FUJIFILM
Value from Innovation

FUJINON
CCTV LENS
for Security & Surveillance

CCTV Lenses Catalog Ver. 1.5

FUJINON
CCTV LENSES

FUJINON lenses have dominated the broadcasting lens market where excellent image quality is required. The technologies for those broadcasting lenses are now adopted in CCTV lens manufacturing. We offer various lenses for a wide range of purposes including large super zoom lenses suitable for long range surveillance, day and night lenses, and HD lenses. We always make great effort to produce reliable products for customers all over the world through our strictest quality control and streamlined production structure.

See what it is, not what it might be. FUJINON CCTV LENSES

Features

Fish-Eye Lenses

Fujinon's Fish-Eye lens, with an angle of 185 degrees, is the world's first to support 5 megapixel CCD cameras. High-quality image display in imaging software has been made simple with captured images that are sharp from edge to edge, and with the adoption of the Fθ system suited for uniform displaying of images. Look no further for effective, blindspot-free wide-area surveillance, such as of subway entrances and shopping arcades.

Fixed Focal Length Lenses

High cost-performance fixed focal length lenses that are compact, lightweight and of course provide high quality images for security CCTV cameras. Great lineups including day-and-night use lenses supporting 5-megapixel cameras, which are optimum for ITS in growing demand. These lenses are highly effective wherever security monitoring is required, including bank ATMs, convenience stores, offices, condominiums and transportation facilities.

HD Vari-Focal Lenses

High-resolution lenses for use in security systems for which demand has grown in recent years. These lenses boast super clear imaging from the center to the edges with superior face recognition capability. The lenses are suitable for any purpose and locale, in day and night use, from among focal lengths of 2.2 mm to 80 mm.

Vari-Focal Lenses

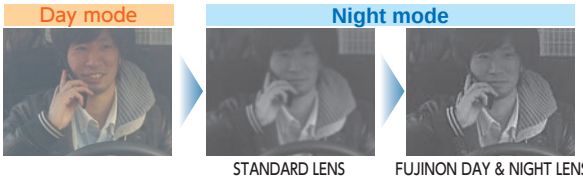
Lenses for use in security systems for which demand has grown in recent years. These lenses allow clear imaging from the center to the edges with superior face recognition capability. They are suitable for any purpose and locale.
The lenses are featured by: an AT aspheric surface, large aperture of F0.95, day and night use, miniature design for dome application or coverage for 1/2-inch sensors superior in terms of optical performance.

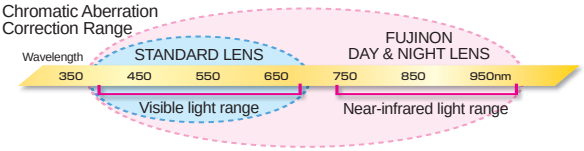
Zoom Lenses

With the adoption of high-precision TRI-CAM + INNERCAM technology, we offer an expanded lineup of products to meet ever more diversified needs. There are models with auto-focusing, optical anti-vibration, zoom and focus presetting, and also those which support the RS-232C standard that enable sophisticated zoom control by computer. We are expanding the lineup with lenses for night vision cameras and lenses with super zoom (eg: 60x), long focal length (eg: 3200 mm) or high resolution (eg: 2 megapixels) demanded for long range surveillance. Small and lightweight lenses enable compact long range surveillance systems to be built.

Day&Night Lenses

There is a growing need for compact, high quality lenses for 24/7 surveillance applications such as parking lots, factory premises, streets. Continuous surveillance is also required for public facilities such as airports, harbors, highways and border patrol, requiring more versatile focal lengths and higher zoom ratios.
Fujinon has developed lenses that respond to infrared illumination to capture clear, corrected images, even at 0 lux. We offer a lineup of lenses from the standard focal length of 2.9-8 mm, to the diverse focal length of 12.5-2200 mm.





At night, day & night cameras operate in the near-infrared range. For this reason, use of regular lenses causes the image to be out of focus. Using special optical glass and advanced optical designing technology, Fujinon's day&night lenses achieve minimal axial aberration. Sharp and high quality images can be captured around-the-clock, whether in the visible range (day / color) or in the near-infrared range (night / monochrome), and at every focal distance from the wide end to the tele end.

Focal Length

*Focal length will be 2x when extender is used.

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HD Lenses

As modern industries and social infrastructures are growing rapidly, demands for surveillance systems incorporating high-definition cameras are increasing day by day. In order to fully utilize advanced complex security systems, superior lens performance for image capture is essential.

To respond to this market demand, Fujifilm offers a wide variety of high quality lenses for HD security cameras, achieving clear images for superior face recognition capability.

Suitable for any application and condition, our lineup contains
Day and Night, and other lenses ranging from 2.2 mm to 3200 mm.

FUJINON HD Vari-Focal lenses can be incorporated with the P-iris control, a precise control of the iris (by using a stepping motor) according to the situation, to produce higher quality video images. (*1)(*2)

High-vision surveillance images!

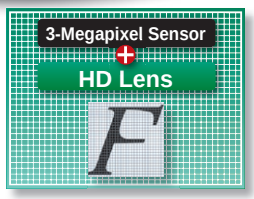


Image captured by HD lens for 3-megapixel sensor

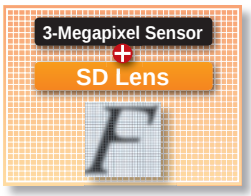
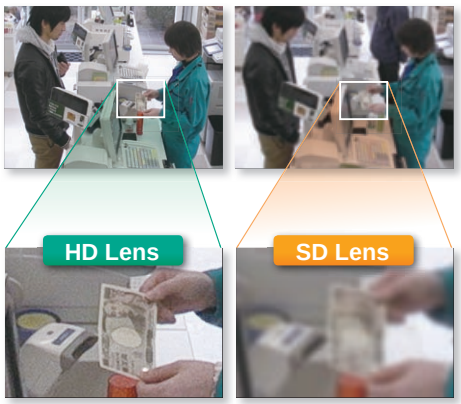


Image captured by SD lens

* The above are simulated images of those captured by HD lens/SD lens and 3-megapixel sensor.

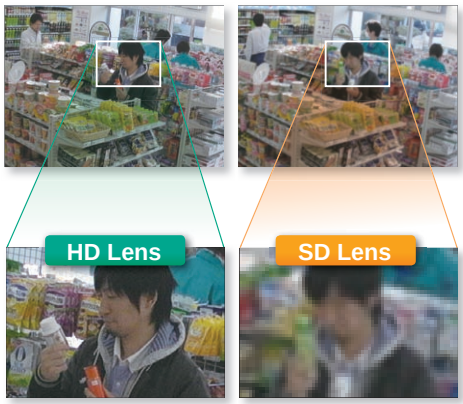
Lenses supporting 1.3- to 5-megapixel HD sensors provide 2 to 4 times greater resolution, compared to traditional lenses for SD sensors. Only when used in combination with these lenses, cameras with greater pixel sizes and image quality allowed to fully exercise their performance.

● **Over Cash Register**



Details on banknotes or cash display are clearly seen.

● **In Store**



Facial expressions or details of clothing can be easily seen in images taken by HD lenses.

*1: The P-iris is an optional feature. Contact us separately to incorporate it.
*2: P-iris lenses are only available with the cameras supporting P-iris control.

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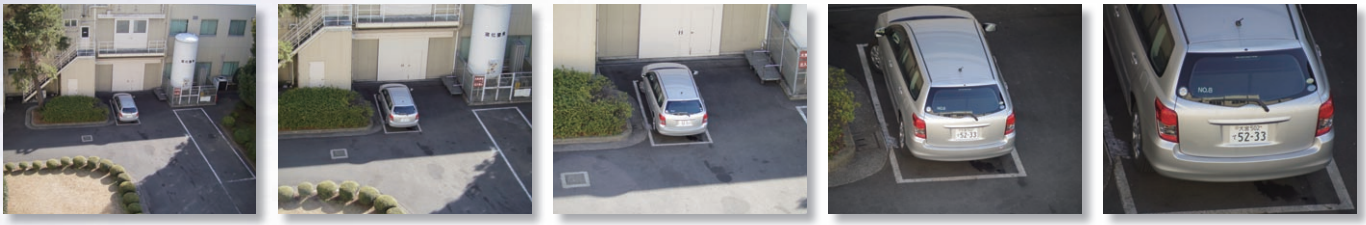
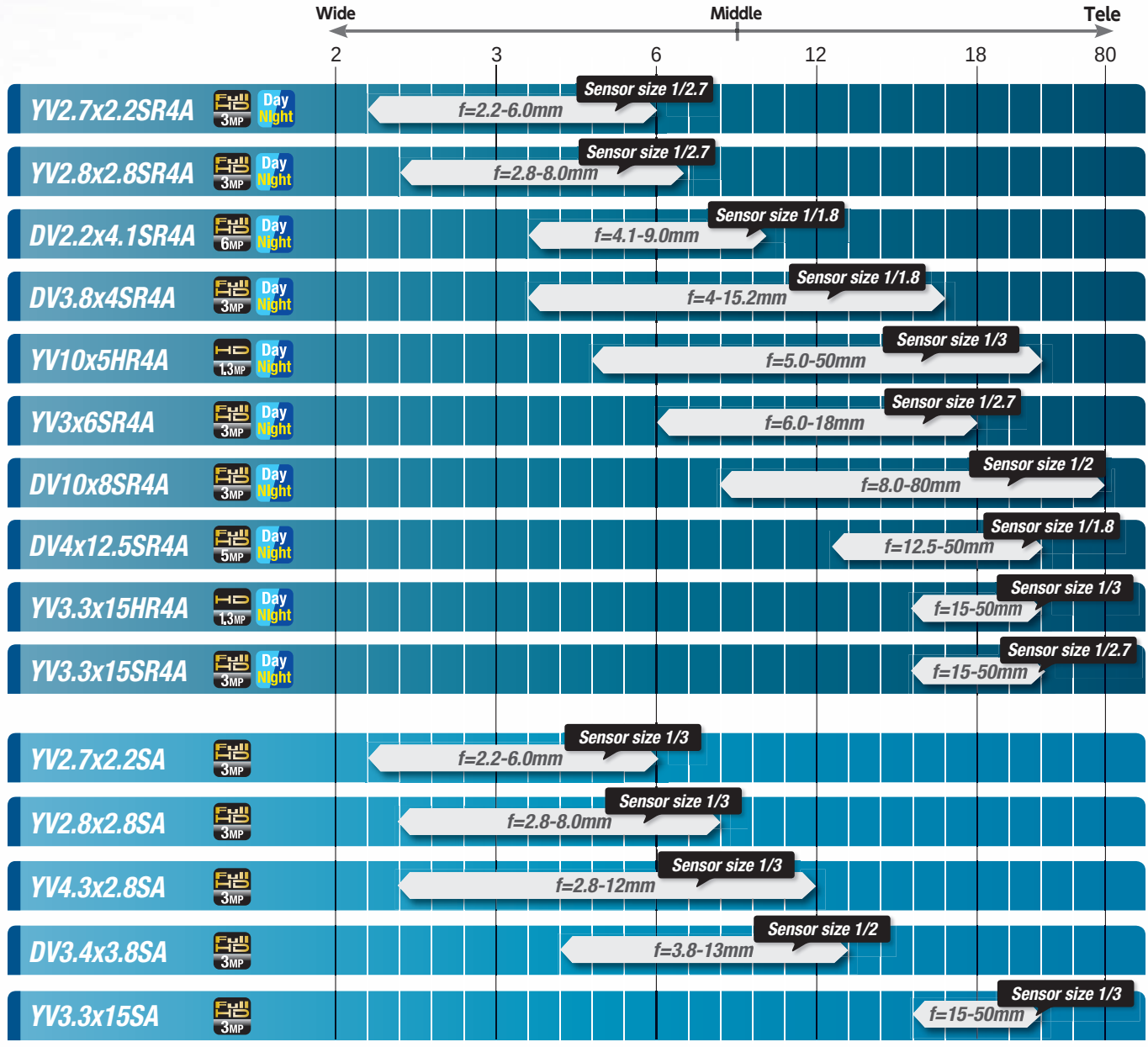
Chart of Focus Range for HD Vari-Focal Lenses.

Wide **Middle** **Tele**



*Shots taken by DV10x8SR4A



Vari-Focal Day Type

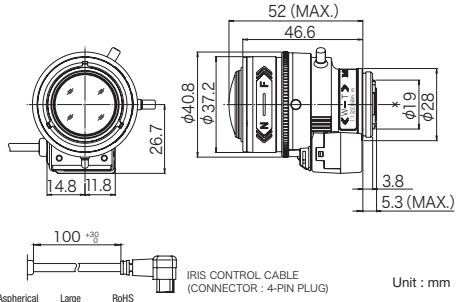
3MP

YV2.8x2.8SA-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | **1/3** | **1/4**

2.8 x

Applicable to 1/3



IRIS CONTROL CABLE (CONNECTOR : 4-PIN PLUG)

Unit : mm

Focal Length (mm)			2.8 - 8 (2.8x)
Iris Range			F1.2 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/3"	WIDE	100° 00' × 73° 45'
		TELE	35° 03' × 26° 18'
	1/4"	WIDE	73° 45' × 54° 49'
		TELE	26° 18' × 19° 44'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	109° 50' × 59° 51'
		TELE	38° 11' × 21° 29'
	1/4"	WIDE	80° 39' × 44° 38'
		TELE	28° 39' × 16° 07'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			50

Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.2 | RoHS Compliant: RoHS

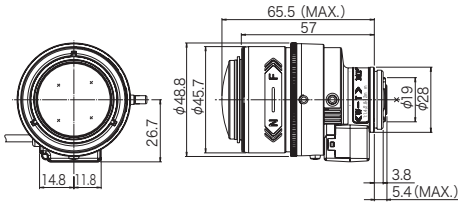
※This product is also available in manual Iris type.

