

# MicroHAWK F420-F

## Smart Camera

### World's smallest fully-integrated vision system.

- Simple configuration with AutoVISION.
- 5 megapixel sensor available.
- Autofocus available.
- Serial RS-232, USB, or Ethernet over USB.
- IP54.
- Corner-exit cable.



## MicroHAWK F420-F

### Mounting Options

Appearance	Type	Part Number
	L Bracket Adjustable Angle Mounting Kit	V430-AM0
	1/4-20 Camera Mounting Block Kit	V430-AM1
	4" (102 mm) Ram Mount Stand	V430-AM2
	APG Pan and Tilt Camera Mount	V430-AM3
	Nylon Screw and Washer Electrical Isolation Mounting Kit	V430-AM4
	MS-4 / MINI to V/F4XX-F Adapter Plate	V430-AM5
	Smart Ring Light to V/F4XX-F Mounting Bracket	V430-AM6
	QX / Vision HAWK to V/F4XX-F Adapter Plate	V430-AM7

# F420-F

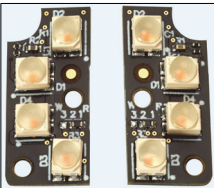
## Optics Options

Appearance	Type	Part Number
	Front Window - Installation Kit	V430-AF10 *
	Diffuser - Installation Kit	V430-AF11 *
	Polarizer - Installation Kit	V430-AF12 *
	Right Angle Mirror - Installation Kit	V430-AF3
	YAG Filter - Installation Kit	V430-AF4
	ESD-Safe Window - Installation Kit	V430-AF5
	Red Filter - Installation Kit	V430-AF6
	Blue Filter - Installation Kit	V430-AF7

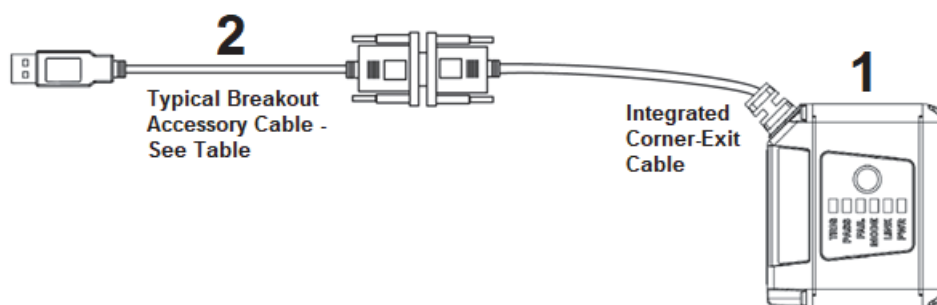
\* Note: V430-AF10, AF11, and AF12 are used for **MicroHAWK V/F4X0-FXXXXXXX-XXX** cameras in this datasheet. The prior generation **MicroHAWK V430-FXXXXXXX** code reader uses part numbers V430-AF0, AF1, and AF2. Please select the correct accessory from the table based on your camera part number format.

Accessory	Prior V430-FXXXXXXX Code Reader	New V/F4X0-FXXXXXXX-XXX Code Reader and Smart Camera
Front Window Installation Kit	V430-AF0	V430-AF10
Diffuser Installation Kit	V430-AF1	V430-AF11
Polarizer Installation Kit	V430-AF2	V430-AF12

## Lighting Options

Appearance	Type	Part Number
	Red Light - Installation Kit	V430-ALR
	White Light - Installation Kit	V430-ALW
	Blue Light - Installation Kit	V430-ALB
	IR Light - Installation Kit	V430-ALI

## Wiring Options



Drawing Reference	Appearance	Category	Length / Spec	Part Number
2	Accessory USB Cable To Host	USB Breakout Cable	1 Meter	V420-WUB-1M
	Accessory USB Cable To Host Power Supply	Cable - USB Breakout With External Power Input	1 Meter	V420-WUX-1M
		Power Supply	2 Meters	97-9000006-01
	Kit - Cable and Power Supply	Kit - Cable and Power Supply		V420-AC1
		Cable - RS-232 Breakout (DB-15) and External Power Input	Cable - RS-232 Breakout (DB-15) and External Power Input	1 Meter
	Power Supply	Power Supply	2 Meters	97-9000006-01
Kit - Cable and Power Supply	Cable - USB, IO, and Power Breakout	Cable - USB, IO, and Power Breakout	1 Meter	V420-WU8X-1M
		Power Supply	2 Meters	97-000011-02
	Kit - Cable and Power Supply	Kit - Cable and Power Supply		V420-AC2
Cable - RS-232, USB, IO, and Power Breakout	Cable - RS-232, USB, IO, and Power Breakout	Cable - RS-232, USB, IO, and Power Breakout	1 Meter	V420-WRU8X-1M
	Power Supply	Power Supply	2 Meters	97-000011-02
Cable - Trigger, IO, and Power Breakout	Cable - Trigger, IO, and Power Breakout	Cable - Trigger, IO, and Power Breakout	900 MM	61-000151-01

## 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

# F420-F

## F420-F Part Number Structure

Use this legend when defining product part numbers. Please note that not all combinations of parameters are valid. For instance, color cameras are only available with white lighting, and 400 mm fixed focus is only available with UHD lenses. When ordering, use valid part numbers from the tables in the Ordering Information section only.

### F420-F[XXX][Y][ZZZ]-[L][C][P]

Key	Classification	Code	Meaning
XXX	Focus Distance (mm)	000	Autofocus – Variable Distance
		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
		400	Fixed Focus at 400 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
		L	Narrow 16 mm Lens – Autofocus to 1160 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
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
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 Numbers:

- F420-F081W03M-NNS: Fixed Focus at 81 mm, Wide Lens, 0.3 MP Monochrome Sensor, No Outer Light, AutoVISION Sensor

## F420-F Valid Product Matrix

Model	Category	Focus Type	Sensor	Lens	Focus Distance (mm)	Light	License
F420-F	Monochrome	Fixed Focus	03M, 12M	W, M	50, 81, 102, 190, 300	None, Red, White	S, A, V
			12M	N	64, 400	None, Red, White	S, A, V
		Autofocus	03M	W, M	50 <-> 300 Autofocus	None, Red, White	S, A, V
			12M	W, M, N	50 <-> 300 (W, M) 40 <-> 150 (N) Autofocus	None, Red, White	S, A, V
	Color	Fixed Focus	50C	W, M	50, 81, 102, 190, 300	None, White	S, A, V
		Autofocus	50C	W, M	50 <-> 300 Autofocus	None, White	S, A, V
	Specialty	Long Range Autofocus	12M	L	75 <-> 1160 Autofocus	None, Red, White	S, A, V

## F420-F Ordering Information

### Categories:

#### 1. Fixed Focus Camera

- a.) F420-F Monochrome Fixed Focus Camera
- b.) F420-F Color Fixed Focus Camera
- c.) F420-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens

#### 2. Autofocus Camera

- a.) F420-F 0.3 MP Monochrome Autofocus Camera (50 – 300 mm)
- b.) F420-F 1.2 MP Monochrome Autofocus Camera (50 – 300 mm for Wide and Medium Lens, 40 – 150 mm for Narrow Lens)
- c.) F420-F Color Autofocus Camera (50 - 300 mm)
- d.) F420-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm)

### 1a) F420-F Monochrome Fixed Focus Camera: Valid Combinations

F420-F[XXX][Y][ZZZ]-[L][C][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
		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
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
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) F420-F 5.0 MP Color Fixed Focus Camera: Valid Combinations

Note: 5 MP Color cameras are available with No or White light options only.

F420-F[XXX][Y]50C-[L][C][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
		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
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

## F420-F

### 1c) F420-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens: Valid Combinations

Note: Fixed Focus Narrow lens option available for 1.2 MP Mono camera only.

