

IP/CCTV LENSES

Mega-Pixel Vari-Focal Lenses
Vari-Focal Lenses
Fixed-Focal Lenses
Mega-Pixel Machine Vision Lenses
Machine Vision Lenses
SWIR Lenses for Industrial Applications
Accessories / Terminology Explanations



Caution: Please read the instruction manual carefully before using the lens.

TAMRON

Manufacturer of precise and sophisticated optical products
for a broad range of industries.

TAMRON CO., LTD. <https://www.tamron.com/global/biz/>
1385, Hasunuma, Minuma-ku, Saitama-shi, Saitama 337-8556 JAPAN
Tel: +81-48-684-9129 Fax: +81-48-683-8594



Vari-Focal lenses are constantly evolving together with Tamron, the optical equipment specialist

Tamron has consistently developed innovative Vari-Focal lenses compatible with the needs of a market that is accelerating towards increasingly sophisticated, ever more compact IP networks.

Images are all about “resolution”. High-quality products that refuse to compromise are the result of an unrelenting commitment to high resolution coupled with unsurpassed technological capabilities.

Offering high-resolution that is both durable and versatile, Tamron’s products enjoy worldwide success.

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Products and Features

Mega-Pixel Vari-Focal Lenses

Ultra-high-resolution vari-focal lenses deliver maximum performance for mega-pixel cameras. Innovative optical technology provides high-resolution and high-contrast performance.

Flat-Field Mega-Pixel Lenses



Delivering uniformly ultra-high-resolution image from corner to periphery

The Tamron Flat-Field Mega-Pixel Lens Series delivers mega-pixel image quality not only in the center but also in the corners of the image field, providing the mega-pixel resolution quality needed for image cropping and enlarging, irrespective of the location of the subject on the screen. This ensures that subject faces and other relevant information can be clearly identified and distinguished, making the Tamron Flat-Field Mega-Pixel Lenses an ideal solution for high-resolution network surveillance applications. In fact all lenses of the Tamron Mega-Pixel Lens Series lineup deliver Flat-Field Mega-Pixel resolution.



Mega-Pixel Key Technologies

These Technologies Unfold the Mega-Pixel Cameras True Powers

< M117VG3817IR, M118VM413IRCS, M118VM413IR, M118VG413IRCS, M118VG413IR, M118VP413IRCS, M118VP413IR, M118VG1250IR, M118VP1250IR, M13VG2713IR, M13VM288IR, M13VG288IR, M13VP288IR, M13VG555IR, M13VG850IR, M13VP850IR, M13VG550IR, M12VM412, M12VG412 >

Each lens in Tamron's Mega-Pixel Vari-Focal Lens Series uses Aspherical elements to minimize optical aberrations and ensures high optical quality while maintaining a compact form employing innovative optical technologies. These lenses deliver high-resolution and high-contrast images that are sharp from the center to the periphery of the image field and represent the ideal solution for applications that use high-quality mega-pixel cameras.

Compensation made possible by Aspherical lens



Vari-Focal Lenses

Through the beneficial employment of aspherical elements, Tamron manufactured a superior line of Vari-Focal lenses featuring fast maximum apertures, high magnification ratios compactness and uncompromised optical quality.

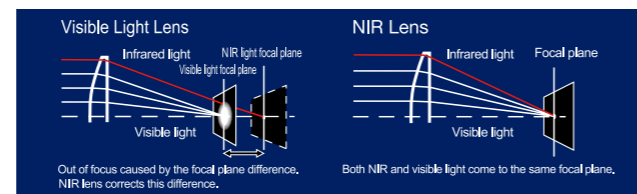
Wide Dynamic Range

The standard 3.0-8mm Vari-Focal lens for the 1/3" format, which meets the needs of the most frequent job applications, offers an impressive maximum open aperture of F/1.0 and F/360 minimum aperture. This wide dynamic range increases the versatility of this lens since it can be used in situations where light conditions are extreme or ever-changing.



Compatible NIR (Near-IR) *Only supported by NIR Lenses

The Tamron NIR lens series is designed to minimize focus shift in the NIR range by expanding chromatic aberration compensation to include both daylight and the NIR ranges. The lens therefore unfolds its power in 24-hour around-the-clock surveillance, when combined with a day/night camera.



Fixed-Focal Lenses

A complete series of 1/3" format Fixed-Focal Lenses from 2.2mm super wide angle (118.6°) to 6mm (46.5°).



Compatible NIR (Near-IR)

Tamron's 1/3" format 2.2mm, 2.8mm, 4mm and 6mm lenses are precisely compatible with day/night cameras since their chromatic aberration compensation is expanded to the NIR range.

Mega-Pixel Machine Vision Lenses

Tamron's high-resolution line-up of lenses is most suitable for such applications as FA (Factory Automation), Machine Vision, etc., where high image quality is essential. Tamron has a complete line-up of lenses that are perfectly compatible with cameras featuring mega-pixel imagers.

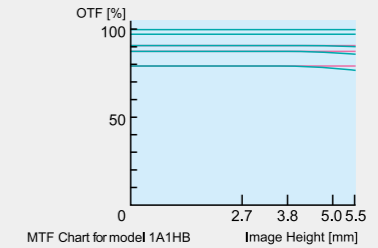


Minimized Distortion

Distortion, the most formidable enemy in image processing, is thoroughly compensated for, thereby reducing distortion in images to the absolute minimum. As a result, Tamron's High-Resolution Lenses provide stabilized high-performance in the field of precise measuring.

High-Resolution Extending to the Periphery

Various optical aberrations are compensated for to the absolute minimum in order to maintain high-resolution not only in the center of an image but also to its periphery.



Solid and Robust Mechanism

So as to endure the vibrations of FA and Machine Vision apparatus, where lenses are built in, Tamron's High-Resolution Lenses all feature solid and robust mechanisms. This makes it possible to maintain their finest initial performances even after long periods of use.

Locking Mechanisms

Each of the lenses is available with locking mechanisms for the iris and focusing controls, making their use ideal in environment suffering from significant vibrations.

Compact Design

In consideration of using the lenses with FA and Machine Vision, all of the lenses in each series provide compact chassis and the external dimensions and filter sizes are unified.

