

FUJINON CCTV LENSES

for Security & Surveillance



HD Vari-Focal



HD Fixed Focal



HD Fish-Eye



Vari-Focal



Zoom

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 F θ 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.



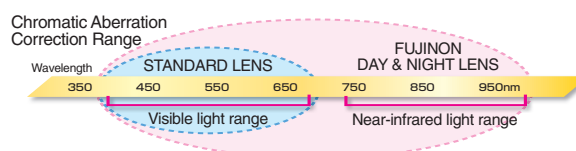
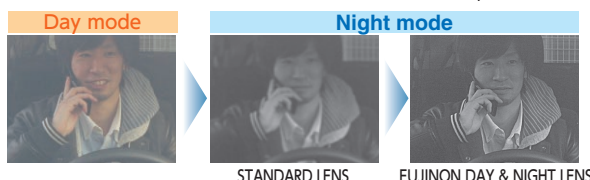
Zoom Lenses

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.



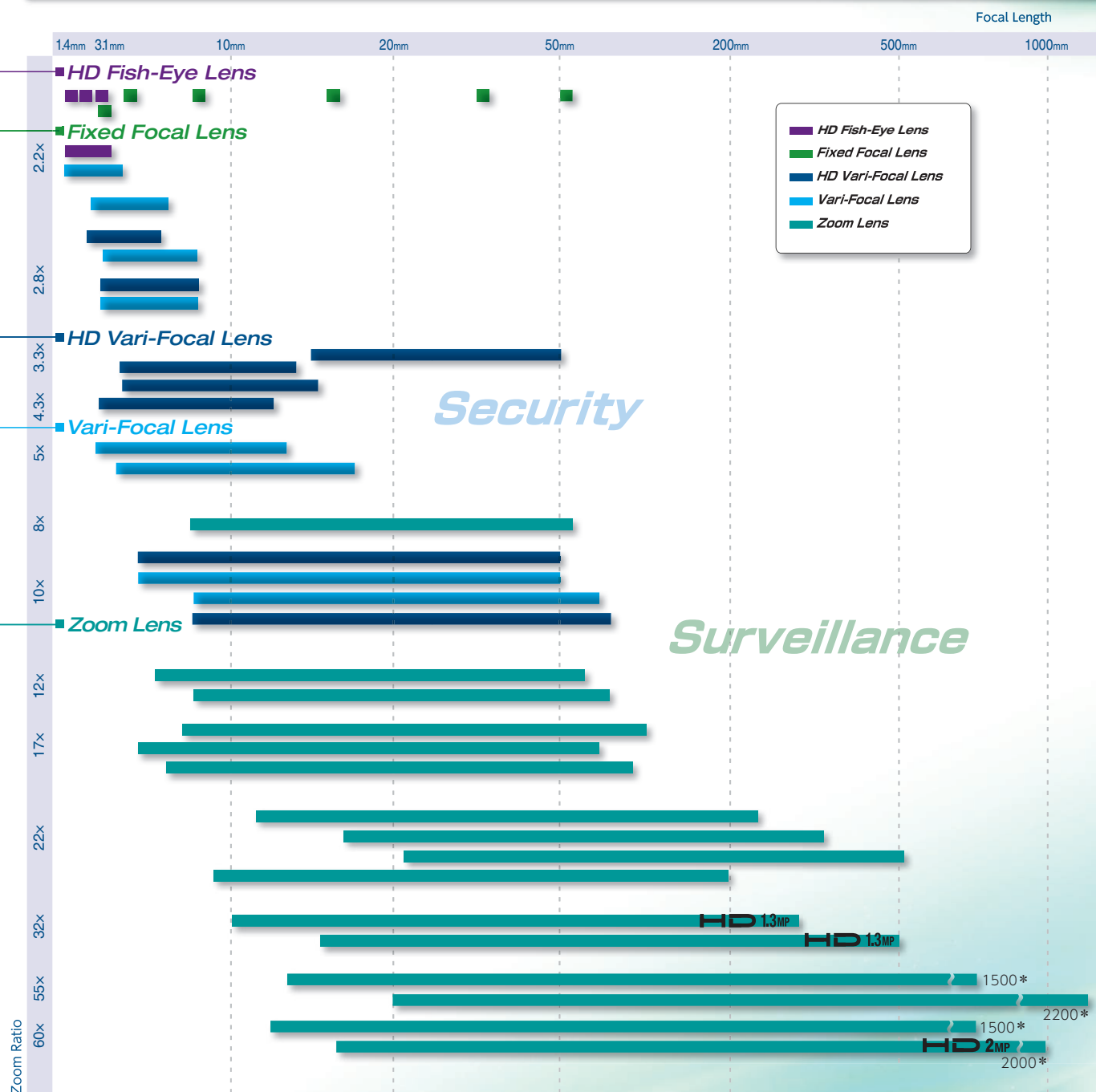
Day&Night Lenses

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.

FUJINON 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!**

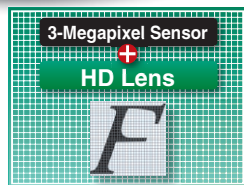


Image captured by
HD lens for 3-megapixel sensor

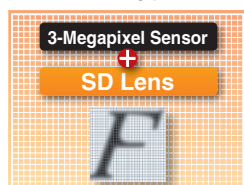
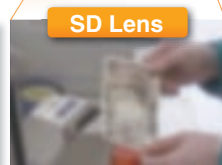


Image captured by SD lens

* 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.

FUJINON

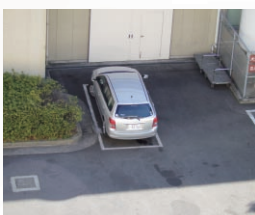
Chart of Focus Range for HD Vari-Focal Lenses.



