

TAMRON®

Fine Technology

ADVANCED CCTV LENSES

Vari-Focal Lenses
Motorized Zoom Lenses
Fixed-Focal Lenses
Mega-Pixel High Resolution Lenses
Super High Resolution Lens
High Resolution Lenses
Accessories



Vision With Precision



Day to Night Solution
TAMRON IR LENSES

US

A Half Century of Innovation and Achievement,
Tamron the Pioneer of the Vari-Focal Lens

Empowered by fifty years of optical expertise,
Tamron proceeds to open new horizons that change the concept of industrial optics,
Concentrating on meeting the demands of professionals in the field,
Tamron pioneered the Vari-Focal lens design and continues to research
new technologies in order to bring to market lenses that are compact and
lightweight, high performance and high quality.



Contents	02
Products and Features	03
Model Explanation	05
General Specifications	06
Vari-Focal Lenses (Manual Iris)	09
Vari-Focal Lenses (Manual Iris / IR Corrected)	11
Vari-Focal Lenses (DC Auto Iris)	12
Vari-Focal Lenses (DC Auto Iris / IR Corrected)	14
Vari-Focal Lenses (Video Auto Iris)	15
Vari-Focal Lenses for Micro Camera	18
Motorized Zoom Lenses (Motorized Iris)	19
Motorized Zoom Lenses (DC Auto Iris)	22
Motorized Zoom Lenses (Video Auto Iris)	23
Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom	26
Fixed-Focal Lenses (Manual Iris)	29
Fixed-Focal Lenses (Manual Iris / IR Corrected)	32
Fixed-Focal Lenses (DC Auto Iris)	33
Fixed-Focal Lenses (DC Auto Iris / IR Corrected)	36
Fixed-Focal Lenses (Video Auto Iris)	38
Mega-Pixel High Resolution Lenses / Super High Resolution Lens	43
High Resolution Lenses	44
Accessories	48
Terminology Explanation	49

Products and Features

Products and Features

Vari-Focal Lenses

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



Abundant Lens Line-up

Practically any application can be handled by Tamron's wide selection of 1/3" format lenses that range from an ultra-wideangle 2.8mm, which provides a 97° angle of view, to a 50mm ultra telephoto lens with a 4° angle of view.

Outstanding Image Quality through the Employment of Aspherical Elements

The main Tamron Vari-Focal lenses for the 1/3" format use aspherical elements in order to achieve high resolution and high contrast performance over the entire focal length range. The designers paid particular attention to peripheral image quality in light of the increasing use of these lenses with digital recorders that require image degradation in the periphery be at an absolute minimum. The use of aspherical elements also contributes to the compact design of the Vari-Focal lenses for which Tamron is well known.

■ Compensation effect with an aspherical lens element (Schematic Illustration)

● Compensation for Spherical Aberration



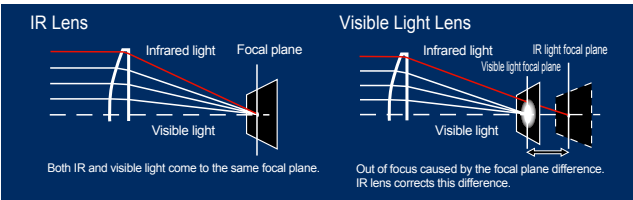
Wide Dynamic Range

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 with Day/Night Cameras

The 2.8-11mm Vari-Focal lens for the 1/3" format is designed to minimize focus shift in the near infrared range by expanding chromatic aberration compensation to include both daylight and the near infrared ranges. The lens therefore exhibits its power in 24-hour around-the-clock surveillance when combined with a day/night camera.



Super High Resolution Fixed-Focal Lenses for Industrial Applications

for Machine Vision / Factory Automation applications

Tamron's high resolution line-up of lenses are 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.

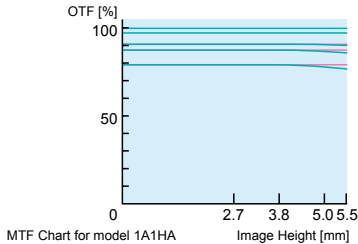


Minimized Distortion

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 fixed-focal lenses provide stabilized 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 Factory Automation apparatus where lenses are built in, Tamron's fixed-focal lenses all feature solid and robust mechanisms. This makes it possible to maintain their finest initial performance even after long periods of use.

Locking Mechanisms

Each of the lenses are 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 machines, all of the lenses in each series provide compact chassis and the external dimensions and filter sizes are unified.

Motorized Zoom Lenses

Tamron's motorized zoom lenses ranging from 10X to 20X are designed with durability and reliability in mind.



Fixed-Focal Lenses for Surveillance

A complete series of 37 models covering CCD formats from 1/3" to 2/3" are available.



Compatible with Day/Night Cameras

Tamron's 1/3" format 2.8mm, 4mm, 6mm and 8mm lenses are precisely compatible with day/night cameras since their chromatic aberration compensation is expanded to the near infrared range.

Products and Features

Model Explanation

Tamron CCTV lens model numbers are very simple.
Please see the following explanation of model number nomenclature.

Model Explanation

Model numbers

13 V M 2 8 1 2 A S I R

1 2 3 4

1 Imager Size

- 13 for 1/3" CCD Camera
Can also be used with 1/4" cameras
- 12 for 1/2" CCD Camera
Can also be used with 1/3" & 1/4" cameras
- 23 for 2/3" CCD Camera
Can also be used with 1/2", 1/3" & 1/4" cameras

2 Lens Type

- V Vari-Focal Lens
Compact size lens with variable focal lengths.
which allows flexibility and fine-tuning of
focal length in the field.
- F Fixed-Focal Lens
An array of specific focal lengths from which to choose
when the exact focal length needed is known.
- Z Zoom Lens
Useful when the lens is positioned in a remote area.

3 Iris Type

- M Manual Iris
Good for use under stable lighting conditions.
 - G DC Auto Iris (w/o Amp.)
 - A Video Auto Iris (w/ Amp.)
- Good for use when lighting conditions are not stable.
The iris type selection is dependent
upon the camera in use.

4 Focal Length

Designates the focal length range.

1) In the case of Vari-Focal lenses, the focal length of both the wide end
and the tele end are shown. (e.g., 286 stands for f=2.8~6mm)
2) In the case of Zoom lenses, the magnification and the focal length of
the wide end are shown. (e.g., 10X6 stands for f=6~60mm)

Mount Type

Please refer to the specification sheet.

General Specifications

Vari-Focal Lenses

Con-F Constant F-Number Asl Aspherical Lens IR Infrared

Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page
Manual Iris	2/3	23VM816	8~16mm	1.6~Close	Con-F	9
	1/2	12VM612	6~12mm	1.4~Close	Con-F	
	1/3	13VM286	2.8~6mm	1.2~Close	Con-F Asl	
		13VM550	5~50mm	1.4~Close	Asl	
		13VM2812AS	2.8~12mm	1.4~Close	Asl	10
		13VO35814	3.5~8mm	1.4	Con-F	
Manual Iris/ IR Corrected	1/3	13VM308AS	3.0~8mm	1.0~Close	Asl	11
		13VM2811ASIR	2.8~11mm	1.4~Close	Asl IR	
Auto Iris (DC)	1/2	12VG612-SQ	6~12mm	1.4~Close	Con-F	12
	1/3	13VG286-SQ	2.8~6mm	1.2~64	Con-F Asl	
		13VG550-SQ	5~50mm	1.4~185	Asl	
		13VG2812AS-SQ	2.8~12mm	1.4~360	Asl	13
		13VG308AS-SQ	3.0~8mm	1.0~360	Asl	
Auto Iris (DC/IR Corrected)	1/3	13VG308ASIR-SQ	3.0~8mm	1.0~360	Asl IR	14
		13VG2811ASIR-SQ	2.8~11mm	1.4~360	Asl IR	
Auto Iris (Video)	2/3	23VA816-SQ	8~16mm	1.6~Close	Con-F	15
	1/2	12VA612-SQ	6~12mm	1.4~Close	Con-F	
	1/3	13VA286-SQ	2.8~6mm	1.2~64	Con-F Asl	16
		13VA550-SQ	5~50mm	1.4~185	Asl	
		13VA2812AS-SQ	2.8~12mm	1.4~360	Asl	17
		13VA308AS-SQ	3.0~8mm	1.0~360	Asl	
Manual Iris	1/3	13MVM612	6~12mm	3~29 (Wide)	for Micro Camera	18

Motorized Zoom Lenses

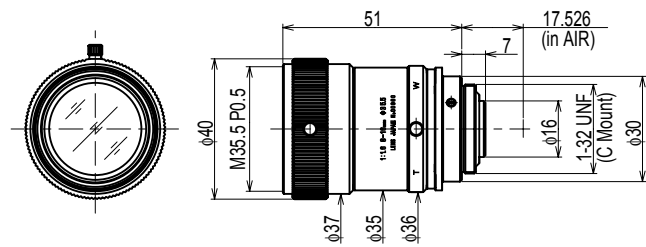
Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page
Motorized Iris	1/2	12PZM10X8	8~80mm	1.8~360		19
		12PZM15X8	8~120mm	1.8~360		
	1/3	13PZM10X6	6~60mm	1.4~360		20
		13PZM15X6	6~90mm	1.6~360		
Auto Iris (DC)	1/2	12PZM20X56	5.6~112mm	1.6~360		21
		12PZG10X8C	8~80mm	1.8~360		22
Auto Iris (Video)	1/3	13PZG10X6C	6~60mm	1.4~360		
		12PZA10X8C	8~80mm	1.8~360		23
	1/2	12PZA15X8	8~120mm	1.8~360		
		13PZA10X6C	6~60mm	1.4~360		24
		13PZA15X6	6~90mm	1.6~360		
	1/3	13PZA20X56	5.6~112mm	1.6~360		25
		12PZP10X8	8~80mm	1.8~360	w/Presets for Focus/Zoom	26
		12PZP15X8	8~120mm	1.8~360	w/Presets for Focus/Zoom	
	1/2	13PZP10X6	6~60mm	1.4~360	w/Presets for Focus/Zoom	27
		13PZP15X6	6~90mm	1.6~360	w/Presets for Focus/Zoom	
		13PZP20X56	5.6~112mm	1.6~360	w/Presets for Focus/Zoom	

	General Specifications								
General Specifications	Fixed Focal Lenses			IR Infrared					
	Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page		
	Manual Iris	2/3	23FO45	4.5mm	2.0		29		
			23FM08	8mm	1.4~Close				
			23FM16	16mm	1.4~Close				
		1/2	12FM35	3.5mm	1.4~Close		30		
			12FM45	4.5mm	1.4~Close				
			12FM06	6mm	1.4~Close				
			12FM12	12mm	1.4~Close				
			12FM04T	4mm	1.4~Close		31		
			12FM06T	6mm	1.4~Close				
			12FM12T	12mm	1.4~Close				
		Manual Iris/ IR Corrected	1/3	13FM28IR	2.8mm	1.2~Close	IR	32	
				13FM04IR	4mm	1.2~Close	IR		
	13FM06IR			6mm	1.2~Close	IR			
	13FM08IR			8mm	1.2~Close	IR			
	Auto Iris (DC)	1/2	12FG35-SQ	3.5mm	1.4~360		33		
			12FG45-SQ	4.5mm	1.4~360				
			12FG06-SQ	6mm	1.4~360				
			12FG12-SQ	12mm	1.4~360		34		
			12FG04T-SQ	4mm	1.4~150		35		
			12FG06T-SQ	6mm	1.4~150				
			12FG12T-SQ	12mm	1.4~200				
			Auto Iris (DC/IR Corrected)	1/3	13FG28IR-SQ	2.8mm		1.2~360	IR
	13FG04IR-SQ	4mm			1.2~360	IR			
	13FG06IR-SQ	6mm			1.2~360	IR			
	13FG08IR-SQ	8mm			1.2~360	IR	37		
	Auto Iris (Video)	2/3			23FA08-SQ	8mm	1.4~360		38
			23FA16-SQ	16mm	1.4~360				
		1/2	12FA35-SQ	3.5mm	1.4~360		39		
			12FA45-SQ	4.5mm	1.4~360				
			12FA06-SQ	6mm	1.4~360			40	
			12FA12-SQ	12mm	1.4~360				
			12FA04T-SQ	4mm	1.4~150		41		
			12FA06T-SQ	6mm	1.4~150				
			12FA12T-SQ	12mm	1.4~200				
		1/3	13FA28T-SQ	2.8mm	1.4~125		42		
			13FA04T-SQ	4mm	1.2~125				
			13FA08T-SQ	8mm	1.2~150				
	07 ADVANCED CCTV LENSES TAMRON								

General Specifications								
Mega-Pixel High Resolution Lenses								
Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page		
Manual Iris	2/3	23FM16SP	16mm	1.4~22	w/Lock screw	43		
		23FM25SP	25mm	1.4~22	w/Lock screw			
		23FM50SP	50mm	2.8~32	w/Lock screw			
Super High Resolution Lens								
Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page		
Manual Iris	2/3	26HA	25mm	1.4~Close		43		
High Resolution Lenses								
Iris Type	Imager Size	Model No.	Focal Length	Aperture Range	Remarks	Page		
Manual Iris	2/3	23FM65L	6.5mm	1.8~Close	w/Lock screw	44		
		23FM08	8mm	1.4~16				
		23FM08L	8mm	1.4~16	w/Lock screw	45		
		23FM12	12mm	1.8~16				
		23FM12L	12mm	1.8~16	w/Lock screw			
		23FM16	16mm	1.4~16				
		23FM16L	16mm	1.4~16	w/Lock screw	46		
		23FM25	25mm	1.6~16				
		23FM25L	25mm	1.6~16	w/Lock screw			
		23FM35L	35mm	2.1~22	w/Lock screw	47		
		23FM50	50mm	2.8~22				
		23FM50L	50mm	2.8~22	w/Lock screw			
		23FM75	75mm	3.9~32				
		23FM75L	75mm	3.9~32	w/Lock screw			
Accessories								
					Model No.	Page		
Optional Accessories for High Resolution Lenses					Extension Ring	EX-10	48	
					Filter (φ25.5mm) Filter (φ35.5mm)	UV		
						PL		
						R2		
						PO1		
Standard Accessories					80B			
					C-CS Adapter			
					Filter (φ30.5mm) Filter (φ37.5mm)	UV PL		

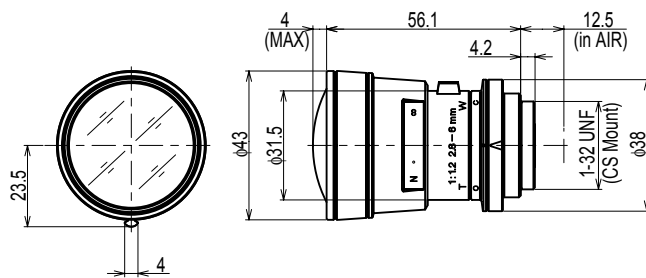
Vari-Focal Lenses (Manual Iris)

23VM816



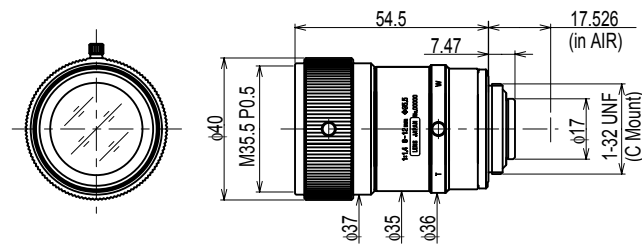
Imager Size		2/3
Mount Type		C
Focal Length		8 ~ 16mm
Aperture Range		1.6 ~ Close
Angle of View (Horizontal X Vertical)	2/3 Wide Tele	59.8° X 45.3° 30.8° X 23.6°
	1/2 Wide Tele	44.0° X 33.2° 22.9° X 17.3°
	1/3 Wide Tele	33.2° X 24.9° 17.3° X 13.1°
	1/4 Wide Tele	24.9° X 18.7° 13.0° X 9.8°
Focusing Range		0.93m ~ ∞
Operation	Focus	Manual w/Lock
	Zoom	Manual w/Lock
	Iris	Manual
Filter Size		M35.5 P=0.5mm
Back Focus (in air)		10.89mm
Weight		96g
Operating Temperature		-8 ~ +48°C

13VM286



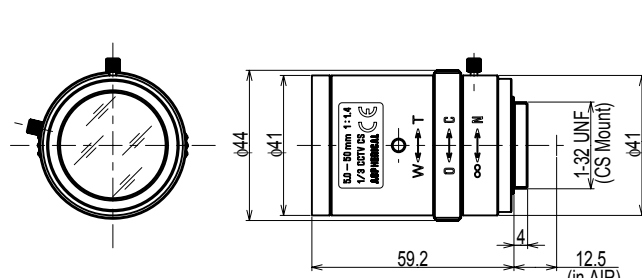
Imager Size			1/3
Mount Type			C S
Focal Length			2.8 ~ 6mm
Aperture Range			1.2 ~ Close
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	88.7° X 69.2° 44.2° X 34.0°
	1/4	Wide Tele	69.1° X 52.8° 34.0° X 25.9°
Focusing Range			0.3m ~ ∞
Operation	Focus		Manual
	Zoom		Manual
	Iris		Manual
Filter Size			—
Back Focus (in air)			8.54mm
Weight			80g
Operating Temperature			-10 ~ +70°C