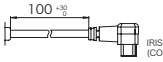
YV4.3x2.8SA-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | **1/3** | **1/4**

4.3 x

Applicable to 1/3





IRIS CONTROL CABLE (CONNECTOR : 4-PIN PLUG)

Unit : mm

Focal Length (mm)			2.8 - 12 (4.3x)
Iris Range			F1.4 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/3"	WIDE	100° 02' × 74° 03'
		TELE	23° 26' × 17° 36'
	1/4"	WIDE	74° 03' × 55° 06'
		TELE	17° 36' × 13° 13'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	109° 33' × 60° 08'
		TELE	25° 31' × 14° 23'
	1/4"	WIDE	80° 56' × 44° 51'
		TELE	19° 10' × 10° 48'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			80

Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS

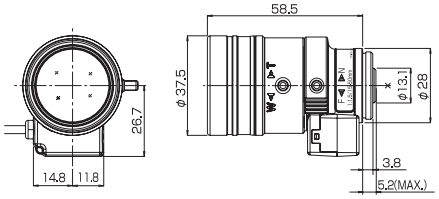
※This product is also available in manual Iris type.

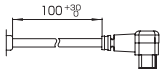
YV3.3x15SA-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | **1/3** | **1/4**

3.3 x

Applicable to 1/3





IRIS CONTROL CABLE (CONNECTOR : 4-PIN PLUG)

Unit : mm

Focal Length (mm)			15 - 50 (3.3x)
Iris Range			F1.5 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/3"	WIDE	18° 08' × 13° 34'
		TELE	5° 35' × 4° 12'
	1/4"	WIDE	13° 34' × 10° 10'
		TELE	4° 12' × 3° 10'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	19° 46' × 11° 04'
		TELE	6° 04' × 3° 26'
	1/4"	WIDE	14° 47' × 8° 18'
		TELE	4° 34' × 2° 35'
Focus Range (From the Lens Front) (m)			∞ - 0.8
Mass (g)			60

Full HD 3MP

Vari-Focal: VARI | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.5 | RoHS Compliant: RoHS

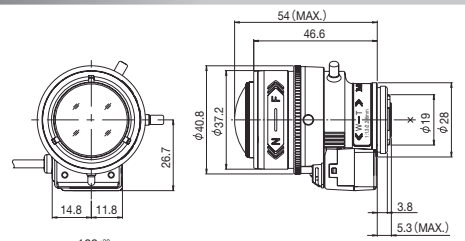
※This product is also available in manual Iris type.

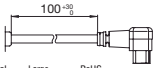
YV2.7x2.2SA-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | **1/3** | **1/4**

2.7 x

Applicable to 1/3





IRIS CONTROL CABLE (CONNECTOR : 4-PIN PLUG)

Unit : mm

Focal Length (mm)			2.2 - 6 (2.7x)
Iris Range			F1.3 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/3"	WIDE	120° 00' × 91° 36'
		TELE	46° 26' × 34° 59'
	1/4"	WIDE	91° 36' × 69° 21'
		TELE	34° 59' × 26° 18'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	129° 43' × 75° 23'
		TELE	50° 30' × 28° 38'
	1/4"	WIDE	99° 23' × 56° 53'
		TELE	38° 04' × 21° 31'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			55

Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.3 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

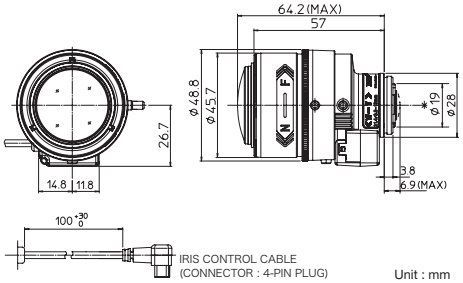
*1 : The iris automatically closes when the camera is turned off.
※ Each of the above products is also available in long cable type (230 mm).

DV3.4x3.8SA-SA1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

3.4 x

Applicable to 1/2



Unit : mm

Focal Length (mm)			3.8 - 13 (3.4x)
Iris Range			F1.4 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2"	WIDE	97° 34' × 71° 47'
		TELE	28° 23' × 21° 18'
	1/3"	WIDE	71° 47' × 53° 15'
		TELE	21° 18' × 15° 59'
	1/4"	WIDE	53° 15' × 39° 41'
		TELE	15° 59' × 11° 59'
Angle of View (H × V) Aspect Ratio 16:9	1/2"	WIDE	107° 12' × 58° 10'
		TELE	30° 55' × 17° 25'
	1/3"	WIDE	78° 34' × 43° 18'
		TELE	23° 12' × 13° 04'
	1/4"	WIDE	58° 10' × 32° 20'
		TELE	17° 25' × 9° 48'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			80

Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

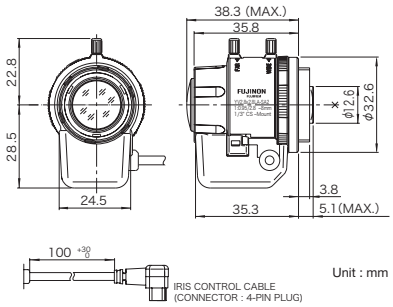
SD

YV2.8x2.8LA-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

2.8 x

Applicable to 1/3



Unit : mm

Focal Length (mm)			2.8 - 8(2.8x)
Iris Range			F0.95 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2"	WIDE	–
		TELE	–
	1/3"	WIDE	99° 52' × 73° 17'
		TELE	35° 14' × 26° 24'
	1/4"	WIDE	73° 17' × 54° 19'
		TELE	26° 24' × 19° 47'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			45

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F0.95 | RoHS Compliant: RoHS

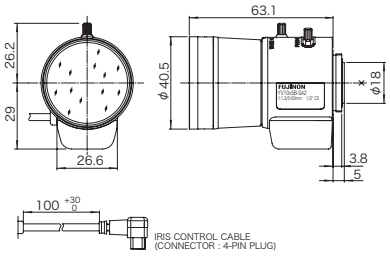
※This product is also available in manual Iris type.

YV10x5B-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

10 x

Applicable to 1/3



Unit : mm

Focal Length (mm)			5 - 50(10x)
Iris Range			F1.3 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2"	WIDE	–
		TELE	–
	1/3"	WIDE	51° 59' × 39° 12'
		TELE	5° 24' × 4° 05'
	1/4"	WIDE	39° 12' × 29° 30'
		TELE	4° 05' × 3° 05'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			100

Vari-Focal: VARI | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.3 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

*1 : The iris automatically closes when the camera is turned off.
※ Each of the above products is also available in long cable type (230 mm).

Vari-Focal Day&Night Type

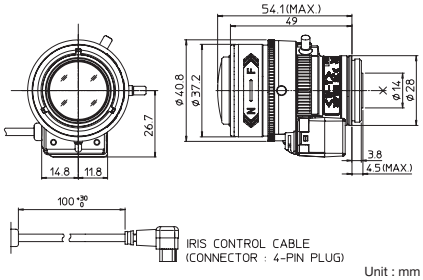
3MP

YV2.8x2.8SR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/2.7 | 1/3 | 1/4

2.8 x

Applicable to 1/2.7



Unit : mm

Day Night | Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.3 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

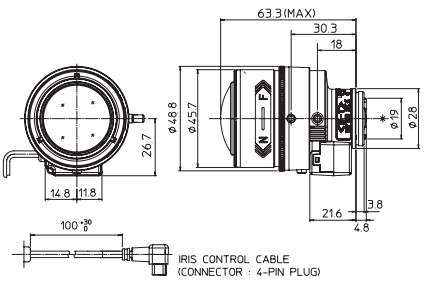
Focal Length (mm)			2.8 - 8 (2.8x)
Iris Range			F1.3 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2.7"	WIDE	112° 24' × 81° 16'
		TELE	38° 48' × 29° 05'
	1/3"	WIDE	100° 34' × 73° 22'
		TELE	35° 16' × 26° 26'
	1/4"	WIDE	73° 22' × 54° 18'
		TELE	26° 26' × 19° 49'
Angle of View (H × V) Aspect Ratio 16:9	1/2.7"	WIDE	124° 51' × 65° 26'
		TELE	42° 17' × 23° 43'
	1/3"	WIDE	111° 8' × 59° 19'
		TELE	38° 27' × 21° 35'
	1/4"	WIDE	80° 23' × 44° 13'
		TELE	28° 47' × 16° 13'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			60

YV3x6SR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/2.7 | 1/3 | 1/4

3 x

Applicable to 1/2.7



Unit : mm

Day Night | Full HD 3MP

Vari-Focal: VARI | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS

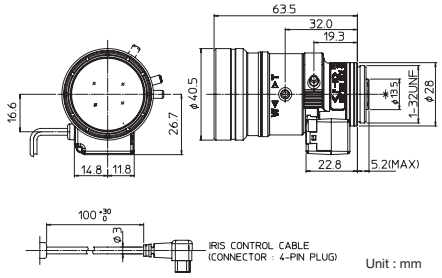
Focal Length (mm)			6 - 18 (3x)
Iris Range			F1.4 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2.7"	WIDE	51° 5' × 37° 50'
		TELE	16° 60' × 12° 45'
	1/3"	WIDE	46° 13' × 34° 18'
		TELE	15° 27' × 11° 36'
	1/4"	WIDE	34° 18' × 25° 35'
		TELE	11° 36' × 8° 42'
Angle of View (H × V) Aspect Ratio 16:9	1/2.7"	WIDE	55° 56' × 30° 48'
		TELE	18° 30' × 10° 26'
	1/3"	WIDE	50° 35' × 27° 54'
		TELE	16° 50' × 9° 28'
	1/4"	WIDE	37° 27' × 20° 53'
		TELE	12° 37' × 7° 7'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			95

YV3.3x15SR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2.7 | 1/3 | 1/4

3.3 x

Applicable to 1/2.7



Unit : mm

Day Night | Full HD 3MP

Vari-Focal: VARI | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.5 | RoHS Compliant: RoHS

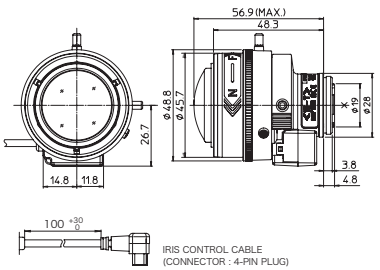
Focal Length (mm)			15 - 50 (3.3x)
Iris Range			F1.5 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/2"	WIDE	20° 1' × 15° 5' *2
		TELE	6° 9' × 4° 39' *2
	1/3"	WIDE	18° 14' × 13° 43'
		TELE	5° 37' × 4° 14'
	1/4"	WIDE	13° 43' × 10° 18'
		TELE	4° 14' × 3° 11'
Angle of View (H × V) Aspect Ratio 16:9	1/2"	WIDE	21° 45' × 12° 20' *2
		TELE	6° 41' × 3° 49' *2
	1/3"	WIDE	19° 49' × 11° 14'
		TELE	6° 6' × 3° 28'
	1/4"	WIDE	14° 56' × 8° 26'
		TELE	4° 36' × 2° 36'
Focus Range (From the Lens Front) (m)			∞ - 1.0
Mass (g)			80

YV2.7x2.2SR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/2.7 | 1/3 | 1/4

2.7 x

Applicable to 1/2.7



Unit : mm

Day Night | Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.3 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

Focal Length (mm)			2.2 - 6 (2.7x)
Iris Range			F1.3 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
ngle of View (H × V)	1/2.7"	WIDE	132° 47' × 100° 19'
		TELE	50° 26' × 37° 54'
	1/3"	WIDE	121° 4' × 91° 20'
		TELE	45° 51' × 34° 28'
	1/4"	WIDE	91° 20' × 68° 43'
		TELE	34° 28' × 25° 53'
Angle of View (H × V) Aspect Ratio 16:9	1/2.7"	WIDE	144° 08' × 82° 08'
		TELE	54° 48' × 30° 57'
	1/3"	WIDE	131° 34' × 74° 46'
		TELE	49° 55' × 28° 11'
	1/4"	WIDE	99° 19' × 56° 19'
		TELE	37° 31' × 21° 12'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			75

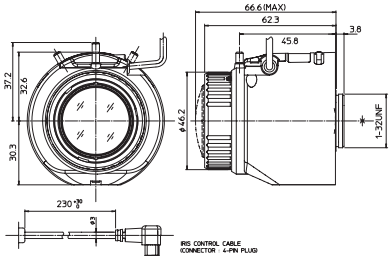
*1 : The iris automatically closes when the camera is turned off.
※ Each of the above products is also available in long cable type (230 mm).