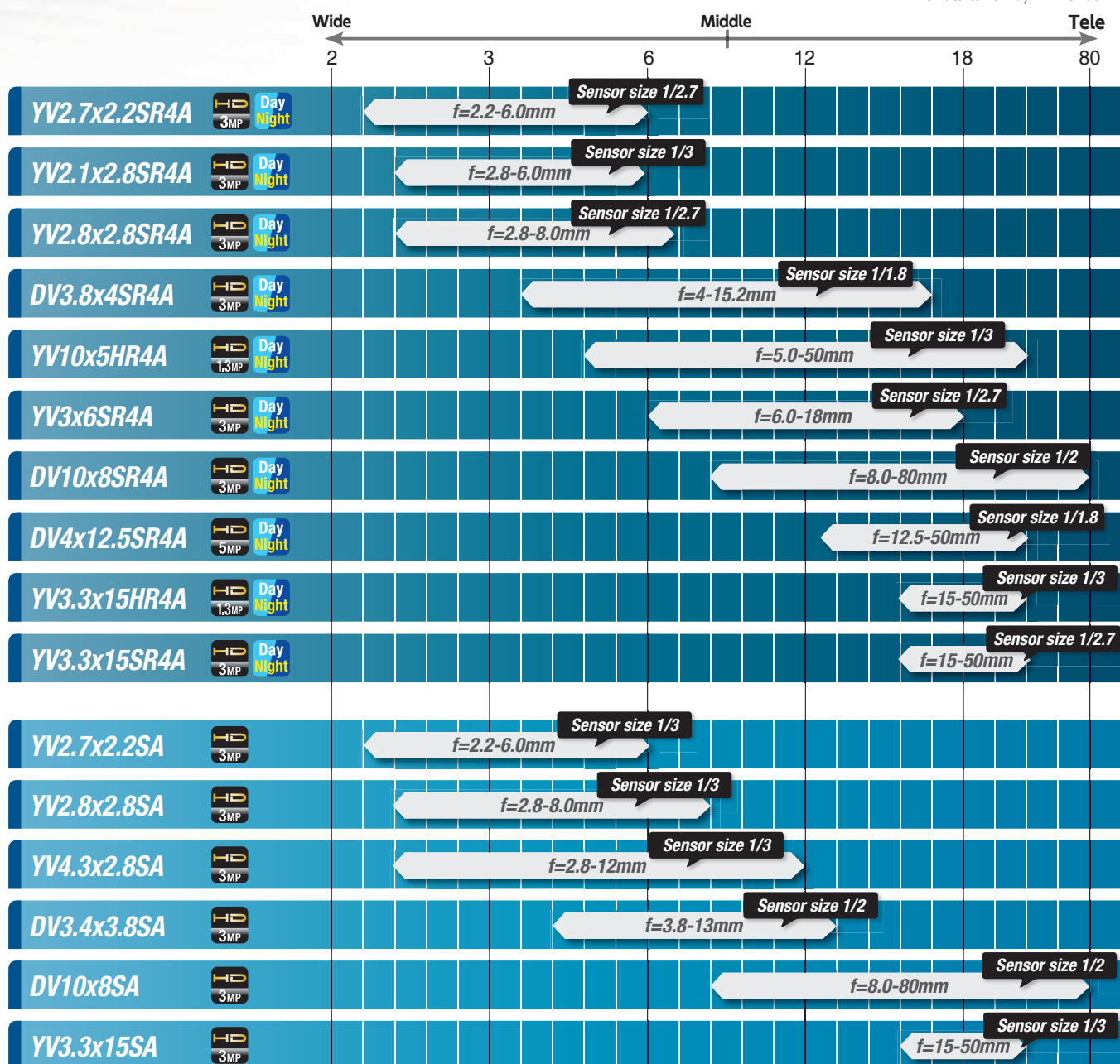
Wide

Middle

Tele



*Shots taken by DV10x8SR4A



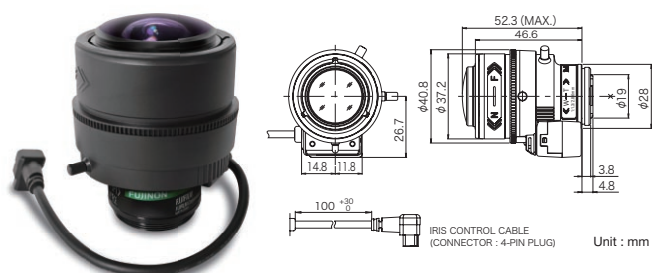
HD Vari-Focal Day&Night Lens

Day
Night

YV2.1x2.8SR4A-SA2

2.1x

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



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

HD
3MP

YV2.7x2.2SR4A-SA2

2.7x

Applicable to 1/2.7

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



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

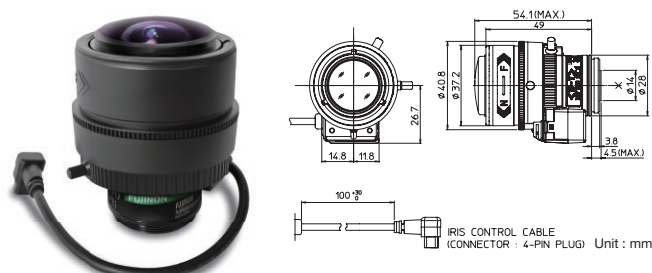
HD
3MP

YV2.8x2.8SR4A-SA2

2.8x

Applicable to 1/2.7

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



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

HD
3MP

YV3x6SR4A-SA2

NEW

3x

Applicable to 1/2.7

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



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

HD
3MP

			Applicable to 1/3		Applicable to 1/2.7		Applicable to 1/2.7		Applicable to 1/2.7		
			YV2.1x2.8SR4A-SA2		YV2.7x2.2SR4A-SA2		YV2.8x2.8SR4A-SA2		YV3x6SR4A-SA2		
Focal Length (mm)			2.8 - 6 (2.1x)		2.2 - 6 (2.7x)		2.8 - 8 (2.8x)		6 - 18 (3x)		
Iris Range			F1.3 - T360 (Equivalent to F360)		F1.3 - T360		F1.3 - T360		F1.4 - T360		