12VM612



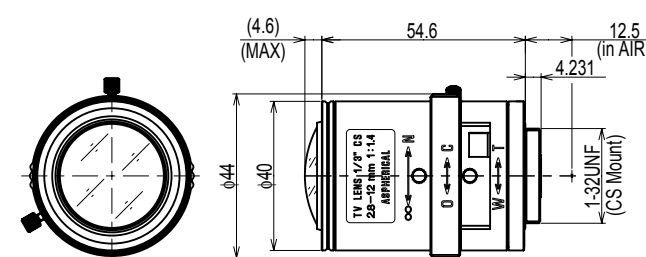
Imager Size			1/2
Mount Type			C
Focal Length			6 ~ 12mm
Aperture Range			1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/2	Wide Tele	58.7° X 44.4° 30.4° X 23.1°
	1/3	Wide Tele	44.4° X 33.4° 23.1° X 17.5°
	1/4	Wide Tele	33.4° X 25.1° 17.4° X 13.1°
Focusing Range			0.23m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Manual
Filter Size			M35.5 P=0.5mm
Back Focus (in air)			10.4mm
Weight			105g
Operating Temperature			-5 ~ +50°C

13VM550



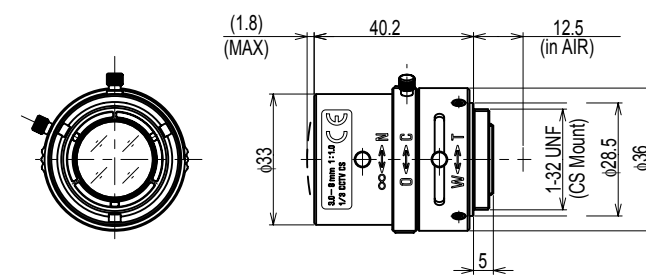
Imager Size			1/3
Mount Type			C S
Focal Length			5 ~ 50mm
Aperture Range			1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	53.6° X 40.2° 5.5° X 4.2°
	1/4	Wide Tele	40.2° X 30.1° 4.1° X 3.1°
Focusing Range		Wide Tele	0.3m ~ ∞ 1.0m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Manual
Filter Size			—
Back Focus (in air)			10.05mm
Weight			84g
Operating Temperature			-10 ~ +60°C

13VM2812AS



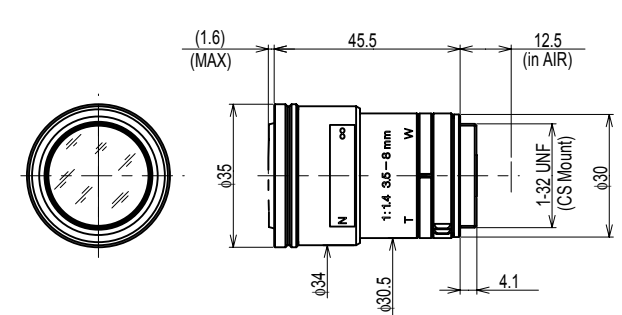
Imager Size			1/3
Mount Type			C S
Focal Length			2.8 ~ 12mm
Aperture Range			1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	97.4° X 72.5° 24.1° X 18.1°
	1/4	Wide Tele	72.5° X 54.1° 18.1° X 13.6°
Focusing Range			0.3m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Manual w/Lock
Filter Size			—
Back Focus (in air)			wide8.61 ~ Tele19.90mm
Weight			72g
Operating Temperature			-10 ~ +50°C

13VM308AS



Imager Size			1/3
Mount Type			C S
Focal Length			3.0 ~ 8mm
Aperture Range			1.0 ~ Close
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	91.0° X 66.6° 35.9° X 26.9°
	1/4	Wide Tele	66.6° X 49.3° 26.9° X 20.1°
Focusing Range			0.2m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Manual w/Lock
Filter Size			—
Back Focus (in air)			8.36 ~ 14.12mm
Weight			39g
Operating Temperature			-20 ~ +60°C

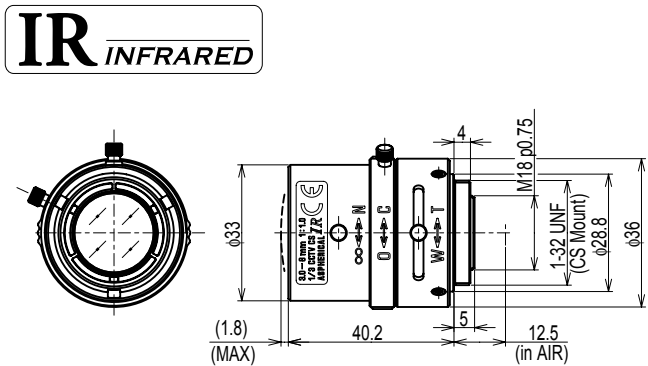
13V035814



Imager Size			1/3
Mount Type			C S
Focal Length			3.5 ~ 8mm
Aperture Range			1.4
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	73.4° X 55.7° 34.3° X 26.3°
	1/4	Wide Tele	55.7° X 41.9° 26.2° X 19.9°
Focusing Range			0.3m ~ ∞
Operation	Focus		Manual
	Zoom		Manual
	Iris		Fixed
Filter Size			—
Back Focus (in air)			8.79mm
Weight			48g
Operating Temperature			-5 ~ +50°C

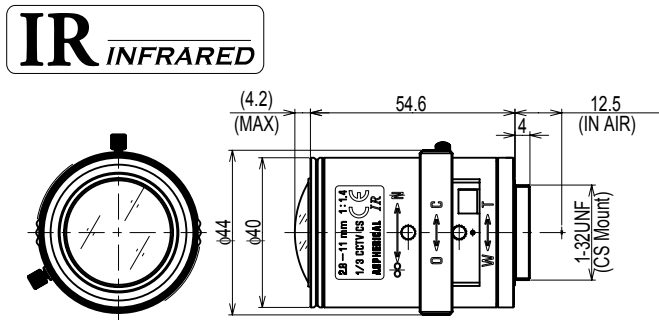
Vari-Focal Lenses (Manual Iris/IR Corrected)

13VM308ASIR



Imager Size	1/3
Mount Type	C S
Focal Length	3.0 ~ 8mm
Aperture Range	1.0 ~ Close
Angle of View (Horizontal X Vertical)	1/3 Wide Tele 90.8° X 66.6° 36.2° X 27.0° 1/4 Wide Tele 66.6° X 49.3° 27.0° X 20.2°
Focusing Range	0.2m ~ ∞
Operation	Focus Manual w/Lock Zoom Manual w/Lock Iris Manual w/Lock
Filter Size	—
Back Focus (in air)	8.36 ~ 14.12mm
Weight	38g
Operating Temperature	-20 ~ +60°C

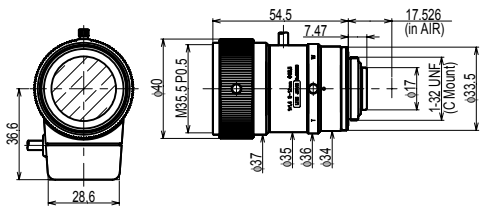
13VM2811ASIR



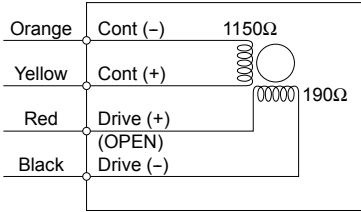
Imager Size	1/3
Mount Type	C S
Focal Length	2.8 ~ 11mm
Aperture Range	1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/3 Wide Tele 97.4° X 72.4° 26.2° X 19.7° 1/4 Wide Tele 72.4° X 54.0° 19.7° X 14.7°
Focusing Range	0.3m ~ ∞
Operation	Focus Manual w/Lock Zoom Manual w/Lock Iris Manual w/Lock
Filter Size	—
Back Focus (in air)	8.66 ~ 18.69mm
Weight	72g
Operating Temperature	-20 ~ +60°C

Vari-Focal Lenses (DC Auto Iris)

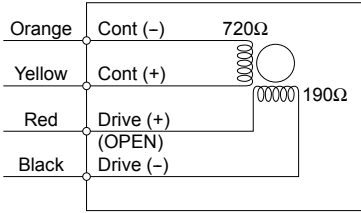
12VG612-SQ



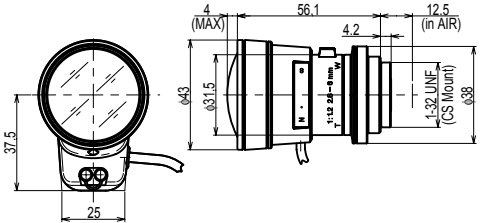
Imager Size	1/2
Mount Type	C
Focal Length	6 ~ 12mm
Aperture Range	1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/2 Wide Tele 58.7° X 44.4° 30.4° X 23.1° 1/3 Wide Tele 44.4° X 33.4° 23.1° X 17.5° 1/4 Wide Tele 33.4° X 25.1° 17.4° X 13.1°
Focusing Range	0.23m ~ ∞
Operation	Focus Manual w/Lock Zoom Manual w/Lock Iris Auto Iris (DC)
Filter Size	M35.5 P=0.5mm
Back Focus (in air)	10.4mm
Operating Voltage	Open 4.5V Close 0.5V
Weight	110g
Operating Temperature	-5 ~ +50°C
Wiring Diagram (12VG612-SQ)	



Wiring Diagram (13VG286-SQ) (13VG550-SQ)

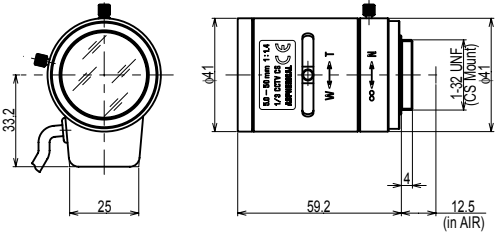


13VG286-SQ



Imager Size	1/3
Mount Type	C S
Focal Length	2.8 ~ 6mm
Aperture Range	1.2 ~ 64
Angle of View (Horizontal X Vertical)	1/3 Wide Tele 88.7° X 69.2° 44.2° X 34.0° 1/4 Wide Tele 69.1° X 52.8° 34.0° X 25.9°
Focusing Range	0.3m ~ ∞
Operation	Focus Manual Zoom Manual Iris Auto Iris (DC)
Filter Size	—
Back Focus (in air)	8.54mm
Operating Voltage	Open 4.0V Close 0.5V
Weight	100g
Operating Temperature	-10 ~ +70°C

13VG550-SQ



Imager Size	1/3
Mount Type	C S
Focal Length	5 ~ 50mm
Aperture Range	1.4 ~ 185
Angle of View (Horizontal X Vertical)	1/3 Wide Tele 53.6° X 40.2° 5.5° X 4.2° 1/4 Wide Tele 40.2° X 30.1° 4.1° X 3.1°
Focusing Range	Wide Tele 0.3m ~ ∞ 1.0m ~ ∞
Operation	Focus Manual w/Lock Zoom Manual w/Lock Iris Auto Iris (DC)
Filter Size	—
Back Focus (in air)	Wide 10.05mm
Operating Voltage	Open 4.0V Close 0.5V
Weight	95g
Operating Temperature	-10 ~ +60°C

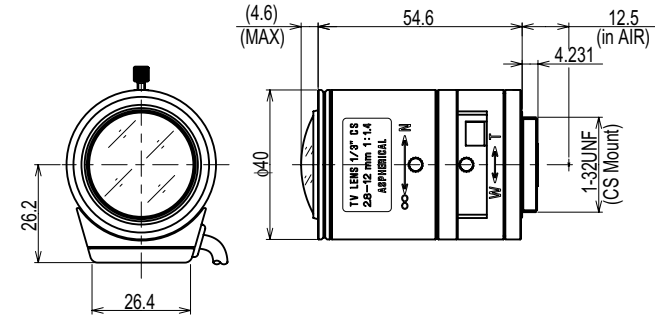
Vari-Focal Lenses (DC Auto Iris)

Vari-Focal Lenses (DC Auto Iris/IR Corrected)

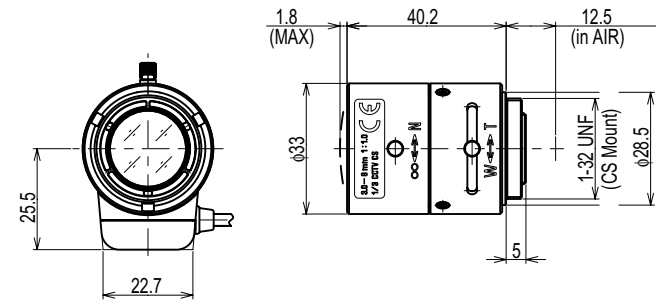
Vari-Focal Lenses (DC Auto Iris)

Vari-Focal Lenses (DC Auto Iris / IR Corrected)

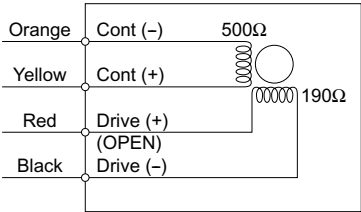
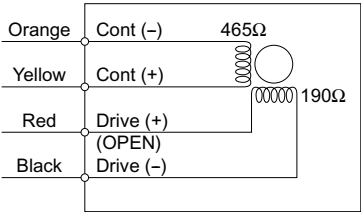
13VG2812AS-SQ



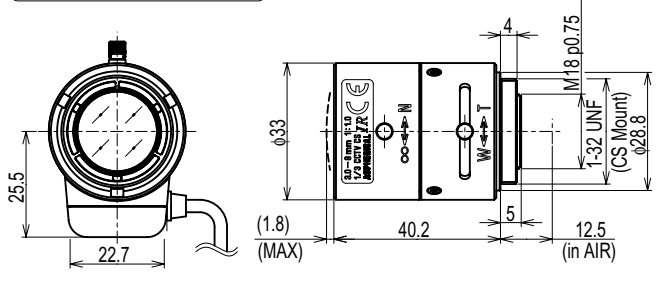
13VG308AS-SQ



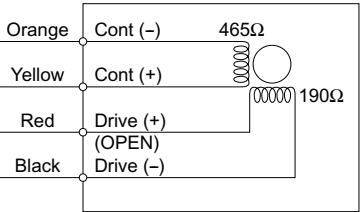
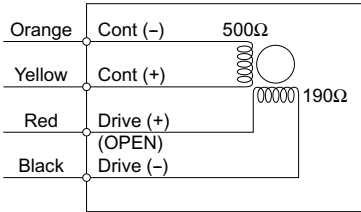
Imager Size			1/3	Imager Size			1/3
Mount Type			C S	Mount Type			C S
Focal Length			2.8 ~ 12mm	Focal Length			3.0 ~ 8mm
Aperture Range			1.4 ~ 360	Aperture Range			1.0 ~ 360
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	97.4° X 72.5° 24.1° X 18.1°	Angle of View (Horizontal X Vertical)	1/3	Wide Tele	91.0° X 66.6° 35.9° X 26.9°
	1/4	Wide Tele	72.5° X 54.1° 18.1° X 13.6°		1/4	Wide Tele	66.6° X 49.3° 26.9° X 20.1°
Focusing Range			0.3m ~ ∞	Focusing Range			0.2m ~ ∞
Operation	Focus		Manual w/Lock	Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock		Zoom		Manual w/Lock
	Iris		Auto Iris (DC)		Iris		Auto Iris (DC)
Filter Size			————	Filter Size			————
Back Focus (in air)			wide8.61 ~ Tele19.90mm	Back Focus (in air)			8.36 ~ 14.12mm
Operating Voltage			Open 4.0V Close 0.5V	Operating Voltage			Open 4.0V Close 0.5V
Weight			79g	Weight			47g
Operating Temperature			-10 ~ +50°C	Operating Temperature			-20 ~ +60°C
Wiring Diagram				Wiring Diagram			



13VG308ASIR-SQ

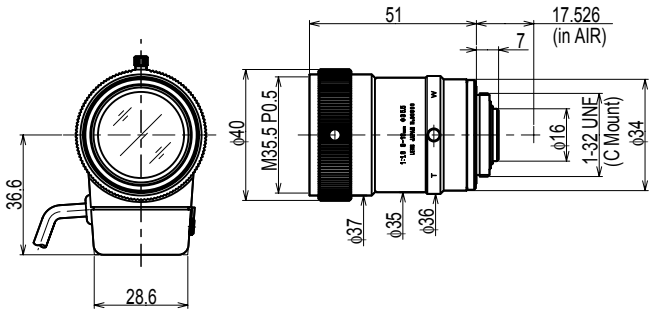


Imager Size			1/3	Imager Size			1/3
Mount Type			C S	Mount Type			C S
Focal Length			3.0 ~ 8mm	Focal Length			2.8 ~ 11mm
Aperture Range			1.0 ~ 360	Aperture Range			1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	90.8° X 66.6° 36.2° X 27.0°	Angle of View (Horizontal X Vertical)	1/3	Wide Tele	97.4° X 72.4° 26.2° X 19.7°
	1/4	Wide Tele	66.6° X 49.3° 27.0° X 20.2°		1/4	Wide Tele	72.4° X 54.0° 19.7° X 14.7°
Focusing Range			0.2m ~ ∞	Focusing Range			0.3m ~ ∞
Operation	Focus		Manual w/Lock	Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock		Zoom		Manual w/Lock
	Iris		Auto Iris (DC)		Iris		Auto Iris (DC)
Filter Size			————	Filter Size			————
Back Focus (in air)			8.36 ~ 14.12mm	Back Focus (in air)			8.66 ~ 18.69mm
Operating Voltage			Open 4.0V Close 0.5V	Operating Voltage			Open 4.0V Close 0.5V
Weight			46g	Weight			79g
Operating Temperature			-20 ~ +60°	Operating Temperature			-20 ~ +60°C
Wiring Diagram				Wiring Diagram			

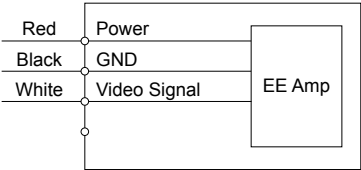


Vari-Focal Lenses (Video Auto Iris)

