For Sales and Service
MachineVisionDirect.com
+1 (800) 834-5588
Support@MachineVisionDirect.com

HF6XA-5M

Technical Datasheet

2/3"

Fujinon HF-XA-5M Series

ORDER NOW

Fujifilm's Fujinon HF-XA-5M series lenses offer a 3.45µm resolving power (equivalent to 5.0 megapixels) and are designed for use with 2/3" and smaller sensors. The HF-XA-5M series is available in 7 variants from 6 mm to 50 mm and feature Fujinon's 4DHR technology which allow them to provide highly consistent image sharpness across both the center and outer extremities of the lens.

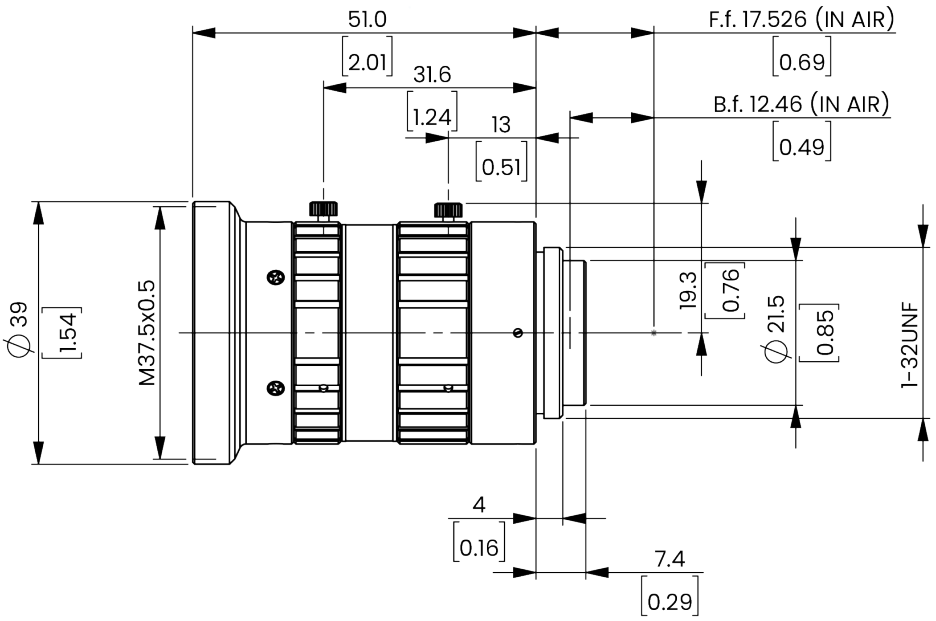
Specification Highlights

FOCAL LENGTH:	6 mm	**WORKING DISTANCE:**	100mm - Infinity
FORMAT:	2/3"	**FILTER THREAD:**	M37.5 x 0.5
PIXEL SIZE:	3.45 µm	**WEIGHT:**	100 grams
LENS MOUNT:	C-Mount	**RESOLUTION MP:**	5 MP
APERTURE:	F1.9-F16	**LENS CLASS:**	Fixed Focal Length

Full Specifications

Focal Length	6 mm	Flange Back	17.526 mm
Focal Length Design Value	6.23 mm	Entrance Pupil Position (From Mount)	-36.27 mm
Iris Range (f-number)	F1.9-F16	Exit Pupil Position (From Image Plane)	-48.71 mm
Angle of View	74.7° x 58.1° (2/3")	Front Principal Point (From Mount)	-30.92 mm
Working Distance (From Front of Lens Barrel)	100 mm - Infinity	Rear Principal Point (From Mount)	11.30 mm
Operation of Focus	Manual	Distance Between Principal Points	42.22 mm
Operation of Iris	Manual	TV Distortion	-2.88%
Filter Thread	M37.5 x 0.5	Dimensions	ϕ39 × 51.0
Mount	C-Mount	Chief Ray Angle	6.13°
Weight	100 Grams	Relative Illumination (Aperture F4.0; Image Height at Diagonal)	84%
Sensor Size (Standard)	2/3" (3.45 µm)	Relative Illumination (Aperture at Full Open; Image Height at Diagonal)	42%
Back Focal Length (In Air)	12.46 mm	Operation Temperature	-10°C - +50°C

Dimensions

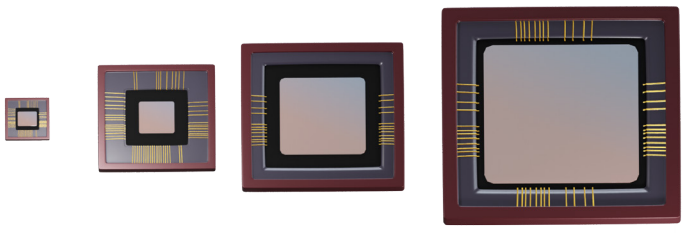


For Sales and Service
MachineVisionDirect.com
+1 (800) 834-5588
Support@MachineVisionDirect.com