Operation	Zoom		Manual								
	Focus		Manual								
	Iris		Auto (DC type)*1								
Angle of View (H × V)	1/2.7"	WIDE	—	132° 47' × 100° 19'		112° 24' × 81° 16'		51° 5' × 37° 50'			
		TELE	—	50° 26' × 37° 54'		38° 48' × 29° 05'		16° 60' × 12° 45'			
	1/3"	WIDE	101° 11' × 74° 10'	121° 4' × 91° 20'		100° 34' × 73° 22'		46° 13' × 34° 18'			
		TELE	46° 58' × 35° 09'	45° 51' × 34° 28'		35° 16' × 26° 26'		15° 27' × 11° 36'			
	1/4"	WIDE	74° 10' × 54° 58'	91° 20' × 68° 43'		73° 22' × 54° 18'		34° 18' × 25° 35'			
		TELE	35° 09' × 26° 19'	34° 28' × 25° 53'		26° 26' × 19° 49'		11° 36' × 8° 42'			
Angle of View (H × V) Aspect Ratio 16:9	1/2.7"	WIDE	—	144° 08' × 82° 08'		124° 51' × 65° 26'		55° 56' × 30° 48'			
		TELE	—	54° 48' × 30° 57'		42° 17' × 23° 43'		18° 30' × 10° 26'			
	1/3"	WIDE	111° 25' × 60° 03'	131° 34' × 74° 46'		111° 8' × 59° 19'		50° 35' × 27° 54'			
		TELE	51° 13' × 28° 41'	49° 55' × 28° 11'		38° 27' × 21° 35'		16° 50' × 9° 28'			
	1/4"	WIDE	81° 14' × 44° 41'	99° 19' × 56° 19'		80° 23' × 44° 13'		37° 27' × 20° 53'			
		TELE	38° 18' × 21° 30'	37° 31' × 21° 12'		28° 47' × 16° 13'		12° 37' × 7° 7'			