6MP

DV2.2x4.1SR4A-SA2L

Applicable camera (model): 1 | 2/3 | 1/1.8 | 1/2 | 1/3 | 1/4

Applicable to 1/1.8



Unit : mm

Focal Length (mm)			4.1 - 9 (2.2x)
Iris Range			F1.6 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)
Angle of View (H × V)	1/1.8"	WIDE	100° 1' × 74° 21'
		TELE	45° 17' × 33° 59'
	1/2"	WIDE	89° 33' × 66° 42'
		TELE	40° 43' × 30° 34'
	1/3"	WIDE	66° 42' × 49° 50'
		TELE	30° 34' × 22° 56'
	1/4"	WIDE	49° 50' × 37° 18'
		TELE	22° 56' × 17° 12'
Angle of View (H × V) Aspect Ratio 16:9	1/1.8"	WIDE	109° 23' × 60° 32'
		TELE	49° 18' × 27° 47'
	1/2"	WIDE	97° 52' × 54° 20'
		TELE	44° 21' × 24° 59'
	1/3"	WIDE	72° 47' × 40° 39'
		TELE	33° 17' × 18° 44'
	1/4"	WIDE	54° 20' × 30° 27'
		TELE	24° 59' × 14° 3'
Focus Range (From the Lens Front) (m)			∞ - 0.3m
Mass (g)			135

Day Night | Full HD 6MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.6 | RoHS Compliant: RoHS

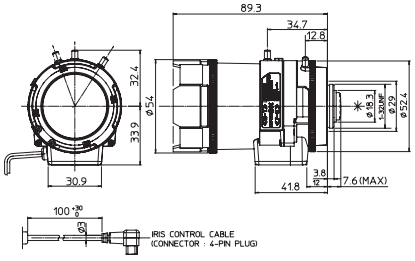
5MP

DV4x12.5SR4A-SA1

Applicable camera (model): 1 | 2/3 | 1/1.8 | 1/2 | 1/3 | 1/4

4 x

Applicable to 1/1.8



Unit : mm

Focal Length (mm)			12.5 - 50 (4x)
Iris Range			F1.6 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/1.8"	WIDE	32° 54' × 24° 37'
		TELE	8° 14' × 6° 13'
	1/2"	WIDE	29° 32' × 22° 7'
		TELE	7° 26' × 5° 36'
	1/3"	WIDE	22° 7' × 16° 34'
		TELE	5° 36' × 4° 12'
	1/4"	WIDE	–
		TELE	–
Angle of View (H × V) Aspect Ratio 16:9	1/1.8"	WIDE	35° 52' × 20° 6'
		TELE	8° 57' × 5° 5'
	1/2"	WIDE	32° 12' × 18° 3'
		TELE	8° 4' × 4° 35'
	1/3"	WIDE	24° 6' × 13° 32'
		TELE	6° 5' × 3° 27'
	1/4"	WIDE	–
		TELE	–
Focus Range (From the Lens Front) (m)			∞ - 0.8
Mass (g)			175

Day Night | Full HD 5MP

Vari-Focal: VARI | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.6 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

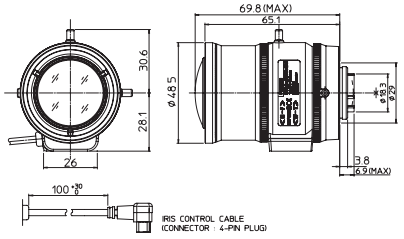
3MP

DV3.8x4SR4A-SA1

Applicable camera (model): 1 | 2/3 | 1/1.8 | 1/2 | 1/3 | 1/4

3.8 x

Applicable to 1/1.8



Unit : mm

Focal Length (mm)			4 - 15.2 (3.8x)
Iris Range			F1.5 - T360
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/1.8"	WIDE	103° 27' × 77° 03'
		TELE	27° 23' × 20° 34'
	1/2"	WIDE	92° 42' × 69° 08'
		TELE	24° 38' × 18° 29'
	1/3"	WIDE	69° 08' × 51° 40'
		TELE	18° 29' × 13° 53'
	1/4"	WIDE	51° 40' × 38° 41'
		TELE	13° 53' × 10° 25'
Angle of View (H × V) Aspect Ratio 16:9	1/1.8"	WIDE	113° 02' × 62° 46'
		TELE	29° 48' × 16° 49'
	1/2"	WIDE	101° 14' × 56° 21'
		TELE	26° 49' × 15° 07'
	1/3"	WIDE	75° 25' × 42° 09'
		TELE	20° 08' × 11° 21'
	1/4"	WIDE	56° 21' × 31° 34'
		TELE	15° 07' × 8° 31'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			120

Day Night | Full HD 3MP

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.5 | RoHS Compliant: RoHS

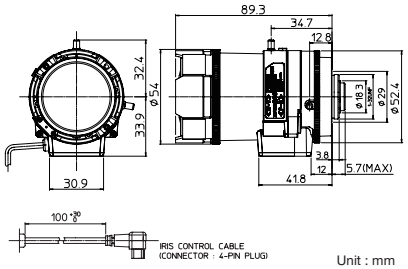
※This product is also available in manual Iris type.

DV10x8SR4A-SA1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

10 x

Applicable to 1/2



Unit : mm

Focal Length (mm)			8 - 80 (10x)
Iris Range			F1.6 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type)*1
Angle of View (H × V)	1/1.8"	WIDE	–
		TELE	–
	1/2"	WIDE	44° 33' × 34° 58'
		TELE	4° 42' × 3° 32'
	1/3"	WIDE	34° 58' × 26° 35'
		TELE	3° 32' × 2° 39'
	1/4"	WIDE	22° 40' × 17° 06'
		TELE	2° 22' × 1° 47'
Angle of View (H × V) Aspect Ratio 16:9	1/1.8"	WIDE	–
		TELE	–
	1/2"	WIDE	49° 39' × 29° 10'
		TELE	5° 07' × 2° 53'
	1/3"	WIDE	38° 16' × 22° 05'
		TELE	3° 50' × 2° 09'
	1/4"	WIDE	24° 42' × 14° 03'
		TELE	2° 35' × 1° 27'
Focus Range (From the Lens Front) (m)			∞ - 1.5
Mass (g)			180

Day Night | Full HD 3MP

Vari-Focal: VARI | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.6 | RoHS Compliant: RoHS

※This product is also available in manual Iris type.

*1 : The iris automatically closes when the camera is turned off. *2 : Angle of view values for the 1/2.7 model.
※ Each of the above products is also available in long cable type (230 mm).

Vari-Focal Day&Night Type

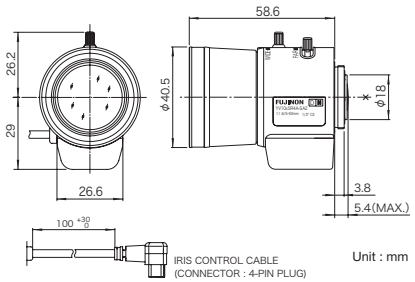
HD

YV10x5HR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

10 x

Applicable to 1/3



Unit : mm

Day Night | HD 1.3MP

Vari-Focal: VARI | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.6 | RoHS Compliant: RoHS

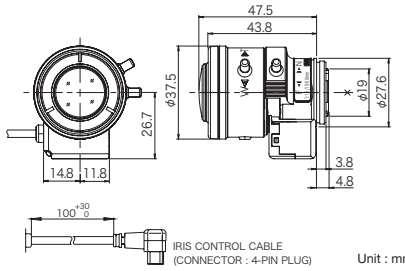
Focal Length (mm)			5 - 50 (10x)
Iris Range			F1.6 - T360 (Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type) *1
Angle of View (H × V)	1/3"	WIDE	51° 17' × 39° 36'
		TELE	5° 30' × 4° 07'
	1/4"	WIDE	39° 36' × 30° 13'
		TELE	4° 07' × 3° 06'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	55° 35' × 31° 58'
		TELE	5° 47' × 3° 20'
	1/4"	WIDE	42° 19' × 24° 4'
		TELE	4° 25' × 2° 31'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			85

YV3.3x15HR4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

3.3 x

Applicable to 1/3



Unit : mm

Day Night | HD 1.3MP

Vari-Focal: VARI | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Aspherical Lens: AT | Large Aperture Ratio: F1.5 | RoHS Compliant: RoHS

Focal Length (mm)			15 - 50 (3.3x)
Iris Range			F1.5 - T360 (Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type) *1
Angle of View (H × V)	1/3"	WIDE	18° 29' × 13° 45'
		TELE	5° 29' × 4° 09'
	1/4"	WIDE	13° 45' × 10° 16'
		TELE	4° 09' × 3° 08'
Angle of View (H × V) Aspect Ratio 16:9	1/3"	WIDE	20° 13' × 11° 11'
		TELE	5° 57' × 3° 25'
	1/4"	WIDE	15° 0' × 8° 22'
		TELE	4° 31' × 2° 34'
Focus Range (From the Lens Front) (m)			∞ - 0.8
Mass (g)			50

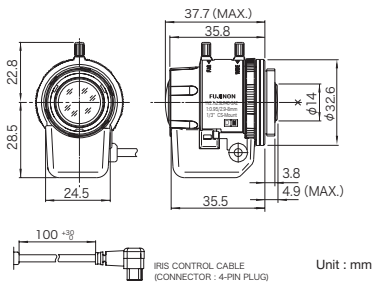
SD

YV2.7x2.9LR4D-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

2.7 x

Applicable to 1/3



Unit : mm

Day Night

Vari-Focal: VARI | Wide Angle: WIDE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F0.95 | RoHS Compliant: RoHS

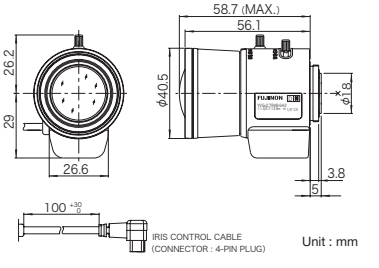
Focal Length (mm)			2.9 - 8(2.7x)
Iris Range			F0.95 - T360 (Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type) *1
Angle of View (H × V)	1/3"	WIDE	94° 37' × 69° 30'
		TELE	35° 18' × 26° 26'
	1/4"	WIDE	61° 30' × 51° 33'
		TELE	26° 26' × 19° 48'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			45

YV5x2.7R4B-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/2.7 | 1/3 | 1/4

5 x

Applicable to 1/2.7



Unit : mm

Day Night

Vari-Focal: VARI | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | Aspherical Lens: AT | Large Aperture Ratio: F1.3 | RoHS Compliant: RoHS

Focal Length (mm)			2.7 - 13.5(5x)
Iris Range			F1.3 - T360 (Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type) *1
Angle of View (H × V)	1/3"	WIDE	99° 42' × 74° 17'
		TELE	20° 37' × 15° 30'
	1/4"	WIDE	74° 17' × 55° 26'
		TELE	15° 30' × 11° 38'
Focus Range (From the Lens Front) (m)			∞ - 0.3
Mass (g)			70

∗ 1 : The iris automatically closes when the camera is turned off.
※ Each of the above products is also available in long cable type (230 mm).

For detailed specifications, see the following website: ▶http://www.fujifilm.com/products/optical_devices/cctv/security/

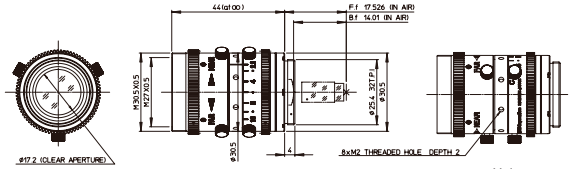
Fixed Focal

For 3CCD

TF4XA-1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 1/3



Unit : mm

Focal Length (mm)		4
Iris Range		F2.2
Operation	Focus	Manual
	Iris	Manual
Angle of View (H × V)		71° 28' x 41° 31'
Focus Range (From the Lens Front) (m)		∞ - 0.1
Mass (g)		100

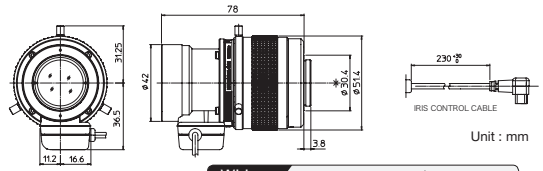
Full HD 2MP | Fixed Focal: FIXED | For 3CCD Camera: 3CCD | Manual Iris: MANUAL | C Mount: C-mt | Metal Mount: METAL | RoHS Compliant: RoHS

For ITS

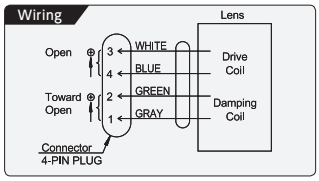
HF35SR4A-SA1L

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 2/3



Unit : mm



Focal Length (mm)		35
Iris Range		F2.0 - T360
Operation	Focus	Manual
	Iris	Auto(DC Type)*1
Angle of View (H × V)	2/3"	14° 20' × 10° 46'
	1/2"	10° 27' × 7° 51'
	1/3"	7° 51' × 5° 53'
Angle of View (H × V) Aspect Ratio 16:9	2/3"	15° 36' × 8° 48'
	1/2"	11° 22' × 6° 25'
	1/1"	8° 33' × 4° 49'
Focus Range (From the Lens Front) (m)		∞ - 0.75
Mass (g)		270

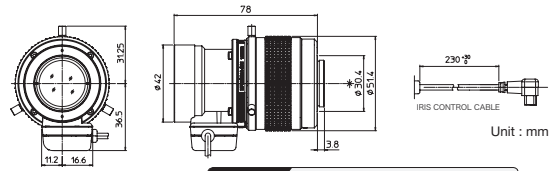
*1 : The iris automatically closes when the camera is turned off.
※ This product is also available in manual type.

Day Night | Full HD 5MP | Fixed Focal: FIXED | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | RoHS Compliant: RoHS

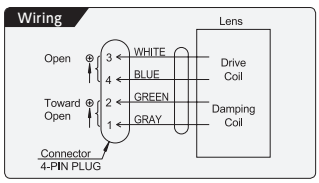
HF50SR4A-SA1L

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 2/3



Unit : mm



Focal Length (mm)		50
Iris Range		F2.8 - T360
Operation	Focus	Manual
	Iris	Auto(DC Type)*1
Angle of View (H × V)	2/3"	10° 03' × 7° 33'
	1/2"	7° 19' × 5° 30'
	1/3"	5° 30' × 4° 07'
Angle of View (H × V) Aspect Ratio 16:9	2/3"	10° 57' × 6° 10'
	1/2"	7° 58' × 4° 29'
	1/1"	5° 59' × 3° 22'
Focus Range (From the Lens Front) (m)		∞ - 1.0
Mass (g)		260

*1 : The iris automatically closes when the camera is turned off.
※ This product is also available in manual type.

