

TAMRON

Focus on the Future



8MP – MA23F SERIES

PIXEL PITCH
2.74 μm

2/3"
IMAGERS

RUGGED LENS DESIGN

MADE FOR HARSH ENVIRONMENTS



FOCUS ON THE FUTURE

With 70 years of expertise, Tamron stands as a renowned leader in optical technology. Our commitment to innovation and precision ensures that our products deliver reliable, high-performance lenses designed to meet the specific demands of machine vision applications. Crafted with meticulous attention to detail, our lenses guarantee superior performance and reliability across diverse industrial applications.

HIGHLIGHTS OF THE MA23F SERIES



- 2/3" Image Sensor
- 2.74 μ m Pixel Pitch
- Industry leading low distortion

- Ruggedized
- Same Filter Size and Diameter
- Compact and uniform lens design

MA23F08V

PRESTIGE LINE

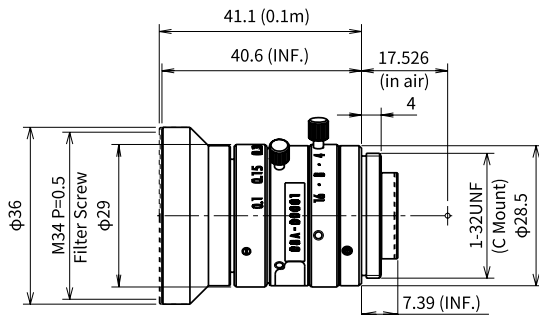
8MP AND ULTRA COMPACT

PIXEL PITCH
2.74 μ m

2/3"
IMAGERS



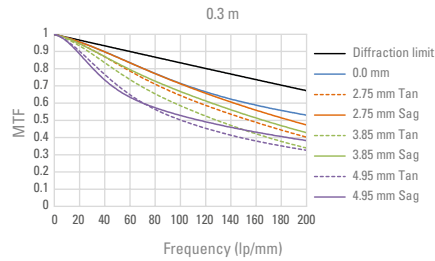
- Focal length 8 mm
- Aperture F/2.4 ~ F/16
- Filter size M34 P = 0.5 mm
- Exit Pupil Position -23.1 mm
- TV Distortion -0.6 %
- M.O.D. 100 mm
- Max. Diameter 36.0 mm
- Weight 84 g
- Operating Temp. -20°C ~ +60°C



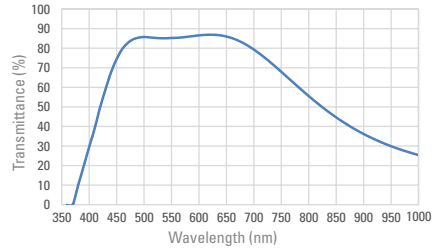
Angle of View

2/3"	58.9° x 45.5°
1/1.8"	47.4° x 36.4°
1/2"	44.3° x 33.7°

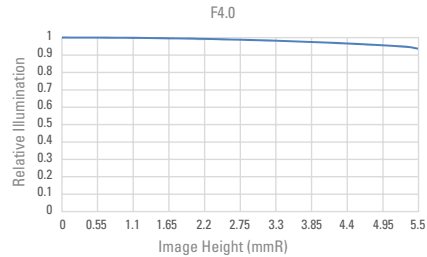
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F08V (f=08/F2.4)	
	WD	Coverage
W/O	1000.0	1143.4 x 850.6
	100.0	128.4 x 95.3
0.5	113.4	143.5 x 106.5
	47.1	68.7 x 50.9
1	50.1	72.1 x 53.4
	27.4	46.5 x 34.4
1.5	29.0	48.2 x 35.7
	17.6	35.3 x 26.1
5	—	—
10	—	—
15	—	—
20	—	—
25	—	—
30	—	—
35	—	—
40	—	—

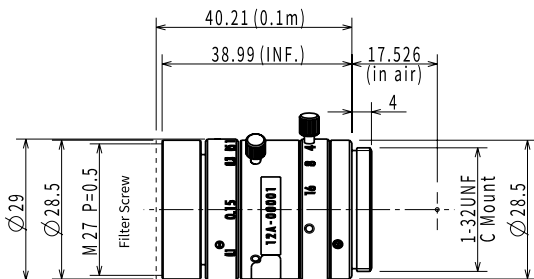
Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

