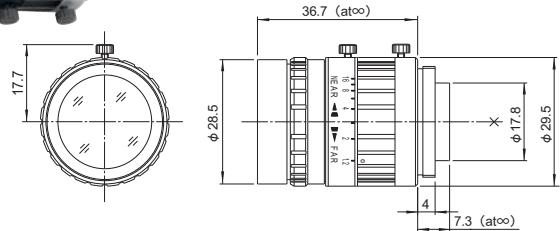


For FA/Machine Vision Fixed Focal

DF6HA-1B

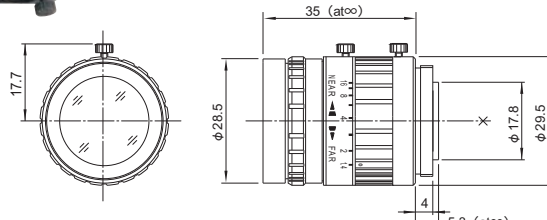
FIXED WIDE 1.5 Mega MANUAL C-MT METAL F1.2



Unit : mm

HF9HA-1B

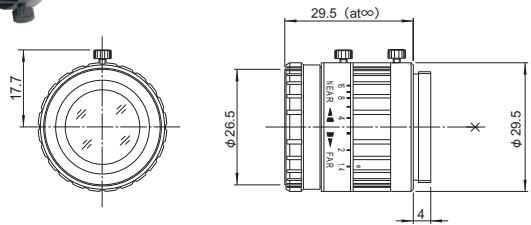
FIXED WIDE 1.5 Mega MANUAL C-MT METAL F1.4



Unit : mm

HF12.5HA-1B

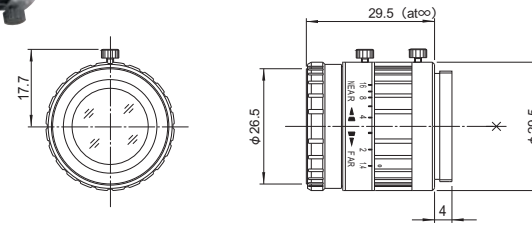
FIXED 1.5 Mega MANUAL C-MT METAL F1.4



Unit : mm

HF16HA-1B

FIXED 1.5 Mega MANUAL C-MT METAL F1.4



Unit : mm

Feature Indications

FIXED

Fixed Focal
High performance single focal lens for the best image quality

MANUAL

Manual Iris
Manually-operated iris

C-mt

C Mount
Screw-in mounting commonly used in FA lenses

F1.4

Wide Aperture Rate
Lens with the wide aperture rate, optimizing the sensitivity of cameras

WIDE

Wide Angle
Wide angle lens which ensures wide field of view

1.5 Mega

For Megapixel Camera
For 1.5 Megapixel Camera

METAL

Metal Mount
Metal mounting with high accuracy and durability

With locking knob for iris and focus

Model Explanation

Image Size	H	F	9	HA-1	SA-1 5 megapixel
D ...1/2" H ...2/3" C ...1"	Fixed Focal	Focal Length	Megapixel Support	HA-1B 1.5 megapixel	

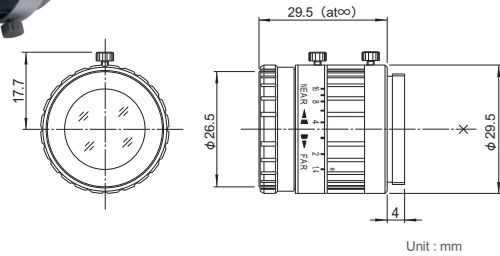
1.5 Megapixel

- High-resolution design, providing support for up to 1.5 megapixel camera resolution.
- Low-distortion design achieving accurate image input.
- Focus & iris lock tab provided, supporting environments such as vibration.

	DF6HA-1B		HF9HA-1B		HF12.5HA-1B		HF16HA-1B		
Focal Length (mm)	6		9		12.5		16		
Iris Range	F1.2~F16		F1.4~F16		F1.4~F16		F1.4~F16		
Operation	Focus	Manual		Manual		Manual		Manual	
	Iris	Manual		Manual		Manual		Manual	
Angle Of View (HxV)	1/2"	56°09' × 43°36'	2/3"	52°06' × 40°16'	2/3"	38°47' × 29°35'	2/3"	30°45' × 23°18'	
	1/3"	43°36' × 33°24'	1/2"	39°09' × 29°52'	1/2"	28°43' × 21°44'	1/2"	22°37' × 17°04'	
	1/4"	33°24' × 25°22'	1/3"	29°52' × 22°37'	1/3"	21°44' × 16°23'	1/3"	17°04' × 12°50'	
Focusing Range (From Front Of The Lens) (m)	∞ ~ 0.1		∞ ~ 0.1		∞ ~ 0.1		∞ ~ 0.1		
Object Dimensions at M.O.D. (HxV) (mm)	1/2"	122 × 92	2/3"	108 × 81	2/3"	78 × 58	2/3"	63 × 47	
	1/3"	92 × 69	1/2"	79 × 59	1/2"	57 × 42	1/2"	46 × 34	
	1/4"	69 × 52	1/3"	59 × 44	1/3"	42 × 32	1/3"	34 × 26	
Back Focal Distance (in air) (mm)	11.44		13.48		15.09		15.15		
Exit Pupil Position (From Image Plane) (mm)	-46		-28		-31		-31		
Filter Thread (mm)	M27 × 0.5		M27 × 0.5		M25.5 × 0.5		M25.5 × 0.5		
Mount	C		C		C		C		
Mass (g)	55		55		45		45		
Remarks	With Metal Mount		With Metal Mount		With Metal Mount		With Metal Mount		