Focus Range (From the Lens Front) (m)			∞ - 0.3								
Mass (g)			55		75		60		95		

* 1: The Iris automatically closes when the camera is turned off.

※ Each of the above products is also available in a manual type.

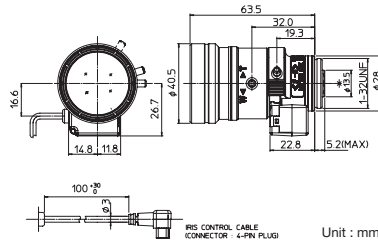
※ Each of the above products is also available in a long cable type (230 mm).

YV3.3x15SR4A-SA2

NEW

3.3 x Applicable to 1/2.7

Applicable camera (model) 1 2/3 1/27 1/3 1/4



Unit : mm

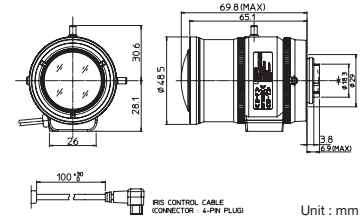
Vari-Focal Telephoto Long Focal DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI TELE DC CS-mt METAL ND C230 AT F1.5 RoHS

HD 3MP

DV3.8x4SR4A-SA1

3.8 x Applicable to 1/1.8

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



Unit : mm

Vari-Focal Wide Angle DC Auto Iris C Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI WIDE DC C-mt METAL ND C230 AT F1.5 RoHS

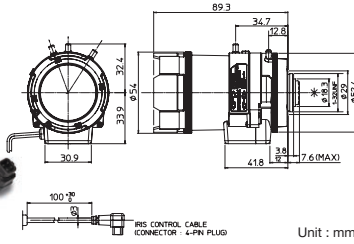
HD 3MP

DV4x12.5SR4A-SA1

NEW

4 x Applicable to 1/1.8

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



Unit : mm

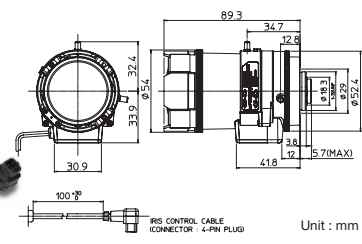
Vari-Focal Telephoto Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI TELE DC C-mt METAL ND C230 AT F1.6 RoHS

