codes
	DPM (directly marked codes)
	Locate codes
	Locate: surface, edge, form
	Measuring: angle, circle, distance, point-to-point, point-to-line
	Parts detection: brightness, contrast, surface pixels, edge pixels

### Read data

Code types, readable	2/5 Hong Kong
	2/5 IATA
	2/5 Interleaved
	2/5 Matrix
	2/5 NEC
	2/5 Straight
	Aztec
	Codabar
	Code 128
	Code 39
	Data Matrix Code
	DotCode
	EAN 8/13
	GS1 Databar Expanded
	GS1 Databar Expanded Stacked
	GS1 Databar Limited
	GS1 Databar RSS 14
	GS1 Databar RSS 14 Stacked
	Micro QR
	PDF417
	PDF417 Micro
	Pharma Code
	QR 2005
	QR Model 1
	UPC-A
	UPC-E

### 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)
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#### Switching inputs

Voltage type	DC
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### Outputs

Number of digital switching outputs	5 Piece(s)
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#### 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, PROFINET
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#### 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, PROFINET

#### PROFINET

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

### Connection

Number of connections	2 Piece(s)
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## Technical data

### Connection 1

<b>Function</b>	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

### Connection 2

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

### Mechanical data

<b>Design</b>	Cubic
<b>Dimension (W x H x L)</b>	45 mm x 85 mm x 35 mm
<b>Housing material</b>	Metal
<b>Metal housing</b>	Diecast zinc
<b>Lens cover material</b>	Plastic / PMMA
<b>Net weight</b>	265 g
<b>Housing color</b>	Silver
<b>Type of fastening</b>	Mounting thread Via optional mounting device

### Operation and display

<b>Number of LEDs</b>	3 Piece(s)
<b>Type of configuration</b>	Vision Studio software

### Environmental data

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

### Certifications

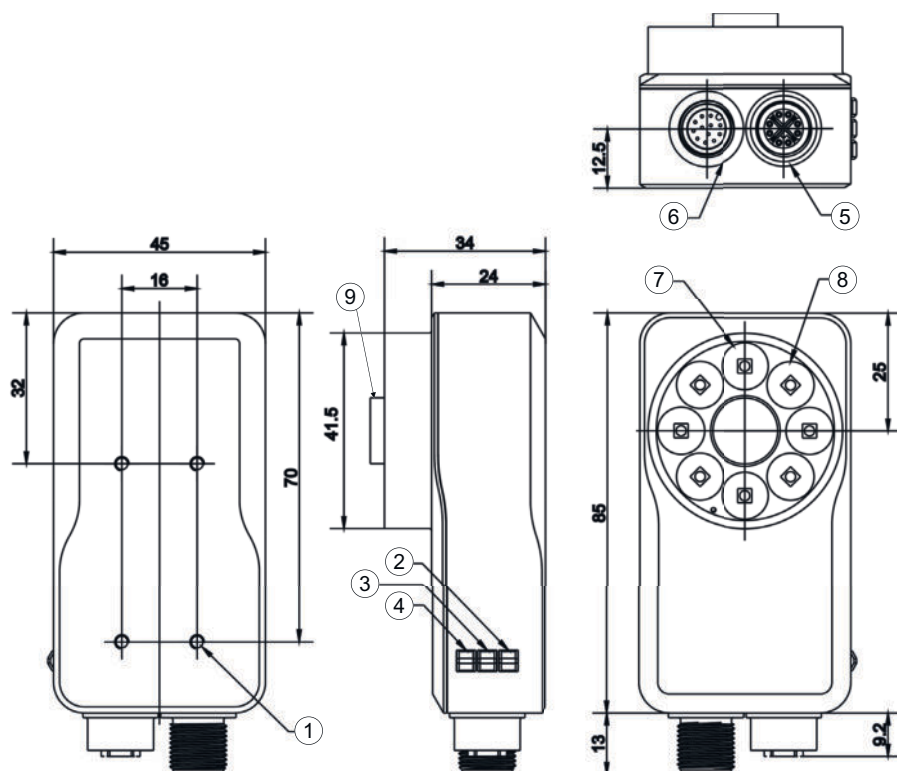
<b>Degree of protection</b>	IP 67, EN 60529 with various connectors or screwed-on caps
<b>Protection class</b>	III
<b>Approvals</b>	c UL US
<b>Test procedure for EMC in accordance with standard</b>	EN 61000-6-2 EN 61000-6-3
<b>Test procedure for continuous shock in accordance with standard</b>	IEC 60068-2-27,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

