

MicroHAWK F330-F Smart Camera


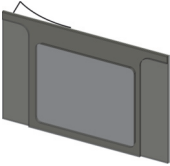
Compact Ethernet smart camera.

- Simple configuration with AutoVISION.
- 5 megapixel sensor available.
- Smallest in class.
- IP40.
- Single snap-in RJ45 connector and cable.
- Ethernet TCP/IP, EtherNet/IP, and PROFINET.






MicroHAWK F330-F

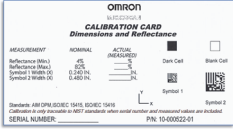
Optics Options

Appearance	Type	Part Number
	Diffuser Kit – Peel and Stick Accessory. Exterior to unit.	V330-AF1
	Polarizer Kit – Peel and Stick Accessory. Exterior to unit.	V330-AF2

Direct Wiring Options

Appearance	Type	Length	Part Number
	Standard Ethernet Cables, In-Cabinet Use; Standard RJ45 Connectors on Both Ends; Green	1 Meter	XS6W-5PUR8SS100CM-G
		3 Meters	XS6W-5PUR8SS300CM-G
		5 Meters	XS6W-5PUR8SS500CM-G
		10 Meters	XS6W-5PUR8SS1000CM-G
		15 Meters	XS6W-5PUR8SS1500CM-G
	Standard Ethernet Cables, Out-of-Cabinet Use; Rugged RJ45 Connectors on Both Ends; Light Blue	1 Meter	XS5W-T421-CMD-K
		3 Meters	XS5W-T421-EMD-K
		5 Meters	XS5W-T421-GMD-K
		10 Meters	XS5W-T421-JMD-K
		15 Meters	XS5W-T421-KMD-K
	High Flex Ethernet Cables for Robot and Cable Tray Use; Rugged RJ45 Connectors on Both Ends; Light Blue	1 Meter	XS5W-T421-CMD-KR
		3 Meters	XS5W-T421-EMD-KR
		5 Meters	XS5W-T421-GMD-KR
		10 Meters	XS5W-T421-JMD-KR
		15 Meters	XS5W-T421-KMD-KR

Verification Options

Appearance	Type	Part Number
	AutoVISION Verification Calibration Card with NIST-Traceable Measurement Report	98-000265-01
	AutoVISION Verification Calibration Card	98-000265-02

F330-F Part Number Structure

Use this legend when defining product part numbers. Please note that not all combinations of parameters are valid. For instance, fixed focus distance of 50 mm is not available with Narrow Lens. When ordering, use valid part numbers from the tables in the Ordering Information section only.

F330-F[XXX][Y][ZZZ]-NN[P]

Key	Classification	Code	Meaning
XXX	Focus Distance (mm)	050	Fixed Focus at 50 mm
		064	Fixed Focus at 64 mm
		081	Fixed Focus at 81 mm
		102	Fixed Focus at 102 mm
		133	Fixed Focus at 133 mm
		190	Fixed Focus at 190 mm
		300	Fixed Focus at 300 mm
Y	Lens	W	Wide Field of View - 5.2 mm Focal Length Lens
		M	Medium Field of View – 7.7 mm Focal Length Lens
		N	Narrow Field of View – 16 mm Focal Length Lens
ZZZ	Sensor	03M	752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter
		12M	1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter
		50C	2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter
L	Light Type	N	No Outer Light
C	Light Color	N	No Outer Light
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

Example Part Number:

- F330-F064W50C-NNV: Fixed Focus at 64 mm, Wide Lens, 5 MP Color – No Light, Visionscape (Full AutoVISION and Visionscape Toolsets)

F330-F Valid Product Matrix

Model	Category	Focus Type	Sensor	Lens	Focus Distance (mm)	Light	License
F330-F	Monochrome	Fixed Focus	03M, 12M	W, M	50, 64, 81, 102, 133, 190, 300	None	S, A, V
	Color	Fixed Focus	50C	W, M	50, 64, 81, 102, 133, 190, 300	None	S, A, V
	Monochrome	Fixed Focus	03M, 12M	N	64, 81, 102, 133, 190, 300	None	S, A, V
	Color	Fixed Focus	50C	N	64, 81, 102, 133, 190, 300	None	S, A, V