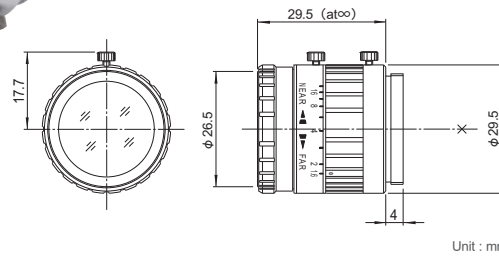
For FA/Machine Vision Fixed Focal

HF25HA-1B



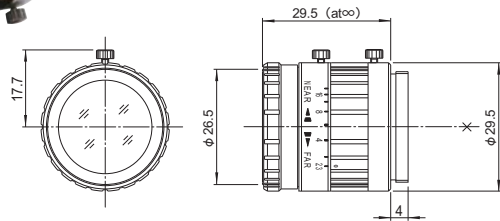
Unit : mm

HF35HA-1B



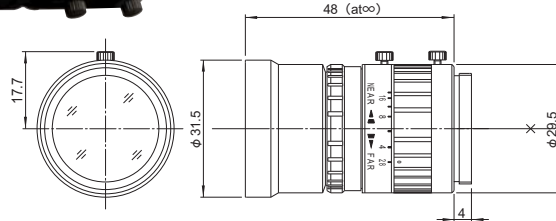
Unit : mm

HF50HA-1B



Unit : mm

HF75HA-1B



Unit : mm

Feature Indications

- FIXED** Fixed Focal
High performance single focal lens for the best image quality
- 1.5 Mega** For Megapixel Camera
For 1.5 Megapixel Camera
- MANUAL** Manual Iris
Manually-operated iris
- METAL** Metal Mount
Metal mounting with high accuracy and durability
- F1.4 F1.6** Wide Aperture Rate
Lens with the wide aperture rate, optimizing the sensitivity of cameras
- C-mt** C Mount
Screw-in mounting commonly used in FA lenses

... With locking knob for iris and focus

Model Explanation

Image Size	H	F	25	HA-1	SA-1 5 megapixel
D ...1/2" H ...2/3" C ...1"	Fixed Focal	Focal Length	Megapixel Support	HA-1B 1.5 megapixel	

1.5 Megapixel

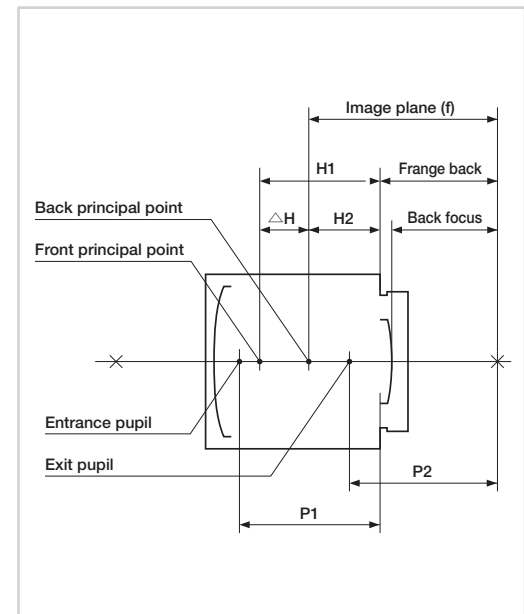
- High-resolution design, providing support for up to 1.5 megapixel camera resolution.
- Low-distortion design achieving accurate image input.
- Focus & iris lock tab provided, supporting environments such as vibration.

	HF25HA-1B	HF35HA-1B	HF50HA-1B	HF75HA-1B
Focal Length (mm)	25	35	50	75
Iris Range	F1.4-F16	F1.6-F22	F2.3-F22	F2.8-F22
Operation	Focus Iris	Manual Manual	Manual Manual	Manual Manual
Angle Of View (HxV)	2/3" 1/2" 1/3"	19°58' x 15°02' 14°35' x 10°58' 10°58' x 8°14'	14°20' x 10°46' 10°27' x 7°51' 7°51' x 5°53'	10°03' x 7°33' 7°19' x 5°30' 5°30' x 4°07'
Focusing Range (From Front Of The Lens) (m)	∞ ~ 0.15	∞ ~ 0.25	∞ ~ 0.5	∞ ~ 1.1
Object Dimensions at M.O.D. (HxV) (mm)	2/3" 1/2" 1/3"	53 x 40 38 x 29 29 x 22	59 x 44 43 x 32 32 x 24	77 x 57 56 x 42 42 x 31
Back Focal Distance (in air) (mm)	14.58	15.03	15.26	15.74
Exit Pupil Position (From Image Plane) (mm)	-32	-27	-25	-27
Filter Thread (mm)	M25.5 x 0.5	M25.5 x 0.5	M25.5 x 0.5	M30.5 x 0.5
Mount	C	C	C	C
Mass (g)	45	45	45	55
Remarks	With Metal Mount	With Metal Mount	With Metal Mount	With Metal Mount