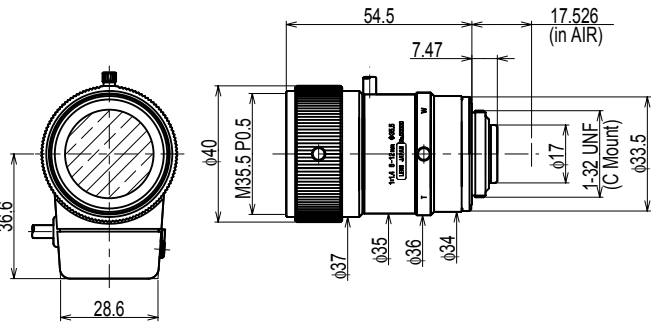
23VA816-SQ



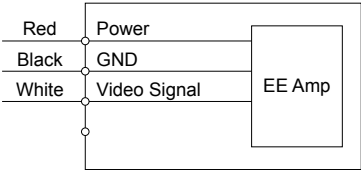
Imager Size			2/3
Mount Type			C
Focal Length			8 ~ 16mm
Aperture Range			1.6 ~ Close
Angle of View (Horizontal X Vertical)	2/3	Wide Tele	59.8° X 45.3° 30.8° X 23.6°
	1/2	Wide Tele	44.0° X 33.2° 22.9° X 17.3°
	1/3	Wide Tele	33.2° X 24.9° 17.3° X 13.1°
	1/4	Wide Tele	24.9° X 18.7° 13.0° X 9.8°
Focusing Range			0.93m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Auto Iris (Video)
Filter Size			M35.5 P=0.5mm
Back Focus (in air)			10.89mm
Input Power (Max. Power Consumption)			DC 8 ~ 13V (50mA)
Input Signal			VS or V signal
A.L.C.			Average~Peak
Weight			130g
Operating Temperature			-5 ~ +50°C
Wiring Diagram			



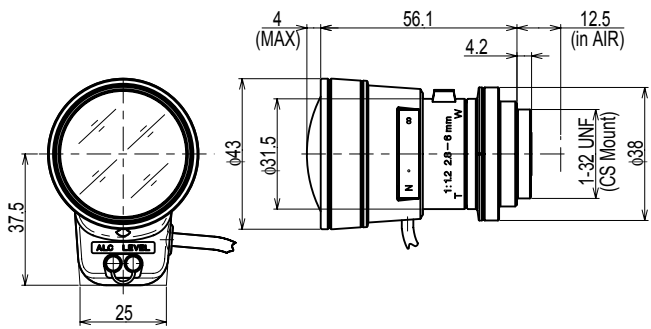
12VA612-SQ



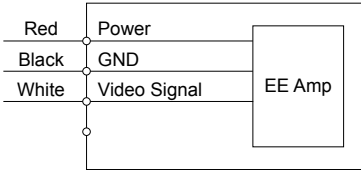
Imager Size			1/2
Mount Type			C
Focal Length			6 ~ 12mm
Aperture Range			1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/2	Wide Tele	58.7° X 44.4° 30.4° X 23.1°
	1/3	Wide Tele	44.4° X 33.4° 23.1° X 17.5°
	1/4	Wide Tele	33.4° X 25.1° 17.4° X 13.1°
Focusing Range			0.23m ~ ∞
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Auto Iris (Video)
Filter Size			M35.5 P=0.5mm
Back Focus (in air)			10.4mm
Input Power (Max. Power Consumption)			DC 8 ~ 13V (50mA)
Input Signal			VS or V signal
A.L.C.			Average~Peak
Weight			110g
Operating Temperature			-5 ~ +50°C
Wiring Diagram			



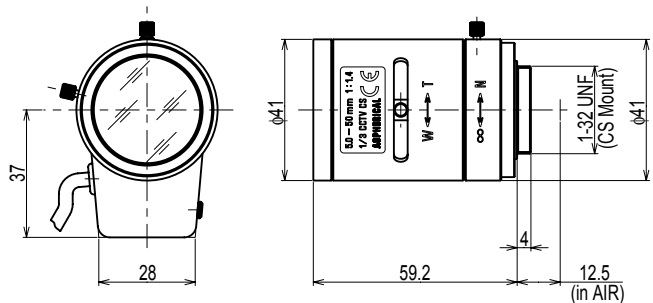
13VA286-SQ



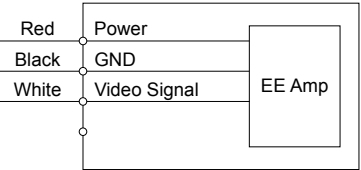
Imager Size			1/3
Mount Type			C S
Focal Length			2.8 ~ 6mm
Aperture Range			1.2 ~ 64
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	88.7° X 69.2° 44.2° X 34.0°
	1/4	Wide Tele	69.1° X 52.8° 34.0° X 25.9°
Focusing Range			0.3m ~ ∞
Operation	Focus		Manual
	Zoom		Manual
	Iris		Auto Iris (Video)
Filter Size			—
Back Focus (in air)			8.54mm
Input Power (Max. Power Consumption)			DC 5 ~ 15V (50mA)
Input Signal			VS or V signal
A.L.C.			Average~Peak
Weight			100g
Operating Temperature			-10 ~ +70°C
Wiring Diagram			



13VA550-SQ



Imager Size			1/3
Mount Type			C S
Focal Length			5 ~ 50mm
Aperture Range			1.4 ~ 185
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	53.6° X 40.2° 5.5° X 4.2°
	1/4	Wide Tele	40.2° X 30.1° 4.1° X 3.1°
Focusing Range		Wide Tele	0.3m ~ ∞ 1.0m ~ ∞
Operation		Focus	Manual w/Lock
		Zoom	Manual w/Lock
		Iris	Auto Iris (Video)
Filter Size			—————
Back Focus (in air)		Wide	10.05mm
Input Power (Max. Power Consumption)			DC 8.5 ~ 16V (50mA)
Input Signal			VS or V signal
A.L.C.			Average~Peak
Weight			101g
Operating Temperature			-10 ~ +60°C
Wiring Diagram			



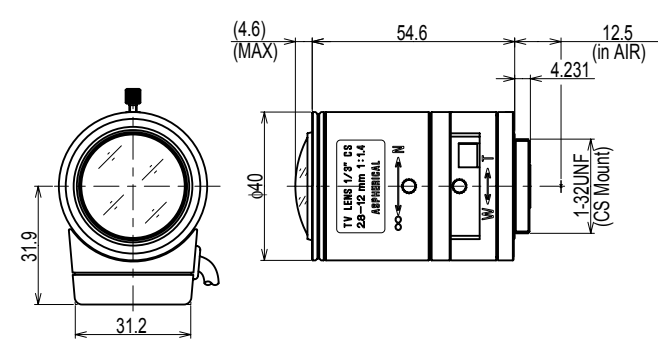
Vari-Focal Lenses (Video Auto Iris)

Vari-Focal Lenses (Video Auto Iris)

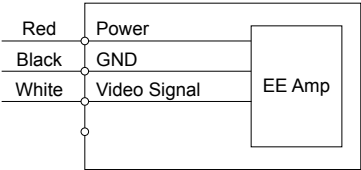
Vari-Focal Lenses (Video Auto Iris)

Vari-Focal Lenses for Micro Camera

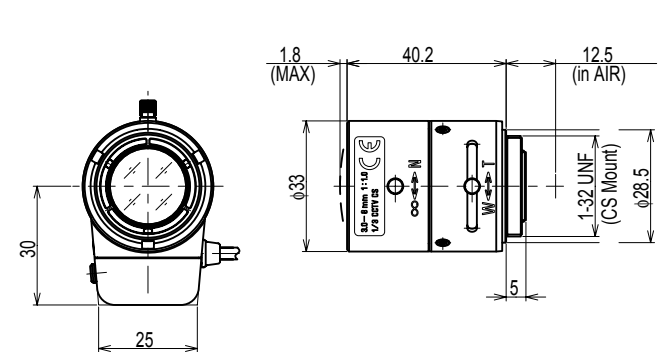
13VA2812AS-SQ



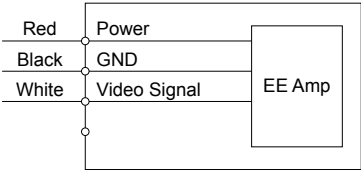
Imager Size		1/3	
Mount Type		C S	
Focal Length		2.8 ~ 12mm	
Aperture Range		1.4 ~ 360	
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	97.4° X 72.5° 24.1° X 18.1°
	1/4	Wide Tele	72.5° X 54.1° 18.1° X 13.6°
Focusing Range		0.3m ~ ∞	
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Auto Iris (Video)
Filter Size		—	
Back Focus (in air)		wide8.61 ~ Tele19.90mm	
Input Power (Max. Power Consumption)		DC 8.5 ~ 16V (50mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		82g	
Operating Temperature		-10 ~ +50°C	
Wiring Diagram			



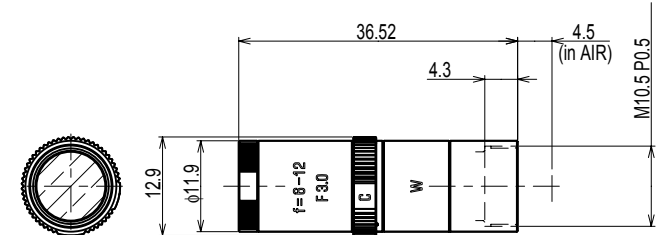
13VA308AS-SQ



Imager Size		1/3	
Mount Type		C S	
Focal Length		3.0 ~ 8mm	
Aperture Range		1.0 ~ 360	
Angle of View (Horizontal X Vertical)	1/3	Wide Tele	91.0° X 66.6° 35.9° X 26.9°
	1/4	Wide Tele	66.6° X 49.3° 26.9° X 20.1°
Focusing Range		0.2m ~ ∞	
Operation	Focus		Manual w/Lock
	Zoom		Manual w/Lock
	Iris		Auto Iris (Video)
Filter Size		—	
Back Focus (in air)		8.36 ~ 14.12mm	
Input Power (Max. Power Consumption)		DC 8.5 ~ 16V (50mA)	
Input Signal		VS or V signal	
Weight		50g	
Operating Temperature		-20 ~ +60°C	
Wiring Diagram			



13VMM612



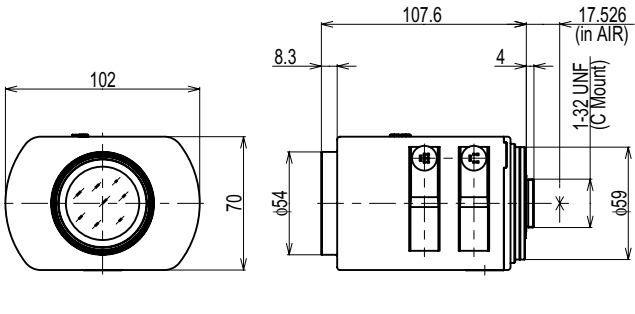
Imager		1/3	
Mount		M10.5 P=0.5mm	
Focal Length		6 ~ 12mm	
Aperture Range	Wide Tele		3 ~ 29 4.3 ~ 40
	1/3	Wide Tele	44.2° X 33.2° 23.2° X 17.4°
Angle of View (Horizontal X Vertical)	1/4	Wide Tele	33.2° X 24.9° 17.4° X 13.0°
Focusing Range		0.2m ~ ∞	
Operation	Focus		Manual
	Zoom		Manual
	Iris		Manual
Filter Size		—	
Back Focus (in air)	Wide Tele		9.37mm 13.71mm
Weight		6.7g	
Operating Temperature		-5 ~ +50°C	

Vari-Focal Lenses (Video Auto Iris)

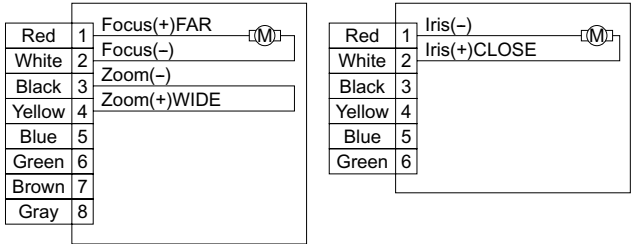
Vari-Focal Lenses for Micro Camera

Motorized Zoom Lenses (Motorized Iris)

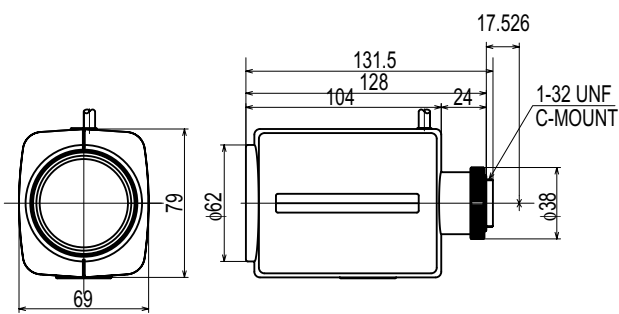
12PZM10×8



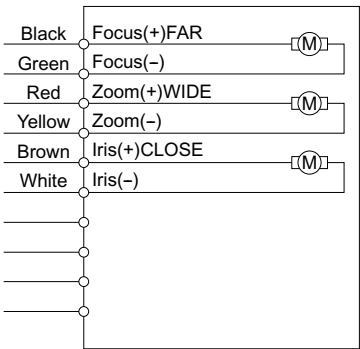
Imager Size		1/2	
Mount Type		C	
Focal Length		8 ~ 80mm	
Aperture Range		1.8 ~ 360	
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	44.1° X 33.2° 4.6° X 3.5°	
	1/3 Wide Tele	33.2° X 24.9° 3.5° X 2.6°	
	1/4 Wide Tele	24.9° X 18.7° 2.6° X 1.9°	
Focusing Range		1.17m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Motorized	
Filter Size		M52 P=0.75mm	
Back Focus (in air)		14.01mm	
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)	
	Zoom	DC 6V or 12V (47mA)	
	Iris	DC 6V or 12V (32mA)	
Weight		433g	
Operating Temperature		-5 ~ +50°C	
Wiring Diagram			



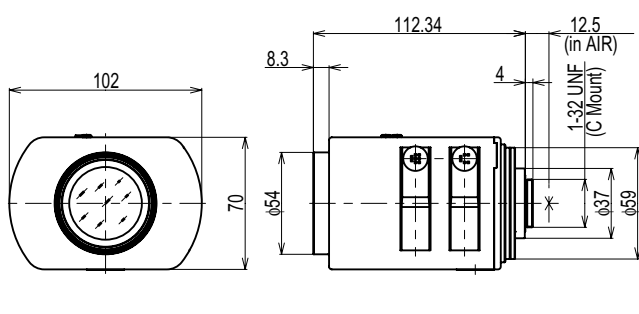
12PZM15×8



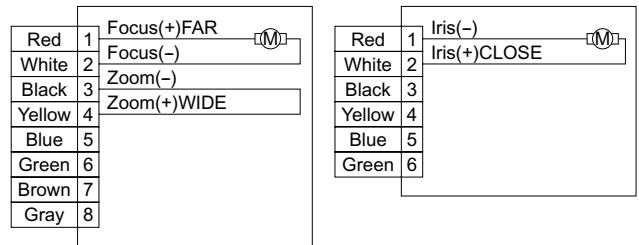
Imager Size		1/2	
Mount Type		C	
Focal Length		8 ~ 120mm	
Aperture Range		1.8 ~ 360	
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	43.6° X 33.0° 3.1° X 2.4°	
	1/3 Wide Tele	33.0° X 24.9° 2.4° X 1.8°	
	1/4 Wide Tele	25.4° X 19.0° 1.8° X 1.4°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Motorized	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		14.66mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
	Iris	DC 8V (60mA)	
Weight		550g	
Operating Temperature		-10 ~ +50°C	
Wiring Diagram			



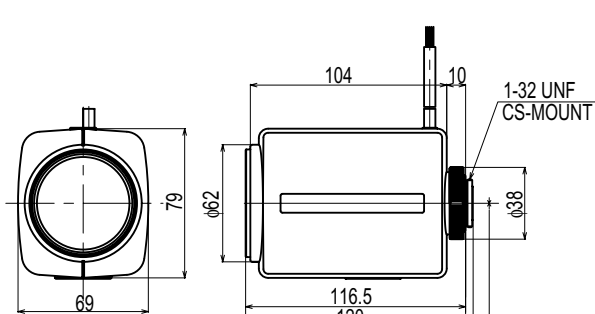
13PZM10×6



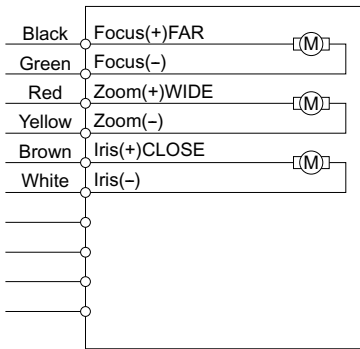
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 60mm	
Aperture Range		1.4 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	43.4° X 32.7° 4.5° X 3.4°	
	1/4 Wide Tele	32.6° X 24.5° 3.4° X 2.6°	
Focusing Range		1.17m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Motorized	
Filter Size		M52 P=0.75mm	
Back Focus (in air)		14.10mm	
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)	
	Zoom	DC 6V or 12V (47mA)	
	Iris	DC 6V or 12V (37mA)	
Weight		433g	
Operating Temperature		-5 ~ +50°C	
Wiring Diagram			