F330-F Ordering Information

Categories:

1. Fixed Focus Cameras

- a) F330-F Monochrome and Color Fixed Focus Camera with Standard Lens
- b) F330-F Monochrome and Color Fixed Focus Camera with Narrow Lens

1a) F330-F Mono and Color Camera with Standard Lens: Valid Combinations

F330-F[XXX][Y][ZZZ]-NN[P]

Key	Classification	Code	Meaning
XXX	Focus Distance (mm)	050	Fixed Focus at 50 mm
		064	Fixed Focus at 64 mm
		081	Fixed Focus at 81 mm
		102	Fixed Focus at 102 mm
		133	Fixed Focus at 133 mm
		190	Fixed Focus at 190 mm
		300	Fixed Focus at 300 mm
Y	Lens	W	Wide Field of View - 5.2 mm Focal Length Lens
		M	Medium Field of View – 7.7 mm Focal Length Lens
ZZZ	Sensor	03M	752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter
		12M	1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter
		50C	2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

1b) F330-F Mono and Color Camera with Narrow Lens: Valid Combinations

Note: 50 mm Fixed Focus option not available with Narrow Lens.

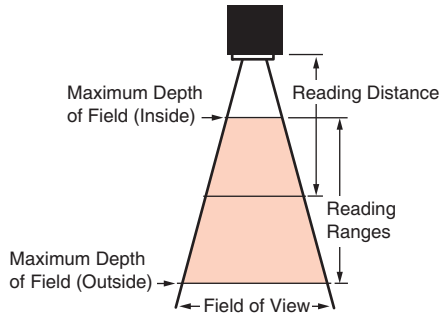
F330-F[XXX]N[ZZZ]-NN[P]

Key	Classification	Code	Meaning
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F330-F

Field of View Charts

Specifications are subject to change.



Fixed Focus Field of View (mm) - Wide Lens

Distance (mm)	0.3 MP		1.2 MP		5 MP	
	Width	Height	Width	Height	Width	Height
50	49	32	53	39	50	38
81	76	49	81	61	78	58
102	95	60	101	75	96	72
190	171	109	182	136	174	130
300	266	170	283	213	271	202

Fixed Focus Field of View (mm) - Medium Lens

Distance (mm)	0.3 MP		1.2 MP		5 MP	
	Width	Height	Width	Height	Width	Height
50	34	22	36	27	35	26
81	53	34	56	42	54	40
102	66	42	70	52	67	50
190	119	76	126	95	121	90
300	185	118	196	147	188	140

Fixed Focus Field of View (mm) - Narrow Lens

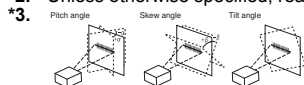
Distance (mm)	1.2 MP	
	Width	Height
64	21	15
400	118	88