OPTICAL DATA (FA/Machine Vision LENS)

Sensor size	Product name	Focal Length	Aperture/Full open	Front principal point H1 (from Mount)	Back principal point H2 (from Mount)	Distance between the principal points ΔH
1/2"	DF6HA-1B	6.15	1.2	-16.45	11.38	27.82
	HF9HA-1B	9.23	1.4	-12.91	8.30	21.21
	HF12.5HA-1B	12.88	1.4	-2.85	4.64	7.49
	HF16HA-1B	16.49	1.4	3.05	1.03	-2.02
	HF25HA-1B	25.81	1.4	1.82	-8.28	-10.10
	HF35HA-1B	34.99	1.6	-9.00	-17.47	-8.46
2/3"	HF50HA-1B	49.57	2.3	-42.64	-32.04	10.59
	HF75HA-1B	75.01	2.8	-100.77	-57.48	43.29
	HF12.5SA-1	12.83	1.4	-33.68	4.70	38.37
	HF16SA-1	16.33	1.4	-24.15	1.20	25.35
	HF25SA-1	24.00	1.4	-23.47	-6.47	17.00
	HF35SA-1	35.74	1.4	-1.27	-18.21	-16.94
	HF50SA-1	51.72	1.8	-1.87	-34.19	-32.32
	HF75SA-1	74.97	1.8	-34.56	-57.45	-22.89
	HF35SR4A-SA1L	35.00	2.0	-19.33	-17.47	1.85
	HF50SR4A-SA1L	50.00	2.8	18.09	-32.47	-50.56
1"	CF12.5HA-1	12.83	1.4	-33.68	4.70	38.37
	CF16HA-1	16.33	1.4	-24.15	1.20	25.35
	CF25HA-1	24.00	1.4	-23.47	-6.47	17.00
	CF35HA-1	35.74	1.4	-1.27	-18.21	-16.94
	CF50HA-1	51.72	1.8	-1.87	-34.19	-32.32
	CF75HA-1	74.97	1.8	-34.56	-57.45	-22.89
1/3" (3CCD)	TF2.8DA-8	2.86	2.2	-33.74	14.67	48.41
	TF4DA-8	4.15	2.2	-28.46	13.37	41.83
	TF8DA-8B	8.23	2.2	-10.81	9.30	20.10
	TF15DA-8	15.26	2.2	-0.33	2.27	2.60
	TF25DA-8B	24.94	2.2	14.49	-7.42	-21.91
Fish-Eye	FE185C046HA-1	1.43	1.4	-38.26	16.10	54.36
	FE185C057HA-1	1.78	1.4	-37.55	15.75	53.30
	FE185C086HA-1	2.68	1.8	-35.00	14.85	49.85

Entrance pupil position P1 (from Mount)	Exit pupil position P2 (from Image plane)	Back focal distance (in air)	Distortion	Relative illumination (Aperture: at full open. Image height: at diagonal)
-21.8	-46	11.44	-1.93%	39
-19.1	-28	13.48	-2.09%	32
-10.3	-31	15.09	-2.01%	35
-4.5	-30	15.15	-0.96%	35
-3.0	-32	14.58	-0.27%	46
2.1	-27	15.00	0.03%	56
5.8	-25	15.25	0.04%	61
35.4	-27	15.75	0.27%	63
-44.9	-101	16.07	-0.30%	68
-38.9	-172	17.99	-0.08%	78
-43.3	-139	22.32	-0.18%	72
-2.1	-37	14.99	-0.07%	62
0.5	-49	17.81	-0.03%	75
-2.2	-52	24.43	-0.03%	72
-37.8	-74	19.65	-0.02%	74
-26.7	-484	19.16	0.07%	80
-44.9	-101	16.07	0.17%	40
-38.9	-172	17.99	0.31%	34
-43.3	-139	22.32	0.02%	39
-2.1	-37	14.99	-0.15%	43
0.5	-49	17.81	-0.06%	62
-2.2	-52	24.43	-0.06%	67
-36.7	101	14.51	-6.25%	51
-32.8	88	14.61	-3.78%	53
-18.6	-178	14.83	-1.32%	30
-12.9	-89	16.32	-0.33%	34
-5.1	-120	15.12	-0.12%	30
-39.7	-227	9.70	-0.47% ※	75
-39.3	-66	9.70	-0.80% ※	74
-37.5	-41	9.75	-0.53% ※	84



※ $y=f\theta$