HF6XA-5M REFERENCE FOV CHART

Working Distance (mm)	Optical Magnification	Extension Ring	Field of View (mm)															
			1.1"		1"		1/1.2"		2/3"		1/1.8"		1/2"		1/2.5"		1/3"	
			H	V	H	V	H	V	H	V	H	V	H	V	H	V	H	V
1000	0.006x	-	-	-	-	-	-	-	1546.4	1125.1	1222.2	896.5	1088.2	801.1	960.9	710.7	801.1	594.3
950	0.006x	-	-	-	-	-	-	-	1470.1	1069.6	1161.8	852.2	1034.5	761.6	913.5	675.6	761.6	564.9
900	0.007x	-	-	-	-	-	-	-	1393.8	1014.0	1101.5	808.0	980.8	722.0	866.0	640.5	722.0	535.6
850	0.007x	-	-	-	-	-	-	-	1317.4	958.5	1041.2	763.7	927.0	682.5	818.6	605.4	682.5	506.2
800	0.008x	-	-	-	-	-	-	-	1241.1	902.9	980.8	719.4	873.3	642.9	771.1	570.3	642.9	476.9
750	0.008x	-	-	-	-	-	-	-	1164.7	847.4	920.5	675.2	819.6	603.4	723.7	535.3	603.4	447.6
700	0.009x	-	-	-	-	-	-	-	1088.4	791.8	860.1	630.9	765.9	563.8	676.2	500.2	563.8	418.2
650	0.009x	-	-	-	-	-	-	-	1012.0	736.3	799.8	586.6	712.1	524.3	628.8	465.1	524.3	388.9
600	0.010x	-	-	-	-	-	-	-	935.7	680.7	739.4	542.4	658.4	484.7	581.4	430.0	484.7	359.5
550	0.011x	-	-	-	-	-	-	-	859.3	625.2	679.1	498.1	604.7	445.1	533.9	394.9	445.1	330.2
500	0.012x	-	-	-	-	-	-	-	783.0	569.6	618.8	453.9	550.9	405.6	486.5	359.8	405.6	300.9
450	0.013x	-	-	-	-	-	-	-	706.7	514.1	558.4	409.6	497.2	366.0	439.0	324.7	366.0	271.5
400	0.015x	-	-	-	-	-	-	-	630.3	458.5	498.1	365.3	443.5	326.5	391.6	289.6	326.5	242.2
350	0.017x	-	-	-	-	-	-	-	554.0	403.0	437.7	321.1	389.7	286.9	344.1	254.5	286.9	212.8
300	0.020x	-	-	-	-	-	-	-	477.6	347.4	377.4	276.8	336.0	247.4	296.7	219.4	247.4	183.5
250	0.024x	-	-	-	-	-	-	-	401.2	291.8	317.0	232.5	282.3	207.8	249.2	184.3	207.8	154.1
200	0.029x	-	-	-	-	-	-	-	324.9	236.3	256.7	188.3	228.5	168.2	201.8	149.2	168.2	124.8
150	0.038x	-	-	-	-	-	-	-	248.5	180.7	196.3	144.0	174.8	128.7	154.3	114.1	128.7	95.4
100	0.055x	-	-	-	-	-	-	-	172.1	125.1	135.9	99.7	121.0	89.1	106.8	79.0	89.1	66.1

FOV Charts are intended to be used as general guidance and are not guaranteed to be accurate as all sensors do not have the same dimensions, including sensors with the same format size. For the most accurate approximations, please use a lens calculator that accounts for your specific sensor dimensions



1/6" 1/3" 2/3" 1"

Sensor Formats

It is important to make sure you size your lens to the correct sensor size (format). The image you get from a 2/3" format lens will provide a smaller Field of View when used with a 1/3" format sensor than it will provide when used with a 2/3" format sensor, even with the same working distance

For Sales and Service
MachineVisionDirect.com
+1 (800) 834-5588
Support@MachineVisionDirect.com

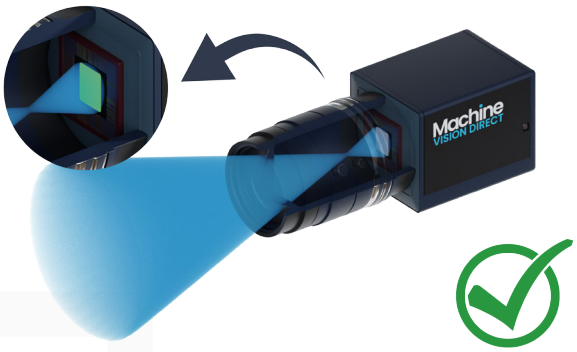
Sensor Size Compatibility Chart

Model	Compatible format sizes								Focal length (mm)
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	
HF6XA-5M	-	-	-	-	●	●	●	●	6
HF8XA-5M	-	-	-	-	●	●	●	●	8
HF12XA-5M	-	-	-	○	●	●	●	●	12
HF16XA-5M	-	-	-	○	●	●	●	●	16
HF25XA-5M	-	-	-	○	●	●	●	●	25
HF35XA-5M	-	-	-	○	●	●	●	●	35
HF50XA-5M	-	○	○	○	●	●	●	●	50

● Compatible sensor size (std.): Ideal size to maximize the target resolution.