#### F420-F[XXX]N12M-[L][C][P]

Key	Classification	Code	Meaning
XXX	Focus Distance (mm)	064	Fixed Focus at 64 mm
		400	Fixed Focus at 400 mm
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

### 2a) F420-F 0.3 MP Monochrome Autofocus Cameras (50 – 300 mm): Valid Combinations

#### F420-F000[Y]03M-[L][C][P]

Key	Classification	Code	Meaning
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
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

### 2b) F420-F 1.2 MP Monochrome Autofocus Camera (50 – 300 mm for Wide and Medium, 40 – 150 mm for Narrow): Valid Combinations

#### F420-F000[Y]12M-[L][C][P]

Key	Classification	Code	Meaning
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
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

**2c) F420-F 5.0 MP Color Autofocus Camera (50 - 300 mm): Valid Combinations**

**Note:** Narrow Autofocus lens option not available for color camera.

**F420-F000[Y]50C-[L][C][P]**

Key	Classification	Code	Meaning
Y	Lens	W	Wide Field of View - 5.2 mm Focal Length Lens
		M	Medium Field of View – 7.7 mm Focal Length Lens
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

**2d) F420-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm): Valid Combinations**

**Note:** Autofocus Long Range lens option available for 1.2 MP Monochrome camera only.

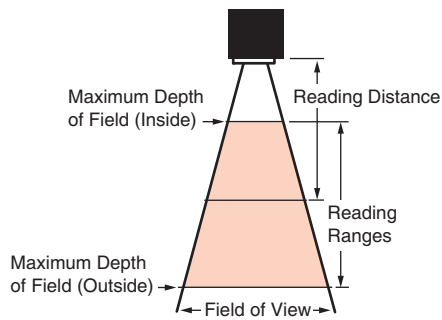
**F420-F000L12M-[L][C][P]**

Key	Classification	Code	Meaning
L	Light Type	N	No Outer Light
		S	Standard Outer Light
C	Light Color	N	No Outer Light
		R	Red
		W	White
P	Software License	S	AutoVISION Sensor (Vision Toolset Only)
		A	AutoVISION (Vision and Code Reading / Verification Toolsets)
		V	Visionscape (Full AutoVISION and Visionscape Toolsets)

# F420-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



### Autofocus Field of View (mm) - Wide Lens

Distance (mm)	0.3 MP		1.2 MP		5 MP	
	Width	Height	Width	Height	Width	Height
50	51	33	55	41	52	39
100	97	62	103	77	98	73
150	142	90	151	113	144	107
200	187	119	199	149	190	142
250	232	148	247	185	236	176
300	277	177	295	221	282	210

### Autofocus Field of View (mm) - Medium Lens

Distance (mm)	0.3 MP		1.2 MP		5 MP	
	Width	Height	Width	Height	Width	Height
50	33	21	36	27	34	25
100	63	40	67	50	64	48
150	92	59	98	73	94	70
200	121	77	129	97	123	92
250	151	96	160	120	153	114
300	180	115	191	144	183	136

### Autofocus Field of View (mm) - Narrow Lens

Distance (mm)	1.2 MP	
	Width	Height
50	16	12
100	31	23
150	45	34

### Long Range Autofocus Field of View (mm)

Distance (mm)	1.2 MP	
	Width	Height
75	24	18
100	31	23
200	60	45
300	89	67
400	118	88
500	147	110
600	176	132
700	204	153
800	233	175
900	262	197
1000	291	218
1200	349	262
1300	378	283
1400	407	305
1500	436	327

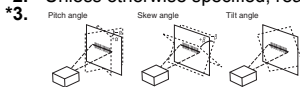
# F420-F

## Ratings and Specifications

F420-F		F420-F□□□□□03M-□□□□	F420-F□□□□□12M-□□□□	F420-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:	8 Red or White	Outer LEDs:
	Reading Distance / Field of View	Refer to <i>Field of View Charts</i> for details.		
	Pitch Angle ( $\alpha$ ) *3	$\pm 30^\circ$		
	Skew Angle ( $\beta$ ) *3	$\pm 30^\circ$		
Tilt Angle ( $\gamma$ ) *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	Liquid Lens Autofocus or Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm, L = 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 $\mu$ s	50 to 58,825 $\mu$ s	50 to 66,667 $\mu$ s
Image Logging		FTP		
Trigger		External Trigger (Edge or Level), Communication Trigger (Ethernet, RS-232C)		
I/O Specifications	Input Signals	Trigger Input: 5-28 V rated (0.16 mA @ 5 VDC); New Master: 5 to 28 V rated (0.16 mA @ 5 VDC); Default: 3.3 V rated (0 mA @ 3.3 V)		
	Output Signals	3 Signals : 5 V TTL-compatible, can sink 10 mA and source 10 mA		
Communication	Connectivity	RS-232C, USB 2.0 High Speed, Ethernet over USB/HID		
	Ethernet Specifications	100BASE-TX / 10BASE-T		
Indicator LEDs		PASS (Green), TRIG (Amber), MODE (Amber), LINK (Amber), FAIL (Red), PWR (Green)		
Power Supply Voltage		5 VDC +/- 5%		
Current Consumption		650 mA at 5 VDC (max.)		
Environmental Immunity *4	Ambient Temperature Range	Operating: 0 to 45° 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)	Sine Vibration: 10 Hz to 55 Hz, 0.35mm displacement, 20 cycles/axis. Random Vibration: 20 Hz to 2000 Hz, 6.295 Grms, 30 min/axis		
	Shock Resistance (Destructive)	50 G, 11 ms, sawtooth profile. 3X in each X, Y, Z axis.		
	Degree of Protection	IEC 60529 IP54		
Weight	Main Body Only	120 g		
	Packaging Weight	Approx. 230 g (including packing)		
Dimensions	Main Body Dimensions	44.5 (W) x 38.1 (D) x 25.4 (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.

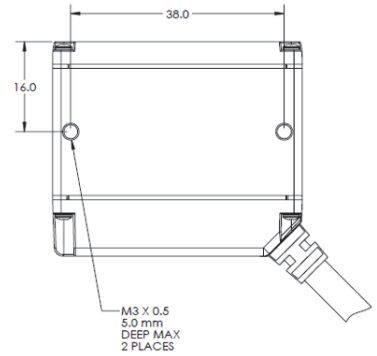
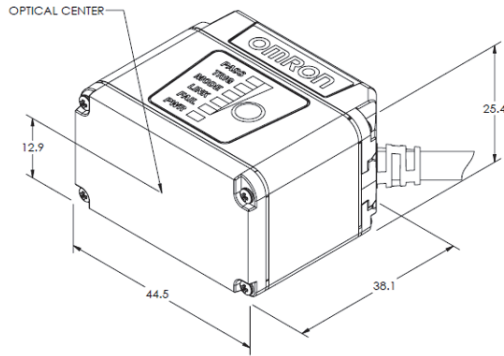
\*2. Unless otherwise specified, reading performance is defined with center of field of view, angle R= $\infty$ .



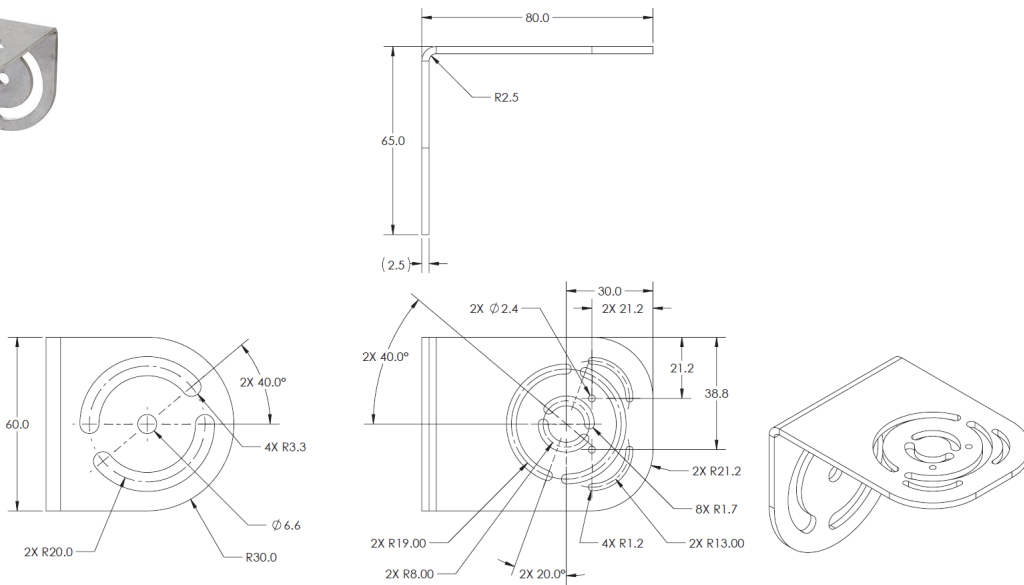
\*4. In an electrically noisy environment, use only the F430-F in combination with a noise filter cable (V430-W□F-□M) to ensure proper operation.

