

MicroHAWK F330-F

Smart Camera


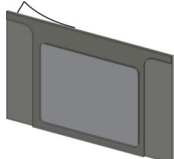
Compact Ethernet smart camera.

- 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

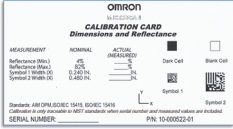
Optics Options

| 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.

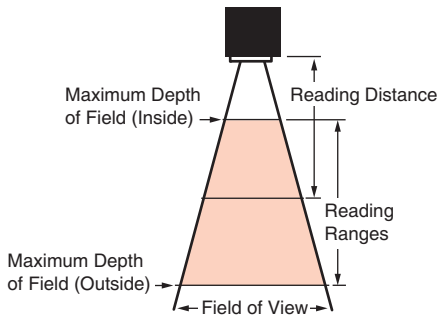
F330-F[XXX]N[ZZZ]-NN[P]

| Key | Classification | Code | Meaning |
|------------|---------------------|------|--|
| XXX | Focus Distance (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 |
| 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) |

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-□□□□ |
|---------------------------|------------------------------------|--|----------------------|----------------------|
| Symbolologies *1 | 1D Symbolologies | 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 Symbolologies | Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode, DMRE | | |
| | Stacked Symbolologies | 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 | Outer LEDs: None | Outer LEDs: 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 symbolologies 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 $R=\infty$.