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Focal Length List



Model	page	2.2mm	2.4mm	2.8mm	5mm	8mm	12mm	50mm	100mm	
Mega-Pixel Vari-Focal Lenses	8MP	M117VG3817IR				×4.5 3.8 - 17mm		FFMP Full HD IR		
		M118VM413IRCS								
		M118VM413IR								
	5MP	M118VG413IRCS				×3.2 4.0 - 13mm		FFMP Full HD IR		
		M118VG413IR								
		M118VP413IRCS								
		M118VP413IR								
		M118VG1250IR						×4.1 12 - 50mm	FFMP Full HD IR	
		M118VP1250IR								
	3MP	M13VG2713IR				×4.6 2.7 - 13mm		FFMP Full HD IR		
		M13VM288IR								
		M13VG288IR				×2.8 2.8 - 8mm		FFMP Full HD IR		
M13VP288IR										
M13VG555IR						×11 5 - 55mm		FFMP Full HD IR		
M13VG850IR						×6.2 8 - 50mm		FFMP Full HD IR		
2MP	M13VG550IR					×10 5 - 50mm		FFMP Full HD IR		
	M12VM412					×3 4.0 - 12mm		FFMP HD		
Vari-Focal Lenses	13VG2812ASII				×4.2 2.8 - 12mm			SD		
	13VM308ASIRII				×2.6 3.0 - 8mm			SD IR		
	13VG308ASIRII									
	12VM412ASIR				×3 4.0 - 12mm			SD IR		
	12VG412ASIR									
	13VM550ASII					×10 5 - 50mm			SD	
	13VG550ASII									
	12VG1040ASIR					×4 10 - 40mm			SD IR	
Fixed-Focal Lenses	13FM22IR	●							SD IR	
	13FG22IR	●							SD IR	
	13FM28IR			●					SD IR	
	13FG28IR			●					SD IR	
	13FM04IR				●				SD IR	
	13FG04IR				●				SD IR	
	13FM06IR					●			SD IR	
	13FG06IR					●			SD IR	

- FFMP Flat-Field Mega-Pixel Full HD Full High Definition HD High Definition SD Standard Definition IR NIR (Near-IR)
- 2.4µm Supports 2.4µm Sensor 2.5µm Supports 2.5µm Sensor 2.74µm Supports 2.74µm Sensor 3.45µm Supports 3.45µm Sensor
- 4.0µm Supports 4.0µm Sensor 5.0µm Supports 5.0µm Sensor 5.86µm Supports 5.86µm Sensor

*Angle of view images are illustrative examples.



モデル名	ページ	2.2mm	2.4mm	2.8mm	5mm	8mm	12mm	50mm	100mm	
Mega-Pixel Machine Vision Lenses	MA111F16VIR							●	FFMP 2.5µm	
	MA111F25VIR							●	FFMP 2.5µm	
	MA111F35VIR							●	FFMP 2.5µm	
	MA111F50VIR							●	FFMP 2.5µm	
	M112FM06				●				FFMP 3.45µm	
	M112FM08					●			FFMP 3.45µm	
	M112FM12						●		FFMP 3.45µm	
	M112FM16						●		FFMP 3.45µm	
	M112FM25						●		FFMP 3.45µm	
	M112FM35							●	FFMP 3.45µm	
	M112FM50							●	FFMP 3.45µm	
	M112FM75							●	FFMP 3.45µm	
	MA23F08V						●		FFMP 2.74µm	
	MA23F12V							●	FFMP 2.74µm	
	MA23F16V							●	FFMP 2.74µm	
	MA23F25V							●	FFMP 2.74µm	
	MA23F35V							●	FFMP 2.74µm	
	MA23F50V							●	FFMP 2.74µm	
	M117FM06					●			FFMP 2.4µm	
	M117FM08						●		FFMP 2.4µm	
	M117FM12							●	FFMP 2.4µm	
	M117FM16							●	FFMP 2.4µm	
	M117FM25							●	FFMP 2.4µm	
M117FM35							●	FFMP 2.4µm		
M117FM50							●	FFMP 2.4µm		
M118FM06					●			FFMP 4.0µm		
M118FM08						●		FFMP 4.0µm		
M118FM12							●	FFMP 4.0µm		
M118FM16							●	FFMP 4.0µm		
M118FM25							●	FFMP 4.0µm		
M118FM50							●	FFMP 4.0µm		
23FM16SP							●	FFMP 4.0µm		
23FM25SP							●	FFMP 4.0µm		
23FM50SP							●	FFMP 4.0µm		
Machine Vision Lenses	22HA						●		SD	
	219HB						●		SD	
	25HA							●	SD	
	25HB							●	SD	
	17HF							●	SD	
	20HC							●	SD	
	35HB							●	SD	
	21HC							●	SD	
	1A1HB								●	SD
	SWIR Lenses	SMA11F12							●	FFMP 5.0µm
SMA11F16								●	FFMP 5.0µm	
SMA11F25								●	FFMP 5.0µm	

Mega-Pixel Vari-Focal Lenses Day / Night

Manual Iris

M118VM413IRCS FFMP Full HD IR ASL Imager Size 2/3 1/1.8 1/2 1/3

5MP

Imager Size	1/1.8	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	Manual with Lock
Focal Length	4.0 - 13mm	Overall Length	98mm	
Aperture Range	F/1.5 - Close	Weight	172g	
Zoom Ratio	×3.2	Remarks	RoHS	
Focus Range	0.3m - ∞			
Field of View Angle (Horizontal × Vertical)	1/1.8W 105.4°×77.6°			
	1/1.8T 33.0°×24.8°			
	1/2W 91.7°×67.9°			
	1/2T 29.0°×21.8°			
	1/3W 67.9°×50.6°			
	1/3T 21.8°×16.3°			

M118VM413IR FFMP Full HD IR ASL Imager Size 2/3 1/1.8 1/2 1/3

5MP

Imager Size	1/1.8	Operation	Focus Zoom	Manual with Lock
Mount Type	C		Iris	Manual with Lock
Focal Length	4.0 - 13mm	Overall Length	92mm	
Aperture Range	F/1.5 - Close	Weight	167g	
Zoom Ratio	×3.2	Remarks	RoHS	
Focus Range	0.3m - ∞			
Field of View Angle (Horizontal × Vertical)	1/1.8W 105.4°×77.6°			
	1/1.8T 33.0°×24.8°			
	1/2W 91.7°×67.9°			
	1/2T 29.0°×21.8°			
	1/3W 67.9°×50.6°			
	1/3T 21.8°×16.3°			

M13VM288IR FFMP Full HD IR ASL Imager Size 2/3 1/2.7 1/3 1/4

3MP

Imager Size	1/2.7	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	Manual with Lock
Focal Length	2.8 - 8mm	Overall Length	58mm	
Aperture Range	F/1.2 - Close	Weight	61g	
Zoom Ratio	×2.8	Remarks	RoHS	
Focus Range	0.3m - ∞			
Field of View Angle (Horizontal × Vertical)	1/2.7W 124.3°×65.2°			
	1/2.7T 43.0°×24.2°			
	1/3W 100.1°×72.9°			
	1/3T 35.8°×26.8°			
	1/4W 72.9°×53.9°			
	1/4T 26.8°×20.1°			

M117VG3817IR FFMP Full HD IR ASL Imager Size 1/1.7 1/1.8 1/2 1/3

8MP

Imager Size	1/1.7	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	DC Auto Iris
Focal Length	3.8 - 17mm	Operating Voltage	Open 4.0V	
Aperture Range	F/1.4 - Close		Close 0.5V	
Zoom Ratio	×4.5	Overall Length	93mm	
Focus Range	0.3m - ∞	Weight	180g	
Field of View Angle (Horizontal × Vertical)	1/1.7W 121.2°×67.2°	Remarks	RoHS	
	1/1.7T 28.1°×16.1°			
	1/1.8W 114.2°×63.5°			
	1/1.8T 26.6°×15.2°			

