

ifm efector Machine Vision 2D Camera



O2D500

The ifm efector 2D machine vision sensor provides simple, capable and reliable image-based detection. Whether contour detection or BLOB analysis, the O2D family of vision sensors excels at solving most error-proofing and inspection applications throughout the manufacturing plant for a fraction of the cost of other vision systems and sensors.

Features

- Convenient autofocus
- Four built-in lights (two non-polarized and two polarized)
- Up to five configurable outputs
- Onboard logic engine
- IP65
- Anchor tracking
- Multi-image analysis at various exposure rates
- Contour and BLOB detection
- Imager resolution: 1.2MP

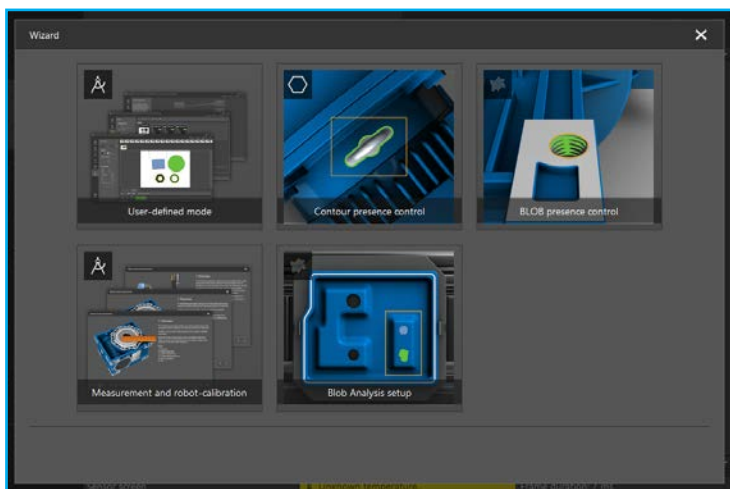
Applications

- Metal injection molding quality
- Bottle filling operation quality
- Packaging box quality
- Filter quality
- Tapped hole detection

ifm efector Machine Vision 2D Camera Selection Guide						
Part Number	Price	Lens Type	Light Emission	Port Protocols	Lens Material	Dimensional Drawing
<u>O2D500</u>	\$1,436.00	Standard	RGBW (red/green/blue/white)	TCP/IP and EtherNet/IP	Gorilla glass	<u>PDF</u>
<u>O2D520</u>	\$1,436.00		Infrared			<u>PDF</u>
<u>O2D502</u>	\$1,436.00	Wide angle	RGBW (red/green/blue/white)			<u>PDF</u>
<u>O2D522</u>	\$1,436.00		Infrared			<u>PDF</u>

Full-Featured Vision Assistant Configuration

The free ifm Vision Assistant configuration software contains several tools to make integration more seamless. The tools in the library include pattern, form, object, location, measurement, diameter, and roundness, just to name a few. The powerful camera features a 35 frames-per-second target speed. Please note that camera speed is dependent on how much processing must be done by the camera.



Screenshot of ifm's Vision Assistant software. The software contains several wizards to assist in efficient integration of the camera into the automation system and PLC to quickly get you up and running.

