

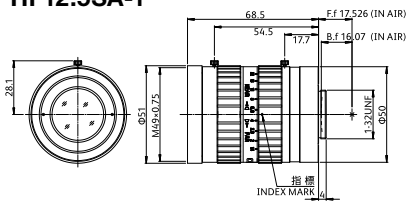
# HF-SA series, 2/3", 3.45μm, 5MP

- Low distortion
- Large maximum aperture

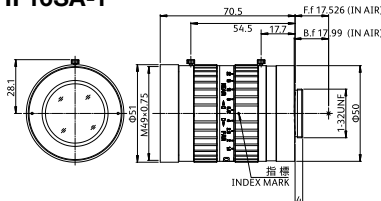


	HF12.5SA-1	HF16SA-1	HF25SA-1	HF35SA-1	HF50SA-1	HF75SA-1
Focal length [mm]	12.5	16	25	35	50	75
Iris range [F. no]	F1.4-F22	F1.4-F22	F1.4-F22	F1.4-F22	F1.8-F22	F1.8-F22
Angle of view : 2/3"	38.0°×29.0°	30.2°×22.9°	20.8°×15.7°	14.0°×10.5°	9.7°×7.3°	6.7°×5.0°
Working Distance*1 [mm]	∞-100	∞-100	∞-100	∞-200	∞-400	∞-900
Operation of focus	Manual	Manual	Manual	Manual	Manual	Manual
Operation of iris	Manual	Manual	Manual	Manual	Manual	Manual
Filter thread [mm]	M49×0.75	M49×0.75	M49×0.75	M49×0.75	M49×0.75	M49×0.75
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Weight (approx.) [g]	295	285	315	185	240	305
Sensor size (std.)*2	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)
Sensor size (max.)*3	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)	2/3"(3.45μm)
TV distortion [%]	-0.08	0.11	-0.06	0.07	0.08	0.01
Dimension [mm]	ø51×68.5	ø51×70.5	ø51×75.5	ø51×48.5	ø51×55.5	ø51×76

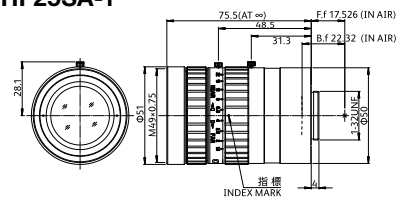
HF12.5SA-1



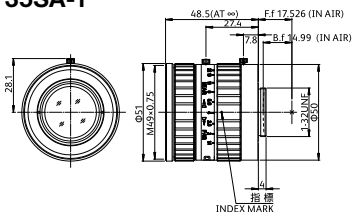
HF16SA-1



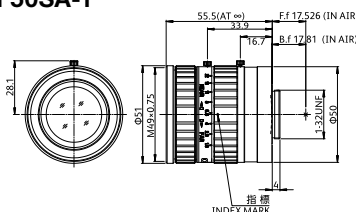
HF25SA-1



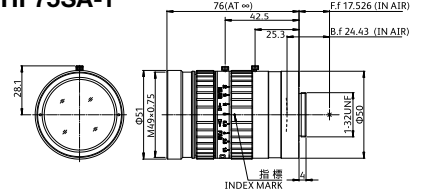
HF35SA-1



HF50SA-1



HF75SA-1



\*1 From front of lens barrel. \*2 Sensor size(std.): Ideal size to maximize the target resolution.

\*3 Sensor size(max.): Adaptable sensor size varies depending on the model. Please check the amount of light and resolution on the edges pertaining to your particular application.

# HF-SA series

## HF12.5SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
1000	0.013x	-	705.4	528.0	511.9	383.3	383.3	287.2
950	0.013x	-	670.9	502.2	486.9	364.6	364.6	273.2
900	0.014x	-	636.4	476.4	461.8	345.8	345.8	259.1
850	0.015x	-	601.9	450.5	436.8	327.1	327.1	245.1
800	0.016x	-	567.5	424.7	411.8	308.3	308.3	231.0
750	0.017x	-	533.0	398.9	386.7	289.6	289.6	217.0
700	0.018x	-	498.5	373.1	361.7	270.8	270.8	202.9
650	0.019x	-	464.1	347.3	336.7	252.1	252.1	188.9
600	0.021x	-	429.6	321.5	311.7	233.3	233.3	174.8
550	0.022x	-	395.1	295.6	286.6	214.6	214.6	160.8
500	0.025x	-	360.6	269.8	261.6	195.8	195.8	146.7
450	0.027x	-	326.2	244.0	236.6	177.1	177.1	132.7
400	0.030x	-	291.7	218.2	211.5	158.3	158.3	118.6
350	0.034x	-	257.2	192.4	186.5	139.6	139.6	104.6
300	0.040x	-	222.8	166.6	161.5	120.8	120.8	90.5
250	0.047x	-	188.3	140.7	136.4	102.1	102.1	76.5
200	0.058x	-	153.8	114.9	111.4	83.4	83.4	62.4
150	0.075x	-	119.3	89.1	86.4	64.6	64.6	48.4
100	0.105x	-	84.9	63.3	61.3	45.9	45.9	34.3