13PZM15×6



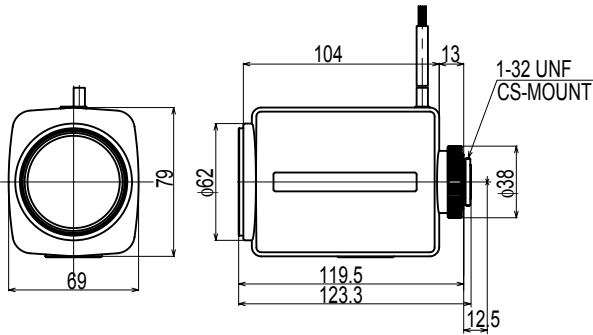
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 90mm	
Aperture Range		1.6 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	44.2° X 33.5° 3.1° X 2.4°	
	1/4 Wide Tele	34.2° X 25.7° 2.4° X 1.8°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Motorized	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		9.55mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
	Iris	DC 8V (60mA)	
Weight		530g	
Operating Temperature		-10 ~ +50°C	
Wiring Diagram			



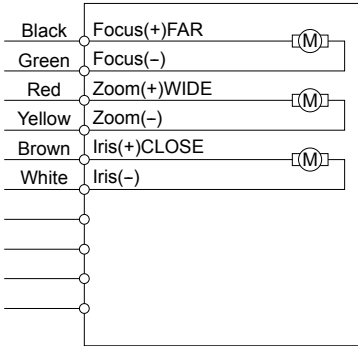
Motorized Zoom Lenses (Motorized Iris)

Motorized Zoom Lenses (DC Auto Iris)

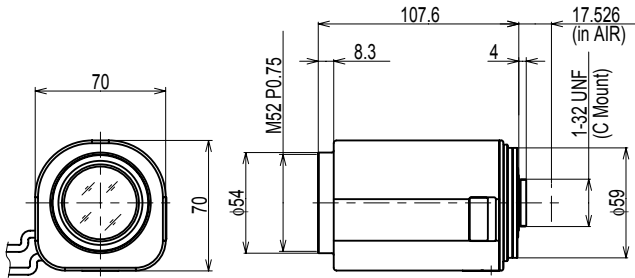
13PZM20×56



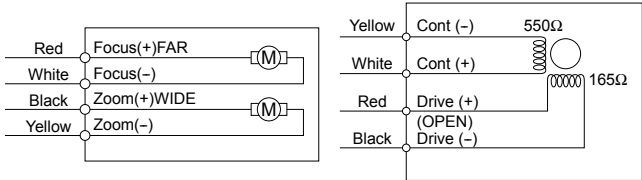
Imager Size		1/3
Mount Type		C S
Focal Length		5.6 ~ 112mm
Aperture Range		1.6 ~ 360
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	47.6° X 35.7° 2.6° X 1.9°
	1/4 Wide Tele	36.6° X 27.4° 2.0° X 1.5°
Focusing Range		1.5m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Motorized
Filter Size		M55 P=0.75mm
Back Focus (in air)		8.97mm
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)
	Zoom	DC 8V (60mA)
	Iris	DC 8V (60mA)
Weight		570g
Operating Temperature		-10 ~ +50°C
Wiring Diagram		



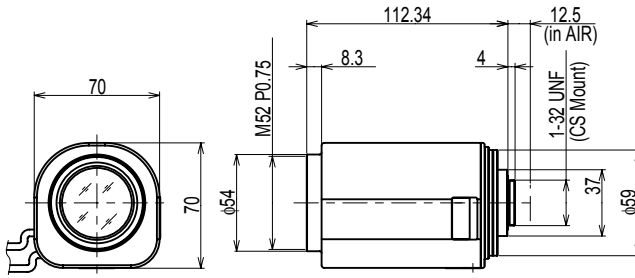
12PZG10×8C



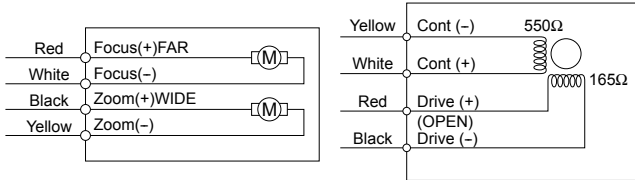
Imager Size		1/2
Mount Type		C
Focal Length		8 ~ 80mm
Aperture Range		1.8 ~ 360
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	44.1° X 33.2° 4.6° X 3.5°
	1/3 Wide Tele	33.2° X 24.9° 3.5° X 2.6°
	1/4 Wide Tele	24.9° X 18.7° 2.6° X 1.9°
Focusing Range		1.2m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Auto Iris (DC)
Filter Size		M52 P=0.75mm
Back Focus (in air)		14.01mm
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)
	Zoom	DC 6V or 12V (47mA)
Iris Operating Voltage		Open 4.0V Close 0V
Weight		380g
Operating Temperature		-5 ~ +50°C
Wiring Diagram		



13PZG10×6C

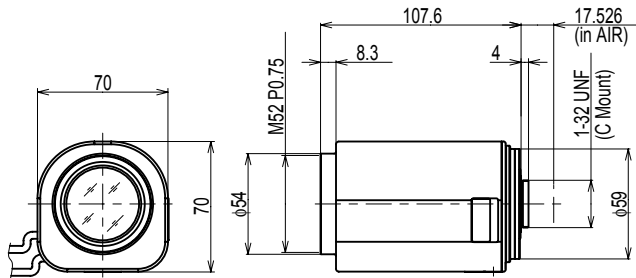


Imager Size		1/3
Mount Type		C S
Focal Length		6 ~ 60mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	43.4° X 32.7° 4.5° X 3.4°
	1/4 Wide Tele	32.6° X 24.5° 3.4° X 2.6°
Focusing Range		1.2m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Auto Iris (DC)
Filter Size		M52 P=0.75mm
Back Focus (in air)		14.10mm
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)
	Zoom	DC 6V or 12V (47mA)
Iris Operating Voltage		Open 4.0V Close 0V
Weight		380g
Operating Temperature		-5 ~ +50°C
Wiring Diagram		

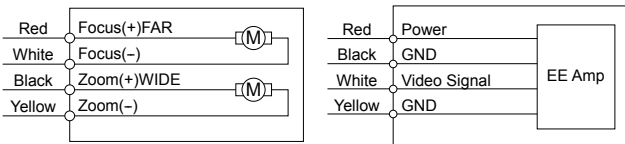


Motorized Zoom Lenses (Video Auto Iris)

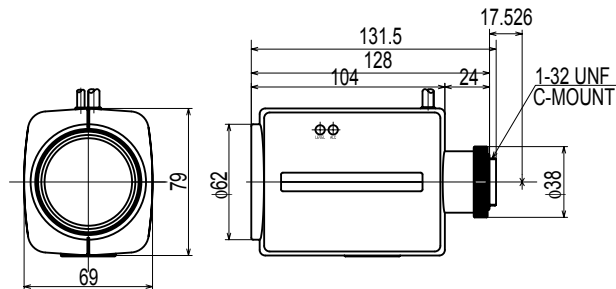
12PZA10×8C



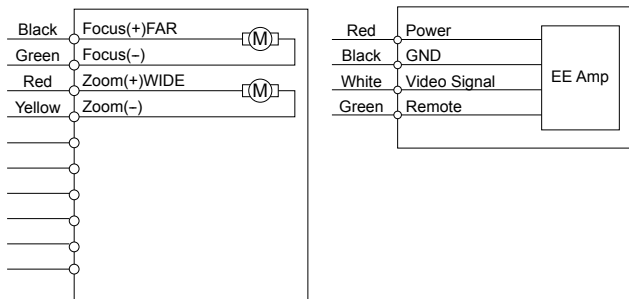
Imager Size		1/2	
Mount Type		C	
Focal Length		8 ~ 80mm	
Aperture Range		1.8 ~ 360	
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	44.1° X 33.2° 4.6° X 3.5°	
	1/3 Wide Tele	33.2° X 24.9° 3.5° X 2.6°	
	1/4 Wide Tele	24.9° X 18.7° 2.6° X 1.9°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M52 P=0.75mm	
Back Focus (in air)		14.01mm	
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)	
	Zoom	DC 6V or 12V (47mA)	
Power Voltage(for Auto Iris)		DC 8V or 13V (50mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		380g	
Operating Temperature		-5 ~ +50°C	
Wiring Diagram			



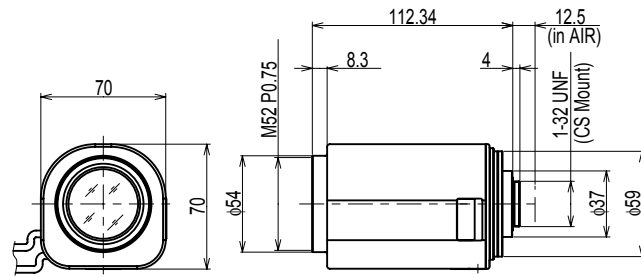
12PZA15×8



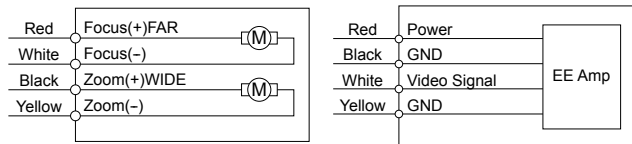
Imager Size		1/2	
Mount Type		C	
Focal Length		8 ~ 120mm	
Aperture Range		1.8 ~ 360	
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	43.6° X 33.0° 3.1° X 2.4°	
	1/3 Wide Tele	33.0° X 24.9° 2.4° X 1.8°	
	1/4 Wide Tele	25.4° X 19.0° 1.8° X 1.4°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		14.66mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
Power Voltage(for Auto Iris)		DC 8 ~ 16V (40mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		550g	
Operating Temperature		-10 ~ +50°C	
Wiring Diagram			



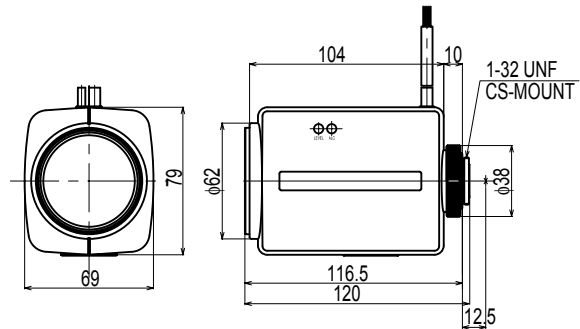
13PZA10×6C



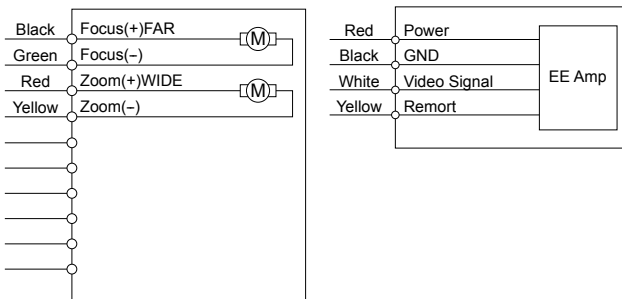
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 60mm	
Aperture Range		1.4 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	43.4° X 32.7° 4.5° X 3.4°	
	1/4 Wide Tele	32.6° X 24.5° 3.4° X 2.6°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M52 P=0.75mm	
Back Focus (in air)		14.10mm	
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)	
	Zoom	DC 6V or 12V (47mA)	
Power Voltage(for Auto Iris)		DC 8 ~ 13V (50mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		380g	
Operating Temperature		-5 ~ +50°C	
Wiring Diagram			



13PZA15×6



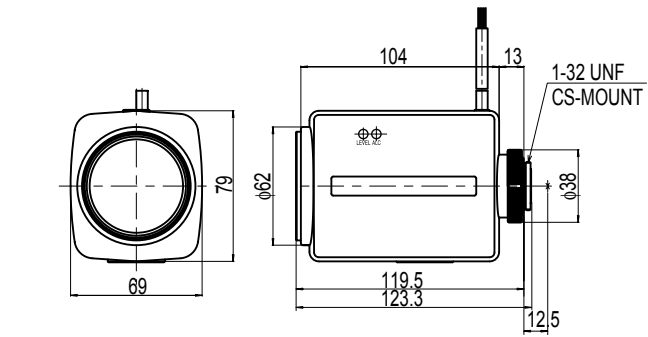
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 90mm	
Aperture Range		1.6 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	44.2° X 33.5° 3.1° X 2.4°	
	1/4 Wide Tele	34.2° X 25.7° 2.4° X 1.8°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		9.55mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
Power Voltage(for Auto Iris)		DC 8 ~ 16V (40mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		530g	
Operating Temperature		-10 ~ +50°C	
Wiring Diagram			



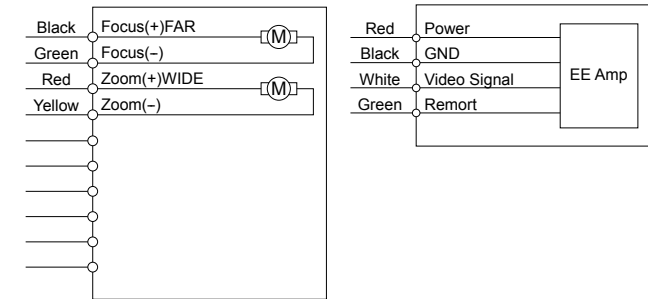
Motorized Zoom Lenses (Video Auto Iris)

Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom

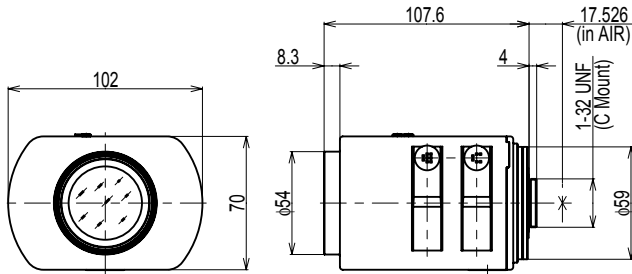
13PZA20×56



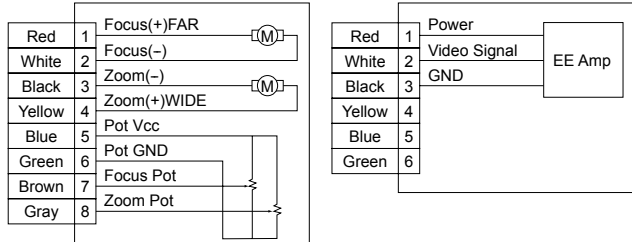
Imager Size		1/3
Mount Type		C S
Focal Length		5.6 ~ 112mm
Aperture Range		1.6 ~ 360
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	47.6° X 35.7° 2.6° X 1.9°
	1/4 Wide Tele	36.6° X 27.4° 2.0° X 1.5°
Focusing Range		1.5m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Auto Iris (Video)
Filter Size		M55 P=0.75mm
Back Focus (in air)		8.97mm
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)
	Zoom	DC 8V (60mA)
Power Voltage(for Auto Iris)		DC 8 ~ 16V (40mA)
Input Signal		VS or V signal
A.L.C.		Average~Peak
Weight		550g
Operating Temperature		-10 ~ +50°C
Wiring Diagram		



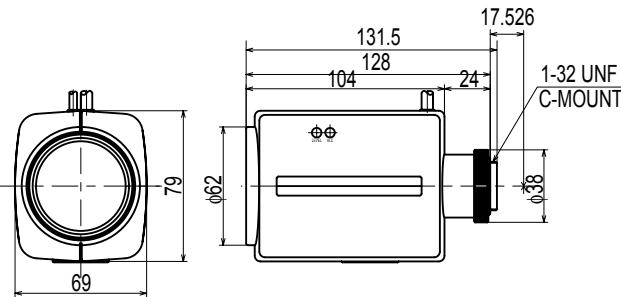
12PZP10×8



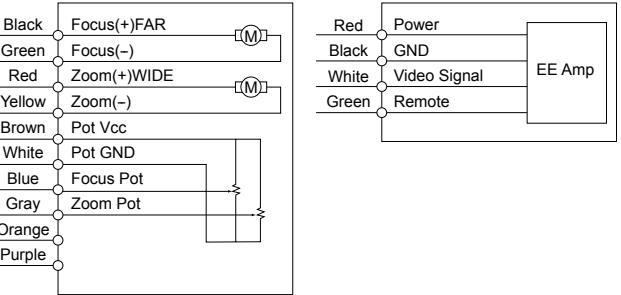
Imager Size		1/2
Mount Type		C
Focal Length		8 ~ 80mm
Aperture Range		1.8 ~ 360
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	44.1° X 33.2° 4.6° X 3.5°
	1/3 Wide Tele	33.2° X 24.9° 3.5° X 2.6°
	1/4 Wide Tele	24.9° X 18.7° 2.6° X 1.9°
Focusing Range		1.17m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Auto Iris (Video)
Filter Size		M52 P=0.75mm
Back Focus (in air)		14.01mm
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)
	Zoom	DC 6V or 12V (47mA)
Power Voltage(for Auto Iris)		DC 8 ~ 13V(50mA)
Input Signal		VS or V signal
A.L.C.		Average~Peak
Weight		395g
Operating Temperature		-5 ~ +50°C
Remarks		w/Presets for Focus/Zoom
Wiring Diagram		



12PZP15×8



Imager Size		1/2
Mount Type		C
Focal Length		8 ~ 120mm
Aperture Range		1.8 ~ 360
Angle of View (Horizontal X Vertical)	1/2 Wide Tele	43.6° X 33.0° 3.1° X 2.4°
	1/3 Wide Tele	33.0° X 24.9° 2.4° X 1.8°
	1/4 Wide Tele	25.4° X 19° 1.8° X 1.4°
Focusing Range		1.2m ~ ∞
Operation	Focus	Motorized
	Zoom	Motorized
	Iris	Auto Iris (Video)
Filter Size		M55 P=0.75mm
Back Focus (in air)		14.66mm
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)
	Zoom	DC 8V (60mA)
Power Voltage(for Auto Iris)		DC 8 ~ 16V (40mA)
Input Signal		VS or V signal
A.L.C.		Average~Peak
Weight		570g
Operating Temperature		-10 ~ +50°C
Remarks		w/Presets for Focus/Zoom
Wiring Diagram		