Ratings and Specifications

F330-F		F330-F□□□□03M-□□□□	F330-F□□□□12M-□□□□	F330-F□□□□50C-□□□□
Symbologies *1	1D Symbologies	Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, Postnet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX		
	2D Symbologies	Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode, DMRE		
	Stacked Symbologies	PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)		
Reading Performance *2	Number of Reading Digits	No Upper Limit (depending on bar width and reading distance)		
	Aiming Light	Two Blue LEDs		
	Illumination	Inner LEDs: Four White and Four Red (Wavelength: 625 nm)		
		Outer LEDs:	None	None
	Reading Distance / Field of View	Refer to <i>Field of View Charts</i> for details.		
	Pitch Angle (α) *3	$\pm 30^\circ$		
	Skew Angle (β) *3	$\pm 30^\circ$		
Tilt Angle (γ) *3	$\pm 180^\circ$			
Vision Tools		Locate, Decode, Optical Character Recognition (OCR), Count, Presence/Absence, Measure, Match Strings, String Format, Logic, Optical Character Verification (OCV), Symbol Quality Verification, Color Identification, Color Match		
Image Capture	Focus	Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm)		
	Resolution	752 (H) x 480 (V)	1280 (H) x 960 (V)	2592 (H) x 1944 (V)
	Color / Monochrome	Monochrome CMOS	Monochrome CMOS	Color CMOS
	Shutter	Global Shutter	Global Shutter	Rolling Shutter
	Frames per Second	52 fps	40 fps	5 fps
	Exposure	50 to 66,667 μ s	50 to 58,825 μ s	50 to 66,667 μ s
Image Logging		FTP		
Trigger		Communication Trigger (Ethernet)		
I/O Specifications	Input Signals	Ethernet		
	Output Signals	Ethernet		
Communication	Connectivity	Ethernet TCP/IP, EtherNet/IP, PROFINET		
	Ethernet Specifications	100BASE-TX / 10BASE-T		
Indicator LEDs		PASS (Green), PWR (Green)		
Power Supply Voltage		Source: 44-57 VDC IEEE802.3af POE		
Current Consumption		Max Current: 0.10 A		
Environmental Immunity *4	Ambient Temperature Range	Operating: 0 to 40° C Storage: -50 to 75° C (No Icing or Condensation)		
	Ambient Humidity Range	Operating and storage: 5% to 95% (Non-Condensing)		
	Ambient Atmosphere	No Corrosive Gases		
	Vibration Resistance (Destructive)	Oscillation Frequency: 10 to 150Hz, Half Amplitude: 0.35 mm, Vibration Direction: X/Y/Z, Sweep Time: 8 minute/count, Sweep Count: 10 times		
	Shock Resistance (Destructive)	Impact Force: 150 m/s ² , Test Direction: 6 directions, three times each (up/down, front/back, left/right)		
	Degree of Protection	IEC 60529 IP40		
Weight	Main Body Only	72 g		
	Packaging Weight	Approx. 180 g (including packing)		
Dimensions	Main Body Dimensions	40 (W) x 63 (D) x 24 (H) mm		
	Packaging Dimensions	170 (W) x 117 (D) x 86 (H) mm		
Accessories		ReadMeFirst, CE Compliance Sheet		
LED Safety Standard		IEC 62471-1: 2006 Risk-Exempt Group		
Safety Standards		EN 61326-1:2013 FCC Part 15, Subpart B (Class B) UL60950-1 RCM, KC, EAC		
Materials	Case	Aluminum Diecast, Alumite (Black)		
	Reading Window	Acrylic		
Software		AutoVISION, Visionscape FrontRunner		

*1. These symbologies are supported based on Omron's read capability validation standard. Omron recommends that validation be performed for each application.

*2. Unless otherwise specified, reading performance is defined with center of field of view, angle $R=\infty$.

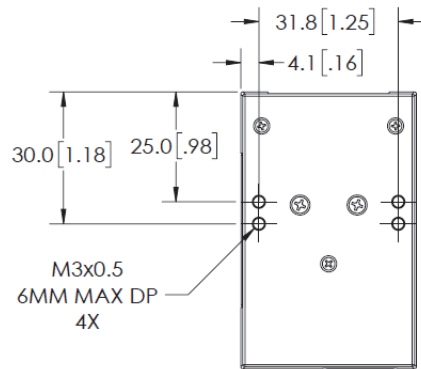
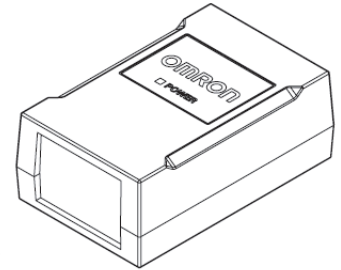
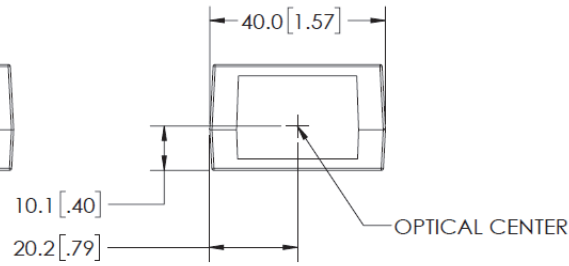
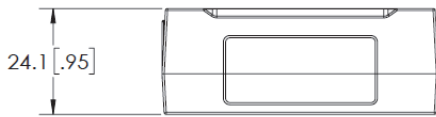
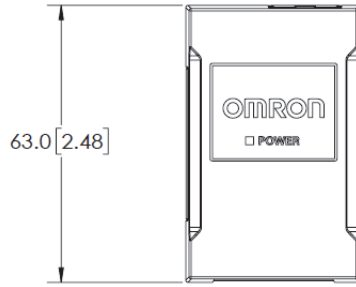


*4. In an electrically noisy environment, use only the F430-F in combination with a noise filter cable (V430-W□F-□□□) to ensure proper operation.