## HF16SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
1000	0.016x	-	556.0	416.9	404.3	303.1	303.1	227.2
950	0.017x	-	529.1	396.7	384.7	288.4	288.4	216.2
900	0.018x	-	502.1	376.5	365.1	273.7	273.7	205.2
850	0.019x	-	475.2	356.3	345.5	259.0	259.0	194.2
800	0.020x	-	448.2	336.0	325.8	244.3	244.3	183.1
750	0.021x	-	421.3	315.8	306.2	229.6	229.6	172.1
700	0.022x	-	394.3	295.6	286.6	214.8	214.8	161.1
650	0.024x	-	367.4	275.4	267.0	200.1	200.1	150.0
600	0.026x	-	340.4	255.2	247.4	185.4	185.4	139.0
550	0.028x	-	313.5	234.9	227.8	170.7	170.7	128.0
500	0.031x	-	286.5	214.7	208.2	156.0	156.0	117.0
450	0.034x	-	259.6	194.5	188.6	141.3	141.3	105.9
400	0.038x	-	232.6	174.3	169.0	126.6	126.6	94.9
350	0.043x	-	205.7	154.0	149.4	111.9	111.9	83.9
300	0.049x	-	178.7	133.8	129.7	97.2	97.2	72.8
250	0.058x	-	151.8	113.6	110.1	82.5	82.5	61.8
200	0.071x	-	124.8	93.4	90.5	67.8	67.8	50.8
150	0.091x	-	97.9	73.1	70.9	53.1	53.1	39.8
100	0.126x	-	70.9	52.9	51.3	38.4	38.4	28.7

## HF25SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
1000	0.023x	-	378.4	283.4	274.8	205.9	205.9	154.4
950	0.025x	-	360.0	269.6	261.4	195.9	195.9	146.8
900	0.026x	-	341.6	255.9	248.1	185.9	185.9	139.3
850	0.027x	-	323.2	242.1	234.7	175.9	175.9	131.8
800	0.029x	-	304.9	228.3	221.4	165.9	165.9	124.3
750	0.031x	-	286.5	214.5	208.0	155.9	155.9	116.8
700	0.033x	-	268.1	200.8	194.7	145.8	145.8	109.3
650	0.035x	-	249.7	187.0	181.3	135.8	135.8	101.8
600	0.038x	-	231.3	173.2	167.9	125.8	125.8	94.3
550	0.042x	-	212.9	159.4	154.6	115.8	115.8	86.8
500	0.045x	-	194.6	145.7	141.2	105.8	105.8	79.3
450	0.050x	-	176.2	131.9	127.9	95.8	95.8	71.8
400	0.056x	-	157.8	118.1	114.5	85.8	85.8	64.3
350	0.063x	-	139.4	104.3	101.1	75.8	75.8	56.8
300	0.073x	-	121.0	90.5	87.8	65.7	65.7	49.3
250	0.086x	-	102.6	76.8	74.4	55.7	55.7	41.8
200	0.105x	-	84.2	63.0	61.1	45.7	45.7	34.3
150	0.135x	-	65.9	49.2	47.7	35.7	35.7	26.8
100	0.187x	-	47.5	35.4	34.3	25.7	25.7	19.2

## HF35SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
1000	0.035x	-	249.2	186.9	181.2	135.9	135.9	101.9
950	0.037x	-	236.9	177.6	172.2	129.2	129.2	96.9
900	0.039x	-	224.6	168.4	163.3	122.5	122.5	91.8
850	0.041x	-	212.3	159.2	154.3	115.7	115.7	86.8
800	0.044x	-	200.0	149.9	145.4	109.0	109.0	81.8
750	0.047x	-	187.7	140.7	136.4	102.3	102.3	76.7
700	0.050x	-	175.4	131.5	127.5	95.6	95.6	71.7
650	0.054x	-	163.1	122.2	118.5	88.9	88.9	66.7
600	0.058x	-	150.8	113.0	109.6	82.2	82.2	61.6
550	0.064x	-	138.5	103.8	100.6	75.5	75.5	56.6
500	0.070x	-	126.2	94.6	91.7	68.7	68.7	51.5
450	0.077x	-	113.9	85.3	82.7	62.0	62.0	46.5
400	0.087x	-	101.6	76.1	73.8	55.3	55.3	41.5
350	0.099x	-	89.3	66.9	64.8	48.6	48.6	36.4
300	0.115x	-	76.9	57.6	55.9	41.9	41.9	31.4
250	0.137x	-	64.6	48.4	46.9	35.2	35.2	26.4
200	0.169x	-	52.3	39.2	38.0	28.4	28.4	21.3
150	0.221x	2	40.0	29.9	29.0	21.7	21.7	16.3
100	0.320x	10	27.6	20.7	20.0	15.0	15.0	11.2