### Classification

<b>Customs tariff number</b>	90021100
<b>ECLASS 5.1.4</b>	27310101
<b>ECLASS 8.0</b>	27310101
<b>ECLASS 9.0</b>	27310201
<b>ECLASS 10.0</b>	27310101
<b>ECLASS 11.0</b>	27310101
<b>ECLASS 12.0</b>	27310101
<b>ECLASS 13.0</b>	27310101
<b>ECLASS 14.0</b>	27310101
<b>ECLASS 15.0</b>	27310101
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>ETIM 7.0</b>	EC002550
<b>ETIM 8.0</b>	EC002550
<b>ETIM 9.0</b>	EC002550
<b>ETIM 10.0</b>	EC002550

# Dimensioned drawings

All dimensions in millimeters



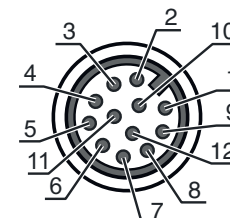
- 1 4 x M3 mounting thread
- 2 Green LED, operation
- 3 Yellow LED, LAN (Ethernet)
- 4 Yellow LED, trigger
- 5 M12 Ethernet connection, X-coded, female
- 6 Connection for operating voltage and I/O, M12, A-coded, 12-pin, male
- 7 Integrated high power LED illumination, red
- 8 Integrated high power LED illumination, white
- 9 Lens

## 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

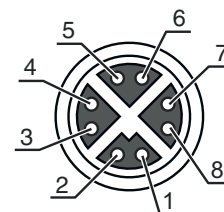


# Electrical connection

## Connection 2

<b>Function</b>	Data interface
	Ethernet, input
<b>Type of connection</b>	Connector
<b>Thread size</b>	M12
<b>Type</b>	Female
<b>Material</b>	Metal
<b>No. of pins</b>	8 -pin
<b>Encoding</b>	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 YYY AAA BBB C D EFFF

<b>IVS</b>	<b>Operating principle</b> IVS: Vision Sensor for inspection tasks
<b>XXXXX</b>	<b>Series/interface (integrated fieldbus technology)</b> 1048i: PROFINET, Ethernet TCP/IP + FTP, SFTP
<b>YYY</b>	<b>Focus position</b> ADJ: adjustable (manually)
<b>AAA</b>	<b>Optics model</b> 8: focal length 8 mm F4: diaphragm f/4.0
<b>BBB</b>	<b>Beam exit</b> 102: front
<b>C</b>	<b>Illumination</b> M: multicolor
<b>D</b>	<b>Resolution range</b> 4: 1440 x 1080 pixels 1: 736 x 480 pixels
<b>E</b>	T: toolset
<b>FFF</b>	<b>Version</b> n/a: 1D/2D-code reading DPM: 1D-, 2D-code reading + DPM (directly marked codes) PRD: presence detection MEC: presence detection, measuring, counting 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

<b>Observe intended use!</b>	
	<ul style="list-style-type: none"> <li>⌘ This product is not a safety sensor and is not intended as personnel protection.</li> <li>⌘ The product may only be put into operation by competent persons.</li> <li>⌘ Only use the product in accordance with its intended use.</li> </ul>

## 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	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR
	50134943	KD S-M12-CW-P1-050	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 12 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

### Connection technology - Interconnection cables

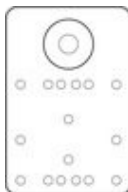
	Part no.	Designation	Article	Description
	50137380	KSS GB-M12-8A-RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, X-coded, 8 -pin Connection 2: RJ45 Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50136188	KSS GB-M12-8W-RJ45-A-P7-050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

## Accessories


### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50121433	BT 300 W	Mounting device	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Adjustable Material: Metal



### Mounting technology - Swivel mounts

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

## Lenses

	Part no.	Designation	Article	Description
	50148541	Lens S-M12-4F4	Lens	Working range: 65 ... 150 mm Focal length: 3.6 mm F-stop (F): 4 Resolution: 5 megapixel Design, housing: Cylindrical

## Illuminations

	Part no.	Designation	Article	Description
	50148123	IL BA 012/130 RD 301 L D	Illumination	Special version: Protective cover, lenticular Functions: Continuous operation
	50148131	IL SP 021/014 300	Illumination	Functions: Triggered operation, Integrated power control

#### Note



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