M118VG1250IR FFMP Full HD IR ASL Imager Size 2/3 1/1.8 1/2 1/3

5MP

Imager Size	1/1.8	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	DC Auto Iris
Focal Length	12 - 50mm	Operating Voltage	Open 4.0V	
Aperture Range	F/1.4 - F/360		Close 0.5V	
Zoom Ratio	×4.1	Overall Length	84mm	
Focus Range	1.0m - ∞	Weight	130g	
Field of View Angle (Horizontal × Vertical)	1/1.8W 34.0°×25.5°	Remarks	RoHS	
	1/1.8T 8.5°×6.4°			
	1/2W 29.9°×22.4°			
	1/2T 7.5°×5.6°			
	1/3W 22.4°×16.8°			
	1/3T 5.6°×4.2°			

DC Auto Iris

M118VG413IRCS FFMP Full HD IR ASL Imager Size 2/3 1/1.8 1/2 1/3

5MP

Imager Size	1/1.8	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	DC Auto Iris
Focal Length	4.0 - 13mm	Operating Voltage	Open 3.0V	
Aperture Range	F/1.5 - Close		Close 0.5V	
Zoom Ratio	×3.2	Overall Length	98mm	
Focus Range	0.3m - ∞	Weight	172g	
Field of View Angle (Horizontal × Vertical)	1/1.8W 105.4°×77.6°	Remarks	RoHS	
	1/1.8T 33.0°×24.8°			
	1/2W 91.7°×67.9°			
	1/2T 29.0°×21.8°			
	1/3W 67.9°×50.6°			
	1/3T 21.8°×16.3°			

M118VG413IR FFMP Full HD IR ASL Imager Size 2/3 1/1.8 1/2 1/3

5MP

Imager Size	1/1.8	Operation	Focus Zoom	Manual with Lock
Mount Type	C		Iris	DC Auto Iris
Focal Length	4.0 - 13mm	Operating Voltage	Open 3.0V	
Aperture Range	F/1.5 - Close		Close 0.7V	
Zoom Ratio	×3.2	Overall Length	92mm	
Focus Range	0.3m - ∞	Weight	167g	
Field of View Angle (Horizontal × Vertical)	1/1.8W 105.4°×77.6°	Remarks	RoHS	
	1/1.8T 33.0°×24.8°			
	1/2W 91.7°×67.9°			
	1/2T 29.0°×21.8°			
	1/3W 67.9°×50.6°			
	1/3T 21.8°×16.3°			

M13VG2713IR FFMP Full HD IR ASL Imager Size 2/3 1/2.7 1/3 1/4

3MP

Imager Size	1/2.7	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	DC Auto Iris
Focal Length	2.7 - 13mm	Operating Voltage	Open 4.0V	
Aperture Range	F/1.4 - 360		Close 0.5V	
Zoom Ratio	×4.8	Overall Length	71mm	
Focus Range	0.3m - ∞	Weight	90g	
Field of View Angle (Horizontal × Vertical)	1/2.7W 125.1°×66.1°	Remarks	RoHS	
	1/2.7T 26.7°×15.2°			
	1/3W 101.1°×73.9°			
	1/3T 22.3°×16.8°			

M13VG288IR FFMP Full HD IR ASL Imager Size 2/3 1/2.7 1/3 1/4

3MP

Imager Size	1/2.7	Operation	Focus Zoom	Manual with Lock
Mount Type	CS		Iris	DC Auto Iris
Focal Length	2.8 - 8mm	Operating Voltage	Open 4.0V	
Aperture Range	F/1.2 - 360		Close 0.7V	
Zoom Ratio	×2.8	Overall Length	58mm	
Focus Range	0.3m - ∞	Weight	70g	
Field of View Angle (Horizontal × Vertical)	1/2.7W 124.3°×65.2°	Remarks	RoHS	
	1/2.7T 43.0°×24.2°			
	1/3W 100.1°×72.9°			
	1/3T 35.8°×26.8°			
	1/4W 72.9°×53.9°			
	1/4T 26.8°×20.1°			

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Fixed-Focal Lenses Day / Night

Manual Iris

13FM22IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock	
Mount Type	CS			Manual with Lock	
Focal Length	2.2mm	Overall Length	42mm		
Aperture Range	F/1.2 - Close	Weight	41g		
Focus Range	0.1m - ∞	Remarks	RoHS		
Field of View Angle (Horizontal * Vertical)	1/3				118.6°×90.0°
	1/4				90.0°×67.9°

13FM28IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock	
Mount Type	CS			Manual with Lock	
Focal Length	2.8mm	Overall Length	39mm		
Aperture Range	F/1.2 - Close	Weight	36g		
Focus Range	0.2m - ∞	Remarks	RoHS		
Field of View Angle (Horizontal * Vertical)	1/3				93.2°×70.7°
	1/4				70.7°×53.4°

13FM04IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock	
Mount Type	CS			Manual with Lock	
Focal Length	4mm	Overall Length	39mm		
Aperture Range	F/1.2 - Close	Weight	33g		
Focus Range	0.2m - ∞	Remarks	RoHS		
Field of View Angle (Horizontal * Vertical)	1/3				65.6°×49.7°
	1/4				49.7°×37.4°

13FM06IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock	
Mount Type	CS			Manual with Lock	
Focal Length	6mm	Overall Length	39mm		
Aperture Range	F/1.2 - Close	Weight	30g		
Focus Range	0.2m - ∞	Remarks	RoHS		
Field of View Angle (Horizontal * Vertical)	1/3				46.5°×34.6°
	1/4				34.6°×25.9°

DC Auto Iris

13FG22IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock
Mount Type	CS			DC Auto Iris
Focal Length	2.2mm	Operating Voltage	Open 2.5V Close 0.5V	
Aperture Range	F/1.2 - 360	Overall Length	42mm	
Focus Range	0.1m - ∞	Weight	49g	
Field of View Angle (Horizontal * Vertical)	1/3	118.6°×90.0°	Remarks	RoHS
	1/4	90.0°×67.9°		

13FG28IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock
Mount Type	CS			DC Auto Iris
Focal Length	2.8mm	Operating Voltage	Open 2.5V Close 0.5V	
Aperture Range	F/1.2 - 360	Overall Length	39mm	
Focus Range	0.2m - ∞	Weight	44g	
Field of View Angle (Horizontal * Vertical)	1/3	93.2°×70.7°	Remarks	RoHS
	1/4	70.7°×53.4°		