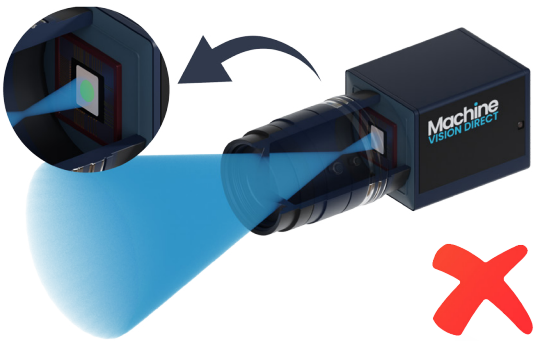
○ Compatible sensor size (max.): Adaptable sensor size varies depending on the model. Select a lens after checking the peripheral light amount and resolution.

Please note that not all sizes of sensors are listed on this chart. It is generally okay to use larger format lenses with smaller format sensors, but not the other way around



Properly Sized Lens Format

A camera with a properly sized lens will project an image that will cover the whole sensor



Undersized Lens Format

A camera with an undersized lens format will project an image that will not cover the whole sensor. This will cause vignetting of the image

Machine VISION DIRECT

For Sales and Service
MachineVisionDirect.com
+1 (800) 834-5588
Support@MachineVisionDirect.com

HF-XA-5M SERIES LENSES

HF6XA-5M

FOCAL LENGTH: 6 mm
APERTURE: F1.9-F16
WORKING DISTANCE: 100 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M37.5 x 0.5

ORDER NOW

HF8XA-5M

FOCAL LENGTH: 8 mm
APERTURE: F1.6-F16
WORKING DISTANCE: 100 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M25.5 x 0.5

ORDER NOW

HF12XA-5M

FOCAL LENGTH: 12 mm
APERTURE: F1.6-F16
WORKING DISTANCE: 100 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M25.5 x 0.5

ORDER NOW

HF16XA-5M

FOCAL LENGTH: 16 mm
APERTURE: F1.6-F16
WORKING DISTANCE: 100 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M25.5 x 0.5

ORDER NOW

HF25XA-5M

FOCAL LENGTH: 25 mm
APERTURE: F1.6-F16
WORKING DISTANCE: 100 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M25.5 x 0.5

ORDER NOW

HF35XA-5M

FOCAL LENGTH: 35 mm
APERTURE: F1.9-F16
WORKING DISTANCE: 200 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M25.5 x 0.5

ORDER NOW

HF50XA-5M

FOCAL LENGTH: 50 mm
APERTURE: F2.4-F16
WORKING DISTANCE: 200 mm - Infinity
FORMAT: 2/3″
FILTER THREAD: M30.5 x 0.5

ORDER NOW

Machine VISION DIRECT

For Sales and Service
MachineVisionDirect.com
+1 (800) 834-5588
Support@MachineVisionDirect.com

FUJINON LENS SERIES

HF-HA-1S

FOCAL LENGTH: 6 mm, 9 mm, 12.5 mm 16 mm, 25 mm, 35 mm 50 mm, 75 mm
PIXEL SIZE: 6.2 µm
FORMAT: 2/3″
RESOLUTION: 1.5 MP

VIEW SERIES

HF-SA

FOCAL LENGTH: 12.5 mm, 16 mm, 25 mm 35 mm, 50 mm, 75 mm
PIXEL SIZE: 3.45 µm
FORMAT: 2/3″
RESOLUTION: 5 MP

VIEW SERIES

HF-XA-5M

FOCAL LENGTH: 6 mm, 8 mm, 12 mm 16 mm, 25 mm 35 mm, 50 mm
PIXEL SIZE: 3.45 µm
FORMAT: 2/3″
RESOLUTION: 5 MP

VIEW SERIES

HF-XA-1F

FOCAL LENGTH: 8 mm, 12 mm, 16 mm 25 mm, 35 mm
PIXEL SIZE: 3.45 µm
FORMAT: 2/3″
RESOLUTION: 5 MP

VIEW SERIES

HF-12M

FOCAL LENGTH: 8 mm, 12 mm, 16 mm 25 mm, 35 mm
PIXEL SIZE: 2.1 µm
FORMAT: 2/3″
RESOLUTION: 12 MP

VIEW SERIES

CF-ZA-1S

FOCAL LENGTH: 8 mm, 12 mm, 16 mm 25 mm, 35 mm, 50 mm
PIXEL SIZE: 2.74 µm
FORMAT: 1.1″
RESOLUTION: 23 MP

VIEW SERIES

CF-HA

FOCAL LENGTH: 12.5 mm, 16 mm, 25 mm 35 mm, 50 mm, 75 mm
PIXEL SIZE: 7.4 µm
FORMAT: 1″
RESOLUTION: 1.5 MP

VIEW SERIES

FE185

FOCAL LENGTH: 6 mm, 9 mm, 12.5 mm 16 mm, 25 mm, 35 mm 50 mm, 75 mm
PIXEL SIZE: 6.2 µm
FORMAT: 2/3″
RESOLUTION: 1.5 MP

VIEW SERIES

Revision 6/11/2023