Dimensions

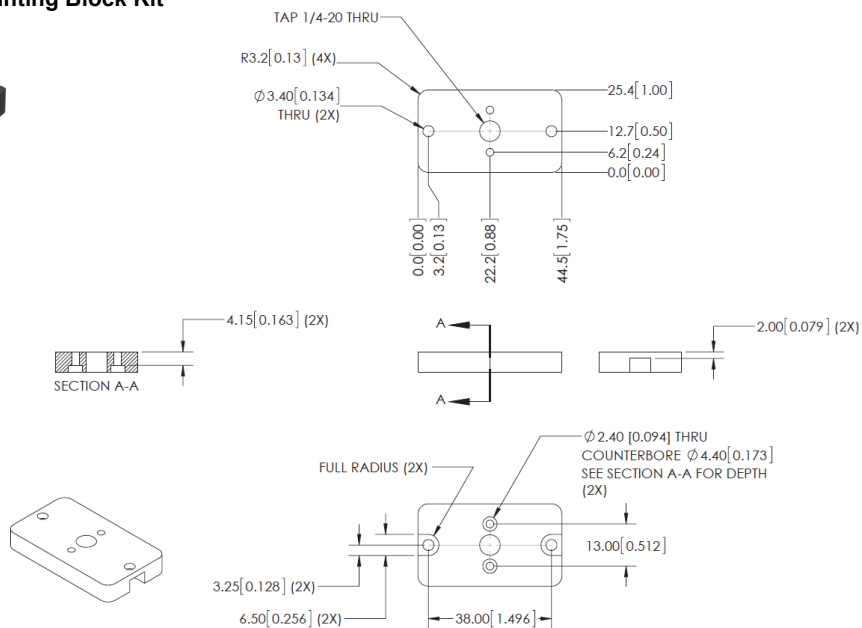
(Unit: mm)



L Bracket Adjustable Angle Mounting Kit V430-AM0

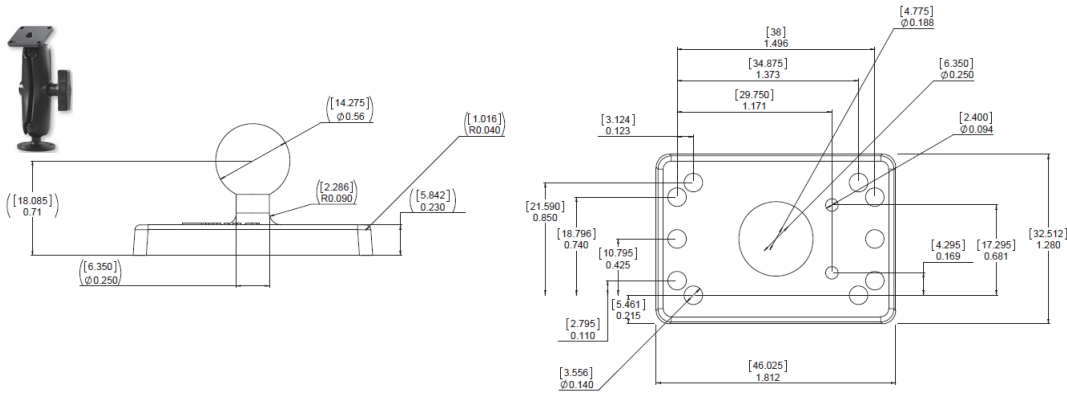


1/4-20 Camera Mounting Block Kit V430-AM1

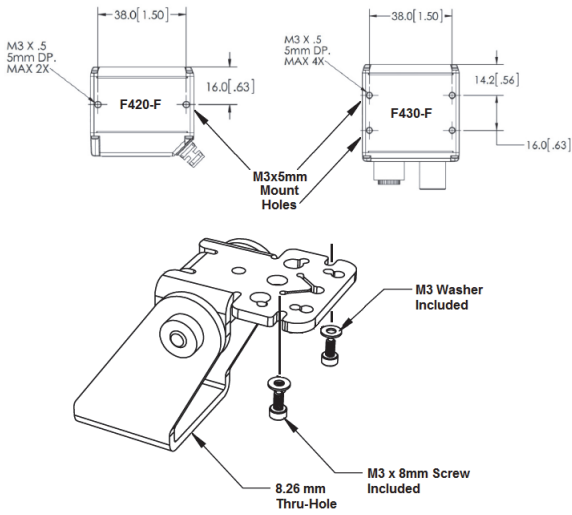


# F420-F

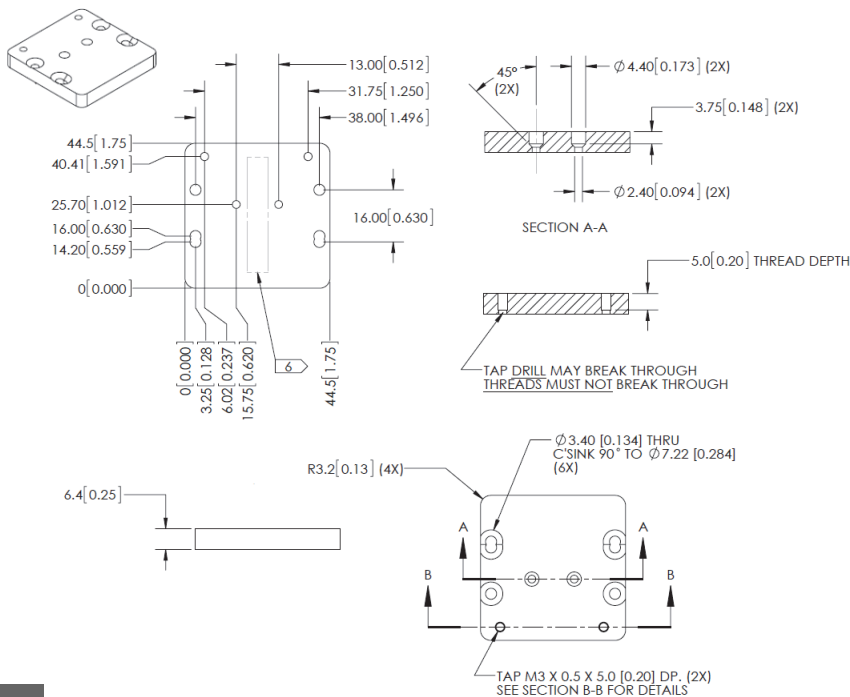
## 4" (102 mm) Ram Mount Stand V430-AM2



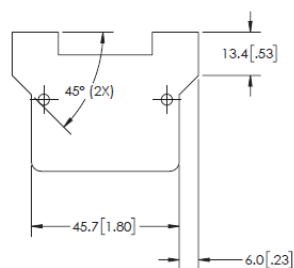
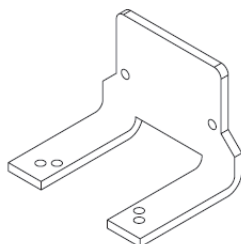
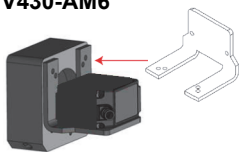
## APG Pan and Tilt Camera Mount V430-AM3