13FG04IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock
Mount Type	CS			DC Auto Iris
Focal Length	4mm	Operating Voltage	Open 2.5V Close 0.5V	
Aperture Range	F/1.2 - 360	Overall Length	39mm	
Focus Range	0.2m - ∞	Weight	40g	
Field of View Angle (Horizontal * Vertical)	1/3	65.6°×49.7°	Remarks	RoHS
	1/4	49.7°×37.4°		

13FG06IR SD IR Imager Size 2/3 1/2 1/3 1/4

Imager Size	1/3	Operation	Focus Iris	Manual with Lock
Mount Type	CS			DC Auto Iris
Focal Length	6mm	Operating Voltage	Open 2.5V Close 0.5V	
Aperture Range	F/1.2 - 360	Overall Length	39mm	
Focus Range	0.2m - ∞	Weight	38g	
Field of View Angle (Horizontal * Vertical)	1/3	46.5°×34.6°	Remarks	RoHS
	1/4	34.6°×25.9°		



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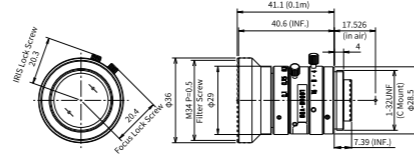
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Mega-Pixel Machine Vision Lenses

MA23F08V



FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

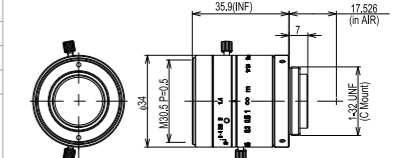
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	8mm	Filter Size	M34 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	41.1mm	
	Focus Range	0.1m - ∞	Weight	84g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	53.1° x 53.1°	Remarks	RoHs	
	(4:3)	58.9° x 45.5°			



23FM16SP



FFMP 4.0µm Imager Size 2/3 1/1.8 1/2 1/4

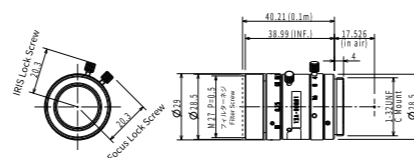
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	16mm	Filter Size	M30.5 P=0.5mm	
	Aperture Range	F/1.4 - 22	Overall Length	43mm	
	Focus Range	0.15m - ∞	Weight	80g	
Field of View Angle (Horizontal * Vertical)	2/3	30.9° x 23.4°	Remarks	RoHs	
	1/2	22.7° x 17.1°			
	1/3	17.1° x 12.9°			



MA23F12V



FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

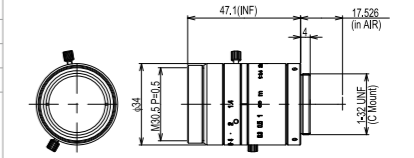
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	12mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	40.21mm	
	Focus Range	0.1m - ∞	Weight	69g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	36.0° x 36.0°	Remarks	RoHs	
	(4:3)	40.2° x 30.6°			



23FM25SP



FFMP 4.0µm Imager Size 2/3 1/1.8 1/2 1/4

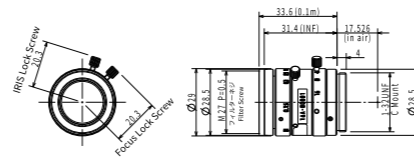
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	25mm	Filter Size	M30.5 P=0.5mm	
	Aperture Range	F/1.4 - 22	Overall Length	51mm	
	Focus Range	0.15m - ∞	Weight	103g	
Field of View Angle (Horizontal * Vertical)	2/3	20.0° x 15.1°	Remarks	RoHs	
	1/2	14.6° x 11.0°			
	1/3	11.0° x 8.2°			



MA23F16V



FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

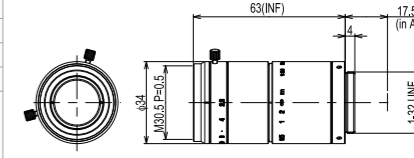
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	16mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	40.21mm	
	Focus Range	0.1m - ∞	Weight	59g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	27.0° x 27.0°	Remarks	RoHs	
	(4:3)	30.2° x 22.8°			



23FM50SP



FFMP 4.0µm Imager Size 2/3 1/1.8 1/2 1/4

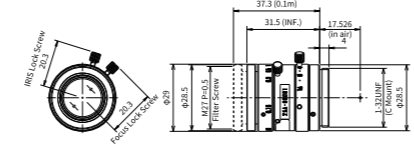
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	50mm	Filter Size	M30.5 P=0.5mm	
	Aperture Range	F/2.8 - 32	Overall Length	67mm	
	Focus Range	0.2m - ∞	Weight	117g	
Field of View Angle (Horizontal * Vertical)	2/3	10.1° x 7.6°	Remarks	RoHs	
	1/2	7.3° x 5.5°			
	1/3	5.5° x 4.1°			



MA23F25V



FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

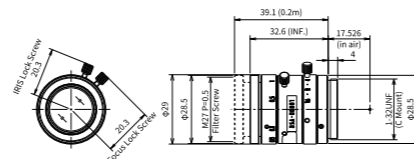
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	25mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	37.3mm	
	Focus Range	0.1m - ∞	Weight	55g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	16.9° x 16.9°	Remarks	RoHs	
	(4:3)	18.9° x 14.3°			



MA23F35V



FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

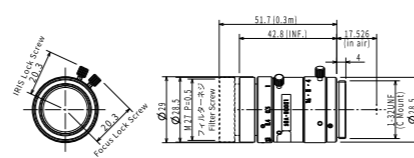
	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	35mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	39.1mm	
	Focus Range	0.2m - ∞	Weight	58g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	11.1° x 11.1°	Remarks	RoHs	
	(4:3)	12.5° x 9.4°			



MA23F50V

FFMP 2.74µm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4



	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	50mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.8 - 16	Overall Length	51.7mm	
	Focus Range	0.3m - ∞	Weight	74g	
Field of View Angle (Horizontal * Vertical)	2/3 (1:1)	7.5° x 7.5°	Remarks	RoHs	
	(4:3)	8.4° x 6.4°			

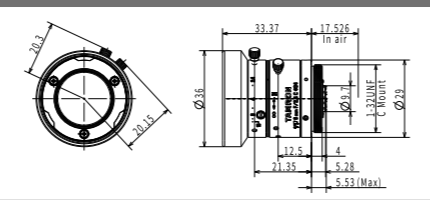


Mega-Pixel Machine Vision Lenses

M117FM06



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

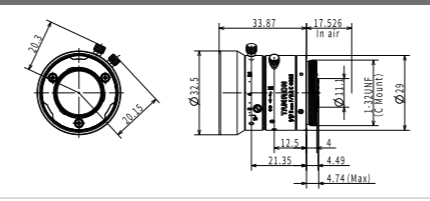
	Imager Size	1/17	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	6mm	Filter Size	M34 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	33.37mm	
	Focus Range	0.1m - ∞	Weight	50g	
Field of View Angle (Horizontal * Vertical)	1/1.7	65.0° × 50.5°	Remarks	RoHs	
	1/1.8	64.2° × 44.9°			