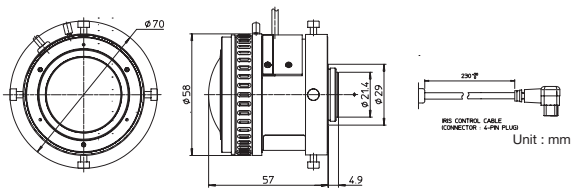
Day Night | Full HD 5MP | Fixed Focal: FIXED | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Metal Mount: METAL | ND Filter: ND | Long Cable: 230 | RoHS Compliant: RoHS

Panomorph Lens

DF360SR4A

Applicable camera (model): 1 | 2/3 | 1/2.5 | 1/3 | 1/4

ImmerVision Enables
RPL A1UST



Unit : mm

Focal Length (mm)		1.3
Iris Range		F2.0 - Close
Operation	Focus	Fixed
	Iris	Auto(DC Type)
Angle of View (H × V)	1/2.5"	182° × 182° (5.33x3.93mm)
Focus Range (From the Lens Front) (m)		∞ - 0.3
Mass (g)		265

Day Night | Full HD 5MP | Fixed Focal: FIXED | Panomorph: 360° | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | Large Aperture Ratio: F2.0 | RoHS Compliant: RoHS

Fish-eye

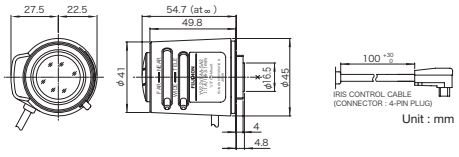
SD

YV2.2x1.4A-SA2

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

2.2 x

Vari-Focal: VARI | Fish-Eye: Fish-Eye 185° | DC Auto Iris: DC | CS Mount: CS-mt | ND Filter: ND | Long Cable: 230 | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS



Unit : mm

Fish-Eye Lens View

Focal Length			1.4 - 3.1(2.2x)
Iris Range			F1.4 - T360(Equivalent to F360)
Operation	Zoom		Manual
	Focus		Manual
	Iris		Auto (DC type) *1
Angle of View (H × V)	1"		–
	2/3"		–
	1/2"		–
	1/3"	WIDE	185° × 185° (φ3.45mm)
		TELE	94° 47' × 69° 26'
	1/4"	WIDE	185° × 121°
		TELE	69° 26' × 51° 30'
Focus Range (From the Lens Front) (m)			∞ - 0.2
Mass (g)			80

5MP

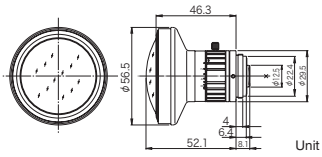
FE185C046HA-1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 1/2

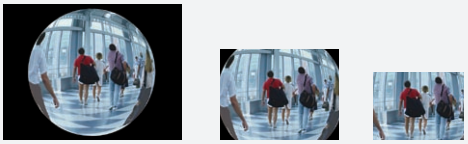
Full HD 5MP

Fixed Focal: FIXED | Fish-Eye: Fish-Eye 185° | Manual Iris: MANUAL | C Mount: C-mt | Metal Mount: METAL | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS



Unit : mm

Fish-Eye Lens View



Focal Length			1.4
Iris Range			F1.4 - F16
Operation	Zoom		–
	Focus		Fixed
	Iris		Manual
Angle of View (H × V)	1"		–
	2/3"		–
	1/2"		185° × 185° (φ4.6mm)
	1/3"	WIDE	185° × 144° 47'
		TELE	
	1/4"	WIDE	144° 47' × 108° 35'
		TELE	
Focus Range (From the Lens Front) (m)			∞ - 0.1
Mass (g)			140

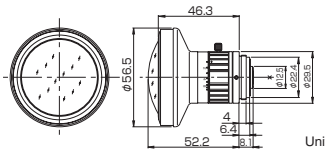
FE185C057HA-1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 2/3

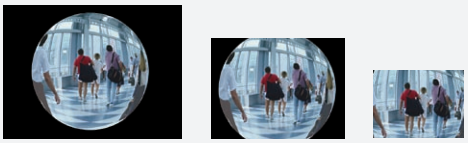
Full HD 5MP

Fixed Focal: FIXED | Fish-Eye: Fish-Eye 185° | Manual Iris: MANUAL | C Mount: C-mt | Metal Mount: METAL | Large Aperture Ratio: F1.4 | RoHS Compliant: RoHS



Unit : mm

Fish-Eye Lens View



Focal Length			1.8
Iris Range			F1.4 - F16
Operation	Zoom		–
	Focus		Fixed
	Iris		Manual
Angle of View (H × V)	1"		–
	2/3"		185° × 185° (φ5.7mm)
	1/2"		185° × 154° 08'
	1/3"	WIDE	154° 08' × 115° 27'
		TELE	
	1/4"	WIDE	–
		TELE	
Focus Range (From the Lens Front) (m)			∞ - 0.1
Mass (g)			135

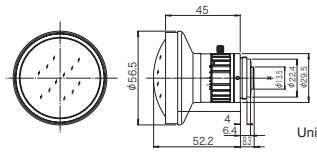
FE185C086HA-1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 1

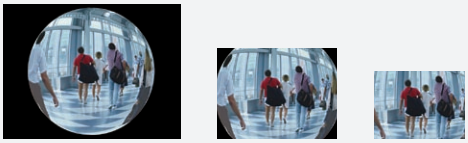
Full HD 5MP

Fixed Focal: FIXED | Fish-Eye: Fish-Eye 185° | Manual Iris: MANUAL | C Mount: C-mt | Metal Mount: METAL | RoHS Compliant: RoHS



Unit : mm

Fish-Eye Lens View



Focal Length			2.7
Iris Range			F1.8 - F16
Operation	Zoom		–
	Focus		Fixed
	Iris		Manual
Angle of View (H × V)	1"		185° × 185° (φ8.6mm)
	2/3"		185° × 140° 35'
	1/2"		136° 18' × 102° 19'
	1/3"	WIDE	–
		TELE	
	1/4"	WIDE	–
		TELE	
Focus Range (From the Lens Front) (m)			∞ - 0.2
Mass (g)			160

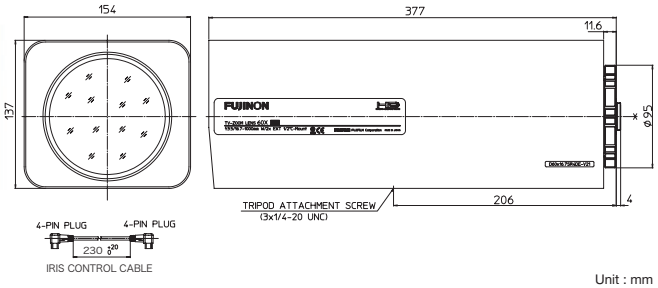
* 1 : The iris automatically closes when the camera is turned off.
※ YV2.2 × 1.4A-SA2 is an SD lens and is also available in a long cable type (230 mm) or manual type.

D60x16.7SR4DE Series / D60x16.7SR4FE 2,000mm

Applicable camera (model) 1 2/3 1/18 1/2 1/3 1/4

60x

Applicable to 1/18



Unit : mm

Day Night | VISIBLE LIGHT CUT | Full HD 2MP

Zoom	Motor Drive	Telephoto Long Focal	Auto Focus	Optical Anti-Vibration	DC Auto Iris	Iris-Remote	C Mount	Metal Mount	Potentio Meter	ND Filter	Extender	PC Control	Full Servo	RoHS Compliant
ZOOM	MOTOR DRIVE	TELE	AF -ZP1A -ZP1C	OS-TECH -ZP1C	DC	IRIS-REMOTE	C-mt	METAL	PRESET -V21	ND	2x	PC -ZP1A -ZP1C	SERVO -ZP1A -ZP1C	RoHS

				Applicable to 1/18 D60x16.7SR4DE-V21	Applicable to 1/18 D60x16.7SR4DE-ZP1A (AF)	Applicable to 1/18 D60x16.7SR4FE-ZP1C (AF and Anti-Vibration)
Focal Length (mm)		1×		16.7 - 1000 (60x)		
		2×		33.4 - 2000		
Iris Range		1×		F3.5 - F16		
		2×		F7.0 - F32		
Filter				Filter ND (1/8, 1/64), Visible Light Cut		
Operation	Zoom			Motor Drive	Servo Control	
	Focus			Motor Drive	Servo Control	
	Iris			Auto(DC type) or Remote*1		
AF				N/A	Available (with analog camera)	
Optical Anti-Vibration				N/A		Available
Temperature Correction Mechanism				○		
Angle of View (H×V)	1/1.8"	1×	WIDE	23° 5' × 17° 41'		
			TELE	0° 25' × 0° 19'		
		2×	WIDE	11° 46' × 8° 54'		
			TELE	0° 12' × 0° 9'		
	1/2"	1×	WIDE	20° 53' × 15° 55'		
			TELE	0° 22' × 0° 17'		
		2×	WIDE	10° 35' × 7° 59'		
			TELE	0° 11' × 0° 8'		
Angle of View (H×V) (16:9)	1/1.8"	1×	WIDE	24° 56 × 14° 34'		
			TELE	0° 27' × 0° 15'		
		2×	WIDE	12° 47' × 7° 18'		
			TELE	0° 14' × 0° 8'		
	1/2"	1×	WIDE	22° 35' × 13° 6'		
			TELE	0° 24' × 0° 14'		
		2×	WIDE	11° 30' × 6° 32'		
			TELE	0° 12' × 0° 7'		
Focus Range (From the Lens Front) (m)				∞ - 5		
Object imensions at M.O.D. (H × V) (4:3) (mm)	1/1.8"	1×	WIDE	1975 × 1504		
			TELE	35 × 27		
		2×	WIDE	998 × 753		
			TELE	18 × 13		
	1/2"	1×	WIDE	1782 × 1353		
			TELE	32 × 24		
		2×	WIDE	896 × 676		
			TELE	16 × 12		
Object imensions at M.O.D. (H × V) (16:9) (mm)	1/1.8"	1×	WIDE	2137 × 1237		
			TELE	38 × 22		
		2×	WIDE	1084 × 617		
			TELE	19 × 11		
	1/2"	1×	WIDE	1931 × 1111		
			TELE	34 × 20		
		2×	WIDE	974 × 553		
			TELE	17 × 10		
Back Focal Distance (in air) (mm)				24.85		
Exit Pupil Position (From Image Plane) (mm)				(1x) -448.80 (2x) -85.23		
Filter Thread (mm)				M112 × 0.75		
Mount				C		
Extender				2x		
Mass (kg)				6.5		7.1
Standard Accessories				IRIS CONTROL CABLE		
Wiring Diagram				P20		

* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23). The above product is also available in reinforced body model with axis adjustment mechanism.

For detailed specifications, see the following website: ▶http://www.fujifilm.com/products/optical_devices/cctv/security/

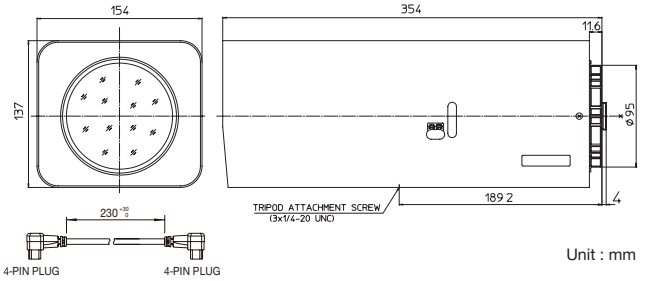
Zoom

D60x12.5BE-V41 / D60x12.5R3DE Series 1,500mm

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

60 x

Applicable to 1/2



Unit : mm

Day Night

D60x12.5R3DE-V41
D60x12.5R3DE-ZP1

D60x12.5BE-V41

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Video Auto Iris	Iris-Remote	C Mount	Metal Mount	Potentio Meter	ND Filter	Extender	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET	ND	2x	RoHS

D60x12.5R3DE Series

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Video Auto Iris	Iris-Remote	C Mount	Metal Mount	Potentio Meter	ND Filter	Extender	PC Control	Full Servo	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET -V41	ND	2x	PC -ZP1	SERVO -ZP1	RoHS

Applicable to 1/2 ※This product is for sale while stock lasts.

				D60x12.5BE-V41 (Applicable to 1/2)	D60x12.5R3DE-V41 (Applicable to 1/2)	D60x12.5R3DE-ZP1 (Applicable to 1/2)
Focal Length (mm)			1×	12.5 - 750(60x)		
			2×	25 - 1500(60x)		
Iris Range			1×	F3.8 - T3000(Equivalent to F3000)		
			2×	F7.6 - T3000(Equivalent to F3000)		
Operation		Zoom		Motor Drive		Servo Control
		Focus		Motor Drive		Servo Control
		Iris		Auto (Video Type) or Remote*1*2		Auto (Video Type) or Remote or Servo Control*1*2
Angle Of View (H×V)	1/2"	1×	WIDE	28° 43' × 21° 44'		
			TELE	0° 29' × 0° 22'		
		2×	WIDE	14° 35' × 10° 58'		
			TELE	0° 15' × 0° 11'		
	1/3"	1×	WIDE	21° 44' × 16° 23'		
			TELE	0° 22' × 0° 17'		
		2×	WIDE	10° 58' × 8° 14'		
			TELE	0° 11' × 0° 08'		
Focusing Range (From Front Of The Lens)(m)				∞ - 5		
Object Dimensions at M.O.D. (H×V) (mm)	1/2"	1×	WIDE	2465 × 1849		
			TELE	41 × 31		
		2×	WIDE	1233 × 924		
			TELE	21 × 15		
	1/3"	1×	WIDE	1849 × 1387		
			TELE	31 × 23		
		2×	WIDE	925 × 693		
			TELE	16 × 12		
Back Focal Distance (in air) (mm)			1×	53.23		
			2×	31.10		
Exit Pupil Position (From Image Plane) (mm)			1×	-77		
			2×	-38		
Filter Thread (mm)				M107 × 1		
Extender				2×		
Mass (g)				5100	5200	
Wiring Diagram				P20		P21

*1 : When power is turned off, iris will automatically close.