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Machine Vision 2D Camera



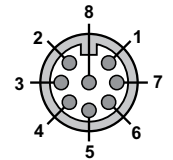
ifm efector Machine Vision 2D Camera Technical Specifications					
Product Characteristics					
Image Resolution	(pixels)	1280 x 960			
Maximum Reading Rate	(Hz)	40			
Electrical Data					
Operating Voltage	(V)	18-30 VDC			
Current Consumption	(mA)	<400 (24VDC; with switched outputs: <900mA)			
Reverse Polarity Protection		Yes			
Wavelength	(nm)	625, 525, and 423			
Image Sensor		CMOS image sensor (black/white)			
Inputs					
Trigger		External: 24V PNP/NPN (IEC 61131-2 Type 3) TCP/IP EtherNet/IP Continuous			
Outputs					
Output Function		PNP/NPN (configurable)			
Maximum Current Load Per Output	(mA)	100			
Monitoring Range					
Field of View	(mm [in])	For Standard Lens (O2D500 and O2D520)		For Wide Angle Lens (O2D502 and O2D522)	
		Operating Distance:	Field of View:	Operating Distance:	Field of View:
		85 [3.35]	28 x 21 [1.10 x 0.83]	35 [1.38]	25 x 19 [0.98 x 0.75]
		300 [11.81]	92 x 69 [3.62 x 2.72]	300 [11.81]	184 x 138 [7.24 x 5.43]
		500 [19.69]	152 x 114 [5.98 x 4.49]	500 [19.69]	304 x 228 [11.97 x 8.98]
		1000 [39.37]	302 x 227 [11.89 x 8.94]	1000 [39.37]	604 x 453 [23.78 x 17.83]
		1500 [59.06]	453 x 340 [17.83 x 13.39]	1500 [59.06]	904 x 678 [35.59 x 26.69]
		2000 [78.74]	603 x 452 [23.74 x 17.80]	2000 [78.74]	1204 x 903 [47.40 x 35.55]
		2500 [98.43]	753 x 564 [29.65 x 22.20]	2500 [98.43]	1504 x 1128 [59.21 x 44.41]
Operating Distance	(mm [in])	>85 [3.35]		>35 [1.38]	
Image Resolution	(pixels)	1280 x 960			
Autofocus Type		Mechanical autofocus			
Interfaces					
Communication Interface		Ethernet			
Transmission Standard		10Base-T; 100Base-TX			
Transmission Rate		10 MBit/s; 100 MBit/s			
Protocol		TCP/IP; EtherNet/IP			
Factory Settings		IP address: 192.168.0.69 Subnet mask: 255.255.255.0 (Class C) Gateway IP address: 192.168.0.201			
Operating Conditions					
Ambient Temperature		-10 to 50°C [14 to 122°F]			
Storage Temperature		-40 to 70°C [-40 to 150°F]			
IP Rating		IP65			
Mechanical Data					
Weight	g [lb]	612.4 [1.35]			
Material		Housing: Diecast zinc powder coated; Front lens: Gorillaglas; LED window: PC; Pushbuttons: POM			

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Electrical Connections – Supply

Connection Colors



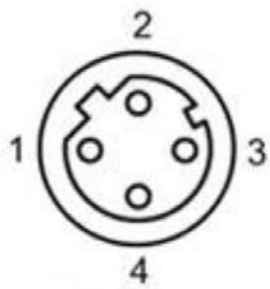
Pin View from Switch
M12 Male

M12 8-Pin Male Connector				
Pin	292 Cable*	295 Cable*	Signal	Description
1	White	Brown	+24V	Power supply
2	Brown	White	Trigger	Trigger input
3	Green	Blue	GND	Ground
4	Yellow	Black	OUT5	Switching output 5
5	Gray	Gray	OUT3	Switching output 3
6	Pink	Pink	OUT4	Switching output 4
7	Blue	Violet	OUT2/IN2	Switching input or output 2
8	Red	Orange	OUT1/IN1	Switching input or output 1

Notes:

* AutomationDirect sells M12 8-pole cables with two different color patterns (7000-170x1-292xxxx and 7000-170x1-295xxxx).

Electrical Connections – Ethernet



M12 4-Pin Male (D-coded Ethernet)	
1	TxD+, transmit data +
2	RxD+, receive data +
3	TxD-, transmit data -
4	RxD-, receive data -

Accessories

O2D Accessories Selection Guide			
Part Number	Price	Description	Drawing
E2D500	\$34.00	Right-angle bracket for 12mm rod	PDF



E2D500



E21112

316L Stainless Steel Rod Selection Guide				
Part Number	Price	Diameter (mm [in])	Length (mm [in])	Drawing
E21112	\$14.50	12 [0.5]	200 [7.9]	PDF
E21113	\$16.50	12 [0.5]	300 [11.8]	PDF