Taking distance: From barrel top to the object

MA23F12V**PRESTIGE LINE**

8MP AND ULTRA COMPACT

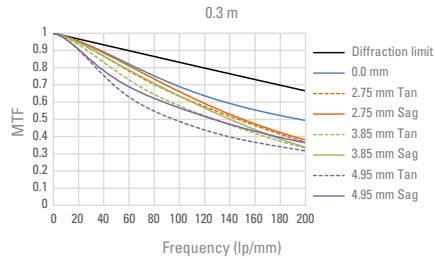
PIXEL PITCH
2.74 μm 2/3"
IMAGERS

- Focal length 12 mm
- Aperture F/2.4 ~ F/16
- Filter size M27 P=0.5 mm
- Exit Pupil Position -34.9 mm
- TV Distortion 0.4 %
- M.O.D. 100 mm
- Max. Diameter 29.0 mm
- Weight 69 g
- Operating Temp. -20°C ~ +60°C

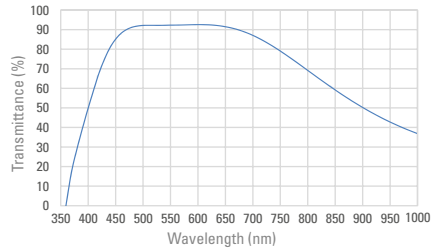
Angle of View

2/3"	40.2° x 30.6°
1/1.8"	31.9° x 24.2°
1/2"	29.7° x 22.4°

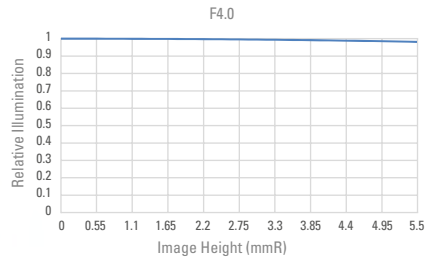
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F12V (f=12/F2.4)	
	WD	Coverage
W/O	1000.0	559.3 × 419.2
	100.0	63.5 × 47.4
0.5	267.9	279.4 × 209.4
	66.5	52.0 × 38.8
1	125.5	140.0 × 104.8
	47.5	44.0 × 32.8
1.5	78.0	93.5 × 70.0
	35.5	38.1 × 28.4
5	11.6	28.4 × 21.2
	6.0	19.8 × 14.7
10	—	—
15	—	—
20	—	—
25	—	—
30	—	—
35	—	—
40	—	—

Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

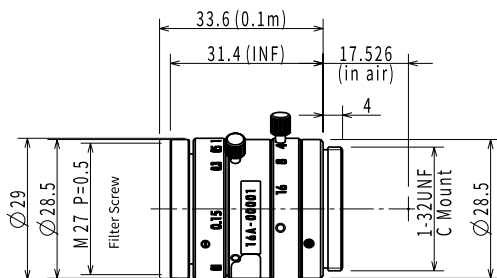
Taking distance: From barrel top to the object

MA23F16V**PRESTIGE LINE**

8MP AND ULTRA COMPACT

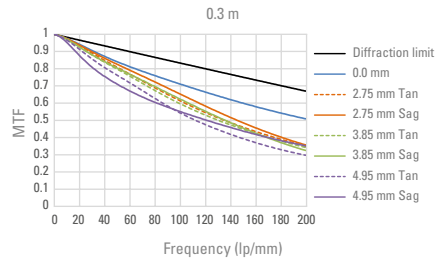
PIXEL PITCH
2.74 μm 2/3"
IMAGERS

- Focal length 16 mm
- Aperture F/2.4 ~ F/16
- Filter size M27 P=0.5 mm
- Exit Pupil Position -34.9 mm
- TV Distortion -0.05 %
- M.O.D. 100 mm
- Max. Diameter 29.0 mm
- Weight 59 g
- Operating Temp. -20°C ~ +60°C

