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HF8XA-5M Technical Datasheet





Fujinon HF-XA-5M Series



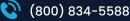
Fujifilm's Fujinon HF-XA-5M series lenses offer a 3.45µm resolving power (equivalent to 5.0 megapixels) and are designed for use with 2/3" and smaller sensors. The HF-XA-5M series is available in 7 variants from 6 mm to 50 mm and feature Fujinon's 4DHR technology which allow them to provide highly consistent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

Specification Highlights

FOCAL LENGTH:	8 n
FORMAT:	2/3
PIXEL SIZE:	3.4
LENS MOUNT:	C-I
APERTURE:	F1.6

8 mm 2/3″ 3.45 µm C-Mount F1.6-F16

WORKING DISTANCE: FILTER THREAD: WEIGHT: RESOLUTION MP: LENS CLASS: 100mm - Infinity M25.5 x 0.5 79 grams 5 MP Fixed Focal Length



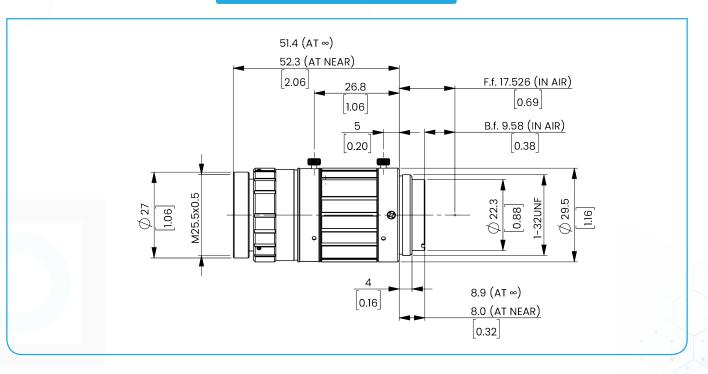
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Full Specifications

Focal Length	8 mm	Flange Back	17.526 mm
Focal Length Design Value	8.3 mm	Entrance Pupil Position (From Mount)	-39.23 mm
Iris Range (f-number)	F1.6-F16	Exit Pupil Position (From Image Plane)	-417.22 mm
Angle of View	58.4 x 44.6°(2/3″)	Front Principal Point (From Mount)	-31.16 mm
Working Distance (From Front of Lens Barrel)	100 mm – Infinity	Rear Principal Point (From Mount)	9.23 mm
Operation of Focus	Manual	Distance Between Principal Points	40.38 mm
Operation of Iris	Manual	TV Distortion	-1.99%
Filter Thread	M25.5 x 0.5	Dimensions	φ29.5 × 51.5
Mount	C-Mount	Chief Ray Angle	0.05°
Weight	79 Grams	Relative Illumination (Aperture F4.0; Image Height at Diagonal)	91%
Sensor Size (Standard)	2/3" (3.45 µm)	Relative Illumination (Aperture at Full Open; Image Height at Diagonal)	42%
Back Focal Length (In Air)	9.75 mm	Operation Temperature	-10°C - +50°C

Dimensions





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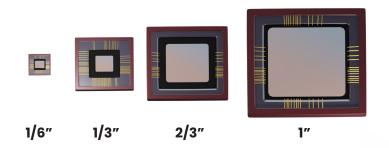
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HF8XA-5M REFERENCE FOV CHART

Workin		Ring H 2008x - - 2009x - - 010x - - 010x - - 011x - - 012x - - 013x - - 014x - - 015x - - 016x - - 018x - - 020x - - 023x - - 032x - -							Fiel	d of Vi	iew (n	nm)						
Distance Magnification Bing	1.1″ 1″		"	1/1.2″		2/	2/3″ 1/1.8″		.8″	1/2″		1/2.5″		1/3″				
(mm)	Magnineadon	King	н	v	н	v	н	v	н	v	н	v	н	v	н	v	н	v
1000	0.008x	-	-	-	-	-	-	-	1130.3	830.4	900.0	665.0	803.8	595.4	711.8	529.1	595.4	443.3
950	0.009x	-	-	-	-	-	-	-	1074.5	789.4	855.6	632.1	764.1	566.0	676.6	502.9	566.0	421.4
900	0.009x	-	-	-	-	-	-	-	1018.6	748.4	811.1	599.3	724.4	536.6	641.5	476.8	536.6	399.5
850	0.010x	-	-	-	-	-	-	-	962.8	707.3	766.6	566.4	684.7	507.1	606.3	450.7	507.1	377.6
800	0.010x	-	-	-	-	-	-	-	906.9	666.3	722.2	533.6	645.0	477.7	571.1	424.5	477.7	355.7
750	0.011x	-	-	-	-	-	-	-	851.1	625.3	677.7	500.7	605.3	448.3	535.9	398.4	448.3	333.8
700	0.012x	-	-	-	-	-	-	-	795.3	584.2	633.2	467.8	565.6	418.9	500.8	372.2	418.9	311.9
650	0.013x	-	-	-	-	-	-	-	739.4	543.2	588.8	435.0	525.8	389.5	465.6	346.1	389.5	290.0
600	0.014x	-	-	-	-	-	-	-	683.6	502.2	544.3	402.1	486.1	360.1	430.4	319.9	360.1	268.1
550	0.015x	-	-	-	-	-	-	-	627.7	461.2	499.8	369.3	446.4	330.6	395.3	293.8	330.6	246.2
500	0.016x	-	-	-	-	-	-	-	571.9	420.1	455.4	336.4	406.7	301.2	360.1	267.7	301.2	224.2
450	0.018x	-	-	-	-	-	-	-	516.0	379.1	410.9	303.6	367.0	271.8	324.9	241.5	271.8	202.3
400	0.020x	-	-	-	-	-	-	-	460.2	338.1	366.4	270.7	327.3	242.4	289.8	215.4	242.4	180.4
350	0.023x	-	-	-	-	-	-	-	404.4	297.0	321.9	237.9	287.5	213.0	254.6	189.2	213.0	158.5
300	0.027x	-	-	-	-	-	-	-	348.5	256.0	277.5	205.0	247.8	183.5	219.4	163.1	183.5	136.6
250	0.032x	-	-	-	-	-	-	-	292.7	215.0	233.0	172.1	208.1	154.1	184.3	137.0	154.1	114.7
200	0.039x	-	-	-	-	-	-	-	236.8	174.0	188.5	139.3	168.4	124.7	149.1	110.8	124.7	92.8
150	0.051x	-	-	-	-	-	-	-	181.0	132.9	144.1	106.4	128.7	95.3	113.9	84.7	95.3	70.9
100	0.074x	-	-	-	-	-	-	-	125.2	91.9	99.6	73.6	89.0	65.9	78.8	58.5	65.9	49.0