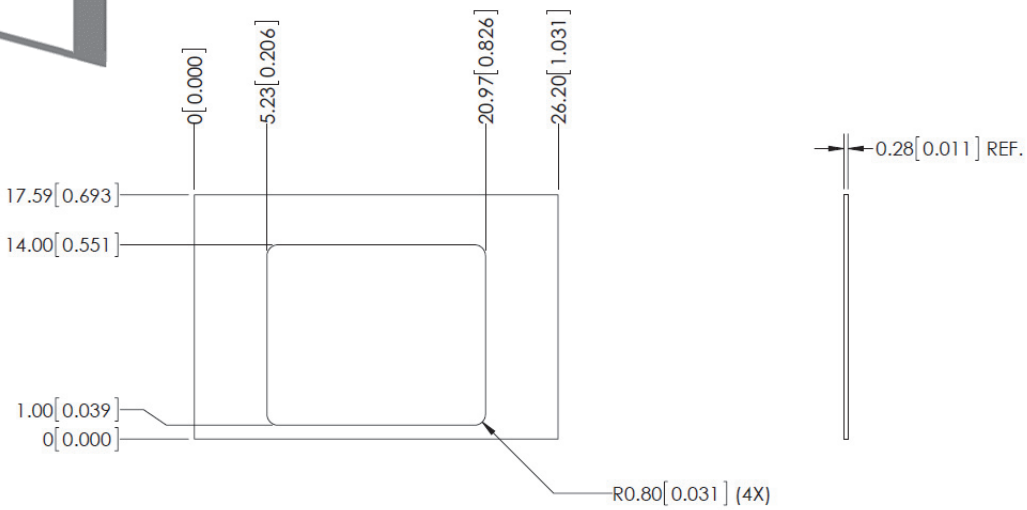
F330-F

Dimensions

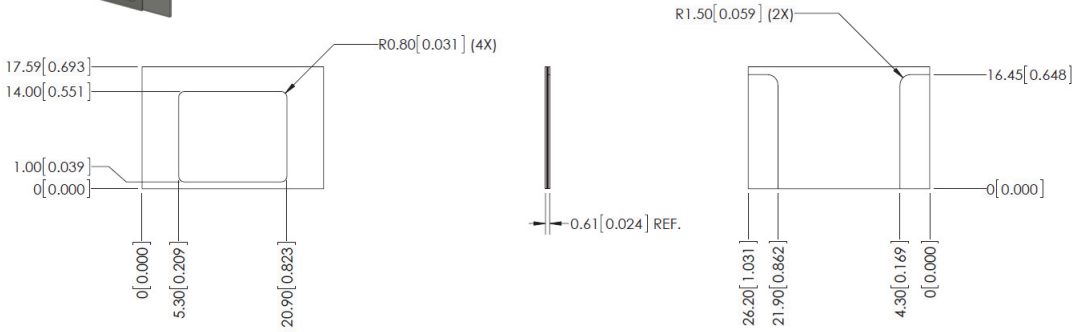
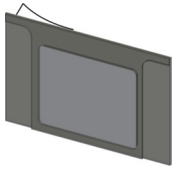
(Unit: mm)