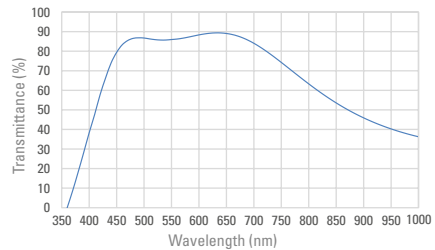
**Angle of View**

2/3"	30.2° x 22.8°
1/1.8"	24.5° x 18.1°
1/2"	22.2° x 16.7°

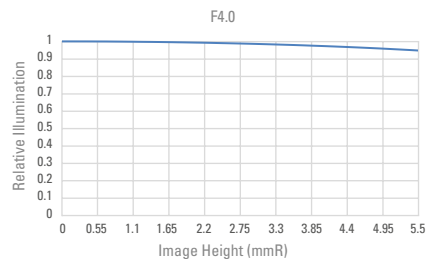
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F16 V (f=16/F2.4)	
	WD	Coverage
W/O	1000.0	559.3 × 419.2
	100.0	63.5 × 47.4
0.5	491.9	279.4 × 209.4
	79.1	50.2 × 38.8
1	238.9	140.0 × 104.8
	64.7	44.0 × 32.8
1.5	154.5	93.5 × 70.0
	54.0	38.1 × 28.4
5	36.5	28.4 × 21.2
	20.9	19.8 × 14.7
10	11.2	14.3 × 10.7
	6.6	11.8 × 8.7
15	2.7	9.6 × 7.1
	0.5	8.3 × 6.2
20	—	—
25	—	—
30	—	—
35	—	—
40	—	—

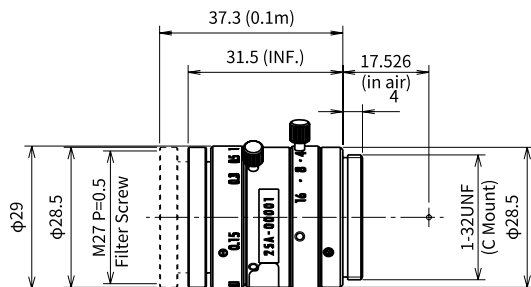
Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

Taking distance: From barrel top to the object

MA23F25V**PRESTIGE LINE**

8MP AND ULTRA COMPACT

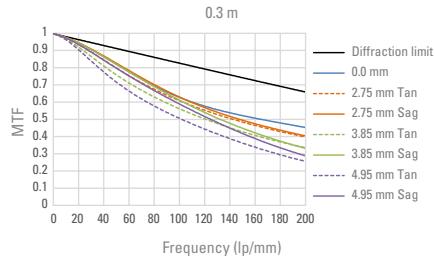
PIXEL PITCH
2.74 μm 2/3"
IMAGERS

- Focal length 25 mm
- Aperture F/2.4 ~ F/16
- Filter size M27 P=0.5 mm
- Exit Pupil Position -36.2 mm
- TV Distortion -0.01 %
- M.O.D. 100 mm
- Max. Diameter 29.0 mm
- Weight 55 g
- Operating Temp. -20°C ~ +60°C

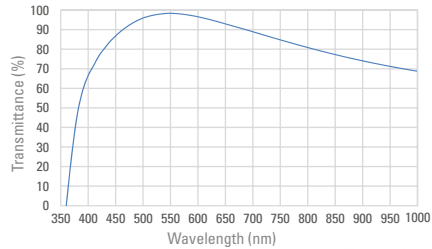
Angle of View

2/3"	18.9° x 14.3°
1/1.8"	14.9° x 11.3°
1/2"	13.8° x 10.4°

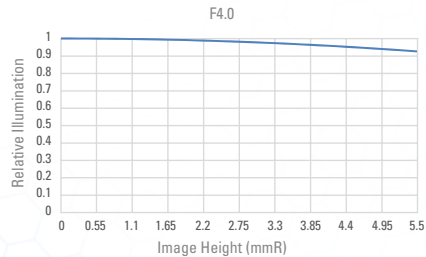
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F25V (f=25/F2.4)	
	WD	Coverage
W/O	1000.0	354.4 × 265.9
	100.0	38.0 × 28.4
0.5	1227.8	434.5 × 325.9
	91.6	35.0 × 26.2
1	610.4	217.5 × 163.1
	84.4	32.5 × 24.3
1.5	404.6	145.1 × 108.8
	78.1	30.3 × 22.6
5	116.6	43.8 × 32.8
	49.8	20.3 × 15.2
10	55.0	22.1 × 16.5
	32.0	14.0 × 10.4
15	34.3	14.7 × 11.0
	23.0	10.7 × 8.0
20	24.0	11.1 × 8.3
	16.9	8.6 × 6.4
25	17.9	8.9 × 6.6
	12.9	7.2 × 5.4
30	13.6	7.4 × 5.5
	10.2	6.2 × 4.6
35	10.5	6.3 × 4.7
	8.1	5.4 × 4.1
40	9.5	5.7 × 4.3
	6.4	4.8 × 3.6