M117FM08



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

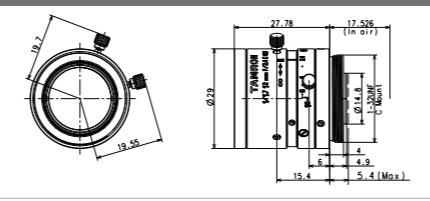
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	8mm	Filter Size	M30.5 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	33.87mm	
	Focus Range	0.1m - ∞	Weight	48g	
Field of View Angle (Horizontal * Vertical)	1/1.7	52.2° × 39.5°	Remarks	RoHs	
	1/1.8	50.9° × 35.1°			



M117FM12



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

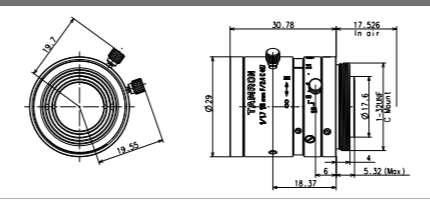
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	12mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	27.78mm	
	Focus Range	0.1m - ∞	Weight	40g	
Field of View Angle (Horizontal * Vertical)	1/1.7	34.3° × 25.9°	Remarks	RoHs	
	1/1.8	33.7° × 22.9°			



M117FM16



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

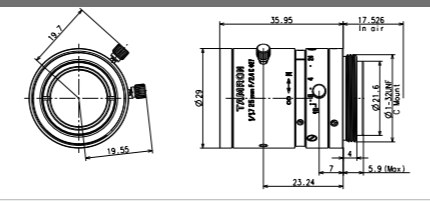
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	16mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	33.78mm	
	Focus Range	0.1m - ∞	Weight	40g	
Field of View Angle (Horizontal * Vertical)	1/1.7	26.1° × 19.7°	Remarks	RoHs	
	1/1.8	25.7° × 17.4°			



M117FM25



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

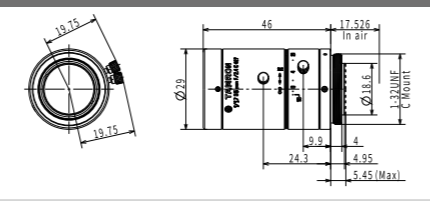
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	25mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	35.95mm	
	Focus Range	0.1m - ∞	Weight	45g	
Field of View Angle (Horizontal * Vertical)	1/1.7	17.4° × 13.1°	Remarks	RoHs	
	1/1.8	17.1° × 11.5°			



M117FM35



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

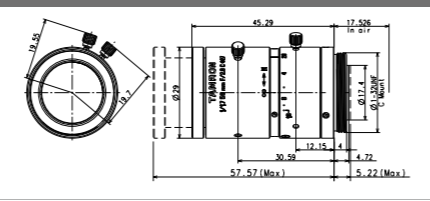
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	35mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.4 - 16	Overall Length	46mm	
	Focus Range	0.1m - ∞	Weight	65g	
Field of View Angle (Horizontal * Vertical)	1/1.7	12.6° × 9.5°	Remarks	RoHs	
	1/1.8	12.4° × 8.4°			



M117FM50



FFMP 2.4μm Imager Size 2/3 1/1.7 1/1.8 1/2 1/4

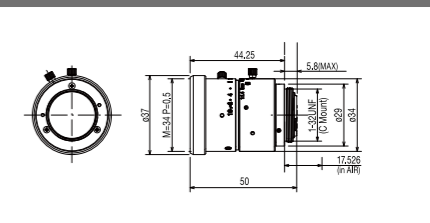
	Imager Size	1/1.7	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	50mm	Filter Size	M27 P=0.5mm	
	Aperture Range	F/2.8 - 16	Overall Length	45.29mm	
	Focus Range	0.2m - ∞	Weight	60g	
Field of View Angle (Horizontal * Vertical)	1/1.7	8.9° × 6.7°	Remarks	RoHs	
	1/1.8	8.7° × 5.9°			



M118FM06



FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

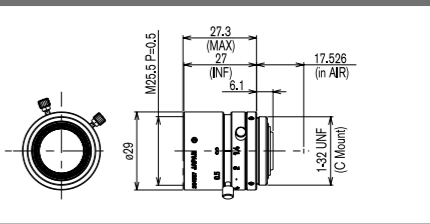
	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	6mm	Filter Size	M34 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	50mm	
	Focus Range	0.1m - ∞	Weight	86g	
Field of View Angle (Horizontal * Vertical)	1/1.8	66.1° × 50.8°	Remarks	RoHs	
	1/2	58.9° × 44.9°			
	1/3	44.9° × 34.0°			



M118FM08



FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

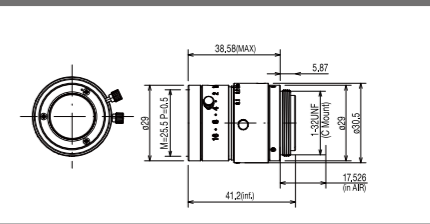
	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	8mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	33mm	
	Focus Range	0.1m - ∞	Weight	44g	
Field of View Angle (Horizontal * Vertical)	1/1.8	50.8° × 38.6°	Remarks	RoHs	
	1/2	45.0° × 34.0°			
	1/3	34.0° × 25.6°			



M118FM12



FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

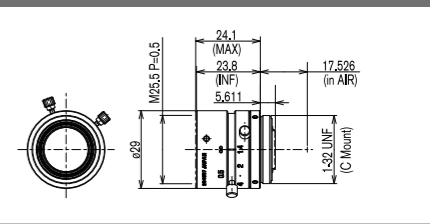
	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	12mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	45mm	
	Focus Range	0.1m - ∞	Weight	57g	
Field of View Angle (Horizontal * Vertical)	1/1.8	34.2° × 25.8°	Remarks	RoHs	
	1/2	30.2° × 22.7°			
	1/3	22.7° × 17.1°			



M118FM16



FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

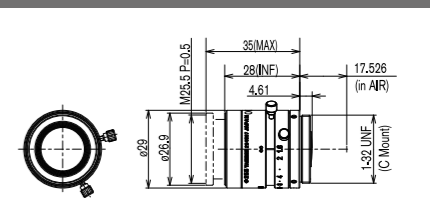
	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	16mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	30mm	
	Focus Range	0.1m - ∞	Weight	39g	
Field of View Angle (Horizontal * Vertical)	1/1.8	25.9° × 19.5°	Remarks	RoHs	
	1/2	22.8° × 17.1°			
	1/3	17.1° × 12.9°			