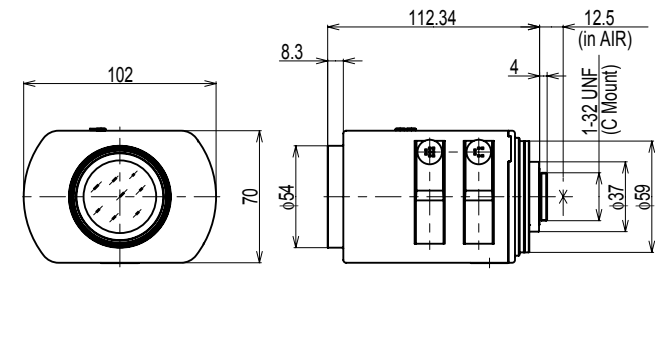
Motorized Zoom Lenses (Video Auto Iris)

Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom

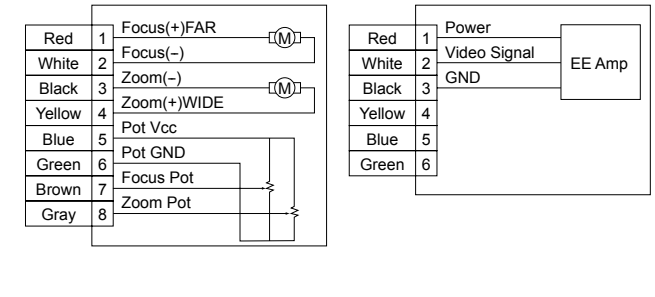
Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom

Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom

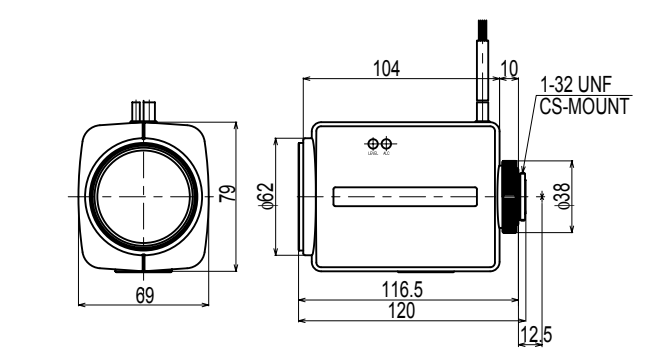
13PZP10×6



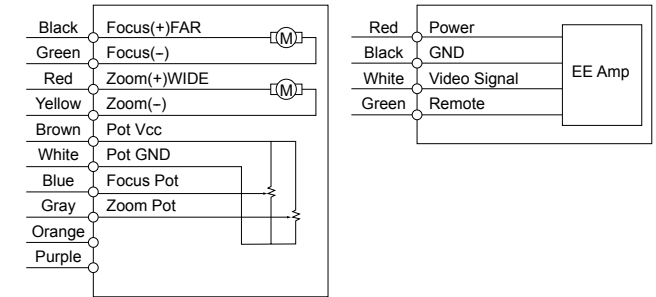
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 60mm	
Aperture Range		1.4 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	43.4° X 32.7° 4.5° X 3.4°	
	1/4 Wide Tele	32.6° X 24.5° 3.4° X 2.6°	
Focusing Range		1.17m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M52 P=0.75mm	
Back Focus (in air)		14.10mm	
Input Power (Max. Power Consumption)	Focus	DC 6V or 12V (47mA)	
	Zoom	DC 6V or 12V (47mA)	
Power Voltage (for Auto Iris)		DC 8 ~ 13V (50mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		395g	
Operating Temperature		-5 ~ +50°C	
Remarks		w/Presets for Focus/Zoom	
Wiring Diagram			



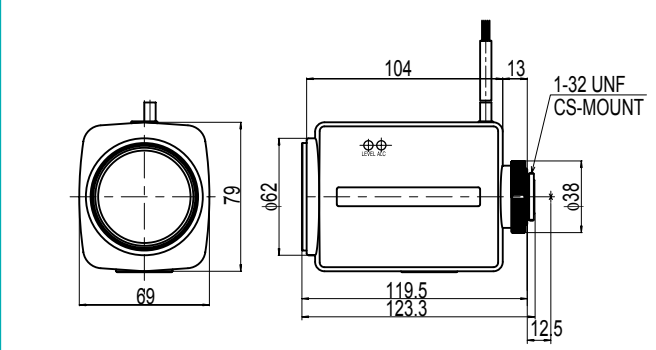
13PZP15×6



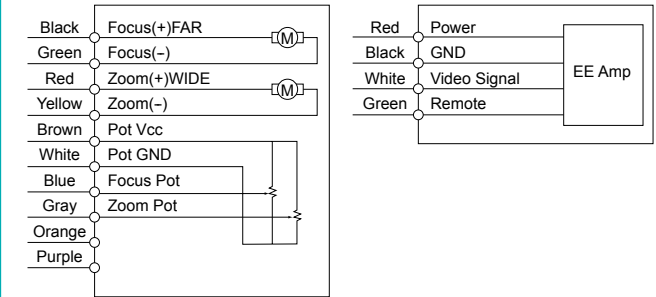
Imager Size		1/3	
Mount Type		C S	
Focal Length		6 ~ 90mm	
Aperture Range		1.6 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	44.2° X 33.5° 3.1° X 2.4°	
	1/4 Wide Tele	34.2° X 25.7° 2.4° X 1.8°	
Focusing Range		1.2m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		9.55mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
Power Voltage(for Auto Iris)		DC 8 ~ 16V (40mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		550g	
Operating Temperature		-10 ~ +50°C	
Remarks		w/Presets for Focus/Zoom	
Wiring Diagram			



13PZP20×56



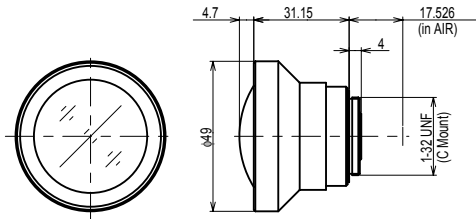
Imager Size		1/3	
Mount Type		C S	
Focal Length		5.6 ~ 112mm	
Aperture Range		1.6 ~ 360	
Angle of View (Horizontal X Vertical)	1/3 Wide Tele	47.6° X 35.7° 2.6° X 1.9°	
	1/4 Wide Tele	36.6° X 27.4° 2.0° X 1.5°	
Focusing Range		1.5m ~ ∞	
Operation	Focus	Motorized	
	Zoom	Motorized	
	Iris	Auto Iris (Video)	
Filter Size		M55 P=0.75mm	
Back Focus (in air)		8.97mm	
Input Power (Max. Power Consumption)	Focus	DC 8V (60mA)	
	Zoom	DC 8V (60mA)	
Power Voltage (for Auto Iris)		DC 8.0 ~ 16.0V (40mA)	
Input Signal		VS or V signal	
A.L.C.		Average~Peak	
Weight		570g	
Operating Temperature		-10 ~ +50°C	
Remarks		w/Presets for Focus/Zoom	
Wiring Diagram			



Motorized Zoom Lenses (Video Auto Iris) w/Presets for Focus/Zoom

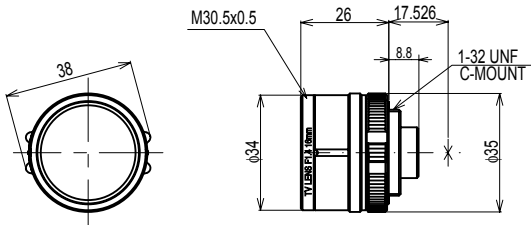
Fixed-Focal Lenses (Manual Iris)

23FO45T



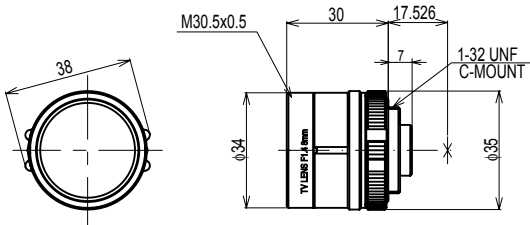
Imager Size	2/3	
Mount Type	C	
Focal Length	4.5mm	
Aperture Range	2.0	
Angle of View (Horizontal X Vertical)	2/3	107.6° X 80.3°
	1/2	77.8° X 58.2°
	1/3	58.2° X 43.5°
	1/4	—
Focusing Range	0.2m ~ ∞	
Operation	Focus	Fixed
	Iris	Fixed
Filter Size	—	
Back Focus (in air)	8.82mm	
Weight	130g	
Operating Temperature	-10 ~ +50°C	

23FM16



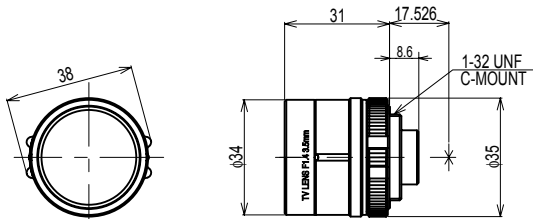
Imager Size	2/3	
Mount Type	C	
Focal Length	16mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	2/3	31.1° X 23.1°
	1/2	22.3° X 16.7°
	1/3	16.7° X 12.5°
	1/4	12.7° X 9.5°
Focusing Range	0.5m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M30.5 P=0.5mm	
Back Focus (in air)	10.32mm	
Weight	37g	
Operating Temperature	-10 ~ +45°C	

23FM08



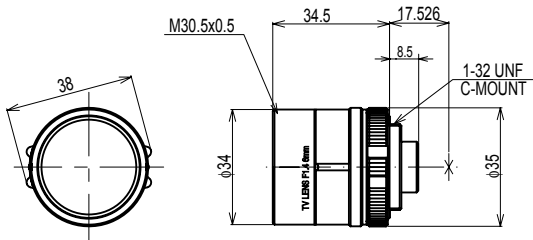
Imager Size	2/3	
Mount Type	C	
Focal Length	8mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	2/3	64.2° X 47.7°
	1/2	46.2° X 34.6°
	1/3	34.5° X 28.6°
	1/4	26.5° X 19.5°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M30.5 P=0.5mm	
Back Focus (in air)	11.30mm	
Weight	50g	
Operating Temperature	-10 ~ +45°C	

12FM35



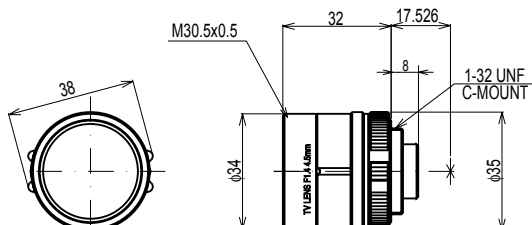
Imager Size	1/2	
Mount Type	C	
Focal Length	3.5mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	1/2	103.6° X 76.6°
	1/3	77.0° X 57.7°
	1/4	58.4° X 43.4°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	—	
Back Focus (in air)	8.89mm	
Weight	56g	
Operating Temperature	-10 ~ +45°C	

12FM06



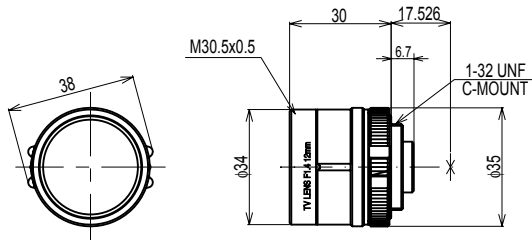
Imager Size	1/2	
Mount Type	C	
Focal Length	6mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	1/2	57.3° X 44.0°
	1/3	44.2° X 33.7°
	1/4	33.6° X 25.3°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M30.5 P=0.5mm	
Back Focus (in air)	9.46mm	
Weight	36g	
Operating Temperature	-10 ~ +45°C	

12FM45



Imager Size	1/2	
Mount Type	C	
Focal Length	4.5mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	1/2	79.0° X 59.4°
	1/3	59.7° X 45.1°
	1/4	45.6° X 34.1°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M30.5 P=0.5mm	
Back Focus (in air)	9.96mm	
Weight	54g	
Operating Temperature	-10 ~ +45°C	

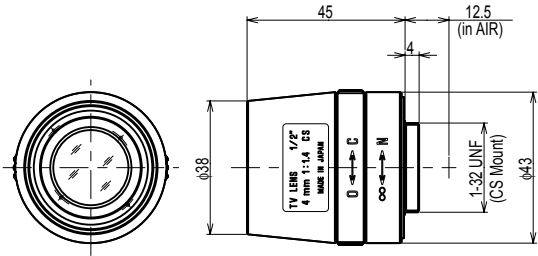
12FM12



Imager Size	1/2	
Mount Type	C	
Focal Length	12mm	
Aperture Range	1.4 ~ Close	
Angle of View (Horizontal X Vertical)	1/2	30.7° X 23.0°
	1/3	23.0° X 17.2°
	1/4	17.5° X 13.1°
Focusing Range	0.3m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M30.5 P=0.5mm	
Back Focus (in air)	11.09mm	
Weight	51g	
Operating Temperature	-10 ~ +45°C	

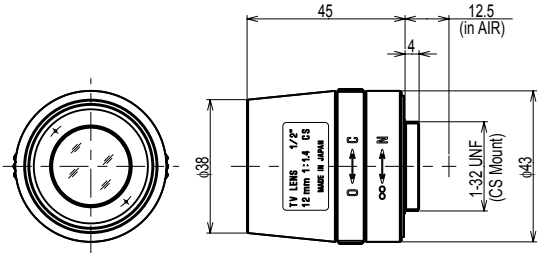
Fixed-Focal Lenses (Manual Iris)

12FM04T



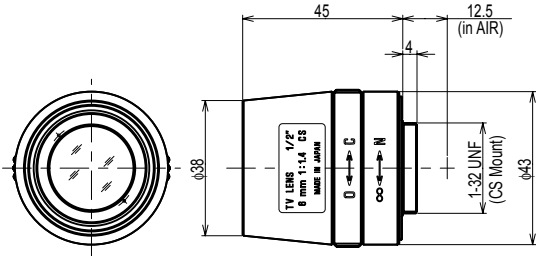
Imager Size	1/2
Mount Type	C S
Focal Length	4mm
Aperture Range	1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/287.3° X 66.2°
	1/366.2° X 50.0°
	1/449.9° X 37.5°
Focusing Range	0.2m ~ ∞
Operation	FocusManual
	IrisManual
Filter Size	
Back Focus (in air)	10.69mm
Weight	60g
Operating Temperature	-5 ~ +50°C

12FM12T



Imager Size	1/2
Mount Type	C S
Focal Length	12mm
Aperture Range	1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/231.4° X 23.3°
	1/323.3° X 17.3°
	1/417.3° X 12.9°
Focusing Range	0.5m ~ ∞
Operation	FocusManual
	IrisManual
Filter Size	
Back Focus (in air)	13.47mm
Weight	53.5g
Operating Temperature	-5 ~ +50°C

12FM06T

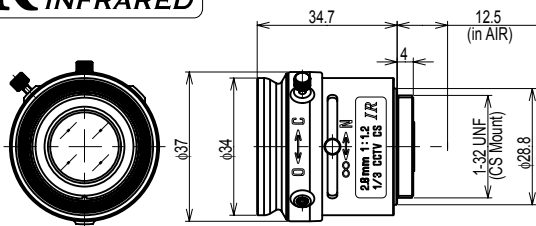


Imager Size	1/2
Mount Type	C S
Focal Length	6mm
Aperture Range	1.4 ~ Close
Angle of View (Horizontal X Vertical)	1/260.0° X 45.1°
	1/345.1° X 33.8°
	1/433.8° X 25.3°
Focusing Range	0.2m ~ ∞
Operation	FocusManual
	IrisManual
Filter Size	
Back Focus (in air)	10.88mm
Weight	62g
Operating Temperature	-5 ~ +50°C

Fixed-Focal Lenses (Manual Iris/IR Corrected)

13FM28IR

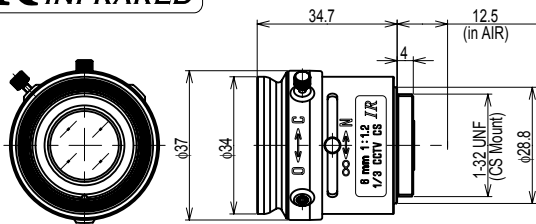
IR INFRARED



Imager Size	1/3
Mount Type	C S
Focal Length	2.8mm
Aperture Range	1.2 ~ Close
Angle of View (Horizontal X Vertical)	1/393.2° X 70.7°
	1/470.7° X 53.4°
Focusing Range	0.2m ~ ∞
Operation	FocusManual w/Lock
	IrisManual w/Lock
Filter Size	
Back Focus (in air)	8.58mm
Weight	36g
Operating Temperature	-20 ~ +60°C

13FM06IR

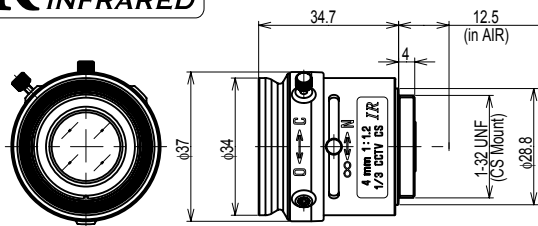
IR INFRARED



Imager Size	1/3
Mount Type	C S
Focal Length	6mm
Aperture Range	1.2 ~ Close
Angle of View (Horizontal X Vertical)	1/346.5° X 34.6°
	1/434.6° X 25.9°
Focusing Range	0.2m ~ ∞
Operation	FocusManual w/Lock
	IrisManual w/Lock
Filter Size	
Back Focus (in air)	8.92mm
Weight	32g
Operating Temperature	-20 ~ +60°C