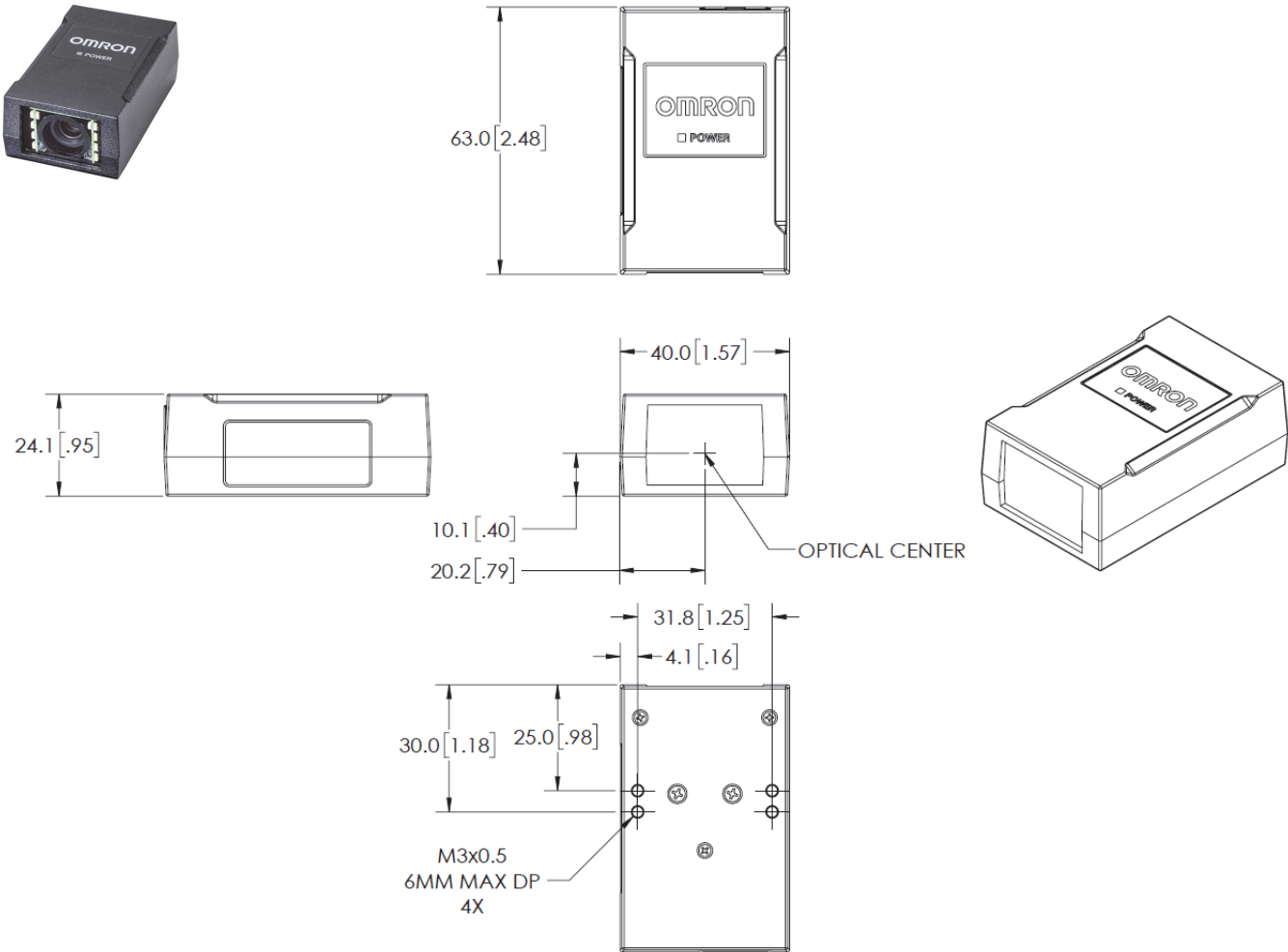


*4. In an electrically noisy environment, use only the F430-F in combination with a noise filter cable (V430-W□F-□M) to ensure proper operation.