M118FM25



FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

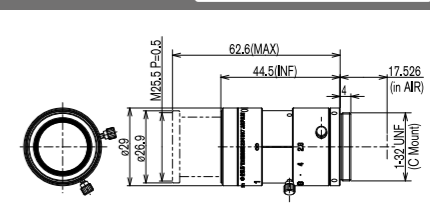
	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	25mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.6 - 16	Overall Length	40mm	
	Focus Range	0.1m - ∞	Weight	39g	
Field of View Angle (Horizontal * Vertical)	1/1.8	16.6° × 12.5°	Remarks	RoHs	
	1/2	14.6° × 11.0°			
	1/3	11.0° × 8.2°			



M118FM50


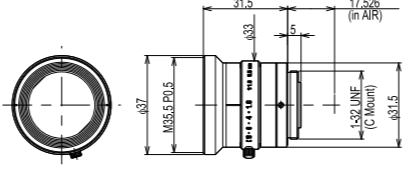
FFMP 4.0μm Imager Size 2/3 1/1.8 1/2 1/4

	Imager Size	1/1.8	Operation	Focus	Manual with Lock
	Mount Type	C		Iris	Manual with Lock
	Focal Length	50mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/2.8 - 22	Overall Length	67mm	
	Focus Range	0.2m - ∞	Weight	52g	
Field of View Angle (Horizontal * Vertical)	1/1.8	8.3° × 6.2°	Remarks	RoHs	
	1/2	7.3° × 5.5°			
	1/3	5.5° × 4.1°			


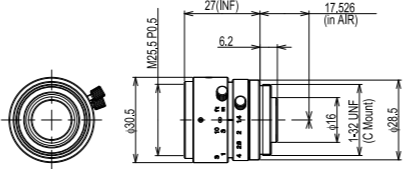


Machine Vision Lenses


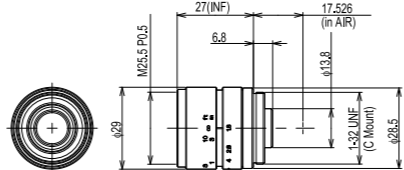
22HA SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	-
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	6.5mm	Filter Size	M35.5 P=0.5mm	
	Aperture Range	F/1.8 - Close	Overall Length	37mm	
Focus Range	1.5m - ∞	Weight	60g		
Field of View Angle (Horizontal * Vertical)	2/3	71.6°×55.5°	Remarks	RoHs	
	1/2	53.9°×41.0°			
	1/3	41.0°×31.0°			


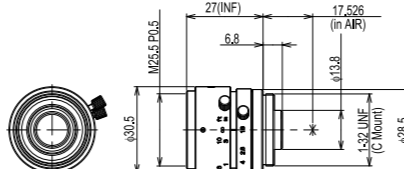
219HB SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	8mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	33mm	
Focus Range	0.26m - ∞	Weight	48g		
Field of View Angle (Horizontal * Vertical)	2/3	59.3°×45.2°	Remarks	RoHs	
	1/2	43.6°×33.1°			
	1/3	33.1°×25.0°			


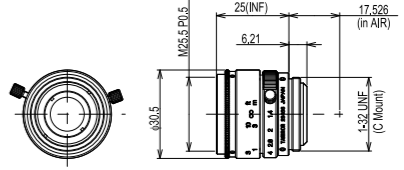
25HA SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual
	Mount Type	C	Operation	Iris	Manual
	Focal Length	12mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.8 - 16	Overall Length	34mm	
Focus Range	0.26m - ∞	Weight	40g		
Field of View Angle (Horizontal * Vertical)	2/3	40.9°×30.9°	Remarks	RoHs	
	1/2	30.0°×22.4°			
	1/3	22.4°×16.6°			


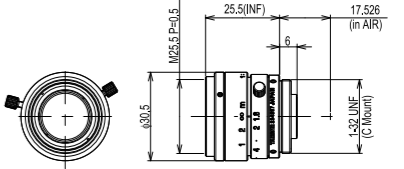
25HB SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	12mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.8 - 16	Overall Length	34mm	
Focus Range	0.26m - ∞	Weight	46g		
Field of View Angle (Horizontal * Vertical)	2/3	40.9°×30.9°	Remarks	RoHs	
	1/2	30.0°×22.4°			
	1/3	22.4°×16.6°			


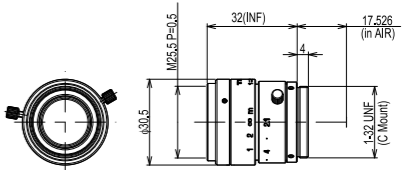
17HF SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	16mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	31mm	
Focus Range	0.29m - ∞	Weight	48g		
Field of View Angle (Horizontal * Vertical)	2/3	30.9°×23.2°	Remarks	RoHs	
	1/2	22.5°×16.9°			
	1/3	16.9°×12.7°			


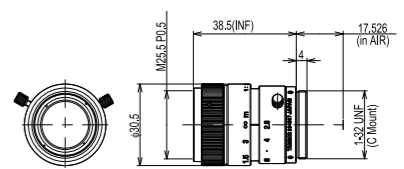
20HC SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	25mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/1.4 - 16	Overall Length	32mm	
Focus Range	0.21m - ∞	Weight	40g		
Field of View Angle (Horizontal * Vertical)	2/3	20.0°×15.0°	Remarks	RoHs	
	1/2	14.6°×11.0°			
	1/3	11.0°×8.2°			


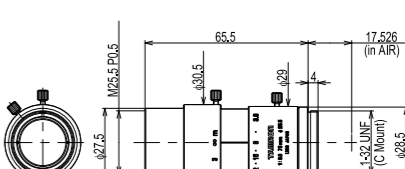
35HB SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	35mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/2.1 - 22	Overall Length	36mm	
Focus Range	0.3m - ∞	Weight	44g		
Field of View Angle (Horizontal * Vertical)	2/3	14.3°×10.8°	Remarks	RoHs	
	1/2	10.4°×7.8°			
	1/3	7.8°×5.9°			

21HC SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)



	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	50mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/2.8 - 22	Overall Length	43mm	
Focus Range	0.44m - ∞	Weight	52g		
Field of View Angle (Horizontal * Vertical)	2/3	10.0°×7.5°	Remarks	RoHs	
	1/2	7.3°×5.5°			
	1/3	5.5°×4.1°			

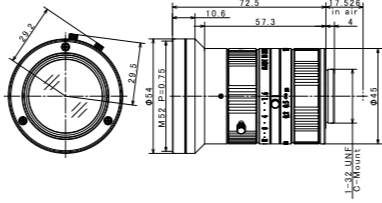
1A1HB SD Imager Size [2/3](#) [1/1.8](#) [1/2](#) [1/4](#)

	Imager Size	2/3	Operation	Focus	Manual with Lock
	Mount Type	C	Operation	Iris	Manual with Lock
	Focal Length	75mm	Filter Size	M25.5 P=0.5mm	
	Aperture Range	F/3.9 - 32	Overall Length	70mm	
Focus Range	0.5m - ∞	Weight	68g		
Field of View Angle (Horizontal * Vertical)	2/3	6.9°×5.2°	Remarks	RoHs	
	1/2	5.0°×3.5°			
	1/3	3.5°×2.5°			