13FM04IR

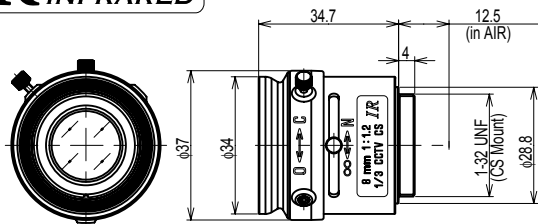
IR INFRARED



Imager Size	1/3
Mount Type	C S
Focal Length	4mm
Aperture Range	1.2 ~ Close
Angle of View (Horizontal X Vertical)	1/365.6° X 49.7°
	1/449.7° X 37.4°
Focusing Range	0.2m ~ ∞
Operation	FocusManual w/Lock
	IrisManual w/Lock
Filter Size	
Back Focus (in air)	8.57mm
Weight	33g
Operating Temperature	-20 ~ +60°C

13FM08IR

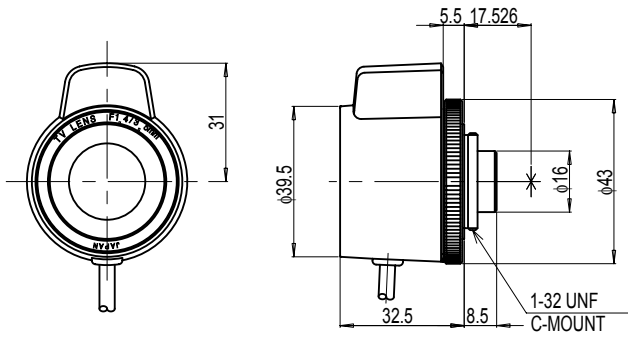
IR INFRARED



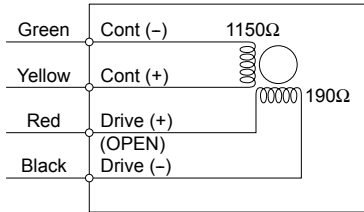
Imager Size	1/3
Mount Type	C S
Focal Length	8mm
Aperture Range	1.2 ~ Close
Angle of View (Horizontal X Vertical)	1/334.5° X 25.7°
	1/425.7° X 19.2°
Focusing Range	0.2m ~ ∞
Operation	FocusManual w/Lock
	IrisManual w/Lock
Filter Size	
Back Focus (in air)	9.89mm
Weight	33g
Operating Temperature	-20 ~ +60°C

Fixed-Focal Lenses (DC Auto Iris)

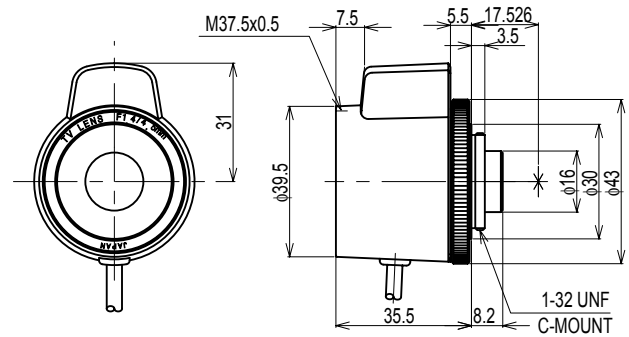
12FG35-SQ



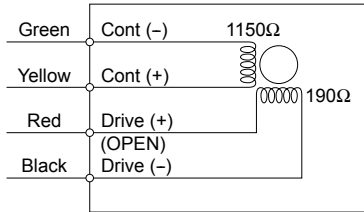
Imager Size		1/2
Mount Type		C
Focal Length		3.5mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	103.6° X 76.6°
	1/3	77.0° X 57.7°
	1/4	58.4° X 43.3°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size		—
Back Focus (in air)		8.89mm
Operating Voltage		Open 4.0V Close 0V
Weight		82g
Operating Temperature		-10 ~ +45°C
Wiring Diagram		



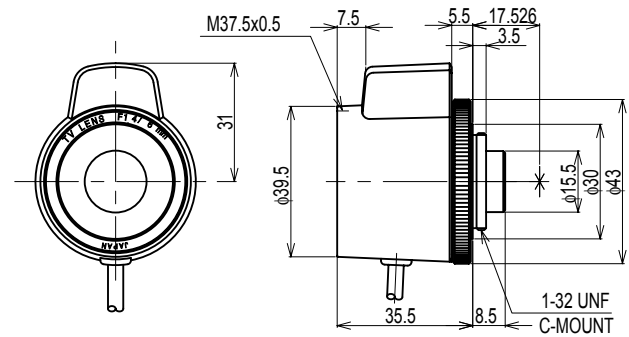
12FG45-SQ



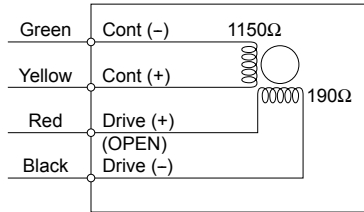
Imager Size		1/2
Mount Type		C
Focal Length		4.5mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	79.0° X 59.4°
	1/3	59.7° X 45.1°
	1/4	45.6° X 34.1°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		9.96mm
Operating Voltage		Open 4.0V Close 0V
Weight		82g
Operating Temperature		-10 ~ +45°C
Wiring Diagram		



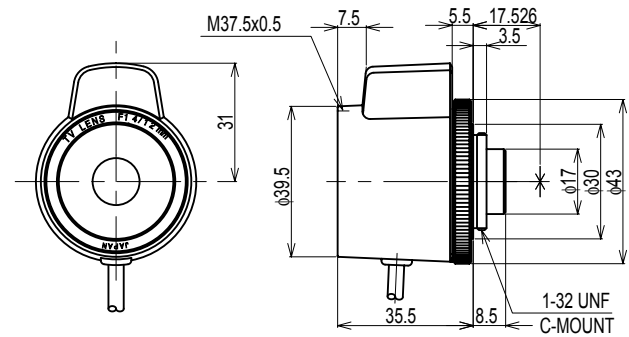
12FG06-SQ



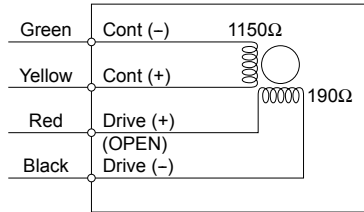
Imager Size		1/2
Mount Type		C
Focal Length		6mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	57.3° X 44.0°
	1/3	44.2° X 33.7°
	1/4	33.6° X 25.3°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		9.46mm
Operating Voltage		Open 4.0V Close 0V
Weight		75g
Operating Temperature		-10 ~ +45°C
Wiring Diagram		



12FG12-SQ



Imager Size		1/2
Mount Type		C
Focal Length		12mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	30.7° X 23.0°
	1/3	23.0° X 17.2°
	1/4	17.5° X 13.1°
Focusing Range		0.3m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		11.09mm
Operating Voltage		Open 4.0V Close 0V
Weight		76g
Operating Temperature		-10 ~ +45°C
Wiring Diagram		

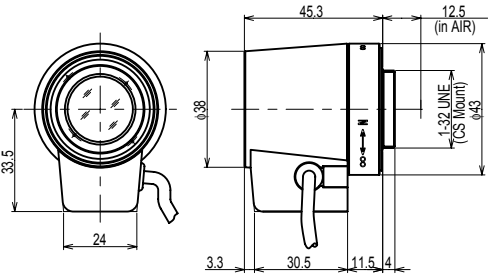


Fixed-Focal Lenses (DC Auto Iris)

Fixed-Focal Lenses (DC Auto Iris/IR Corrected)

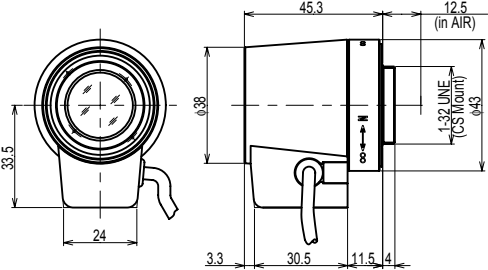
Fixed-Focal Lenses (DC Auto Iris)

12FG04T-SQ



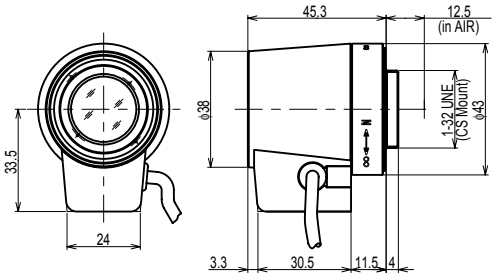
Imager Size	1/2	
Mount Type	CS	
Focal Length	4mm	
Aperture Range	1.4 ~ 150	
Angle of View (Horizontal X Vertical)	1/2	87.3° X 66.2°
	1/3	66.2° X 50.0°
	1/4	49.9° X 37.5°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	10.69mm	
Operating Voltage	Open 4V Close 0.5V	
Weight	73g	
Operating Temperature	-5 ~ +50°C	

12FG12T-SQ



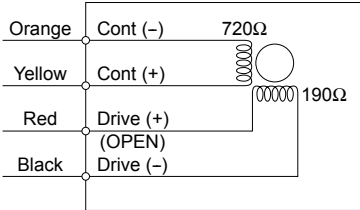
Imager Size	1/2	
Mount Type	CS	
Focal Length	12mm	
Aperture Range	1.4 ~ 200	
Angle of View (Horizontal X Vertical)	1/2	31.4° X 23.3°
	1/3	23.3° X 17.3°
	1/4	17.3° X 12.9°
Focusing Range	0.5m ~ ∞	
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	13.47mm	
Operating Voltage	Open 4V Close 0.5V	
Weight	66g	
Operating Temperature	-5 ~ +50°C	

12FG06T-SQ

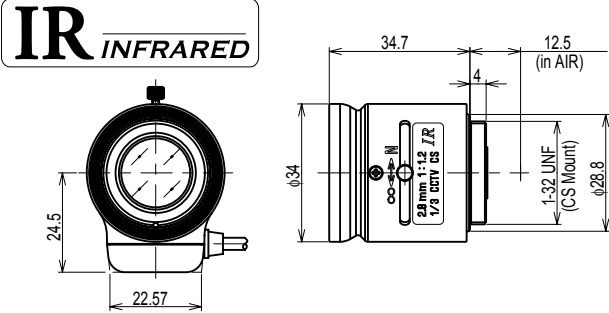


Imager Size	1/2	
Mount Type	CS	
Focal Length	6mm	
Aperture Range	1.4 ~ 150	
Angle of View (Horizontal X Vertical)	1/2	60.0° X 45.1°
	1/3	45.1° X 33.8°
	1/4	33.8° X 25.3°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	10.88mm	
Operating Voltage	Open 4V Close 0.5V	
Weight	75g	
Operating Temperature	-5 ~ +50°C	

Wiring Diagram
(12FG04T-SQ)
(12FG06T-SQ)
(12FG12T-SQ)

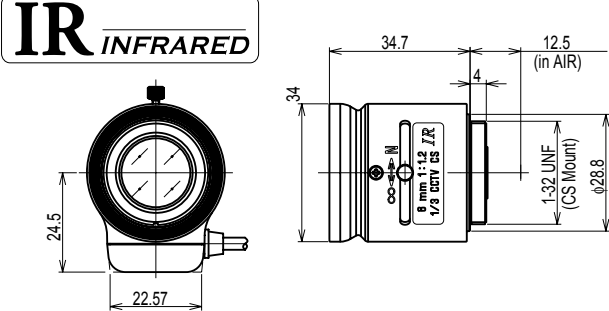


13FG28IR-SQ



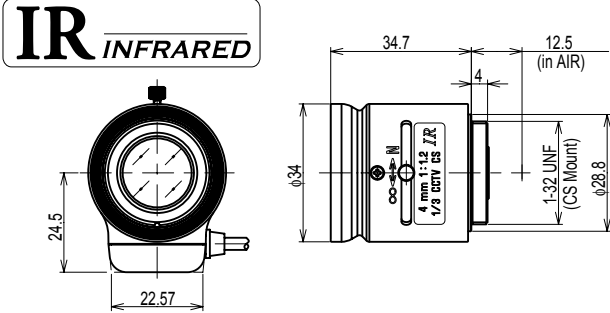
Imager Size	1/3	
Mount	CS	
Focal Length	2.8mm	
Aperture Range	1.2 ~ 360	
Angle of View	1/3	93.2° X 70.7°
	1/4	70.7° X 53.4°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	8.58mm	
Operating Voltage	Open 2.5V Close 0.5V	
Weight	44g	
Operating Temperature	-20 ~ +60°C	

13FG06IR-SQ



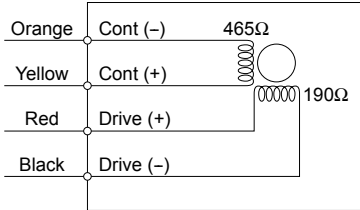
Imager Size	1/3	
Mount	CS	
Focal Length	6mm	
Aperture Range	1.2 ~ 360	
Angle of View	1/3	46.5° X 34.6°
	1/4	34.6° X 25.9°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	8.92mm	
Operating Voltage	Open 2.5V Close 0.5V	
Weight	38g	
Operating Temperature	-20 ~ +60°C	

13FG04IR-SQ



Imager Size	1/3	
Mount	CS	
Focal Length	4mm	
Aperture Range	1.2 ~ 360	
Angle of View	1/3	65.6° X 49.7°
	1/4	49.7° X 37.4°
Focusing Range	0.2m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Auto Iris (DC)
Filter Size	—	
Back Focus (in air)	8.57mm	
Operating Voltage	Open 2.5V Close 0.5V	
Weight	40g	
Operating Temperature	-20 ~ +60°C	

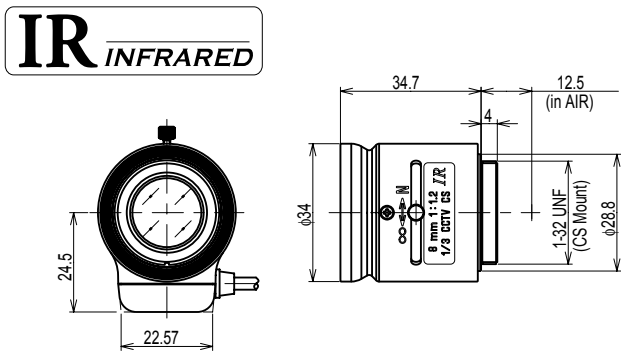
Wiring Diagram
(13FG28IR-SQ)
(13FG04IR-SQ)
(13FG06IR-SQ)



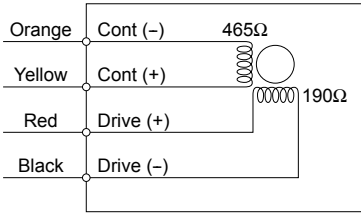
Fixed-Focal Lenses (DC Auto Iris / IR Corrected)

Fixed-Focal Lenses (DC Auto Iris/IR Corrected)

13FG08IR-SQ

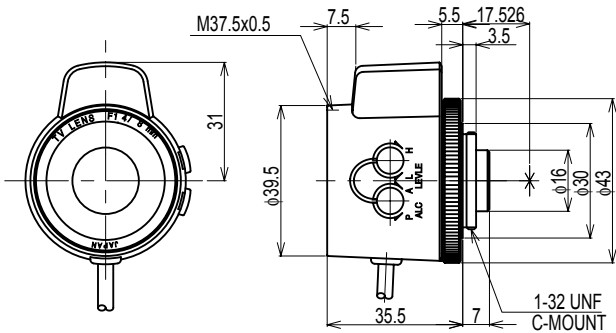


Imager Size		1/3
Mount Type		C S
Focal Length		8mm
Aperture Range		1.2 ~ 360
Angle of View (Horizontal X Vertical)	1/3	34.5° X 25.7°
	1/4	25.7° X 19.2°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual w/Lock
	Iris	Auto Iris (DC)
Filter Size		—
Back Focus (in air)		9.89mm
Operating Voltage		Open 2.5V Close 0.5V
Weight		40g
Operating Temperature		-20 ~ +60°C
Wiring Diagram		

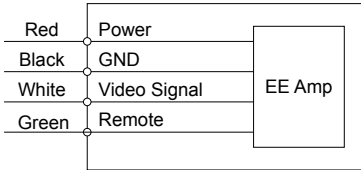


Fixed-Focal Lenses (Video Auto Iris)

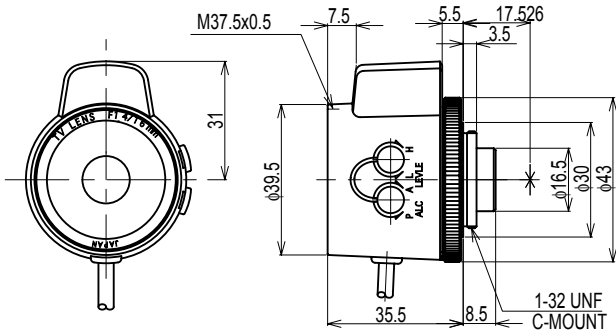
23FA08-SQ



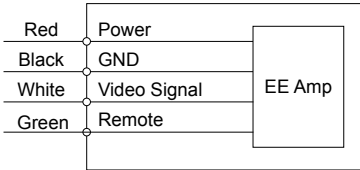
Imager Size		2/3
Mount Type		C
Focal Length		8mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	2/3	64.2° X 47.3°
	1/2	46.2° X 34.6°
	1/3	34.5° X 28.6°
	1/4	26.5° X 19.5°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		11.30mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		85g
Operating Temperature		-10 ~ +45°C
Wining Diagram		