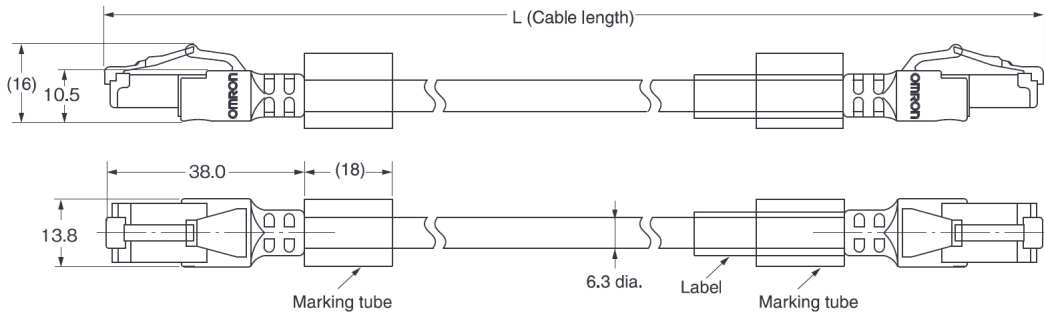
Diffuser Kit – Peel and Stick Accessory. Exterior to unit. V330-AF1



**Polarizer Kit – Peel and Stick Accessory. Exterior to unit.
V330-AF2**

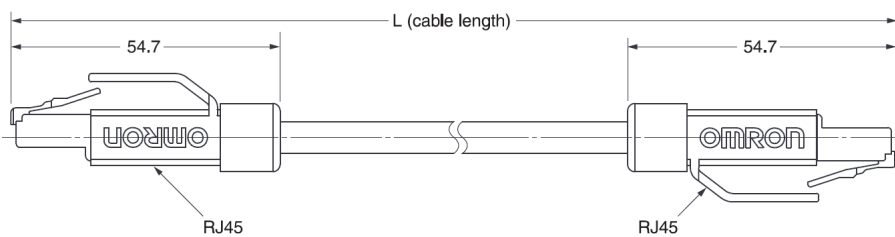


Standard Ethernet Cables, In-Cabinet Use; Standard RJ45 Connectors on Both Ends; Green
XS6W-5PUR8SS100CM-G
XS6W-5PUR8SS300CM-G
XS6W-5PUR8SS500CM-G
XS6W-5PUR8SS1000CM-G
XS6W-5PUR8SS1500CM-G

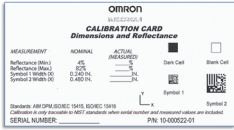



Standard Ethernet Cables, Out-of-Cabinet Use; Rugged RJ45 Connectors on Both Ends; Light Blue
XS5W-T421-CMD-K
XS5W-T421-EMD-K
XS5W-T421-GMD-K
XS5W-T421-JMD-K
XS5W-T421-KMD-K

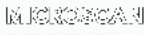
High Flex Ethernet Cables for Robot and Cable Tray Use; Rugged RJ45 Connectors on Both Ends; Light Blue
XS5W-T421-CMD-KR
XS5W-T421-EMD-KR
XS5W-T421-GMD-KR
XS5W-T421-JMD-KR
XS5W-T421-KMD-KR



AutoVISION Verification Calibration Card with NIST-Traceable Measurement Report
98-000265-01
98-000265-02











CALIBRATION CARD

Dimensions and Reflectance

MEASUREMENT	NOMINAL	ACTUAL (MEASURED)		
Reflectance (Min.)	4%	_____%	Dark Cell	Blank Cell
Reflectance (Max.)	82%	_____%		
Symbol 1 Width (X)	0.240 IN.	____.IN.		
Symbol 2 Width (X)	0.480 IN.	____.IN.		

Standards: AIM DPM, ISO/IEC 15415, ISO/IEC 15416
Calibration is only traceable to NIST standards when serial number and measured values are included.

SERIAL NUMBER: _____ P/N: 10-000522-01

Related Manuals

Man.No.	Model	Manual
Z433 (84-9000402-02)	F320-F, F330-F, F420-F, F430-F	MicroHAWK F320-F / F330-F / F420-F / F430-F User Manual

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- Safety Light Curtains • Safety Laser Scanners • Programmable Safety Systems
- Safety Mats and Edges • Safety Door Switches • Emergency Stop Devices
- Safety Switches & Operator Controls • Safety Monitoring/Force-guided Relays

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- Power Supplies • Timers • Counters • Programmable Relays
- Digital Panel Meters • Monitoring Products

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- Limit Switches • Pushbutton Switches • Electromechanical Relays
- Solid State Relays

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- Programming & Configuration • Runtime