SWIR Lenses for Industrial Applications

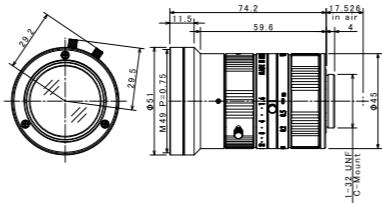
SMA11F12 FFMP 5.0μm Imager Size 1 1/1.8 1/2

	Imager Size	1	Operation	Focus Iris	Manual with Lock
	Mount Type	C			Manual with Lock
	Focal Length	12mm	Filter Size	M52 P=0.75mm	
	Aperture Range	F/1.6 - 22	Overall Length	72.5mm	
	Focus Range	0.2m - ∞	Weight	260g	
Field of View Angle (Horizontal - Vertical)	1	57.9° × 44.6°	Remarks		
	1/2	30.2° × 24.3°			





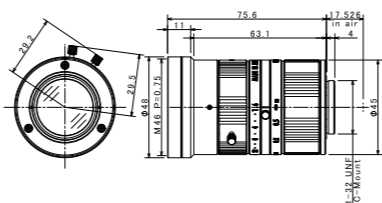
SMA11F16 FFMP 5.0μm Imager Size 1 1/1.8 1/2

	Imager Size	1	Operation	Focus Iris	Manual with Lock
	Mount Type	C			Manual with Lock
	Focal Length	16mm	Filter Size	M49 P=0.75mm	
	Aperture Range	F/1.6 - 22	Overall Length	74.2mm	
	Focus Range	0.2m - ∞	Weight	260g	
Field of View Angle (Horizontal - Vertical)	1	44.1° × 33.7°	Remarks		
	1/2	22.7° × 18.1°			



SMA11F25 FFMP 5.0μm Imager Size 1 1/1.8 1/2

	Imager Size	1	Operation	Focus Iris	Manual with Lock
	Mount Type	C			Manual with Lock
	Focal Length	25mm	Filter Size	M46 P=0.75mm	
	Aperture Range	F/1.6 - 22	Overall Length	75.6mm	
	Focus Range	0.2m - ∞	Weight	260g	
Field of View Angle (Horizontal - Vertical)	1	29.1° × 21.9°	Remarks		
	1/2	14.7° × 11.7°			



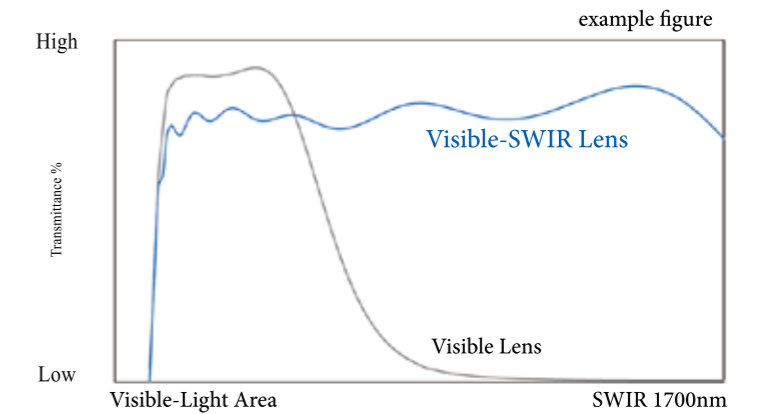
SWIR Lenses

Fixed-Focal Lenses

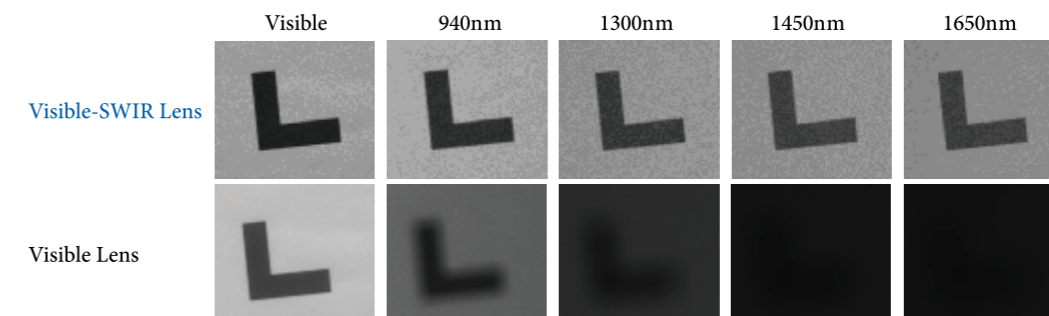
< Industrial Lenses for Various Industry Applications including Food, Agriculture, and Science >
 Tamron SWIR lenses Covering a Wide Spectral Band from Visible-Light to SWIR(Shortwave IR) Band

1. Industry-Leading Spectrum Transmittance (Visible-Light ~ SWIR Band) Tamron' New Proprietary Lens Coating Technology

Visible lenses are optimized to maximize the spectral transmittance in the visible-light band, and images in the SWIR band can be affected by insufficient transmittance, often resulting in defocused artifacts in image quality. Tamron has developed a new optical technology and lens coating technology that makes lenses compatible with a broadband-spectrum band covering the visible-light and the SWIR band.

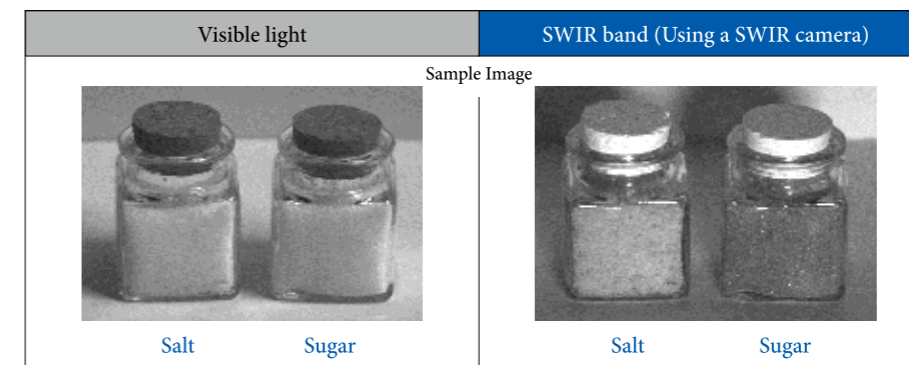


2. Significant Reduction of Focus-Shift in between the Visible-Light and the SWIR Bands (~1700nm)



Tamron SWIR Lenses feature high spectral transmittance over a wide band from the visible-light to the SWIR bands while the focus-shift is suppressed to an absolute minimum over the entire band.