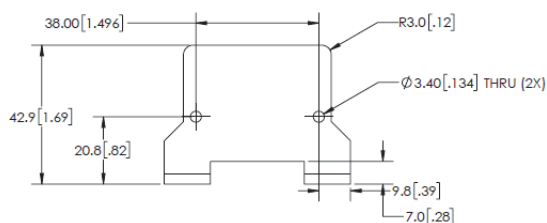
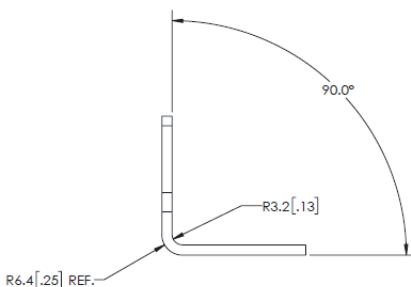
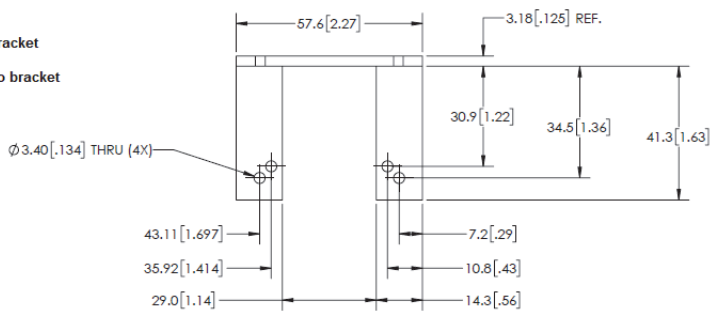
## MS-4 / MINI to V/F4XX-F Adapter Plate V430-AM5



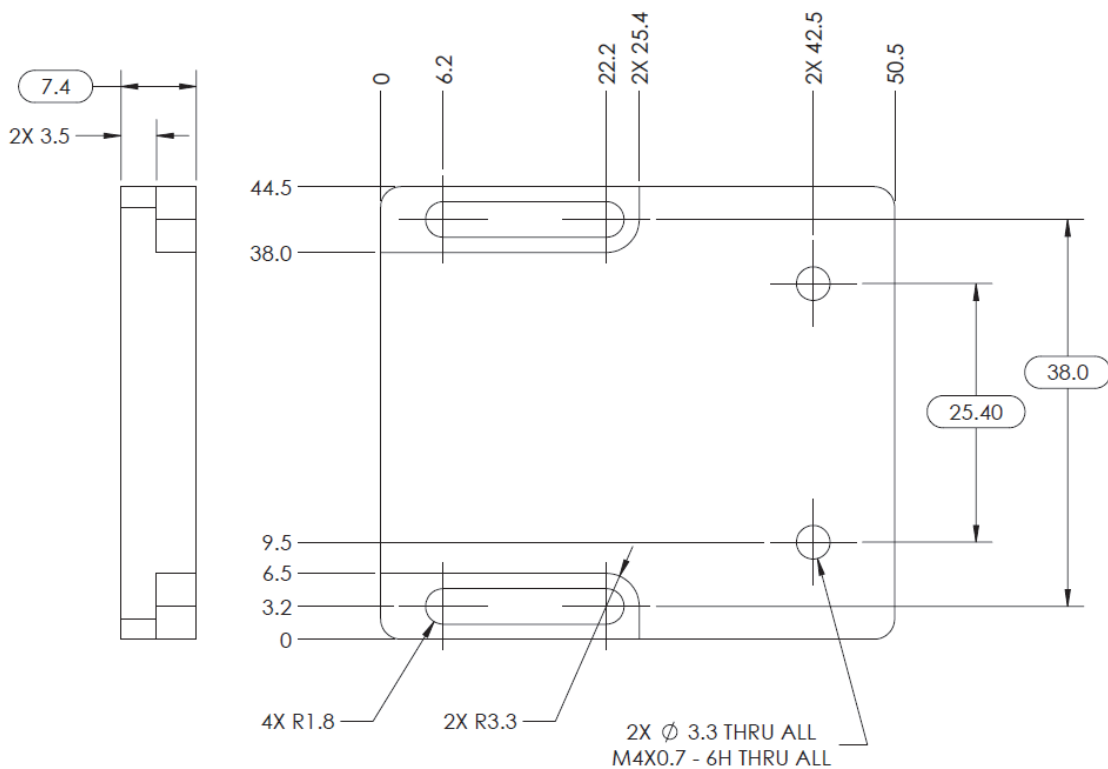
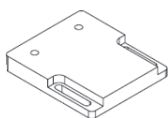
**Smart Ring Light to V/F4XX-F Mounting Bracket  
V430-AM6**



**Screws required:**  
 2 M3x6 mm screws to mount light to bracket  
 2 M3x6 mm screws to mount camera to bracket



**QX / Vision HAWK to V/F4XX-F Adapter Plate  
V430-AM7**

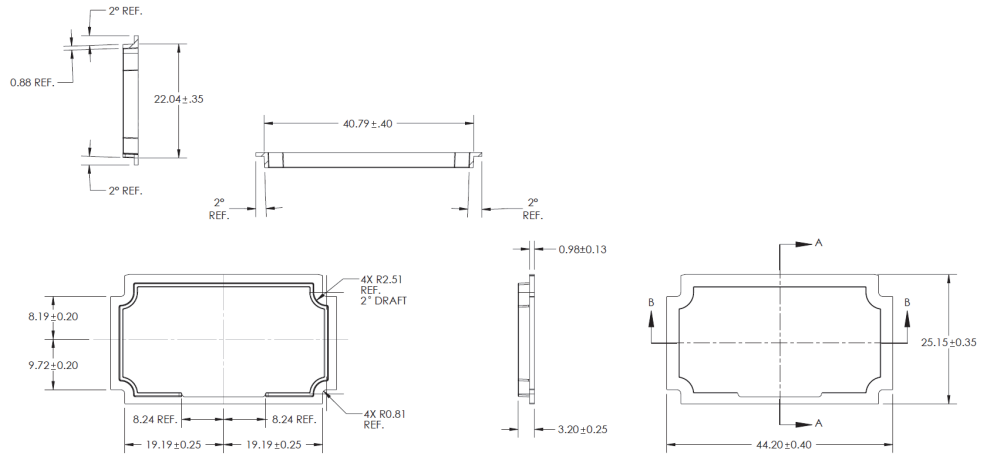
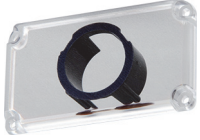