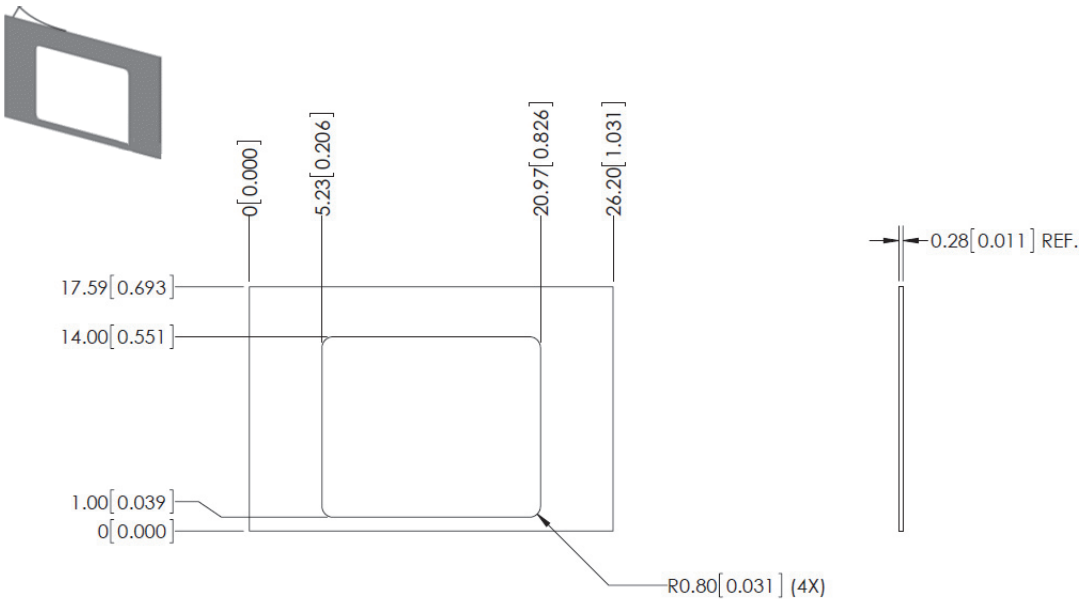
F330-F

Dimensions

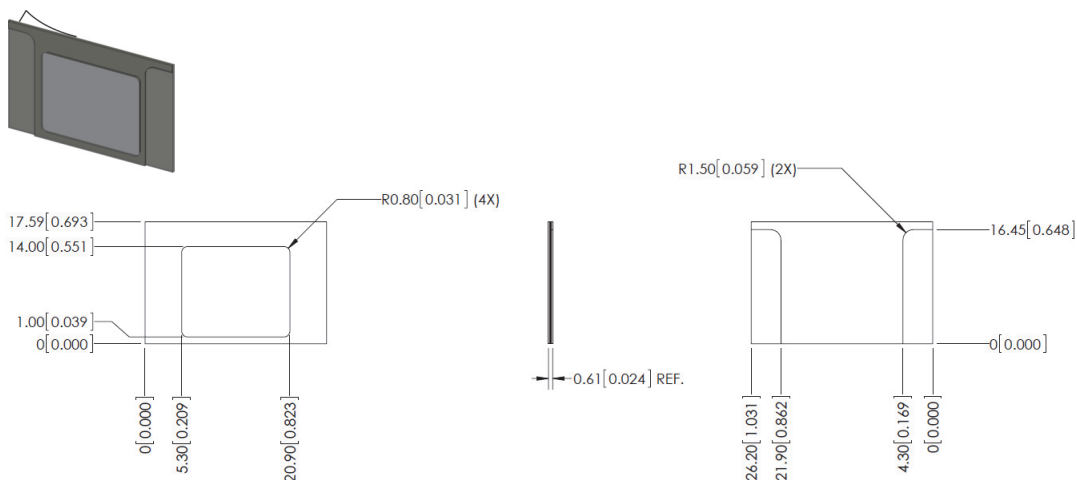
(Unit: mm)



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

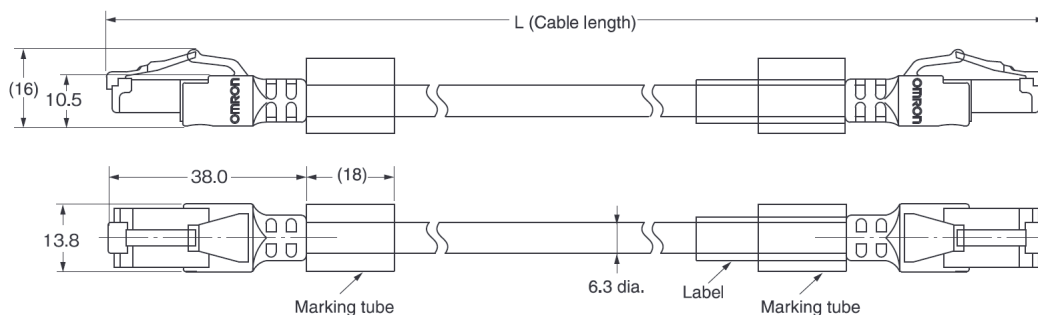


Polarizer Kit – Peel and Stick Accessory. Exterior to unit.
V330-AF2



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

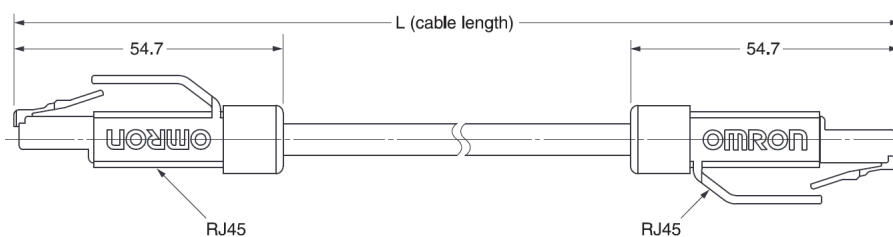


Standard Ethernet Cables, Out-of-Cabinet Use; Rugged RJ45 Connectors on Both Ends; Light Blue

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

OMRON

10-000522-01

CALIBRATION CARD

Dimensions and Reflectance

| MEASUREMENT | NOMINAL | ACTUAL (MEASURED) |
|--------------------|-----------|-------------------|
| Reflectance (Min.) | 4% | ____% |
| Reflectance (Max.) | 82% | ____% |
| Symbol 1 Width (X) | 0.240 IN. | ____IN. |
| Symbol 2 Width (X) | 0.480 IN. | ____IN. |

Dark Cell

Blank Cell

Symbol 1

Symbol 2

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

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10-000522-01

CALIBRATION CARD

Dimensions and Reflectance

| MEASUREMENT | NOMINAL | ACTUAL (MEASURED) |
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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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1220 (0919)

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