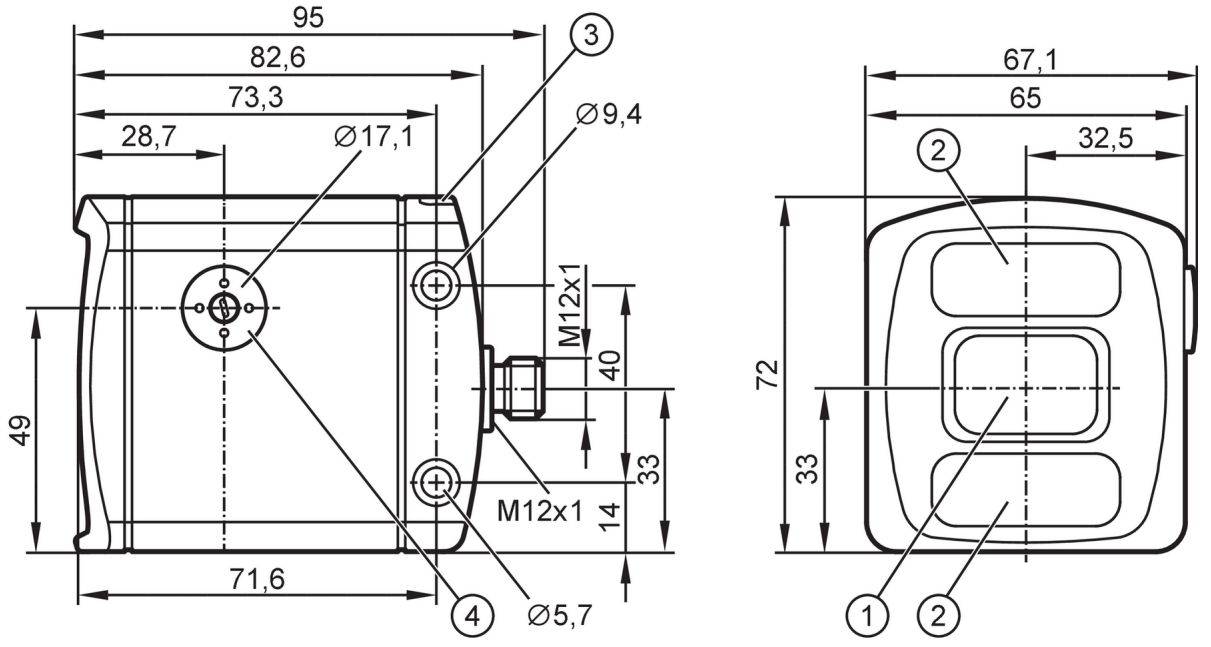
O3D300

3D sensor

O3DIRDKG/E1/GM/T/40



1 lens
2 Illumination unit
3 LED 2-colour yellow/green
4 focus adjustment screw

Product characteristics		
Type of light		infrared light
Image resolution 3D	[px]	176 x 132
Angle of aperture 3D	[°]	40 x 30; (nominal value without lens distortion correction)
Max. reading rate	[Hz]	25
Housing		rectangular
Application		
Application		dimensioning of the object; completeness monitoring; Level monitoring; distance monitoring; volume monitoring; robot gripper navigation; depalletizing
Electrical data		
Operating voltage tolerance	[%]	-15...20
Operating voltage	[V]	24 DC; (EN 61131-2)
Current consumption	[mA]	< 350; (typical value: 420)
Max. current consumption	[mA]	830; (mean value at 24 VDC; with switched outputs; < 1600 peak current pulsed)
Protection class		III
Overvoltage category		II
Type of light		infrared light
Image sensor		PMD 3D ToF-Chip
Internal lighting		yes; (infrared: 850 nm)
Inputs / outputs		
Number of inputs and outputs		Number of digital inputs: 3; Number of digital outputs: 3; Number of analogue outputs: 1
Inputs		
Trigger		24 V PNP/NPN (IEC 61131-2 Typ 3)

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Number of digital inputs		3
Input circuit of digital inputs		24 V PNP/NPN; (configurable; IEC 61131-2 Typ 3)
Outputs		
Total number of outputs		3
Number of digital outputs		3; (configurable)
Output function		24 V PNP/NPN; (EN 61131-2)
Max. voltage drop switching output DC	[V]	1
Max. current load per output	[mA]	100
Number of analogue outputs		1
Analogue current output	[mA]	4...20
Max. load	[Ω]	500
Analogue voltage output	[V]	0...10
Min. load resistance	[Ω]	10000
Min. load	[Ω]	230
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes
Detection zone		
Operating distance	[mm]	300...10000
Note on operating distance		object size: 200 x 200 mm reflectivity: 18 %
Image resolution 3D	[px]	176 x 132
Angle of aperture 3D	[°]	40 x 30; (nominal value without lens distortion correction)
Max. reading rate	[Hz]	25
Measuring/setting range		
Measuring range	[m]	< 30
Software / programming		
Parameter setting options		via PC with ifm Vision Assistant
Interfaces		
Communication interface		Ethernet
Ethernet		
Number of Ethernet interfaces		1
Transmission standard		10Base-T; 100Base-TX
Transmission rate		10; 100
Protocol		TCP/IP; PROFINET IO; EtherNet/IP
Factory settings		IP address: 192.168.0.69 subnet mask: 255.255.255.0 gateway IP address: 192.168.0.201
Operating conditions		
Ambient temperature	[°C]	-10...50
Storage temperature	[°C]	-40...85
Protection		IP 65; IP 67