# F420-F

## Front Window Installation Kit V430-AF10 \*

## Diffuser Installation Kit V430-AF11 \*

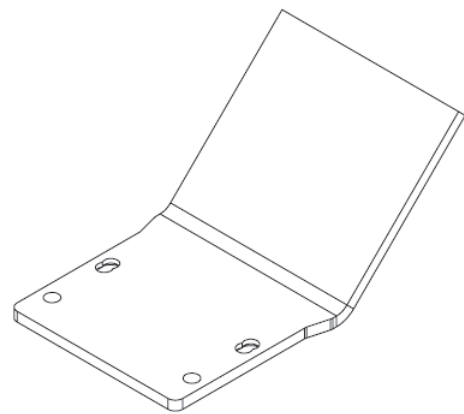
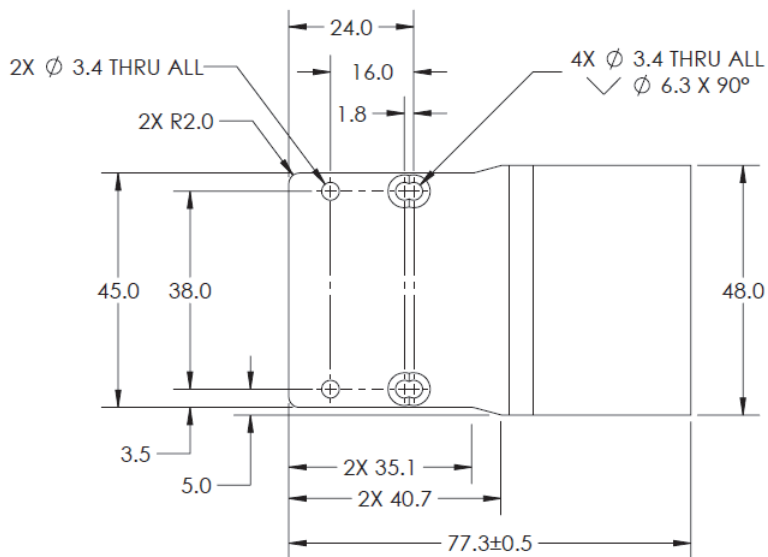
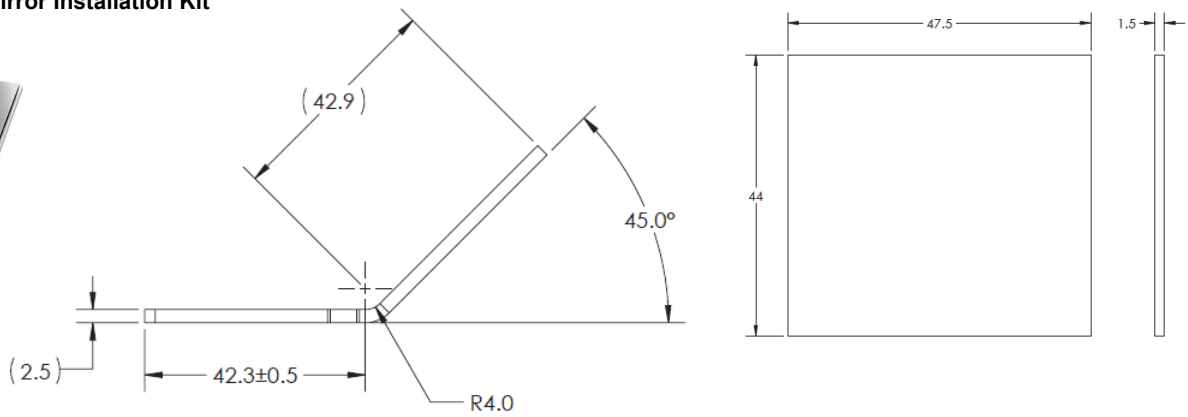
## Polarizer Installation Kit V430-AF12 \*



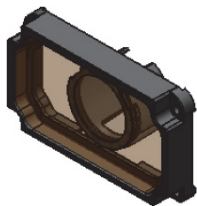
\* Note: V430-AF10, AF11, and AF12 are used for **MicroHAWK V/F4X0-FXXXXXXX-XXX** cameras in this manual. The prior generation **MicroHAWK V430-FXXXXXXX** code camera uses part numbers V430-AF0, AF1, and AF2. Please select the correct accessory from the table based on your camera part number format.

Accessory	Prior V430-FXXXXXXX Code Reader	New V/F4X0-FXXXXXXX-XXX Code Reader and Smart Camera
Front Window Installation Kit	V430-AF0	V430-AF10
Diffuser Installation Kit	V430-AF1	V430-AF11
Polarizer Installation Kit	V430-AF2	V430-AF12

## Right Angle Mirror Installation Kit V430-AF3



### YAG Laser Filter Window V430-AF4



#### Window Material

Polymer

#### Laser Type

Argon  
Broadband  
KTP  
Nd:YAG

#### Protection

OD 6+ @ 200-532 nm  
OD 4+ @ 850-879 nm  
OD 5+ @ 900-1070 nm

The V430-AF4 YAG Laser Filter is used to block a range of wavelengths from a variety of laser types from being seen by the MicroHAWK camera that will either disrupt the cameras view of the object, or damage the MicroHAWK sensor.

The table shows the laser types that are handled by the V430-AF4 Filter window, as well as the level of protection they provide at the various wavelengths.

**Note:** Optical Density (OD) is a measure of the attenuation of energy passing through a filter. The higher the OD value, the higher the attenuation and the greater the protection level.

OD 4 blocks 99.99% of the laser energy.

OD 5 blocks 99.999% of the laser energy (YAG).

OD 6 blocks 99.9999% of the laser energy (Argon, KTP)

### ESD-Safe Window V430-AF5

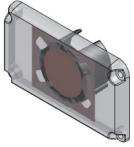


An ESD event occurs when an electrostatic charge rapidly transfers between two objects. This transfer is usually caused when two objects with a notable potential difference in electrical charge contact each other. However, ESD events can also happen when two objects close to one another create a highly charged electrostatic field.

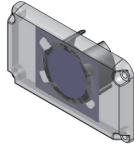
ESD safety precautions are extremely important in the electronics and semiconductor industries where sensitive components can be damaged even by a discharge of a mere 20 volts. Less sensitive components may still be susceptible, and cumulative discharges can create long-term problems affecting the functionality and performance of electronic components.

The MicroHAWK V430-AF5 ESD-Safe window is designed with an ESD coating on the exterior surface to prevent static discharge between the camera or smart camera when the camera is deployed close to the component surface. The antistatic coating offers a resistivity of  $\leq 1.0 \times 10^9 \Omega/\text{sq}$  to prevent these electrostatic discharges.

## Red Filter Installation Kit V430-AF6



## Blue Filter Installation Kit V430-AF7

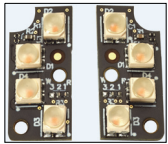


## Red Light Installation Kit V430-ALR

## White Light Installation Kit V430-ALW

## Blue Light Installation Kit V430-ALB

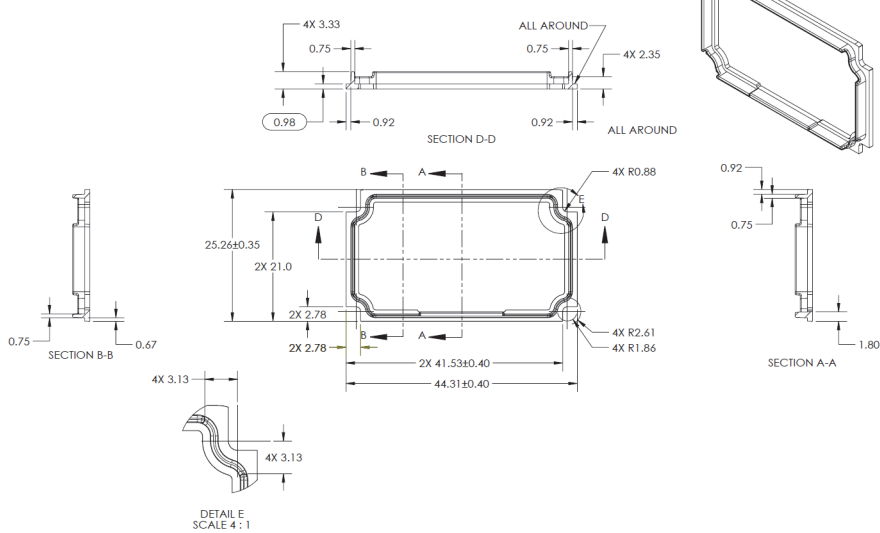
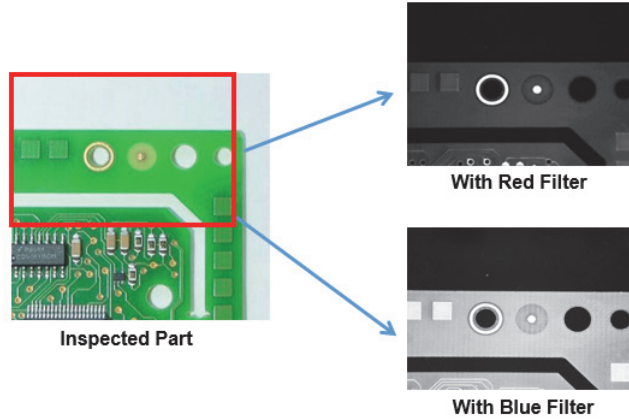
## IR Light Installation Kit V430-ALI