*2 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

Zoom position D60x16.7SR4DE Series

WIDE (16.7mm) ⟷ **TELE (1,000mm)**

*without Extender

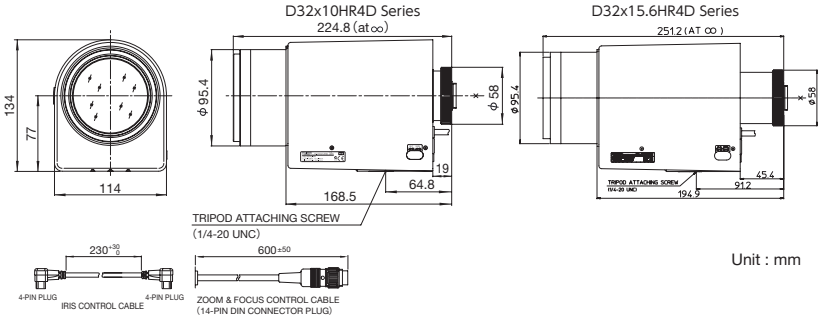
D32x10HR4D Series / D32x15.6HR4D Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

32 x

Applicable to 1/2

*Photograph of the D32x10HR4D model



Unit : mm

Day Night | HD 1.3MP

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Switchable		Iris-Remote	C Mount	Metal Mount	Potentio Meter	ND Filter	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	DC	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET	ND	RoHS

			Applicable to 1/2	Applicable to 1/2
			D32x10HR4D-VX1	D32x15.6HR4D-VX1
Focal Length (mm)			10 - 320(32x)	15.6 - 500(32x)
Iris Range			F2.5 - T1500 (Equivalent to F1500)	F3.9 - T1500 (Equivalent to F1500)
Operation	Zoom		Motor Drive	
	Focus		Motor Drive	
	Iris		Switchable Iris Mode DC Mode : Auto*1 / Video Mode : Auto or Remote*1*2	
Angle ofView (H×V)	1/2"	WIDE	35° 29' × 26° 59'	23° 11' × 17° 30'
		TELE	1° 09' × 0° 52'	0° 44' × 0° 33'
	1/3"	WIDE	26° 59' × 20° 24'	17° 30' × 13° 10'
		TELE	0° 52' × 0° 39'	0° 33' × 0° 25'
Angle ofView (H×V) (16:9)	1/2"	WIDE	36° 45' × 21° 29'	24° 41' × 14° 04'
		TELE	1° 14' × 0° 42'	0° 49' × 0° 27'
	1/3"	WIDE	28° 16' × 16° 13'	18° 41' × 10° 35'
		TELE	0° 56' × 0° 32'	0° 37' × 0° 21'
Focus Range (From the Lens Front) (m)			∞ - 3	
Object Dimensions at M.O.D. (H × V) (4:3) (mm)	1/2"	WIDE	1746 × 1310	1179 × 884
		TELE	57 × 43	37 × 28
	1/3"	WIDE	1310 × 982	884 × 663
		TELE	43 × 32	28 × 21
Object Dimensions at M.O.D. (H × V) (16:9) (mm)	1/2"	WIDE	1891 × 1087	1253 × 709
		TELE	62 × 35	41 × 23
	1/3"	WIDE	1440 × 818	944 × 532
		TELE	47 × 26	31 × 17
Back Focal Distance (in air) (mm)			22.70	44.92
Exit Pupil Position (From Image Plane) (mm)			-53	-75
Filter Thread (mm)			M82 × 0.75	M82 × 0.75
Mass (kg)			2.5	2.7
Wiring Diagram			P21	

*1 : The iris automatically closes when the camera is turned off.
*2 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

Zoom

D8x7.8HA Series

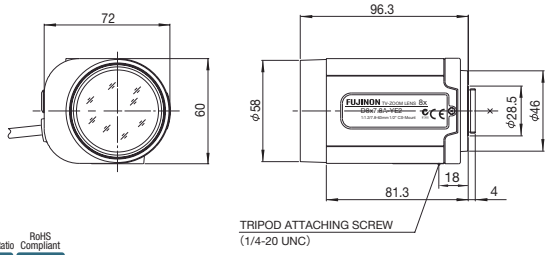
Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

8 x

Applicable to 1/2

HD 1.3MP

Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Wide Angle: WIDE | DC Auto Iris: DC (-YE2, -SE2) | CS Mount: CS-mt | Metal Mount: METAL | Potentio Meter: PRESET (-YE2) | ND Filter: ND | Large Aperture Ratio: F1.2 | RoHS Compliant: RoHS



Unit : mm

			Applicable to 1/2 D8x7.8HA-YE2	Applicable to 1/2 D8x7.8HA-SE2
Focal Length (mm)			7.8 - 63(8x)	
Iris Range			F1.2 - T400 (Equivalent to F400)	
Operation		Zoom	Motor Drive	
		Focus	Motor Drive	
		Iris	Auto(DC Type)*1	
Angle Of View (H×V)	1/2"	WIDE	44° 37' × 34° 12'	
		TELE	5° 49' × 4° 22'	
Angle Of View (H×V) (16 : 9)	1/2"	WIDE	–	
		TELE	–	
Focusing Range (From Front Of The Lens) (m)			∞ - 1.2	
ObjectDimensions at M.O.D.(H×V) (mm)	1/2"	WIDE	944 × 708	
		TELE	117 × 88	
Back Focal Distance (in air) (mm)			14.00	
Exit Pupil Position (From Image Plane) (mm)			-55	
Filter Thread (mm)			M55 × 0.75	
Extender			–	
Mass (g)			400	
Wiring Diagram			P21	

*1 : When power is turned off, iris will automatically close.

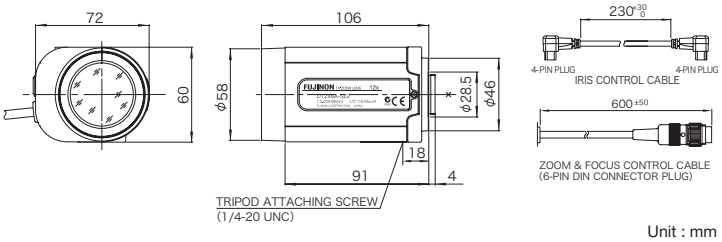
D12x8A Series/ Y12x6A Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

12 x

Applicable to 1/2

Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | CS Mount: CS-mt | Metal Mount: METAL | Potentio Meter: PRESET (-YE2) | ND Filter: ND | RoHS Compliant: RoHS



Unit : mm

			Applicable to 1/2 D12x8A-SE2	D12x8A-YE2	Applicable to 1/3 Y12x6A-SE2	Y12x6A-YE2
Focal Length (mm)			8 - 96(12x)		6 - 72(12x)	
Iris Range			F2.0 - T400 (Equivalent to F400)		F1.5 - T400 (Equivalent to F400)	
Operation	Zoom		Motor Drive			
	Focus		Motor Drive			
	Iris		Auto(DC Type)*1			
Angle Of View (H×V)	1/2"	WIDE	43° 36' × 33° 24'		–	
		TELE	3° 49' × 2° 52'		–	
	1/3"	WIDE	33° 24' × 25° 22'		43° 36' × 33° 24'	
		TELE	2° 52' × 2° 09'		3° 49' × 2° 52'	
Focusing Range (From Front Of The Lens) (m)			∞ - 1.3			
ObjectDimensions at M.O.D.(H×V) (mm)	1/2"	WIDE	1003 × 753		–	
		TELE	84 × 63		–	
	1/3"	WIDE	752 × 565		1003 × 753	
		TELE	63 × 47		84 × 63	
Back Focal Distance (in air) (mm)			16.22		11.69	
Exit Pupil Position (From Image Plane) (mm)			-51		-6028	
Filter Thread (mm)			M55 × 0.75			
Mass (g)			330	350	330	350
Coil Resistance			–		Drive Coil 180Ω Damping Coil 720Ω	
Current Consumption			–		22mA (Max.) at DC 4V	
Wiring Diagram			P21			

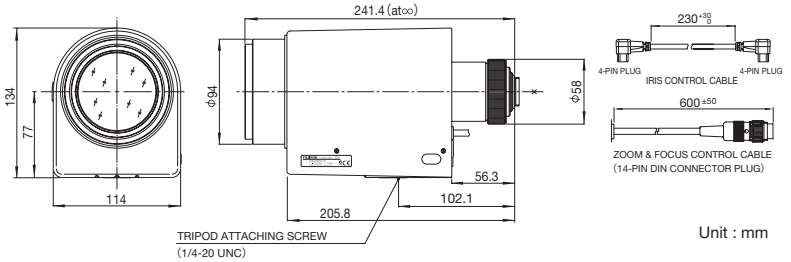
*1 : When power is turned off, iris will automatically close. *2 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

C22x23 Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

22 x

Applicable to 1



Unit : mm

Day Night

Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Telephoto Long Focal: TELE | Video Auto Iris: VIDEO | Iris-Remote: IRIS-REMOTE | C Mount: C-mt | Metal Mount: METAL | Potentio Meter: PRESET -V41 | ND Filter: N D | PC Control: P C -ZP1 | Full Servo: SERVO -ZP1 | RoHS Compliant: RoHS

			Applicable to 1 C22x23R2D-V41	Applicable to 1 C22x23R2D-ZP1
Focal Length (mm)			23 - 506(22x)	
Iris Range			F3.1 - T3000(Equivalent to F3000)	
Operation	Zoom		Motor Drive	Servo Control
	Focus		Motor Drive	Servo Control
	Iris		Auto(Video Type)or Remote*1	Auto(Video Type), Remote*1 or Servo Control
Angle Of View (H×V)	1"	WIDE	31° 06' × 23° 35'	
		TELE	1° 27' × 1° 05'	
Focusing Range (From Front Of The Lens) (m)			∞ - 3	
ObjectDimensions at M.O.D.(H×V) (mm)	1"	WIDE	1611 × 1208	
		TELE	73 × 55	
Back Focal Distance (in air) (mm)			39.54	
Exit Pupil Position (From Image Plane) (mm)			-64	
Filter Thread (mm)			M82 × 0.75	
Mass (kg)			2.4	
Wiring Diagram			P22	

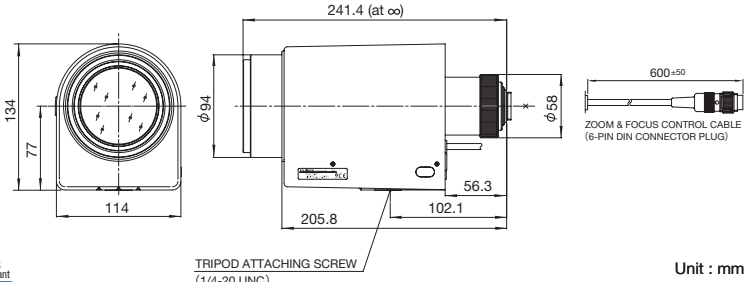
*1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

C22x17 Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

22 x

Applicable to 1



Unit : mm

Day Night

Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Wide Angle: WIDE | Telephoto Long Focal: TELE | Video Auto Iris: VIDEO -Y41 | C Mount: C-mt | Metal Mount: METAL | Potentio Meter: PRESET -Y41 | ND Filter: N D -Y41 | RoHS Compliant: RoHS

			Applicable to 1 C22x17B-Y41	Applicable to 1 C22x17R2D-ZP1
Focal Length (mm)			17 - 374(22x)	
Iris Range			F2.3 - T3000 (Equivalent to F3000)	
Operation	Zoom		Motor Drive	Servo Control
	Focus		Motor Drive	Servo Control
	Iris		Auto(Video Type)or Remote*1	Auto(Video Type) or Servo Control
Angle Of View (H×V)	1"	WIDE	41° 16' × 31° 32'	
		TELE	1° 58' × 1° 28'	
Focusing Range (From Front Of The Lens) (m)			∞ - 3	
ObjectDimensions at M.O.D.(H×V) (mm)	1"	WIDE	2178 × 1633	
		TELE	99 × 74	
Back Focal Distance (in air) (mm)			67.38	
Exit Pupil Position (From Image Plane) (mm)			-127	
Filter Thread (mm)			M82 × 0.75	
Mass (kg)			2.3	
Wiring Diagram			P22	

*1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

For detailed specifications, see the following website: ▶http://www.fujifilm.com/products/optical_devices/cctv/security/

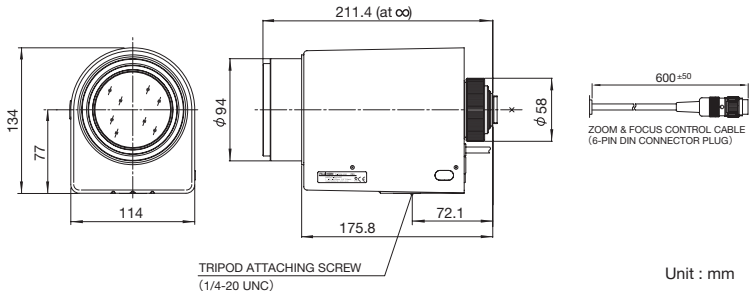
Zoom

H22x11.5 Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

22 x

Applicable to 2/3



Unit : mm

Day Night

H22x11.5R2D-ZP1 Series

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Remote Iris	Video Auto Iris	Iris-Remote	C Mount	Metal Mount	Potentio Meter	ND Filter	PC Control	Full Servo	Large Aperture Ratio	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	REMOTE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET -Y41	ND	PC -ZP1	SERVO -ZP1	F1.6	RoHS

			Applicable to 2/3	Applicable to 2/3
			H22x11.5B-Y41	H22x11.5R2D-ZP1
Focal Length (mm)			11.5 - 253(22x)	
Iris Range			F1.6 - T2000(Equivalent to F2000)	
Operation	Zoom		Motor Drive	Servo Control
	Focus		Motor Drive	Servo Control
	Iris		Auto(Video Type), Remote*1	Auto(Video Type), Remote*1 or Servo Control
Angle Of View (H×V)	2/3"	WIDE	41° 52' × 32° 01'	
		TELE	2° 00' × 1° 30'	
Focusing Range (From Front Of The Lens) (m)			∞ - 3	
ObjectDimensions at M.O.D.(H×V) (mm)	2/3"	WIDE	2213 × 1660	
		TELE	101 × 75	
Back Focal Distance (in air) (mm)			36.16	
Exit Pupil Position (From Image Plane) (mm)			-103	
Filter Thread (mm)			M82 × 0.75	
Mass (kg)			2.3	2.5
Wiring Diagram			P22	