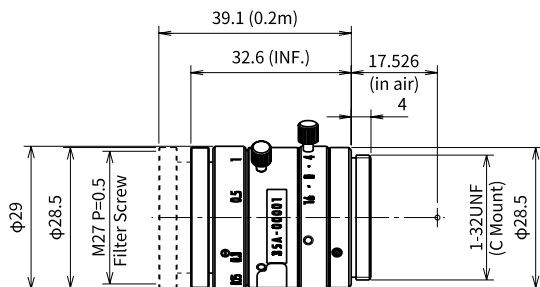
Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

Taking distance: From barrel top to the object

MA23F35V**PRESTIGE LINE**

8MP AND ULTRA COMPACT

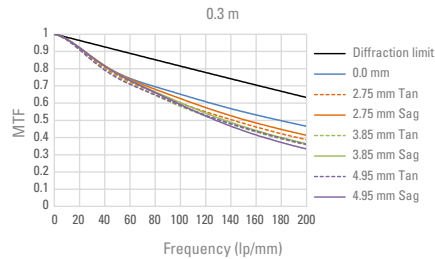
PIXEL PITCH
2.74 μm 2/3"
IMAGERS

- Focal length 35 mm
- Aperture F/2.4 ~ F/16
- Filter size M27 P = 0.5 mm
- Exit Pupil Position -29.4 mm
- TV Distortion 0.04 %
- M.O.D. 200 mm
- Max. Diameter 29.0 mm
- Weight 58 g
- Operating Temp. -20°C ~ +60°C

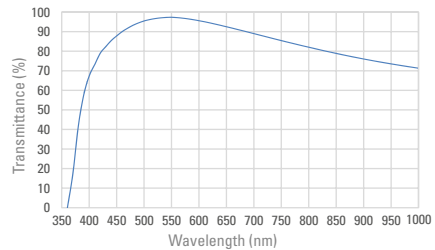
Angle of View

2/3"	12.5° x 9.4°
1/1.8"	9.8° x 7.4°
1/2"	9.1° x 6.8°

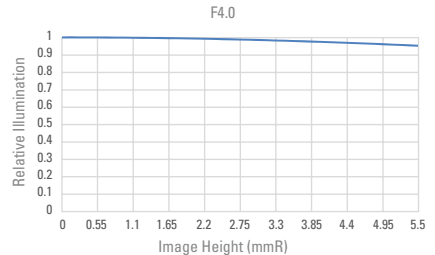
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F35V (f=35/F2.4)	
	WD	Coverage
W/O	1000.0	247.8 × 186.0
	200.0	47.3 × 35.4
0.5	2448.0	610.5 × 458.3
	186.6	43.9 × 32.9
1	1226.6	304.5 × 228.6
	175.0	41.0 × 30.7
1.5	820.7	202.9 × 152.2
	164.8	38.4 × 28.8
5	254.7	61.0 × 45.7
	117.6	26.6 × 19.9
10	133.7	30.6 × 23.0
	86.0	18.6 × 14.0
15	93.4	20.5 × 15.3
	68.9	14.3 × 10.7
20	73.2	15.4 × 11.5
	58.4	11.6 × 8.7
25	61.1	12.3 × 9.2
	51.1	9.8 × 7.3
30	53.0	10.3 × 7.7
	45.8	8.5 × 6.3
35	47.3	8.8 × 6.6
	41.8	7.4 × 5.6
40	42.9	7.7 × 5.8
	38.6	6.6 × 5.0

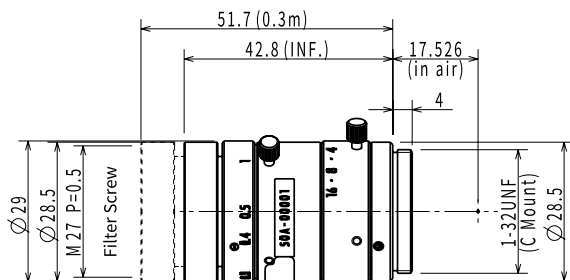
Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