## Red Filter (V430-AF6) and Blue Filter (V430-AF7)

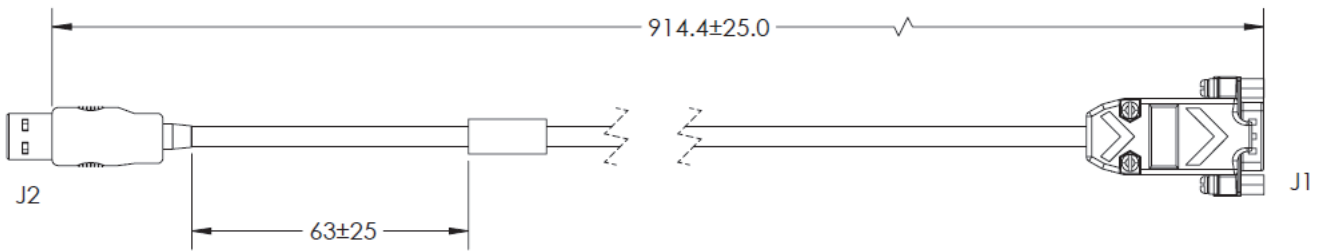
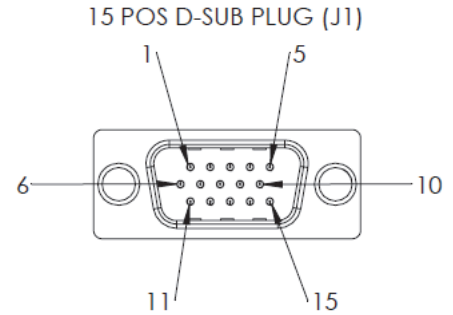
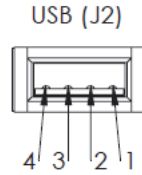
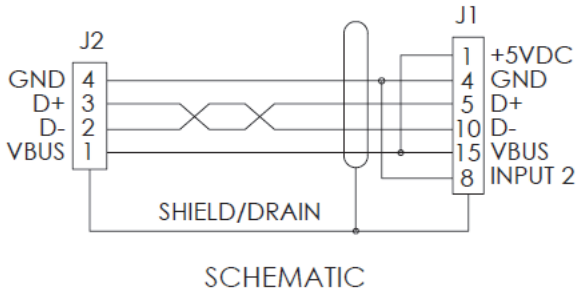
The Red Filter (V430-AF6), and Blue Filter (V430-AF7) are used to turn MicroHAWKs equipped with white lights into units that emit red or blue light. MicroHAWK light color changes can be also be accomplished using the F430-F Red, Blue, White, or IR LED kits.

A typical example of how to use different color filters or LEDs with monochrome cameras is shown below. The emitted color is matched with the color of the part that needs to be emphasized or de-emphasized, which creates sufficient contrast for the part to be inspected or for the symbol to be decoded. In the example below, the red filter makes the reddish copper look bright, while the green circuit board looks dark. The blue filter produces the opposite effect.



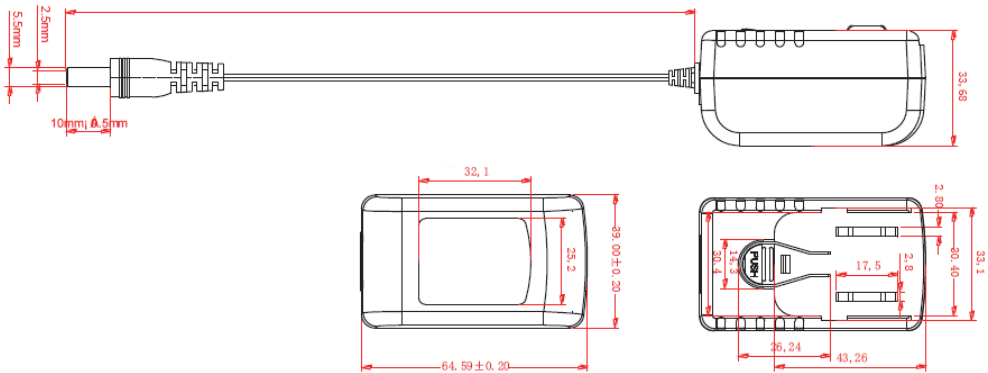
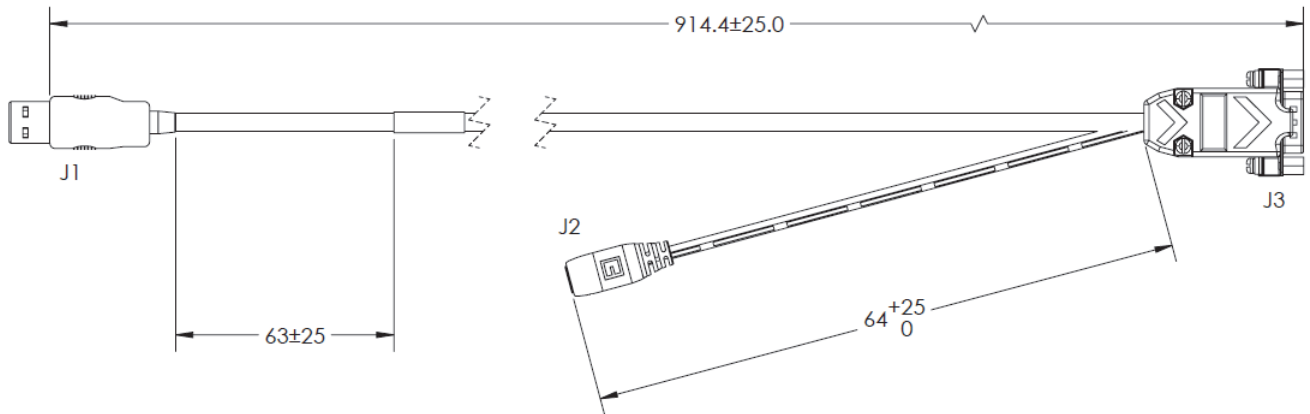
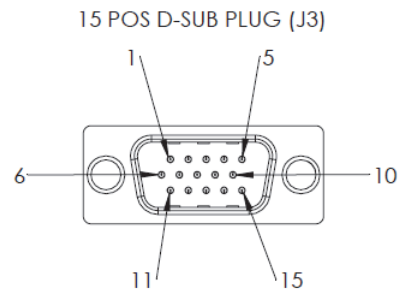
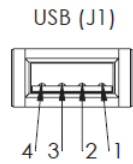
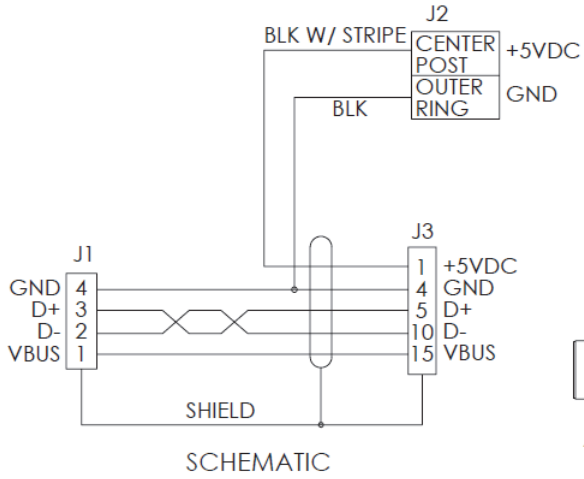
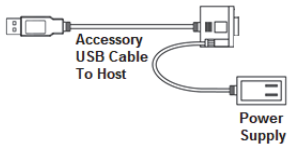