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Max. immunity to extraneous light	[klx]	8; (with reduced measuring accuracy and repeatability: < 100)	

Tests / approvals

EMC	DIN EN 61000-6-4	radiation of interference / industrial environments
	DIN EN 61000-6-2	immunity / industrial environments
Shock resistance	DIN EN 60068-2-27	50 g / (11 ms) not repetitive
	DIN EN 60068-2-27	40 g / (6 ms) repetitive
Vibration resistance	DIN EN 60068-2-6	2 g / (10...150 Hz)
	DIN EN 60068-2-64	2.3 g RMS / (10...500 Hz)
Photobiological safety	exempt group; (DIN EN 62471)	
Electrical safety	DIN EN 61010-2-201	electrical supply only via PELV circuits
MTTF [years]	43	

Mechanical data

Weight [g]	803.5	
Housing	rectangular	
Dimensions [mm]	72 x 67.1 x 82.6	
Materials	housing: diecast aluminium; front pane: gorilla glass; function display: PA	

Displays / operating elements

Display	function	2 x LED, green Ethernet operation
	switching status	2 x LED, yellow OUT 1 OUT 2

Accessories

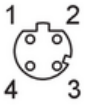
Items supplied	Protective covers

Remarks

Pack quantity	1 pcs.

Electrical connection - Ethernet

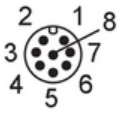
Connector: 1 x M12; coding: D; Contacts: 4



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

Electrical connection - Process connection

Connector: 1 x M12; coding: A; Contacts: 8



1	L+	
2	IN3	DI3 (trigger input)
3	L-	
4	OUT1	DO1, AO
5	OUT3	DO3 (Ready)
6	OUT2	DO2
7	IN1	DI1
8	IN2	DI2

DI: digital input; DO: digital output

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Other data

field of view size with lens distortion correction

measuring range / distance [m]	Length [m]	Width [m]
0.50	0.26	0.35
1.00	0.52	0.69
2.00	1.04	1.39
3.00	1.56	2.08
4.00	2.08	2.78
5.00	2.61	3.47

Accuracy of dimensioning of the object

measuring range / distance [m]	accuracy object size (Length, Width, Height) [mm]	accuracy object position (X, Y, Z coordinates) [mm]	accuracy angle of rotation [°]
typical value	typical value	typical value	typical value
1.0...3.0	± 10	± 5	± 1

typical values at an ambient temperature of 20 °	
Operating distance:	0.3 ... 5 m
Image repetition frequency:	1 Hz
information applies for:	
rectangular objects	
reflectivity:	6...90 % for non-glossy objects
minimum object size:	100x100x100 mm
object in centre of the image	
object speed:	< 0.2 m/s

completeness monitoring

	object speed < 0.2 m/s [mm]	object speed > 0.2 m/s [mm]
typical value:		
minimum height	25	45

Image repetition frequency [Hz]	5
Operating distance [m]	0.3...5
max. packaging size (orthogonal packaging arrangement)	maximum number of objects 64
The image repetition frequency is reduced by using the position tracking function	

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level and distance monitoring

measuring range / distance [m]	repeatability of the measured distance values on grey objects (18% reflectivity) [mm]	repeatability of ROI of 50x50 pixels on grey objects [mm]	accuracy (reflectivity 6-90%) [mm]
	typical value	typical value	typical value
0.3...1.0	8	0.3	± 7
1.0...3.0	12	0.4	± 7
3.0...5.0	20	0.7	± 10
5.0...7.0	30	1.0	± 15
7.0...8.0	50	1.7	± 20
measured in the centre of the image at an ambient temperature of 20°C			
Repeatability		1 σ	
The repeatability can be optimised with filter functions			
Temperature drift -10...+50 °C		0.2 mm/K	

robot gripper navigation and depalletizing

	robot gripper navigation	depalletizing
Operating distance [m]	0.2...6	0.5...6
object types	any object shape	closed rectangular objects
minimum object size [mm]	20 x 20 x 20	50 x 50 x 50 at minimum operating distance
accuracy object position [mm]		
typical value:	± 10 rectangular objects	± 15
accuracy angle of rotation [°]		
typical value:	± 1 rectangular objects	± 3
object speed [m/s]	< 0.2	
Image repetition frequency [Hz]	2 for one object to be measured	1
maximum number of objects	20	