Taking distance: From barrel top to the object

MA23F50V**PRESTIGE LINE**

8MP AND ULTRA COMPACT

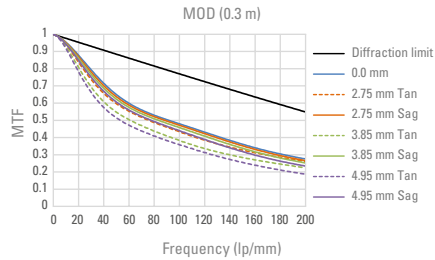
PIXEL PITCH
2.74 μm 2/3"
IMAGERS

- Focal length 50 mm
- Aperture F/2.8 ~ F/16
- Filter size M27 P = 0.5 mm
- Exit Pupil Position -44.2 mm
- TV Distortion 0.05 %
- M.O.D. 300 mm
- Max. Diameter 29.0 mm
- Weight 74 g
- Operating Temp. -20°C ~ +60°C

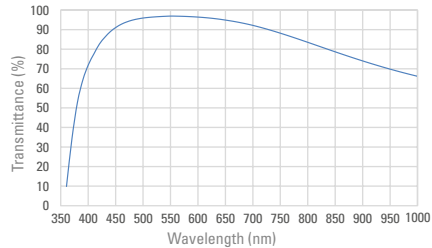
Angle of View

1/1.7"	8.4° x 6.4°
1/1.8"	6.6° x 5.0°
1/2"	6.2° x 4.6°

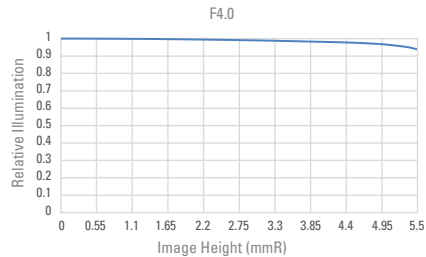
MTF Curves



Transmittance of Wavelengths



Relative Illumination on Image Circle



This table shows the shooting distance and coverage by using different extension rings (Imager Size: 2/3")

Size of Extension Ring	MA23F50V (f=50/F2.8)	
	WD	Coverage
W/O	1000.0	172.1 × 129.2
	300.0	49.5 × 37.1
0.5	5087.6	888.1 × 666.9
	285.1	46.8 × 35.1
1	2546.2	442.9 × 332.6
	271.6	44.5 × 33.3
1.5	1696.0	294.0 × 220.7
	259.4	42.3 × 31.7
5	517.1	87.5 × 65.7
	198.6	31.6 × 23.7
10	267.6	43.8 × 32.8
	151.1	23.3 × 17.5
15	184.8	29.2 × 21.9
	123.5	18.4 × 13.8
20	143.5	22.0 × 16.5
	105.4	15.2 × 11.4
25	118.7	17.6 × 13.2
	92.6	13.0 × 9.7
30	102.1	14.7 × 11.0
	83.1	11.3 × 8.5
35	90.2	12.6 × 9.4
	76.0	10.0 × 7.5
40	81.3	11.0 × 8.2
	70.0	9.0 × 6.7

Upper column: Data at the infinity focusing position.
(In W/O, data at 1.0m focusing position)

Lower column: Data at the nearest focusing position

Taking distance: From barrel top to the object

EXPLANATION

- 1 Model Number, focal length
- 2 Object distance from the tip of the mechanical end at infinity focus
- 3 Size of the extension ring in mm
- 4 Object distance from the tip of the mechanical end at MOD
- 5 Data at infinity focusing position
- 6 Data at the minimum focusing position

- 1. Please use the data shown here for your reference only, it is not the actual figure.
- 2. TAMRON will not be responsible for any trouble caused using this figure.
- 3. This data is a calculated figure, not based on real measurements.
- 4. Please note that tolerances are not taken into consideration within this calculation.
- 5. There might be small differences between each piece.
- 6. There might be some loss in image quality by applying an extension ring.
- 7. TAMRON does not guarantee the original image performance while using any extension rings.
- 8. This data is based on all sources available as of February 2, 2022.
- 9. This data is subject to change without notice.
- 10. All units are given in mm.

Size of Extension Ring	1 MA23F50V (f=50/F2.8)	
	WD	Coverage
W/O	1000.0 300.0	172.1 x 129.2 49.5 x 37.1
3 0.5	2 5087.6 4 285.1	5 888.1 x 666.9 6 46.8 x 35.1
1	2546.2 271.6	442.9 x 332.6 44.5 x 33.3
1.5	1696.0 259.4	294.0 x 220.7 42.3 x 31.7
5	517.1 198.6	87.5 x 65.7 31.6 x 23.7
10	267.6 151.1	43.8 x 32.8 23.3 x 17.5
15	184.8	29.2 x 21.9

TAMRON

Focus on the Future

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