**USB Breakout Cable – 1 Meter**  
**V420-WUB-1M**

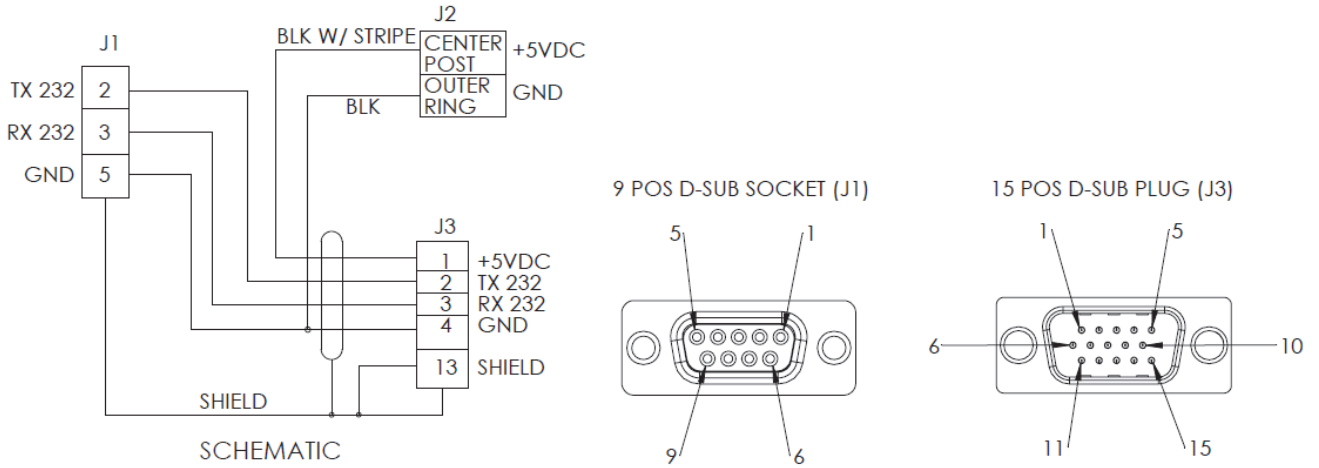
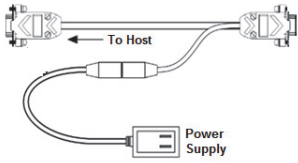


# F420-F

## Kit – USB Breakout Cable with External Power Input (1 Meter) and Power Supply (1 Meter) V420-AC1

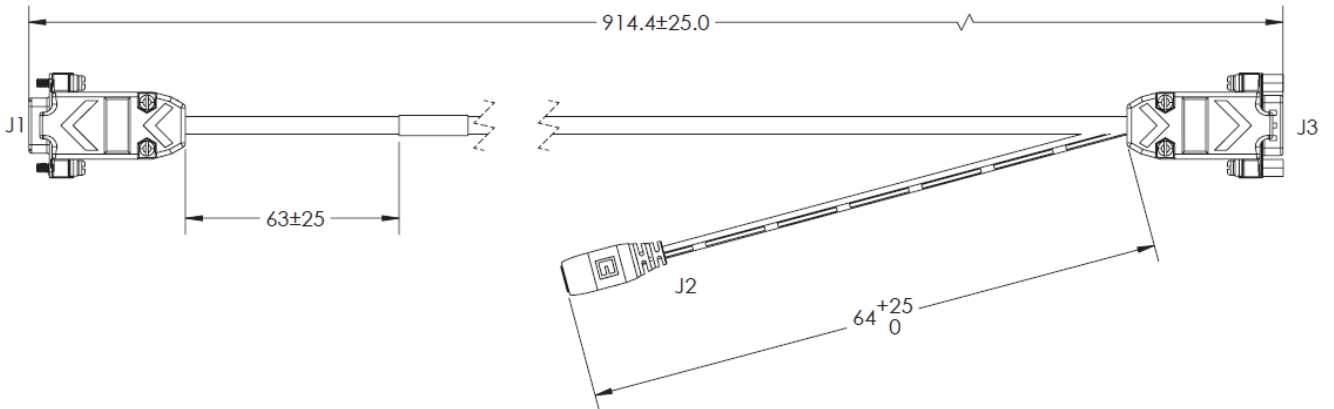
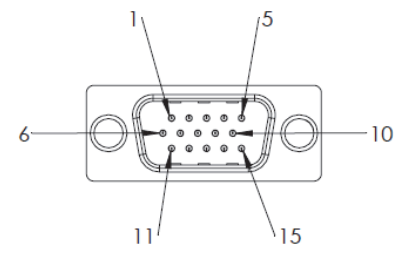
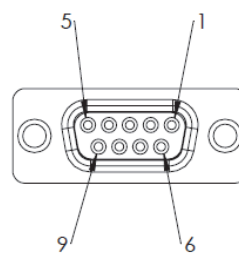


**Kit – RS-232 Breakout Cable (DB-15) with External Power Input (1 Meter) and Power Supply (1 Meter)  
V420-AC0**



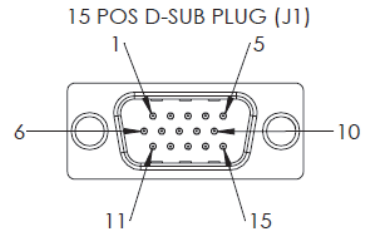
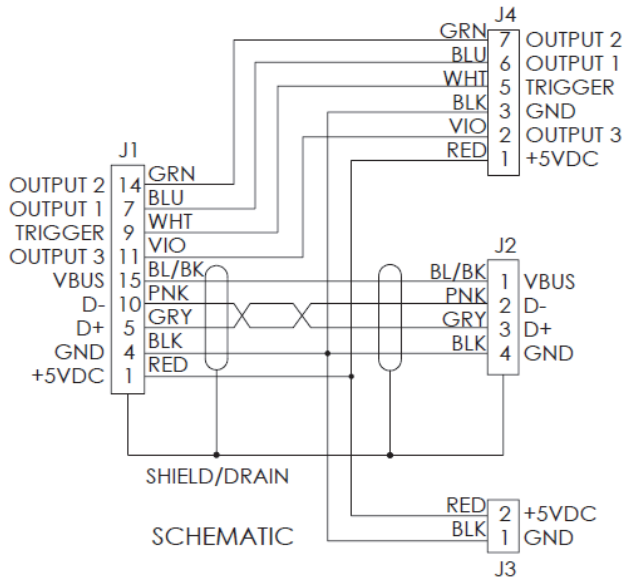
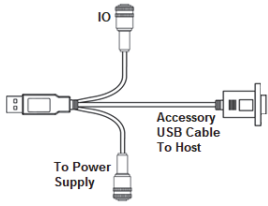
9 POS D-SUB SOCKET (J1)

15 POS D-SUB PLUG (J3)

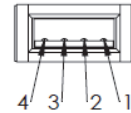


# F420-F

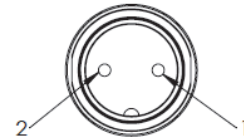
## Cable – USB, IO, and Power Breakout – 1 Meter V420-WU8X-1M



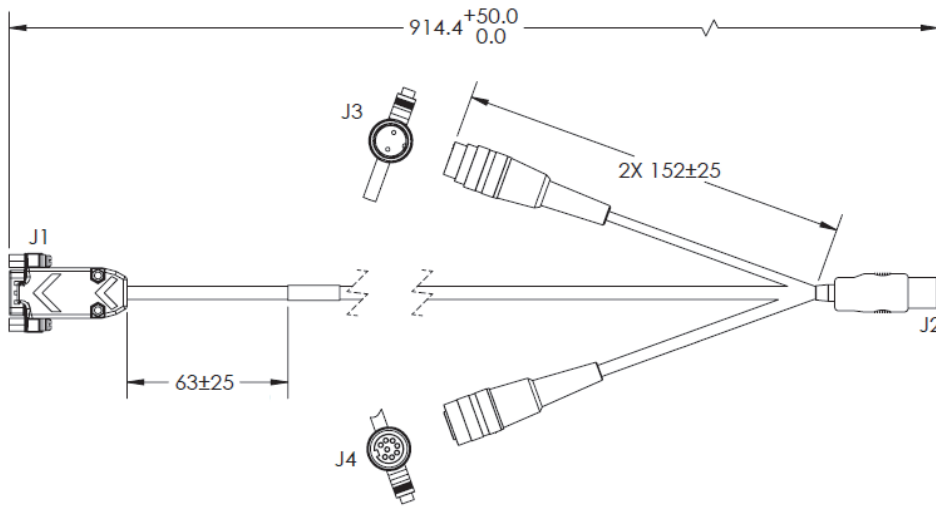
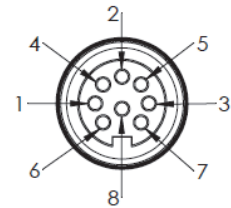
USB (J2)