3. Sample Image



Accessories

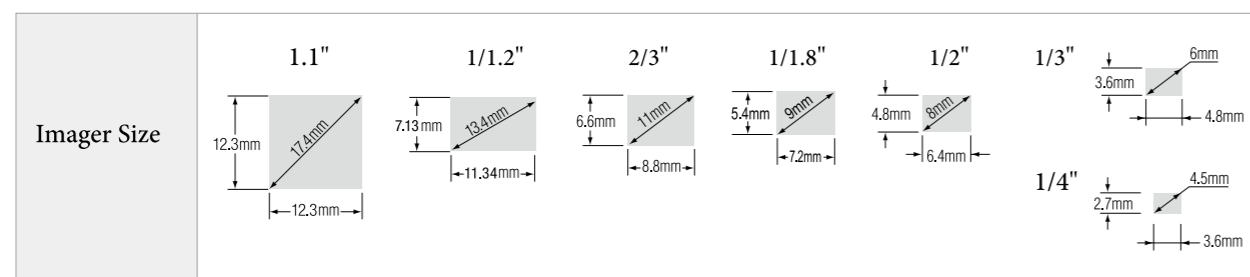
Special Accessories for Machine Vision Lenses

Extension Ring	MR-SET	7 Sets (0.5mm, 1mm, 2mm, 5mm, 10mm, 20mm, 40mm)
Filter for Protection	25.5-NO	Ø25.5mm
	30.5-NO	Ø30.5mm
	35.5-NO	Ø35.5mm
Polarizer Filter	25.5-PL	Ø25.5mm
	30.5-PL	Ø30.5mm
	35.5-PL	Ø35.5mm

Special Accessories for Security Lenses

C-CS Convert Adapter	C-CS Adapter
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Remarks



- 1.1" lenses can also be used with 1.1", 1", 1/1.2", 2/3", 1/1.8", 1/2", 1/2.5", 1/2.7", 1/2.8", 1/3" & 1/4" Imager cameras.
- 1/1.2" lenses can also be used with 2/3", 1/1.8", 1/2", 1/2.5", 1/2.7", 1/2.8", 1/3" & 1/4" Imager cameras.
- 2/3" lenses can also be used with 1/1.8", 1/2", 1/2.5", 1/2.7", 1/2.8", 1/3" & 1/4" Imager cameras.
- 1/1.8" lenses can also be used with 1/2", 1/2.5", 1/2.7", 1/2.8", 1/3" & 1/4" Imager cameras.
- 1/2" lenses can also be used with 1/2.5", 1/2.7", 1/2.8", 1/3" & 1/4" Imager cameras.
- 1/3" lenses can also be used with 1/4" Imager cameras.
- When you fit C-Mount lenses with CS-Mount cameras, please use the C-CS adapter.
- The "Field of View Angle" in the data sheets shows the data when the lens is used with a camera with the indicated imager size. When other cameras with different imager sizes are used, please refer to the following datum:

1.1" Lens	1/1.2" Camera	0.77× against the Specified Angle of View
	2/3" Camera	0.63× against the Specified Angle of View
	1/2" Camera	0.46× against the Specified Angle of View
	1/3" Camera	0.34× against the Specified Angle of View
1/1.2" Lens	1/4" Camera	0.26× against the Specified Angle of View
	2/3" Camera	0.82× against the Specified Angle of View
	1/2" Camera	0.6× against the Specified Angle of View
	1/3" Camera	0.45× against the Specified Angle of View
1/4" Camera	1/3" Camera	0.34× against the Specified Angle of View
	1/4" Camera	0.26× against the Specified Angle of View

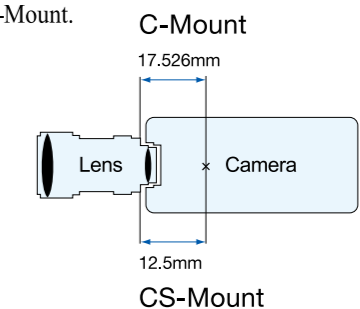
2/3" Lens	1/2" Camera	0.73× against the Specified Angle of View
	1/3" Camera	0.55× against the Specified Angle of View
1/1.8" Lens	1/4" Camera	0.41× against the Specified Angle of View
	1/2" Camera	0.89× against the Specified Angle of View
1/1.8" Lens	1/3" Camera	0.67× against the Specified Angle of View
	1/4" Camera	0.5× against the Specified Angle of View
1/2" Lens	1/3" Camera	0.75× against the Specified Angle of View
	1/4" Camera	0.56× against the Specified Angle of View
1/3" Lens	1/4" Camera	0.75× against the Specified Angle of View

Terminology Explanation

Mount Type

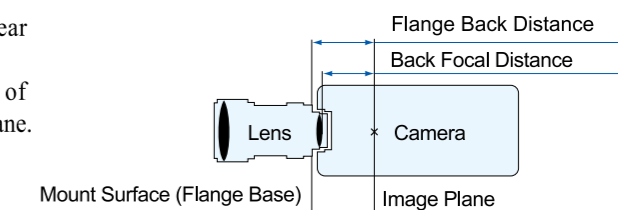
Correspond to the standard mount type of the camera which may be either C-Mount or CS-Mount. The characteristics are as follows.

Flange Back Distance	C-Mount	17.526mm
	CS-Mount	12.5mm



Flange Back Distance & Back Focal Distance

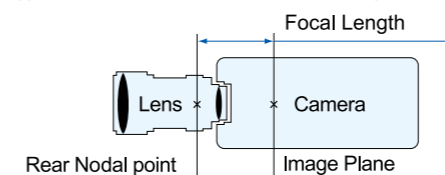
- Flange Back Distance: Distance between the mechanical rear end of the mount surface and the image plane.
- Back Focal Distance: Distance between the physical end of the lens element (side closest to the camera) and the image plane.



Focal Length

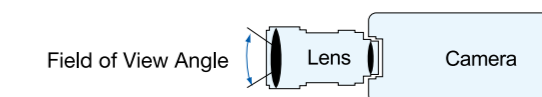
Distance between the rear nodal point and the focal point (Image Plane) on the optical axis.

*The smaller number, the wider the field of view angle.
The bigger number, the narrower the field of view angle.



Field of View Angle

Angle of the captured image as it relates to the given image size. Field-of-view angle will vary, even when using the same lens, depending on the imager size of the camera in use. Details can be found in this catalog.



Aperture Range

The F-number is used to indicate the speed of the lens from full open aperture to minimum aperture. The F-number is calculated using the following formula:

$$F/No. = \frac{\text{Focal Length}}{\text{Effective Diameter of the lens}}$$

*Smaller F-numbers equal faster/brighter lenses.

Focusing Range

Indicate the shooting range from the Minimum Object Distance (MOD) to infinity. Generally, the range is measured from the physical end of the lens to the object.

About the Tamron IP / CCTV Lens WEB SITE <http://www.tamron.biz/>

- Latest news concerning new IP/CCTV lens models and trading shows.
- Download the catalog (PDF), specification sheets (PDF).
- Get technical information and news about discontinued products.