## HF50SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
1500	0.034x	-	255.5	191.6	185.8	139.4	139.4	104.5
1450	0.036x	-	247.0	185.3	179.7	134.8	134.8	101.1
1400	0.037x	-	238.5	178.9	173.5	130.1	130.1	97.6
1350	0.038x	-	230.0	172.5	167.3	125.5	125.5	94.1
1300	0.040x	-	221.5	166.1	161.1	120.8	120.8	90.6
1250	0.041x	-	213.0	159.8	154.9	116.2	116.2	87.1
1200	0.043x	-	204.5	153.4	148.7	111.6	111.6	83.7
1150	0.045x	-	196.0	147.0	142.6	106.9	106.9	80.2
1100	0.047x	-	187.5	140.6	136.4	102.3	102.3	76.7
1050	0.049x	-	179.0	134.3	130.2	97.6	97.6	73.2
1000	0.052x	-	170.5	127.9	124.0	93.0	93.0	69.7
950	0.054x	-	162.0	121.5	117.8	88.4	88.4	66.3
900	0.057x	-	153.5	115.1	111.6	83.7	83.7	62.8
850	0.061x	-	145.0	108.7	105.4	79.1	79.1	59.3
800	0.064x	-	136.5	102.4	99.3	74.4	74.4	55.8
750	0.069x	-	128.0	96.0	93.1	69.8	69.8	52.3
700	0.074x	-	119.5	89.6	86.9	65.2	65.2	48.9
650	0.079x	-	111.0	83.2	80.7	60.5	60.5	45.4
600	0.086x	-	102.5	76.9	74.5	55.9	55.9	41.9
550	0.094x	-	94.0	70.5	68.3	51.2	51.2	38.4
500	0.103x	-	85.5	64.1	62.2	46.6	46.6	34.9
450	0.114x	-	77.0	57.7	56.0	42.0	42.0	31.5
400	0.129x	-	68.5	51.3	49.8	37.3	37.3	28.0
350	0.147x	1	60.0	45.0	43.6	32.7	32.7	24.5
300	0.171x	5	51.5	38.6	37.4	28.0	28.0	21.0
250	0.205x	5	43.0	32.2	31.2	23.4	23.4	17.5
200	0.256x	10	34.5	25.8	25.0	18.8	18.8	14.1
150	0.340x	15	25.9	19.4	18.8	14.1	14.1	10.6
100	0.507x	20	17.4	13.0	12.6	9.5	9.5	7.1

## HF75SA-1

Working Distance [mm]	Optical Magnification	Extension Tube [mm]	Field of View [mm]					
			2/3"		1/2"		1/3"	
			H	V	H	V	H	V
2000	0.038x	-	230.8	173.1	167.9	125.9	125.9	94.4
1950	0.039x	-	225.0	168.7	163.6	122.7	122.7	92.0
1900	0.040x	-	219.1	164.3	159.3	119.5	119.5	89.6
1850	0.041x	-	213.2	159.9	155.1	116.3	116.3	87.2
1800	0.042x	-	207.4	155.5	150.8	113.1	113.1	84.8
1750	0.044x	-	201.5	151.1	146.5	109.9	109.9	82.4
1700	0.045x	-	195.6	146.7	142.3	106.7	106.7	80.0
1650	0.046x	-	189.8	142.3	138.0	103.5	103.5	77.6
1600	0.048x	-	183.9	137.9	133.7	100.3	100.3	75.2
1550	0.049x	-	178.0	133.5	129.5	97.1	97.1	72.8
1500	0.051x	-	172.2	129.1	125.2	93.9	93.9	70.4
1450	0.053x	-	166.3	124.7	120.9	90.7	90.7	68.0
1400	0.055x	-	160.4	120.3	116.7	87.5	87.5	65.6
1350	0.057x	-	154.6	115.9	112.4	84.3	84.3	63.2
1300	0.059x	-	148.7	111.5	108.1	81.1	81.1	60.8
1250	0.062x	-	142.8	107.1	103.9	77.9	77.9	58.4
1200	0.064x	-	137.0	102.7	99.6	74.7	74.7	56.0
1150	0.067x	-	131.1	98.3	95.3	71.5	71.5	53.6
1100	0.070x	-	125.2	93.9	91.1	68.3	68.3	51.2
1050	0.074x	-	119.4	89.5	86.8	65.1</		