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





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



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Sensor Size Compatibility Chart

					Compatible format sizes					Focal length
Model		4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	(mm)
<u>HF6XA-5M</u>	1	-	-	-	-	٠	٠	٠	•	6
<u>HF8XA-5M</u>	1	-	-	-	-	٠	٠	٠	٠	8
HF12XA-5M	1	-	-	-	0	٠	٠	٠	٠	12
HF16XA-5M	1	-	-	-	0	٠	٠	٠	٠	16
<u>HF25XA-5N</u>	<u>1</u>	-	-	-	0	٠	٠	٠	٠	25
<u>HF35XA-5N</u>	<u>1</u>	-	-	-	0	٠	٠	٠	٠	35
<u>HF50XA-5N</u>	Δ	-	0	0	0	٠	٠	٠	٠	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





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HF-XA-5M SERIES LENSES

HF6XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	6 mm F1.9-F16 100 mm - Infinity 2/3″ M37.5 x 0.5	
HF8XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	8 mm F1.6-F16 100 mm - Infinity 2/3″ M25.5 x 0.5	
HF12XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	12 mm F1.6-F16 100 mm - Infinity 2/3″ M25.5 x 0.5	
HF16XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	16 mm F1.6-F16 100 mm - Infinity 2/3″ M25.5 x 0.5	
HF25XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	25 mm F1.6-F16 100 mm - Infinity 2/3″ M25.5 x 0.5	
HF35XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	35 mm F1.9-F16 200 mm - Infinity 2/3″ M25.5 x 0.5	
HF50XA-5M	FOCAL LENGTH: APERTURE: WORKING DISTANCE: FORMAT: FILTER THREAD:	50 mm F2.4-F16 200 mm - Infinity 2/3″ M30.5 x 0.5	

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FUJ	INON	LEN	S SER	IES

	FOCAL LENGTH:	6 mm, 9 mm, 12.5 mm 16 mm, 25 mm, 35 mm 50 mm, 75 mm	
GOOD HF-HA-1S	PIXEL SIZE: FORMAT:	6.2 μm 2/3″	VIEW SERIES
	RESOLUTION:	1.5 MP	
	FOCAL LENGTH:	12.5 mm, 16 mm, 25 mm 35 mm, 50 mm, 75 mm	
HF-SA	PIXEL SIZE:	3.45 μm	VIEW SERIES
Sand Barrier	FORMAT: RESOLUTION:	2/3″ 5 MP	
	FOCAL LENGTH:	6 mm, 8 mm, 12 mm 16 mm, 25 mm 35 mm, 50 mm	
HF-XA-5M	PIXEL SIZE:	3.45 µm	VIEW SERIES
	FORMAT: RESOLUTION:	2/3″ 5 MP	
		8 mm, 12 mm, 16 mm 25 mm, 35 mm	
HF-XA-1F	PIXEL SIZE:	3.45 µm	VIEW SERIES
	FORMAT:	2/3″	
	RESOLUTION: FOCAL LENGTH:	5 MP 8 mm, 12 mm, 16 mm	
		25 mm, 35 mm	
HF-12M	PIXEL SIZE:	2.1 µm	VIEW SERIES
	FORMAT: RESOLUTION:	2/3″ 12 MP	
a 2		8 mm, 12 mm, 16 mm 25 mm, 35 mm, 50 mm	
CF-ZA-1S	PIXEL SIZE:	2.74 µm	VIEW SERIES
	FORMAT:	1.1″	
_	RESOLUTION:	23 MP	
	FOCAL LENGTH:	12.5 mm, 16 mm, 25 mm 35 mm, 50 mm, 75 mm	
CF-HA	PIXEL SIZE:	7.4 μm	VIEW SERIES
Martin Base	FORMAT: RESOLUTION:	1″ 1.5 MP	
		6 mm, 9 mm, 12.5 mm 16 mm, 25 mm, 35 mm 50 mm, 75 mm	
FE185	PIXEL SIZE:	6.2 μm	VIEW SERIES
	FORMAT:	2/3"	
	RESOLUTION:	1.5 MP	•

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