23FA16-SQ



Imager Size		2/3
Mount Type		C
Focal Length		16mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	2/3	31.1° X 23.1°
	1/2	22.3° X 16.7°
	1/3	16.7° X 12.5°
	1/4	12.7° X 9.5°
Focusing Range		0.5m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		10.32mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		80g
Operating Temperature		-10 ~ +45°C
Wining Diagram		

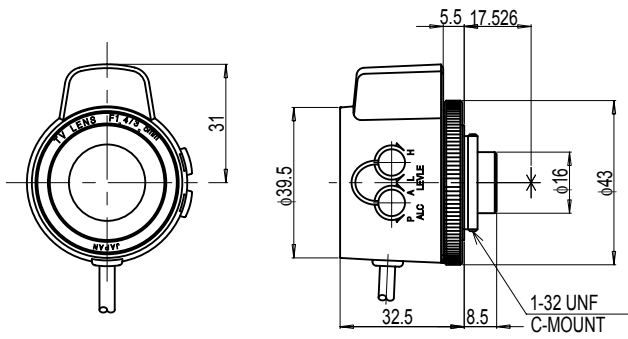


Fixed-Focal Lenses (DC Auto Iris / IR Corrected)

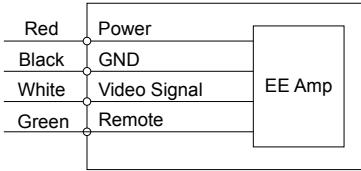
Fixed-Focal Lenses (Video Auto Iris)

Fixed-Focal Lenses (Video Auto Iris)

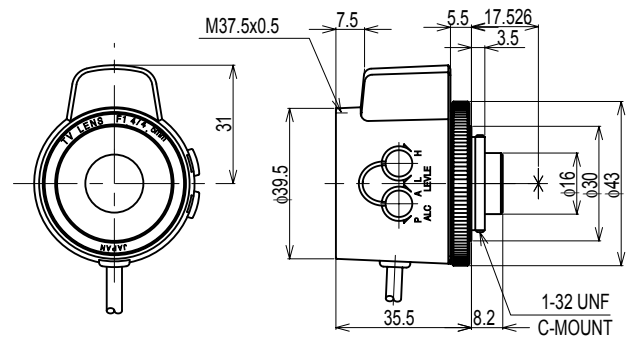
12FA35-SQ



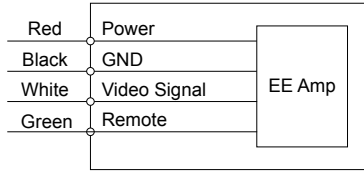
Imager Size		1/2
Mount Type		C
Focal Length		3.5mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	103.6° X 76.6°
	1/3	77.0° X 57.7°
	1/4	58.4° X 43.4°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		—
Back Focus (in air)		8.89mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		85g
Operating Temperature		-10 ~ +45°C
Wining Diagram		



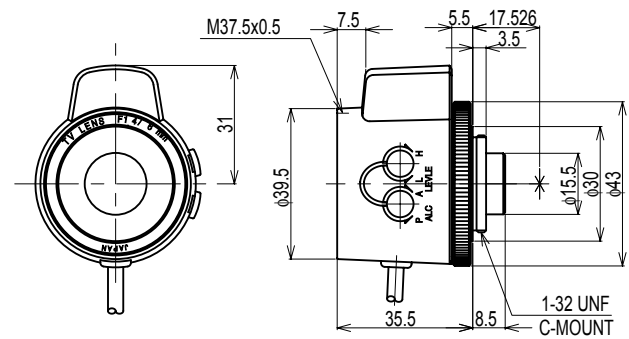
12FA45-SQ



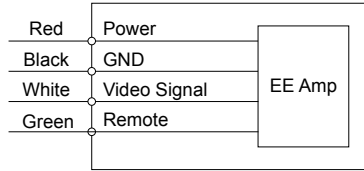
Imager Size		1/2
Mount Type		C
Focal Length		4.5mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	79.0° X 59.4°
	1/3	59.7° X 45.1°
	1/4	45.6° X 34.1°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		9.96mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		85g
Operating Temperature		-10 ~ +45°C
Wining Diagram		



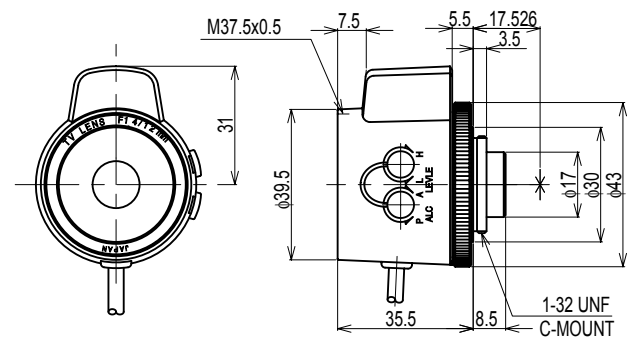
12FA06-SQ



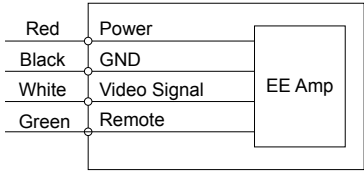
Imager Size		1/2
Mount Type		C
Focal Length		6mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	57.3° X 44.0°
	1/3	44.2° X 33.7°
	1/4	33.6° X 25.3°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		9.46mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		78g
Operating Temperature		-10 ~ +45°C
Wining Diagram		



12FA12-SQ

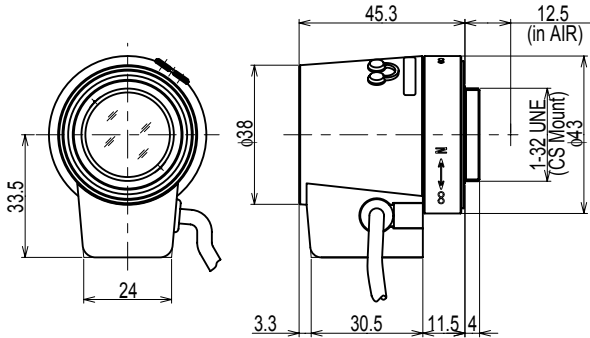


Imager Size		1/2
Mount Type		C
Focal Length		12mm
Aperture Range		1.4 ~ 360
Angle of View (Horizontal X Vertical)	1/2	30.7° X 23.0°
	1/3	23.0° X 17.2°
	1/4	17.5° X 13.1°
Focusing Range		0.3m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		M37.5 P=0.5mm
Back Focus (in air)		11.9mm
Input Power (Max,Power Consumption)		DC 8.0~16.0V (35mA)
Input Signal		VS or V signal
A.L.C		Average~Peak
Weight		79g
Operating Temperature		-10 ~ +45°C
Wining Diagram		



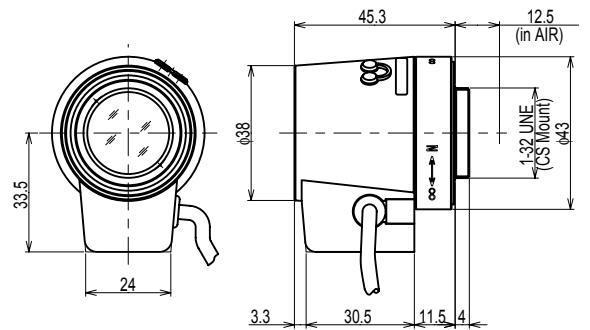
Fixed-Focal Lenses (Video Auto Iris)

12FA04T-SQ



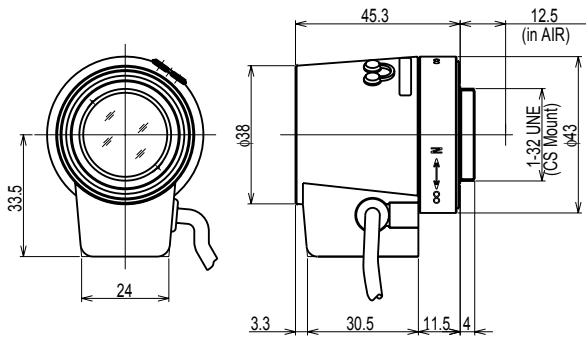
Imager Size		1/2
Mount Type		C S
Focal Length		4mm
Aperture Range		1.4 ~ 150
Angle of View (Horizontal X Vertical)	1/2	87.3° X 66.2°
	1/3	66.2° X 50.0°
	1/4	49.9° X 37.5°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		10.69mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		76g
Operating Temperature		-5 ~ +50°C

12FA12T-SQ



Imager Size		1/2
Mount Type		C S
Focal Length		12mm
Aperture Range		1.4 ~ 200
Angle of View (Horizontal X Vertical)	1/2	31.4° X 23.3°
	1/3	23.3° X 17.3°
	1/4	17.3° X 12.9°
Focusing Range		0.5m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		13.47mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		79g
Operating Temperature		-5 ~ +50°C

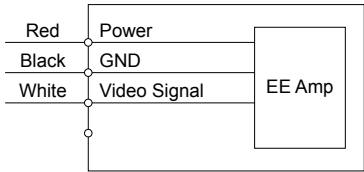
12FA06T-SQ



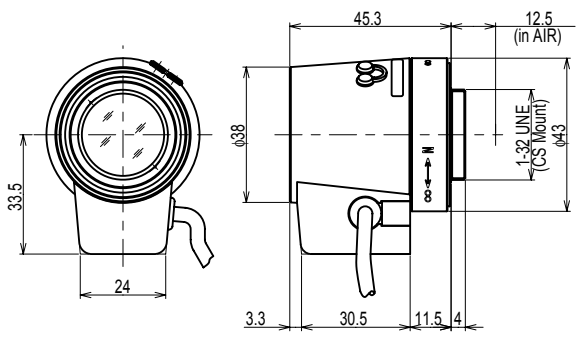
Imager Size		1/2
Mount Type		C S
Focal Length		6mm
Aperture Range		1.4 ~ 150
Angle of View (Horizontal X Vertical)	1/2	60.0° X 45.1°
	1/3	45.1° X 33.8°
	1/4	33.8° X 25.3°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		10.88mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		78g
Operating Temperature		-5 ~ +50°C

Wiring Diagram

(12FA04T-SQ)
(12FA06T-SQ)
(12FA12T-SQ)

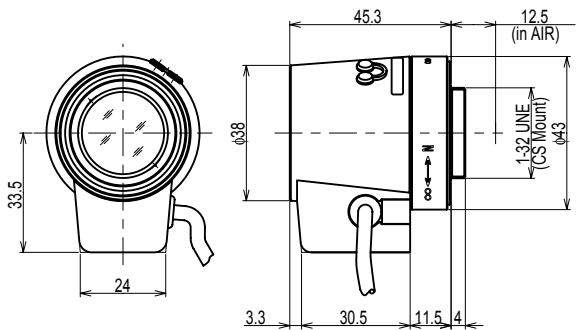


13FA28T-SQ



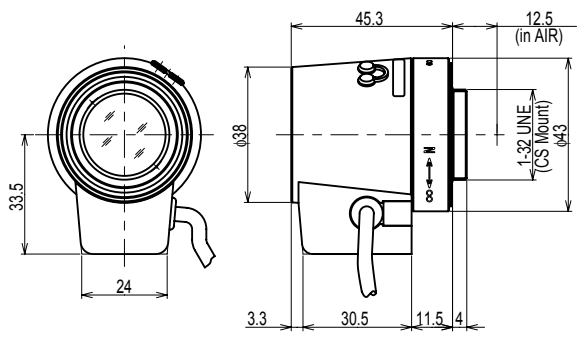
Imager Size		1/3
Mount Type		C S
Focal Length		2.8mm
Aperture Range		1.4 ~ 125
Angle of View (Horizontal X Vertical)	1/3	95.1° X 71.9°
	1/4	71.8° X 54.1°
	1/4	71.8° X 54.1°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		9.47mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		79g
Operating Temperature		-5 ~ +50°C

13FA08T-SQ



Imager Size		1/3
Mount Type		C S
Focal Length		8mm
Aperture Range		1.2 ~ 150
Angle of View (Horizontal X Vertical)	1/3	34.8° X 26.0°
	1/4	25.9° X 19.4°
	1/4	25.9° X 19.4°
Focusing Range		0.3m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		11.96mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		70g
Operating Temperature		-5 ~ +50°C

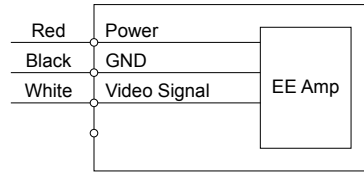
13FA04T-SQ



Imager Size		1/3
Mount Type		C S
Focal Length		4mm
Aperture Range		1.2 ~ 125
Angle of View (Horizontal X Vertical)	1/3	66.1° X 50.0°
	1/4	49.9° X 37.6°
	1/4	49.9° X 37.6°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual
	Iris	Auto Iris (Video)
Filter Size		-----
Back Focus (in air)		9.33mm
Input Power (Max. Power Consumption)		DC 8.5 ~ 16.0V (50mA)
Input Signal		VS or v signal
A.L.C.		Average~Peak
Weight		73g
Operating Temperature		-5 ~ +50°C

Wiring Diagram

(13FA28T-SQ)
(13FA04T-SQ)
(13FA08T-SQ)

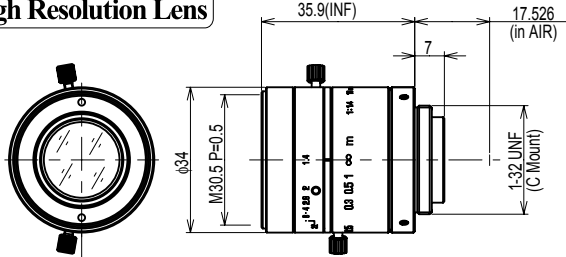


Mega-Pixel High Resolution Lenses/Super High Resolution Lens

High Resolution Lenses

23FM16SP

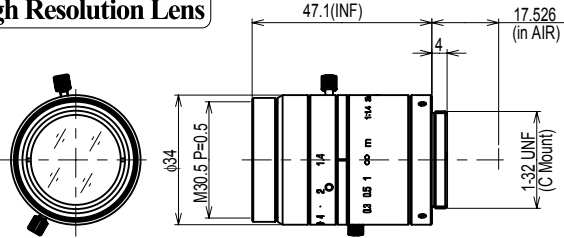
Mega-Pixel
High Resolution Lens



Imager Size		2/3
Mount Type		C
Focal Length		16mm
Aperture Range		1.4 ~ 22
Angle of View (Horizontal X Vertical)	2/3	30.9° X 23.4°
	1/2	22.7° X 17.1°
	1/3	17.1° X 12.9°
Focusing Range		0.15m ~ ∞
Operation	Focus	Manual w/lock
	Iris	Manual w/lock
Filter Size		M30.5 P=0.5mm
Back Focus (in air)		11.54mm
Weight		80g
Operating Temperature		-10 ~ +60°C

23FM25SP

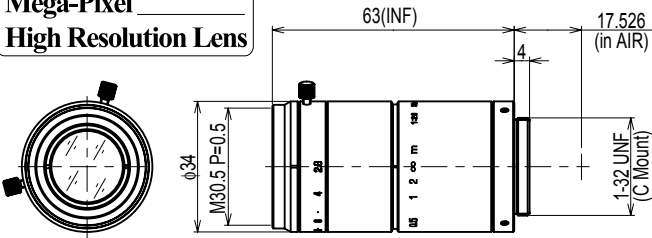
Mega-Pixel
High Resolution Lens



Imager Size		2/3
Mount Type		C
Focal Length		25mm
Aperture Range		1.4 ~ 22
Angle of View (Horizontal X Vertical)	2/3	20.0° X 15.1°
	1/2	14.6° X 11.0°
	1/3	11.0° X 8.2°
Focusing Range		0.15m ~ ∞
Operation	Focus	Manual w/lock
	Iris	Manual w/lock
Filter Size		M30.5 P=0.5mm
Back Focus (in air)		17.17mm
Weight		103g
Operating Temperature		-10 ~ +60°C

23FM50SP

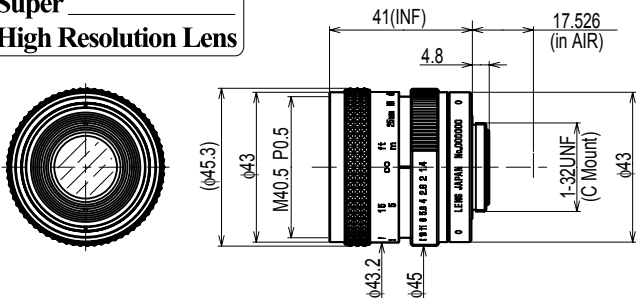
Mega-Pixel
High Resolution Lens



Imager Size		2/3
Mount Type		C
Focal Length		50mm
Aperture Range		2.8 ~ 32
Angle of View (Horizontal X Vertical)	2/3	10.1° X 7.6°
	1/2	7.3° X 5.5°
	1/3	5.5° X 4.1°
Focusing Range		0.2m ~ ∞
Operation	Focus	Manual w/lock
	Iris	Manual w/lock
Filter Size		M30.5 P=0.5mm
Back Focus (in air)		34.46mm
Weight		117g
Operating Temperature		-10 ~ +60°C