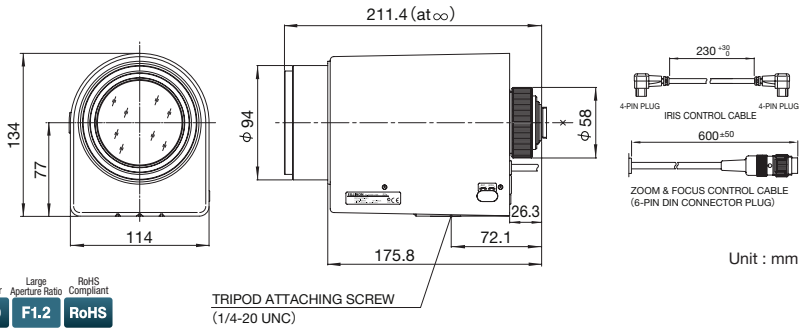
*1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

D22x9.1 Series

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

22 x

Applicable to 1/2



Unit : mm

Day Night

D22x9.1R2D-V41

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Video Auto Iris	C Mount	Metal Mount	Potentio Meter	ND Filter	Large Aperture Ratio	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	VIDEO	C-mt	METAL	PRESET -Y41	ND	F1.2	RoHS

			Applicable to 1/2 ※This product is for sale while stock lasts.	Applicable to 1/2
			D22x9.1B-Y41	D22x9.1R2D-V41
Focal Length (mm)			9.1 - 200(22x)	
Iris Range			F1.2 - T1500 (Equivalent to F1500)	
Operation	Zoom		Motor Drive	
	Focus		Motor Drive	
	Iris		Auto(Video Type)	Auto(Video Type) or Remote*1
Angle Of View (H×V)	1/2"	WIDE	38° 45' × 29° 33'	
		TELE	1° 50' × 1° 23'	
Focusing Range (From Front Of The Lens) (m)			∞ - 3	
ObjectDimensions at M.O.D.(H×V) (mm)	1/2"	WIDE	2034 × 1526	
		TELE	93 × 69	
Back Focal Distance (in air) (mm)			23.93	24.05
Exit Pupil Position (From Image Plane) (mm)			-676	-672
Filter Thread (mm)			M82 × 0.75	
Mass (kg)			2.3	2.5
Wiring Diagram			P22	

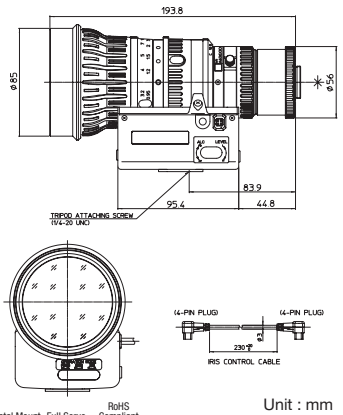
*1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

FULL HD

XT17Sx4.5DA-R11

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 1/3



Unit : mm

Focal Length (mm)			4.5 - 77
Iris Range			F1.6 - F16
Operation	Zoom		Motor Drive
	Focus		Motor Drive
	Iris		Auto (Video Type)or Remote*1
Angle Of View (H×V)	1/3"	WIDE	56° 09' × 43° 36'
	4:3	TELE	3° 34' × 2° 41'
	1/4"	WIDE	43° 36' × 33° 24'
	4:3	TELE	2° 41' × 2° 01'
	1/3"	WIDE	60° 19' × 36° 11'
	16:9	TELE	3° 53' × 2° 11'
	1/4"	WIDE	47° 04' × 27° 36'
	16:9	TELE	2° 55' × 1° 39'
Focusing Range (From Front Of The Lens) (m)			∞ - 0.95
ObjectDimensions at M.O.D.(H×V) (mm)	1/3"	WIDE	920 × 690
		TELE	55 × 41
Back Focal Distance (in air) (mm)			19.95
Exit Pupil Position (From Image Plane) (mm)			-69
Filter Thread (mm)			M82 × 0.75
Mass (g)			1400
Wiring Diagram			P23

1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

Full HD 2MP | Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Wide Angle: WIDE | Telephoto Long Focal: TELE | Video Auto Iris: VIDEO | Iris-Remote: IRIS-REMOTE | For 3CCD Camera: 3CCD | C Mount: C-mt | Metal Mount: METAL | Full Servo: SERVO | RoHS Compliant: RoHS

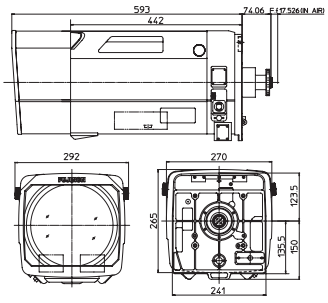
HC16x100R2CE-F11

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

16 x

Applicable to 1

*Manufacture on demand



Unit : mm

Focal Length (mm)		1 ×	100 - 1600 (16x)
		2 ×	200 - 3200 (16x)
Iris Range		1 ×	F3.4 - F16
		2 ×	F6.8 - F32
Operation	Zoom		Servo Control
	Focus		Servo Control
	Iris		Auto (Video Type) or Remote
Angle Of View (H×V)	1"	1 × WIDE	7° 19' × 5° 30'
		1 × TELE	0° 28' × 0° 21'
		2 × WIDE	3° 40' × 2° 45'
		2 × TELE	0° 14' × 0° 10'
Focusing Range (From Front Of The Lens)(m)			∞ ~ 5
Object Dimensions at M.O.D. (H×V) (mm)	1"	1 × WIDE	603 × 452
		1 × TELE	38 × 28
		2 × WIDE	302 × 226
		2 × TELE	19 × 14
Back Focal Distance (in air) (mm)			29.38
Back Focal Adjustment			○
Day & Night			○
Exit Pupil Position (From Image Plane) (mm)		1 ×	-125
		2 ×	-111
Extender			–
Mass (kg)			24

∗ 1 : This model uses the CLH-12 lens support and two ESM-D51B servo modules (for Zoom and Focus.)

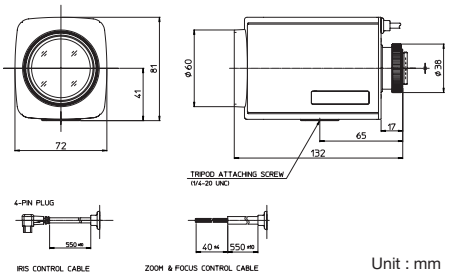
Day Night | Full HD 3MP | Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Telephoto Long Focal: TELE | Video Auto Iris: VIDEO | C Mount: C-mt | Metal Mount: METAL | Aspherical Lens: AT | PC Control: PC | Full Servo: SERVO | Extender: 2x | RoHS Compliant: RoHS

HD

D17x7.5B-YN1

Applicable camera (model): 1 | 2/3 | 1/2 | 1/3 | 1/4

Applicable to 1/2



Unit : mm

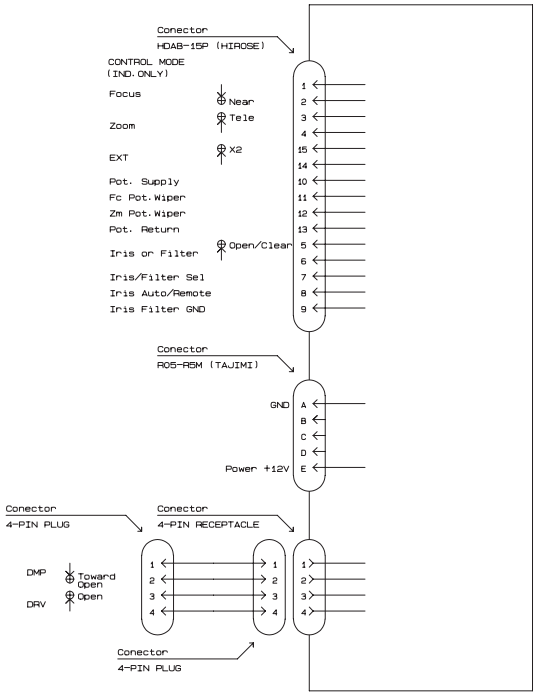
Focal Length (mm)			7.5 - 128
Iris Range			F1.6 - F16
Operation	Zoom		Motor Drive
	Focus		Motor Drive
	Iris		Auto(DC Type)*1
Angle Of View (H×V)	1/2"	WIDE	45° 36' × 34° 42'
	4:3	TELE	2° 54' × 2° 12'
	1/3"	WIDE	34° 54' × 26° 24'
	4:3	TELE	2° 12' × 1° 42'
	1/4"	WIDE	26° 24' × 19° 54'
	4:3	TELE	1° 42' × 1° 18'
	1/2"	WIDE	50° 12' × 28° 42'
	16:9	TELE	3° 12' × 1° 48'
	1/3"	WIDE	38° 00' × 21° 36'
	16:9	TELE	2° 24' × 1° 24'
	1/4"	WIDE	28° 42' × 31° 32'
	16:9	TELE	1° 48' × 1° 00'
Focusing Range (From Front Of The Lens) (m)			∞ - 1.5
ObjectDimensions at M.O.D.(H×V) (mm)	1/2"	WIDE	1193 × 893
		TELE	73 × 55
Back Focal Distance (in air) (mm)			15.1
Exit Pupil Position (From Image Plane) (mm)			-80.1
Filter Thread (mm)			M58 × 0.75
Mass (g)			580
Wiring Diagram			P23

∗ 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 23).

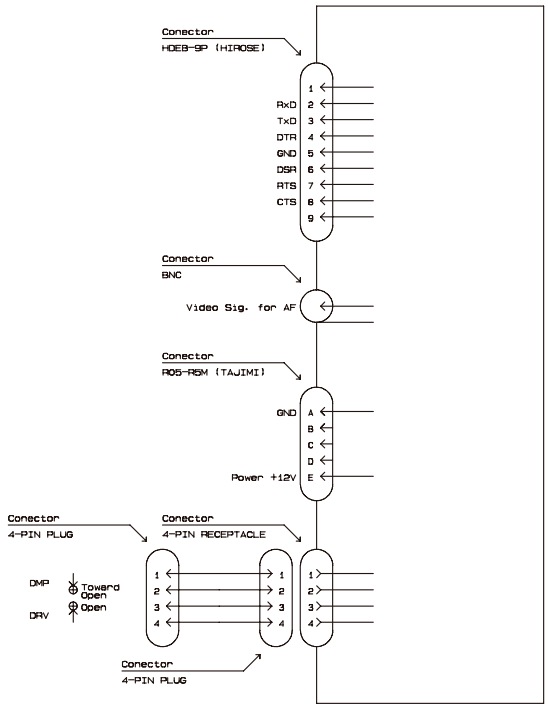
Zoom: ZOOM | Motor Drive: MOTOR DRIVE | Wide Angle: WIDE | Telephoto Long Focal: TELE | DC Auto Iris: DC | C Mount: C-mt | Potentio Meter: PRESET | Metal Mount: METAL | ND Filter: ND | RoHS Compliant: RoHS

Zoom Lens Wiring

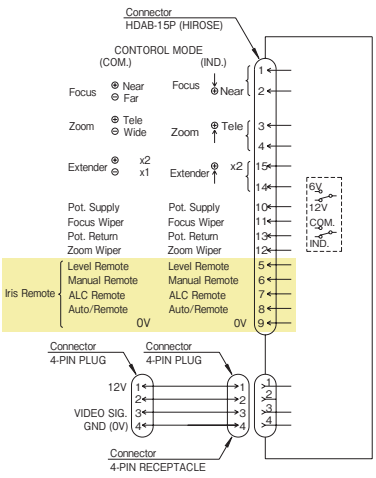
D60x16.7SR4DE-V21 — P13



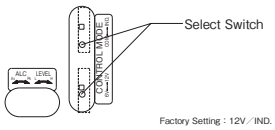
D60x16.7SR4DE-ZP1A — P13
D60x16.7SR4FE-ZP1C — P13



D60x12.5BE-V41 — P14

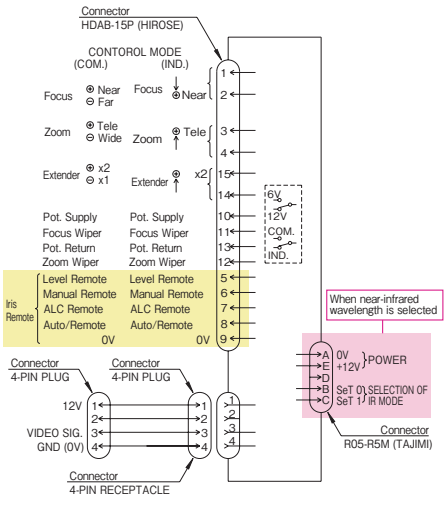


Control Mode (Side View)

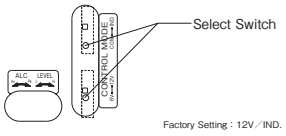


Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

D60x12.5R3DE-V41 — P14

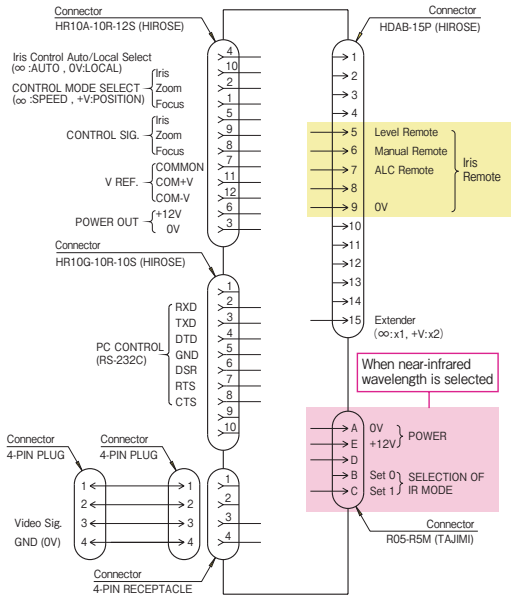


Control Mode (Side View)

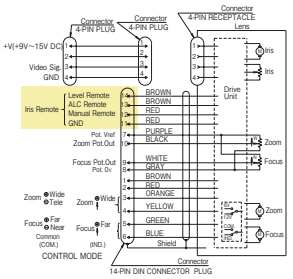


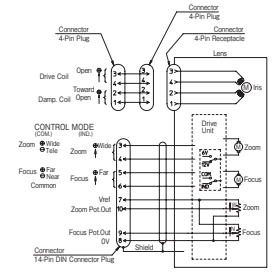
Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

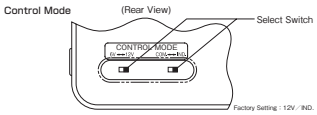
D60x12.5R3DE-ZP1 — P14



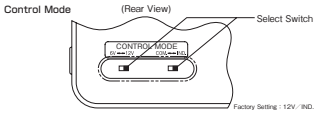
D32x10HR4D-VX1 — P15
D32x15.6HR4D-VX1 — P15





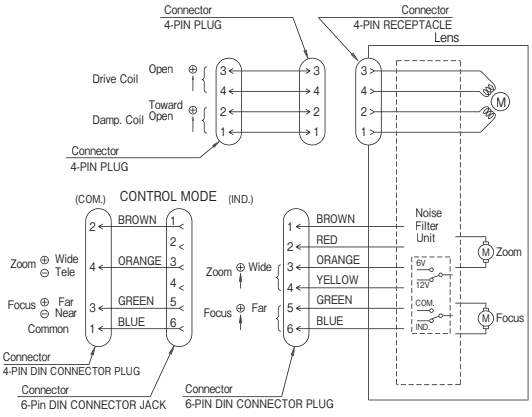


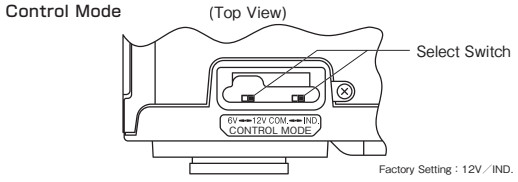
Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.



Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

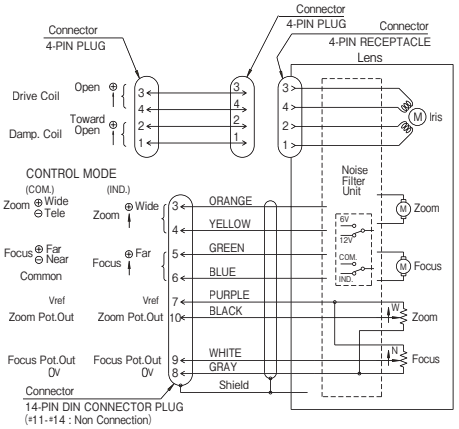
D8x7.8HA-SE2 — P16
D12x8A-SE2 — P16
Y12x6A-SE2 — P16

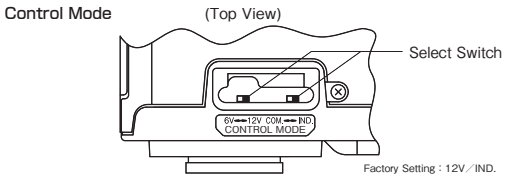




Controller Output	Select Switch Position	Conversion Cable (Standard Accessory)
6V	6V／IND.	Not necessary
±6V	6V／COM.	Necessary
12V	12V／IND.	Not necessary
±12V	12V／COM.	Necessary

D8x7.8HA-YE2 — P16
D12x8A-YE2 — P16
Y12x6A-YE2 — P16

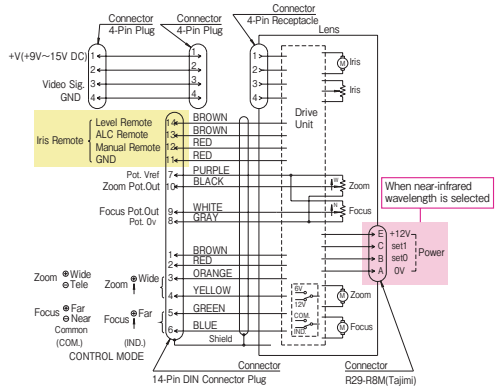


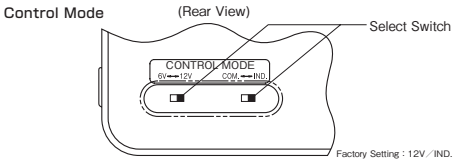


Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

Zoom Lens Wiring

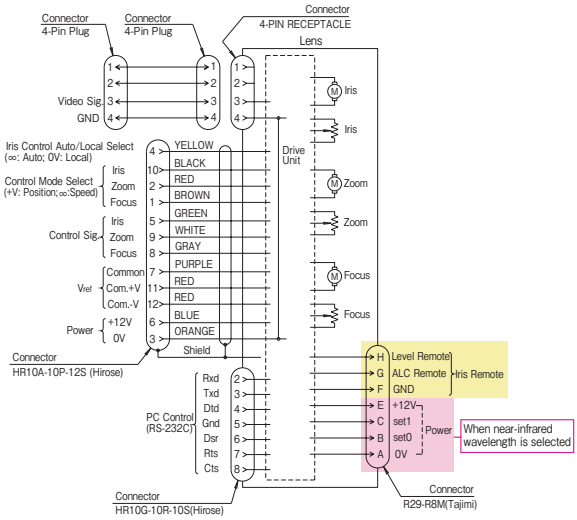
C22x23R2D-V41 — P17
D22x9.1R2D-V41 — P18



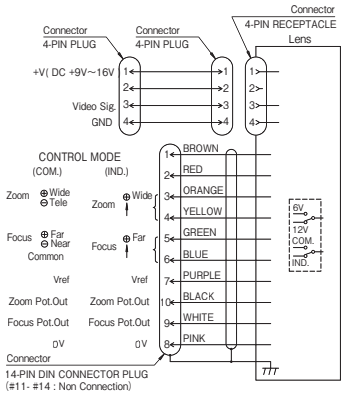


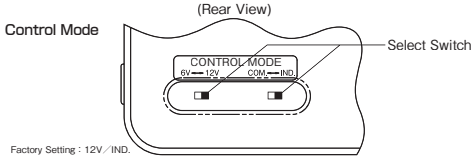
Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

C22x23R2D-ZP1 — P17
C22x17R2D-ZP1 — P17
H22x11.5R2D-ZP1 — P18



C22x17B-Y41 — P17
H22x11.5B-Y41 — P18
D22x9.1B-Y41 — P18

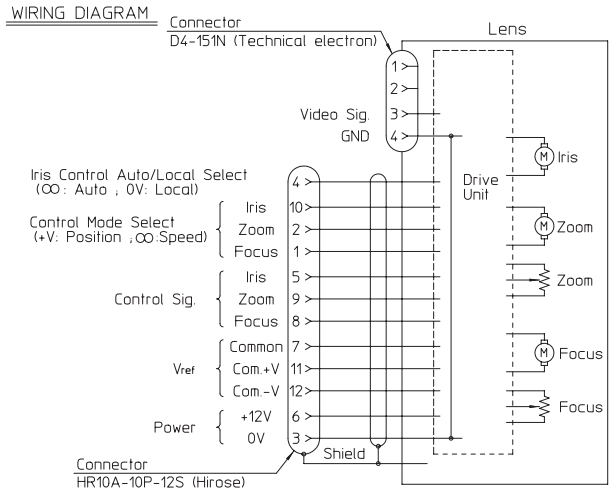




Controller Output	Select Switch Position
6V	6V／IND.
±6V	6V／COM.
12V	12V／IND.
±12V	12V／COM.

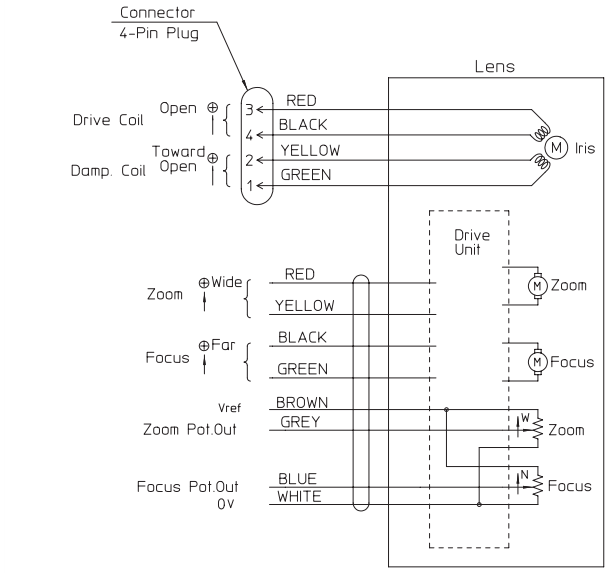
XT17Sx4.5DA-R11 — P19

WIRING DIAGRAM



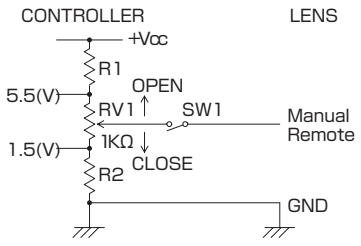
D17x7.5B-YN1 — P19

WIRING DIAGRAM

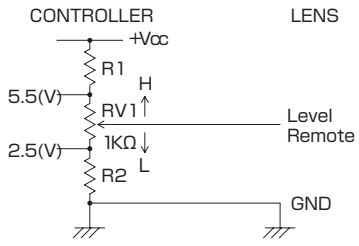


Operation System - Iris Remote

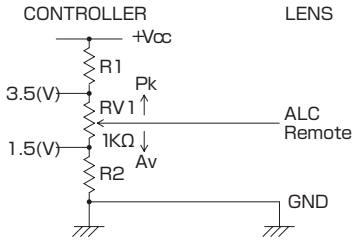
Manual Remote



Level Remote



ALC Remote



Technical Information

Feature Indications

Lens Type

- **Fixed Focal** — FIXED: High performance single focal lens for the best image quality
- **Vari-Focal** — VARI: Variable magnification lens with manually controllable angle. It functions as if you have multiple fixed focal lenses
- **Zoom** — ZOOM: Zoom lens with the high performance cam adopted, which offers high quality smooth movements

Feature/ Function

- 4K
- **6 Mpx HD** — 6MP: High performance to fully exploit 6 megapixel HD cameras' high resolution
- **5 Mpx HD** — 5MP: High performance to fully exploit 5 megapixel HD cameras' high resolution
- **3 Mpx HD** — 3MP: High performance to fully exploit 3 megapixel HD cameras' high resolution
- **2 Mpx HD** — 2MP: High performance to fully exploit 2 megapixel HD cameras' high resolution
- **1.3 Mpx HD** — 1.3MP: High performance to fully exploit 1.3 megapixel HD cameras' high resolution
- **Day & Night** — Day Night: Specially-designed lens supporting both visible light and near-infrared light to prevent out-of-focus of day & night cameras
- **Visible Light Cut Filter** — VISIBLE LIGHT CUT: Blocks visible light, allowing the capturing of image using only near-infrared light
- **Fish-Eye** — Fish-Eye 185°: Super wide angle lens realizing angle of 185 degrees
- **Motor Drive** — MOTOR DRIVE: Enables the lens control from remote locations
- **Telephoto Long Focal** — TELE: Telephoto lens with the ability to zoom
- **Wide Angle** — WIDE: Wide angle lens which ensures wide field of view
- **Auto Focus** — AF: Easy and sharp auto-focusing even in zooming
- **Optical Anti-Vibration** — OS-TECH: High-intensity optical vibration isolation system, optimizing the image in any circumstances
- **For 3CCD Camera** — 3CCD: Lens exclusively for 3CCD cameras for the optimum color reproduction and high resolution of 3CCD cameras
- **Built-in** — Built-in: Cast-in lens resulted from abolition of the standard mounting method, nabling the downsizing of your system
- **Potentio Meter** — PRESET: Enables to preset the zoom, focus and iris positions of the zoom lens
- **ND Filter** — ND: With the built-in ND filter, enables to optimize the brightness of the bright object in direct sunlight
- **Extender** — 2x: Function to double the focal length by one-touch control
- **PC Control** — PC: Enables the advanced control of zoom lens using a PC
- **Long Cable** — C230: Cable length options provided to let you select the best-suited length for your camera
- **Full Servo** — SERVO: DC servo circuit enabling the smooth movement and accurate positioning
- **Aspherical Lens** — AT: Adopts the aspheric lens technologies developed in the most advanced lenses for broadcasting
- **RoHS Compliant** — RoHS

Iris Type

- **Manual Iris** — MANUAL: Manually-operated iris
- **Remote Iris** — REMOTE: Motor-driven iris
- **DC Auto Iris** — DC: Auto iris supporting DC-controlled cameras
- **Video Auto Iris** — VIDEO: Auto iris supporting video-controlled cameras
- **Iris-Remote** — IRIS-REMOTE: Allows switching between auto iris and remote iris