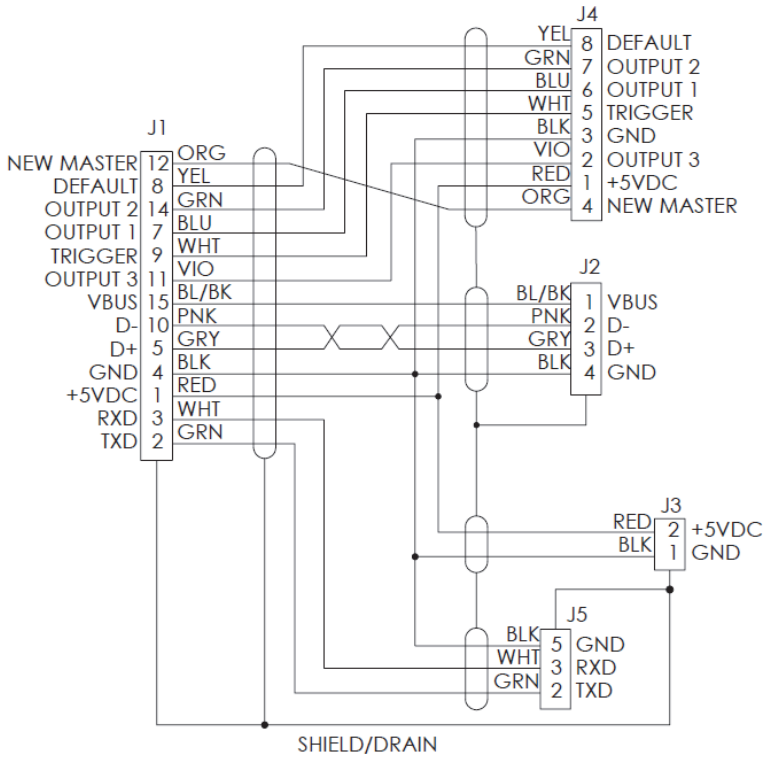
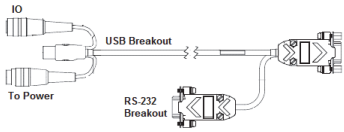
2 POS DIN PLUG (J3)



8 POS DIN SOCKET (J4)

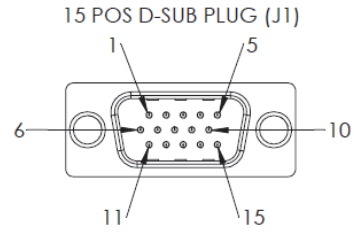


**Cable – RS-232, USB, IO, and Power Breakout – 1 Meter  
V420-WRU8X-1M**

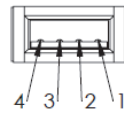


SHIELD/DRAIN

SCHEMATIC

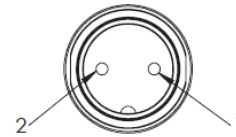


15 POS D-SUB PLUG (J1)

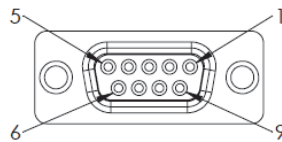


USB (J2)

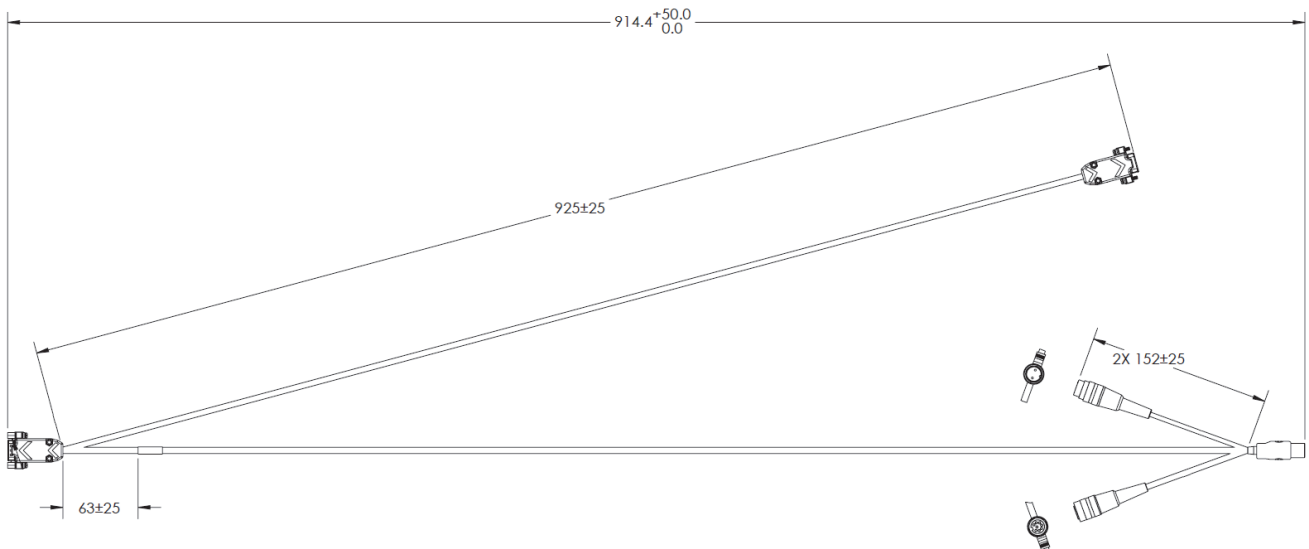
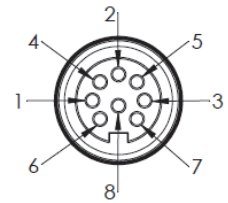
2 POS DIN PLUG (J3)



9 POS D-SUB SOCKET (J5)



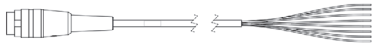
8 POS DIN SOCKET (J4)



# F420-F

Cable – Trigger, IO, and Power Breakout – 900 MM  
61-000151-01

Plugs into the IO connector on the V420-WU8X-1M and V420-WRU8X-1M cables.

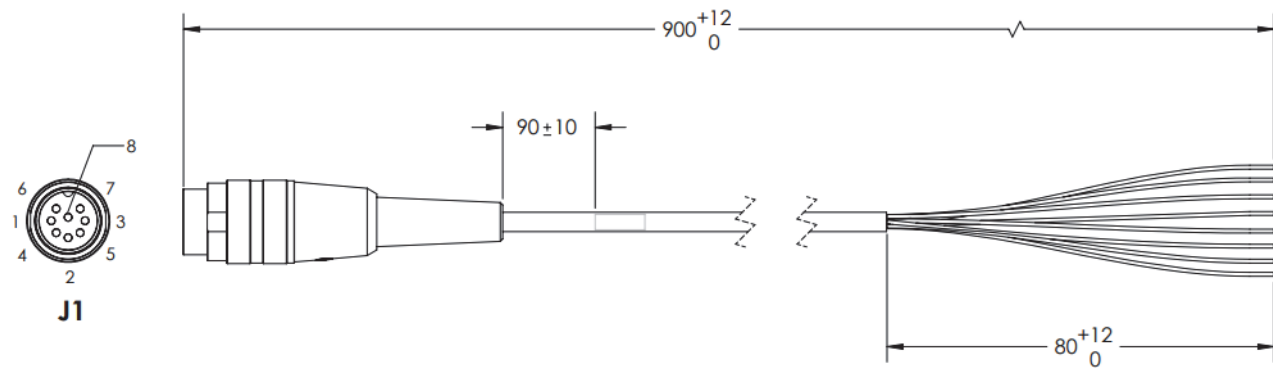


+5 VDC	1	RED
OUTPUT 3	2	WHITE
GND	3	BLACK
NEWMASTER	4	ORANGE
TRIGGER	5	GREEN
OUTPUT 1	6	BLUE
OUTPUT 2	7	BROWN
DEFAULT	8	YELLOW

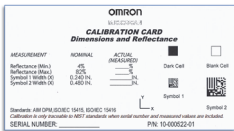
### CABLE SPECIFICATIONS

8 CONDUCTOR STRANDED 22AWG  
UL LISTED  
PVC JACKET - BLACK OR GREY

J1



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



OMRON  
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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