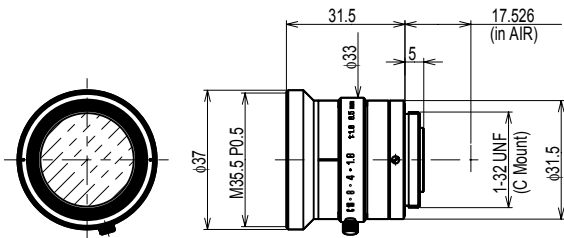
26HA

Super
High Resolution Lens



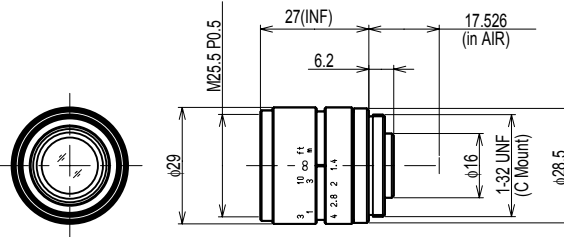
Imager Size		2/3
Mount Type		C
Focal Length		25mm
Aperture Range		1.4 ~ Close
Angle of View (Horizontal X Vertical)	2/3	19.9° X 15.0°
	1/2	14.6° X 10.9°
	1/3	10.9° X 8.2°
Focusing Range		0.6m ~ ∞
Operation	Focus	Manual
	Iris	Manual
Filter Size		M40.5 P=0.5mm
Back Focus (in air)		13.69mm
Weight		145g
Operating Temperature		-10 ~ +50°C

23FM65L



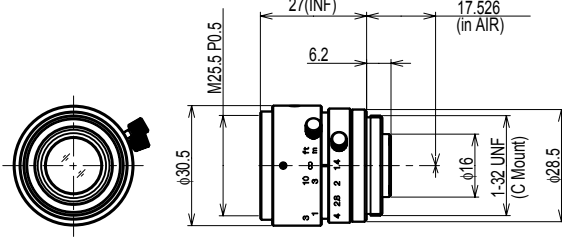
Imager Size		2/3
Mount Type		C
Focal Length		6.5mm
Aperture Range		1.8 ~ Close
Angle of View (Horizontal X Vertical)	2/3	71.6° X 55.5°
	1/2	53.9° X 41.0°
	1/3	41.0° X 31.0°
Focusing Range		0.15m ~ ∞
Operation	Focus	————
	Iris	Manual w/Lock
Filter Size		M35.5 P=0.5mm
Back Focus (in air)		13.00mm
Weight		60g
Operating Temperature		-5 ~ +50°C

23FM08



Imager Size		2/3
Mount Type		C
Focal Length		8mm
Aperture Range		1.4 ~ 16
Angle of View (Horizontal X Vertical)	2/3	59.3° X 45.2°
	1/2	43.6° X 33.1°
	1/3	33.1° X 25.0°
Focusing Range		0.26m ~ ∞
Operation	Focus	Manual
	Iris	Manual
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		11.60mm
Weight		40g
Operating Temperature		-10 ~ +45°C

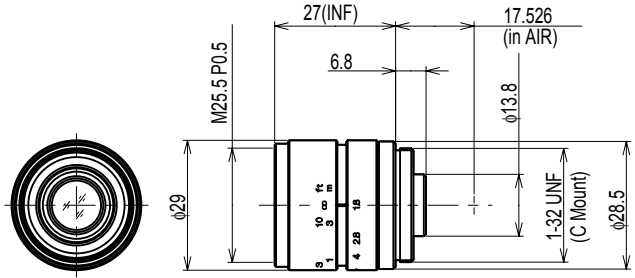
23FM08L



Imager Size		2/3
Mount Type		C
Focal Length		8mm
Aperture Range		1.4 ~ 16
Angle of View (Horizontal X Vertical)	2/3	59.3° X 45.2°
	1/2	43.6° X 33.1°
	1/3	33.1° X 25.0°
Focusing Range		0.26m ~ ∞
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		11.60mm
Weight		48g
Operating Temperature		-10 ~ +45°C

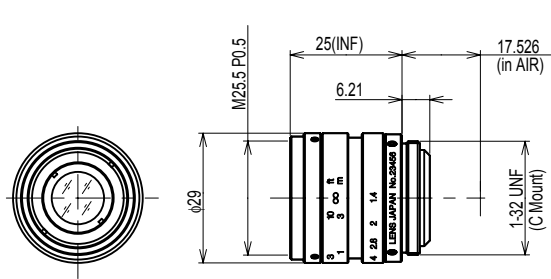
High Resolution Lenses

23FM12



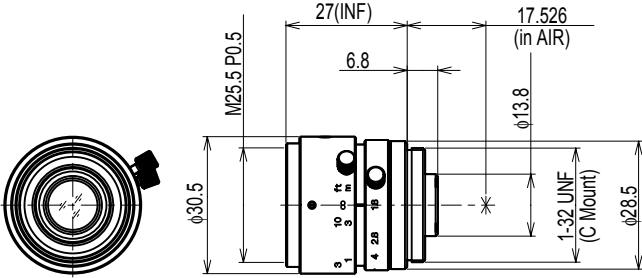
Imager Size	2/3	
Mount Type	C	
Focal Length	12mm	
Aperture Range	1.8 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	40.9° X 30.9°
	1/2	30.0° X 22.4°
	1/3	22.4° X 16.6°
Focusing Range	0.26m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.03mm	
Weight	40g	
Operating Temperature	-10 ~ +45°C	

23FM16



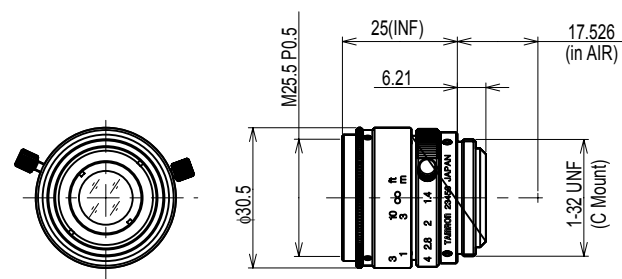
Imager Size	2/3	
Mount Type	C	
Focal Length	16mm	
Aperture Range	1.4 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	30.9° X 23.2°
	1/2	22.5° X 16.9°
	1/3	16.9° X 12.7°
Focusing Range	0.29m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.85mm	
Weight	50g	
Operating Temperature	-5 ~ +50°C	

23FM12L



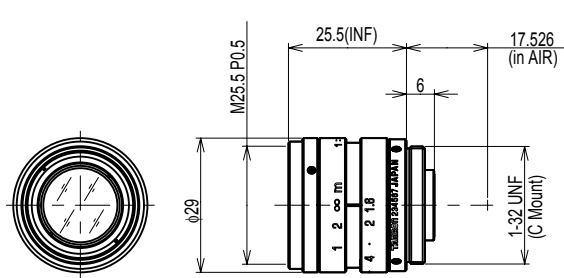
Imager Size	2/3	
Mount Type	C	
Focal Length	12mm	
Aperture Range	1.8 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	40.9° X 30.9°
	1/2	30.0° X 22.4°
	1/3	22.4° X 16.6°
Focusing Range	0.26m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.03mm	
Weight	46g	
Operating Temperature	-10 ~ +45°C	

23FM16L



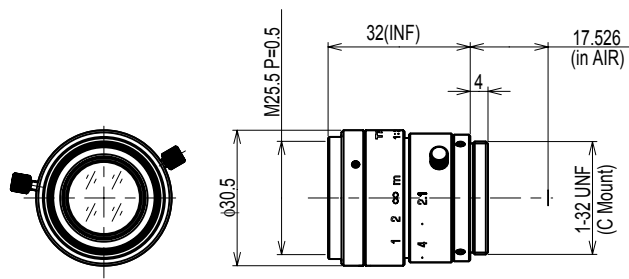
Imager Size	2/3	
Mount Type	C	
Focal Length	16mm	
Aperture Range	1.4 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	30.9° X 23.2°
	1/2	22.5° X 16.9°
	1/3	16.9° X 12.7°
Focusing Range	0.29m ~ ∞	
Operation	Focus	Manual w/lock
	Iris	Manual w/lock
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.85mm	
Weight	48g	
Operating Temperature	-5 ~ +50°C	

23FM25



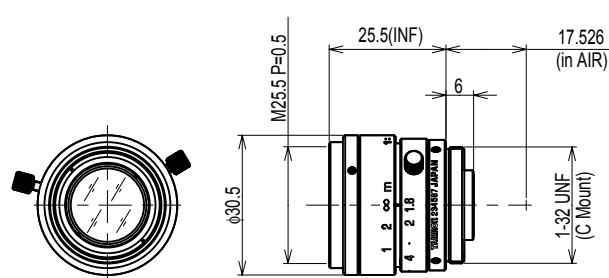
Imager Size	2/3	
Mount Type	C	
Focal Length	25mm	
Aperture Range	1.6 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	20.0° X 15.0°
	1/2	14.6° X 11.0°
	1/3	11.0° X 8.2°
Focusing Range	0.21m ~ ∞	
Operation	Focus	Manual
	Iris	Manual
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.60mm	
Weight	37g	
Operating Temperature	-10 ~ +45°C	

23FM35L



Imager Size	2/3	
Mount Type	C	
Focal Length	35mm	
Aperture Range	2.1 ~ 22	
Angle of View (Horizontal X Vertical)	2/3	14.3° X 10.8°
	1/2	10.4° X 7.8°
	1/3	7.8° X 5.9°
Focusing Range	0.3m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	15.53mm	
Weight	44g	
Operating Temperature	-10 ~ +60°C	

23FM25L

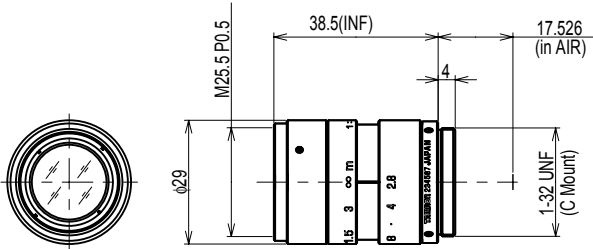


Imager Size	2/3	
Mount Type	C	
Focal Length	25mm	
Aperture Range	1.6 ~ 16	
Angle of View (Horizontal X Vertical)	2/3	20.0° X 15.0°
	1/2	14.6° X 11.0°
	1/3	11.0° X 8.2°
Focusing Range	0.21m ~ ∞	
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size	M25.5 P=0.5mm	
Back Focus (in air)	11.60mm	
Weight	40g	
Operating Temperature	-5 ~ +50°C	

High Resolution Lenses

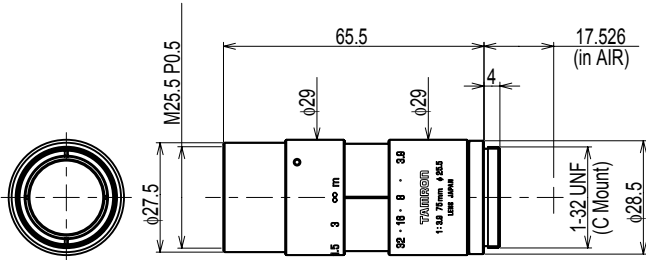
Accessories

23FM50



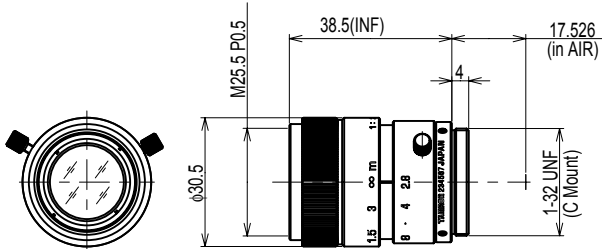
Imager Size		2/3
Mount Type		C
Focal Length		50mm
Aperture Range		2.8 ~ 22
Angle of View (Horizontal X Vertical)	2/3	10.0° X 7.5°
	1/2	7.3° X 5.5°
	1/3	5.5° X 4.1°
Focusing Range		0.44m ~ ∞
Operation	Focus	Manual
	Iris	Manual
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		22.10mm
Weight		50g
Operating Temperature		-10 ~ +45°C

23FM75



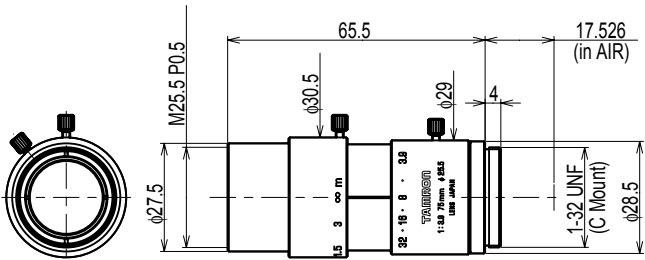
Imager Size		2/3
Mount Type		C
Focal Length		75mm
Aperture Range		3.9 ~ 32
Angle of View (Horizontal X Vertical)	2/3	6.9° X 5.2°
	1/2	5.0° X 3.5°
	1/3	3.5° X 2.5°
Focusing Range		0.5m ~ ∞
Operation	Focus	Manual
	Iris	Manual
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		27.12mm
Weight		64g
Operating Temperature		-10 ~ +70°C

23FM50L



Imager Size		2/3
Mount Type		C
Focal Length		50mm
Aperture Range		2.8 ~ 22
Angle of View (Horizontal X Vertical)	2/3	10.0° X 7.5°
	1/2	7.3° X 5.5°
	1/3	5.5° X 4.1°
Focusing Range		0.44m ~ ∞
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		22.10mm
Weight		52g
Operating Temperature		-5 ~ +50°C

23FM75L



Imager Size		2/3
Mount Type		C
Focal Length		75mm
Aperture Range		3.9 ~ 32
Angle of View (Horizontal X Vertical)	2/3"	6.9° X 5.2°
	1/2"	5.0° X 3.5°
	1/3"	3.5° X 2.5°
Focusing Range		0.5m ~ ∞
Operation	Focus	Manual w/Lock
	Iris	Manual w/Lock
Filter Size		M25.5 P=0.5mm
Back Focus (in air)		27.12mm
Weight		68g
Operating Temperature		-10 ~ +70°C

Optional Accessories for High Resolution Lenses

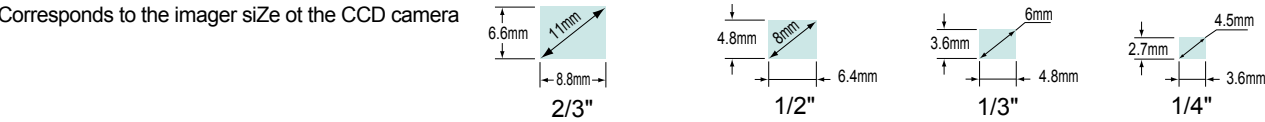
Extension Ring	EX-10	0.5mm, 1mm, 2mm, 5mm, 10mm, 20mm, 40mm
Filter (φ 25.5mm) Fiilter (φ 35.5mm)	UV	for Protection
	PL	Polarizer
	R2	Red
	PO1	Green
	80B	Blue

Standard Accessories

C-CS Adapter	for Adapting C-Mount Lenses to CS—Mount Cameras	
Filter (φ 30.5mm)	UV	for Protection
Fiilter (φ 37.5mm)	PL	Polarizer

Terminology Explanation

Imager Size

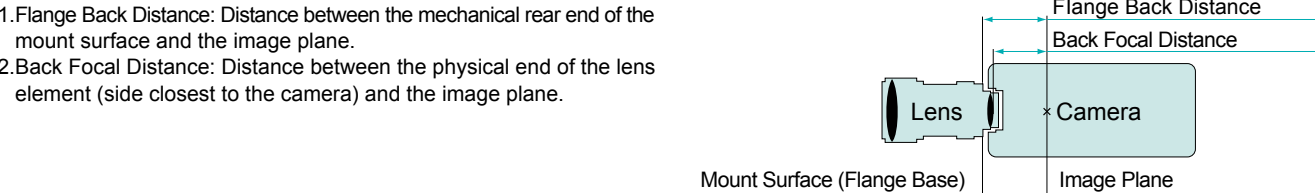


Mount Type

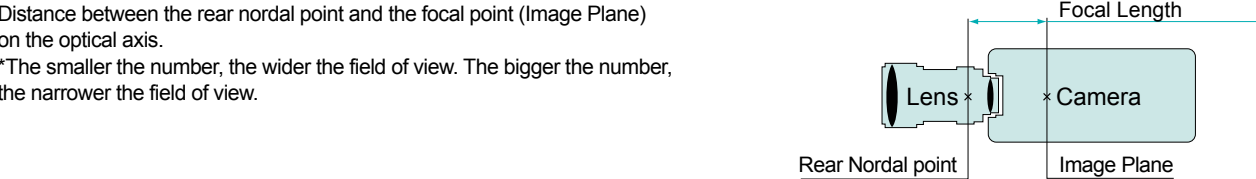
Corresponds to the standard mount type of the camera which may be either C-Mount or CS-Mount. The characteristics are as follows

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

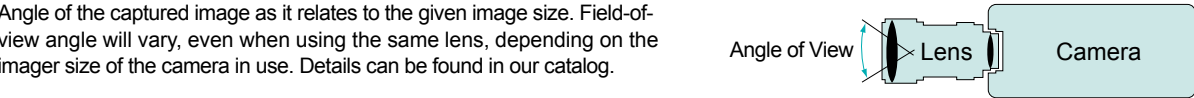
Flange Back Distance & Back Focal Distance



Focal Length



Angle of View



Aperture Range

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:

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

*Smaller F-numbers equal faster/brighter lenses.

Focusing Range

Indicates the shooting range from the Minimum Object Distance (M.O.D.) to infinity. Generally, the range is measured from the physical end of the lens to the object.



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

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