Mounting Type

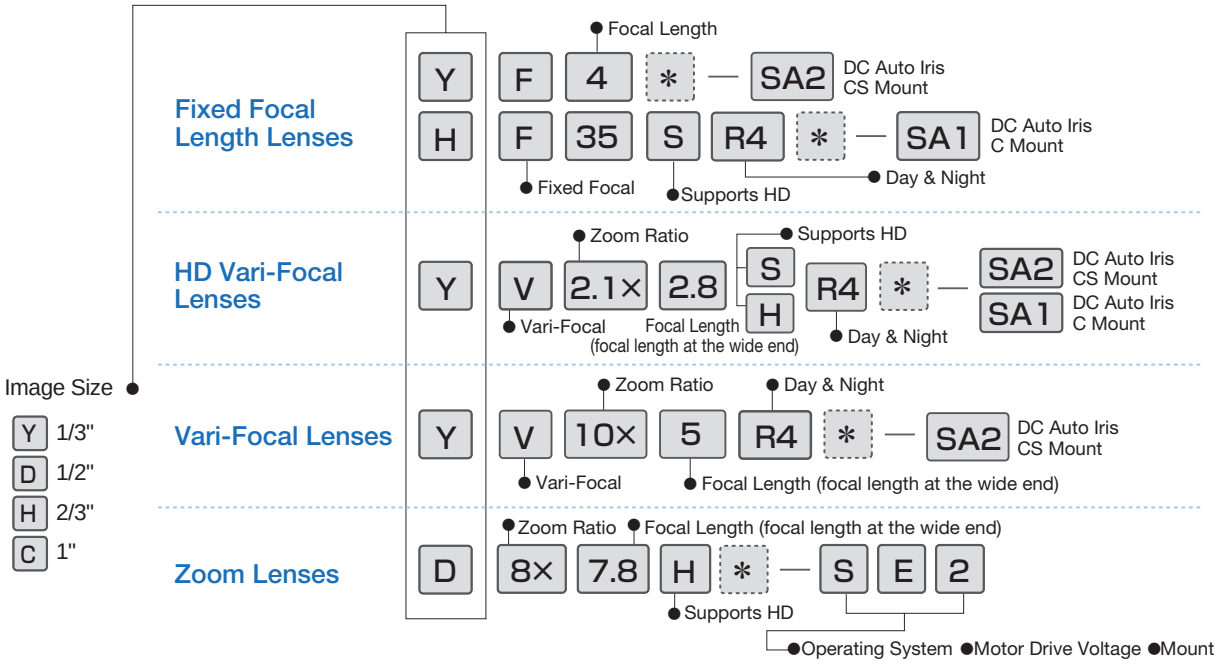
- **C Mount** — C-mt: Screw-in mounting commonly used in FA lenses
- **CS Mount** — CS-mt: Screw-in mounting commonly used in security lenses
- **Metal Mount** — METAL: Metal mounting with high accuracy and durability

Large Aperture Ratio

Bright lenses with large aperture ratio, fully exploiting camera sensitivity

F0.95 | F1.2 | F1.3 | F1.4 | F1.5 | F1.6

Model Explanation

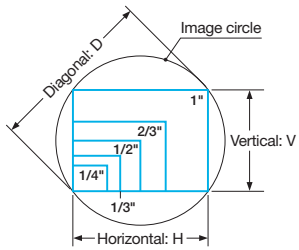


Note: The above model explanation may not apply some products.

Terminology

Image Sizes

●There are several types of imaging sensors for CCTV cameras, with different image sizes.
The aspect ratio of a CCTV camera is normally 4:3 (H:V).



Product symbol	Image sensor	Image size (mm)		
		Horizontal: H	Vertical: V	Diagonal: D
C	1"	12.8	9.6	16.0
H	2/3"	8.8	6.6	11.0
D, S	1/2"	6.4	4.8	8.0
Y, T	1/3"	4.8	3.6	6.0
Q	1/4"	3.6	2.7	4.5
35 mm camera lens (Reference)	35 mm film	36.0	24.0	43.3

C/CS-Mount

●CCTV cameras have either a C-mount or CS-mount.

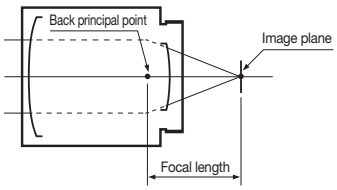
		C-mount	CS-mount
Standard	Flange back focal length (mm)	17.526*1	12.5*1
	Diameter of screw thread (mm)	1-32UNF	

		C-mount camera	CS-mount camera
Interchangeability	C-mount lens	○	○*2
	CS-mount lens	×	○

*1 Length in air
*2 Will need a C-mount adapter ring (5 mm) when fitting a C-mount lens to a CS-mount camera.

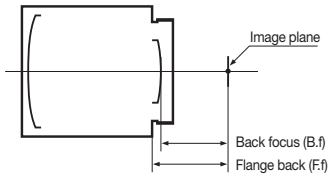
Focal Length

●The focal length will be the distance from the back principal point to the image plane. Lower the focal length wider the image.



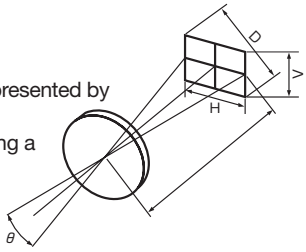
Flange Back and Back Focal Distance

● Flange back will be the distance between the mechanical mount surface and image plane.
Back focal distance will be the distance between the rear end of the lens part and the image plane.



Angle of View

●The angle of view is the object size that can be captured at a specified image size, which is represented by angular measure.
Normally the angle of view is measured assuming a lens is focused at infinity. When using a lens of the same focal length with a different image size, the angle of view will differ.



$$\theta = 2\tan^{-1}\frac{Y'}{2f}$$

θ : Angle of view
Y' : Image size
f : Focal length

Example

The angle of view when the camera size is 1/2"and the focal length is 12.5 mm:

Y' : 6.4
f : 12.5

$$\theta = 2\tan^{-1}\frac{6.4}{2\times 12.5} = 28.72^{\circ}$$

Brightness of a Lens (F and T No.)

●The F No. is an indication of the brightness of lens. The smaller the value, the brighter the image produced by the lens. The F No. is inversely proportional to the effective diameter of the lens and directly proportional to the focal length. The scale on the iris ring of lens uses a ratio of 2, because the value of light incident on a lens is proportional to the cross section of luminous flux (square of diameter). In other words, the brightness decreases by half each time the F No. is increased by one F stop.

●The F No. is a value determined on the assumption that the transmittance of the lens is 100%. Virtually all lenses however, have different spectral transmittance, and thus, the same F No. can have different levels of brightness. To eliminate this inconvenience, a system has been developed to consider both F No. and spectral transmittance, the T No. The T No. and the F No. are related to each other as shown in right:

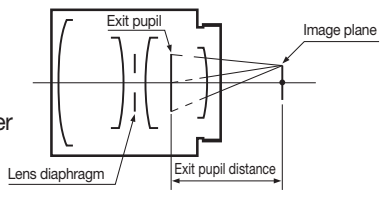
$$\text{F No.} = \frac{f}{d}$$

f: Focal length of a lens
d: Effective diameter of a lens

$$\text{T No.} = \frac{\text{F No.}}{\sqrt{\text{Transmittance (\%)}}} \times 10$$

Exit Pupil Position

●The exit pupil is the image (virtual image) reflected by the lens located at the back of the lens diaphragm.
The exit pupil position is generally represented with the distance between the image plane and the exit pupil. "- (minus)" indicates closer to the object, and "+ (plus)" toward the camera.

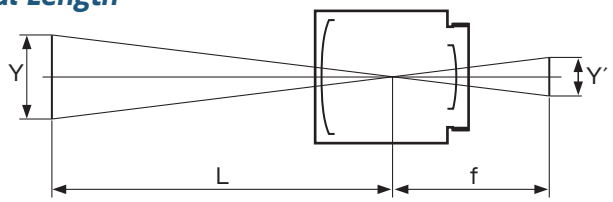


M.O.D.

●The M.O.D. (minimum object distance) is the closest distance to the object at which an image can be taken.
This is the distance from the vertex of the front lens.

Technical Reference

Field of View and Focal Length



Y : Object size
Y' : Image size
L : Object distance
f : Focal length

(1) How to calculate the field of view

If the distance to the object is finite, you can use the following formula to calculate the field of view.

$$Y = Y' \cdot \frac{L}{f}$$

Example

A 1/3" CCD camera with an 8 mm lens is used, and the distance to the object is 3 m. The maximum horizontal width as viewed on the monitor can be calculated as follows.

Y' : 4.8
L : 3000
f : 8

$$Y = 4.8 \times \frac{3000}{8} = 1800 \rightarrow \text{Horizontal width } 1.8 \text{ m}$$

(2) How to calculate focal length

If the distance to the object is finite, you can use the following formula to calculate the focal length.

$$f = Y' \cdot \frac{L}{Y}$$

Example

A 1/3" CCD camera is used, and the distance to the object is 3 m and the horizontal width of the object is 2 m. The focal length to capture the complete object size can be calculated as follows.

Y' : 4.8
L : 3000
Y : 2000

$$f = 4.8 \times \frac{3000}{2000} = 7.2 \rightarrow \text{Focal length approx. 7 mm}$$

Depth of Field

● When focusing on a certain area in front of and behind the deep object appears in focus. This area is called the depth of field. This is because the focus appears sharp if the focus misalignment is under a certain volume. This certain volume is called the permissible circle of confusion.

The depth of field has following properties.

1) The larger the F No. is, the wider the depth of field becomes.
2) The shorter the focal length is, the wider the depth of field becomes.
3) The longer the distance to the object is, the wider the depth of field becomes.
4) The backward depth of field is wider than the forward depth of field.

The depth of field can be calculated by the following formula.

Backward depth of field $Tr = \frac{\delta \cdot F \cdot L^2}{f^2 - \delta \cdot F \cdot L}$

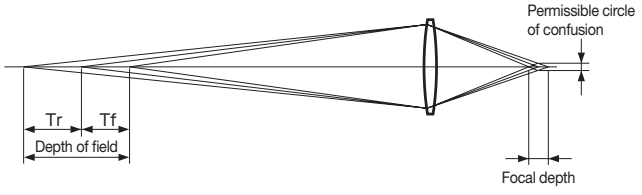
Forward depth of field $Tf = \frac{\delta \cdot F \cdot L^2}{f^2 + \delta \cdot F \cdot L}$

Depth of field $= Tr + Tf$

Focal depth $= 2\delta \cdot F$

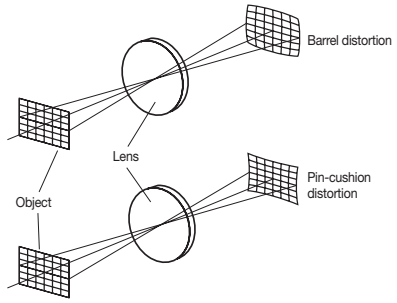
f: Focal distance
F: F No.
δ: Permissible circle diameter of confusion
L: Object distance

Image sensor	Permissible circle of confusion
1"	0.03 mm
2/3"	0.021 mm
1/2"	0.015 mm
1/3"	0.011 mm
1/4"	0.008 mm



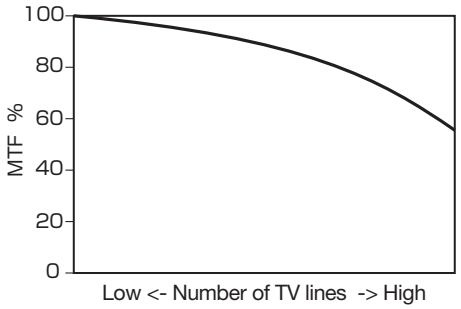
Distortion

- Distortion is an aberration where the geometric figure of the object is not reproduced faithfully at the image plane. It is normally represented by the level shift of an image point from its ideal position by a percentage of image height or width.



MTF (Modulation Transfer Function)

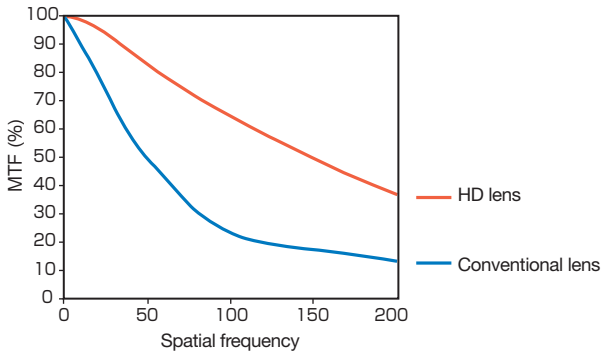
- MTF (Modulation Transfer Function) represents the declining contrast rate when shooting a chart consisted of black and white lines.



HD Lens

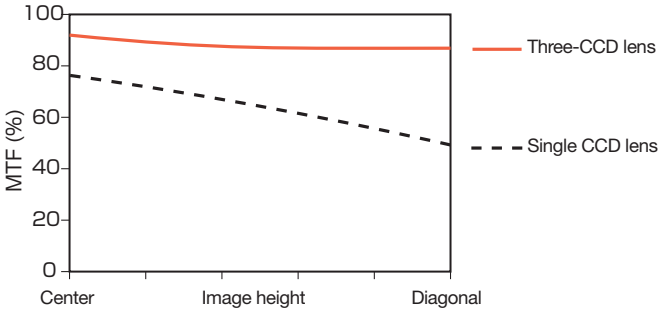
- Based on design techniques accumulated through our experience in production of broadcast lenses, high resolution, small and light-weight HD lenses with minimal aberrations have been realized.

The chart at the right shows the difference between an HD lens and a conventional CCTV lens.
As the number of TV lines increases, the disparity in MTF becomes greater.



Three-CCD lenses

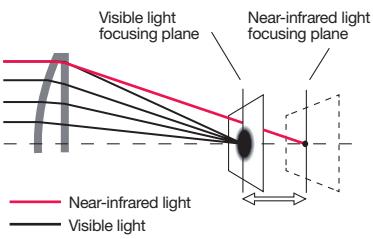
- Three-CCD cameras have thicker glass between the lens and the CCDs than that of single CCD cameras because they use three CCDs to correspond with the red, blue and green colors separated by a prism.
Fujifilm's three-CCD lenses are designed to optimally match three-CCD cameras. The chart shown at the right explains the difference in MTF when a three-CCD lens or a single CCD lens is mounted on a three-CCD camera.



Day & Night Lens

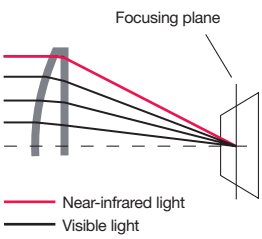
- The day & night lens uses an advanced optical design, special optical glass, and other state-of-the-art technologies to focus light (visible to near-infrared 400- 1000 nm) on the same plane to prevent the focus to become blurry enabling sharp images.

A standard lens (for visible light)
is mounted on a day & night camera, and used under near-infrared light.



Result: Blurry image

A day & night lens
is mounted on a day & night camera, and used under near-infrared light.



Result: Clear image without getting blurry

FUJINON

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