HD 5MP

DV10x8SR4A-SA1

10 x

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



Unit : mm

Vari-Focal Telephoto Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI TELE DC C-mt METAL ND C230 AT F1.6 RoHS

HD 3MP

			Applicable to 1/2.7	Applicable to 1/1.8	Applicable to 1/1.8	Applicable to 1/2
			YV3.3x15SR4A-SA2	DV3.8x4SR4A-SA1	DV4x12.5SR4A-SA1	DV10x8SR4A-SA1
Focal Length (mm)			15 - 50 (3.3x)	4 - 15.2 (3.8x)	12.5 - 50 (4x)	8 - 80 (10x)
Iris Range			F1.5 - T360	F1.5 - T360	F1.6 - T360	F1.6 - T360 (Equivalent to F360)
Operation	Zoom		Manual Manual Auto (DC type)*1			
	Focus					
Iris						
Angle of View (H × V)	1/1.8"	WIDE	—	103° 27' × 77° 03'	32° 54' × 24° 37'	—
		TELE	—	27° 23' × 20° 34'	8° 14' × 6° 13'	—
	1/2"	WIDE	20° 1' × 15° 5' *2	92° 42' × 69° 08'	29° 32' × 22° 7'	44° 33' × 34° 58'
		TELE	6° 9' × 4° 39' *2	24° 38' × 18° 29'	7° 26' × 5° 36'	4° 42' × 3° 32'
	1/3"	WIDE	18° 14' × 13° 43'	69° 08' × 51° 40'	22° 7' × 16° 34'	34° 58' × 26° 35'
		TELE	5° 37' × 4° 14'	18° 29' × 13° 53'	5° 36' × 4° 12'	3° 32' × 2° 39'
	1/4"	WIDE	13° 43' × 10° 18'	51° 40' × 38° 41'	—	22° 40' × 17° 06'
		TELE	4° 14' × 3° 11'	13° 53' × 10° 25'	—	2° 22' × 1° 47'
Angle of View (H × V) Aspect Ratio 16:9	1/1.8"	WIDE	—	113° 02' × 62° 46'	35° 52' × 20° 6'	—
		TELE	—	29° 48' × 16° 49'	8° 57' × 5° 5'	—
	1/2"	WIDE	21° 45' × 12° 20' *2	101° 14' × 56° 21'	32° 12' × 18° 3'	49° 39' × 29° 10'
		TELE	6° 41' × 3° 49' *2	26° 49' × 15° 07'	8° 4' × 4° 35'	5° 07' × 2° 53'
	1/3"	WIDE	19° 49' × 11° 14'	75° 25' × 42° 09'	24° 6' × 13° 32'	38° 16' × 22° 05'
		TELE	6° 6' × 3° 28'	20° 08' × 11° 21'	6° 5' × 3° 27'	3° 50' × 2° 09'
	1/4"	WIDE	14° 56' × 8° 26'	56° 21' × 31° 34'	—	24° 42' × 14° 03'
		TELE	4° 36' × 2° 36'	15° 07' × 8° 31'	—	2° 35' × 1° 27'
Focus Range (From the Lens Front) (m)			∞ - 1.0	∞ - 0.3	∞ - 0.8	∞ - 1.5
Mass (g)			80	120	175	180

*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 manual type.

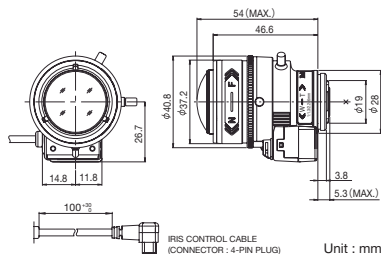
※ Each of the above products is also available in long cable type (230 mm).

HD Vari-Focal

YV2.7x2.2SA-SA2

2.7 x

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



Unit : mm

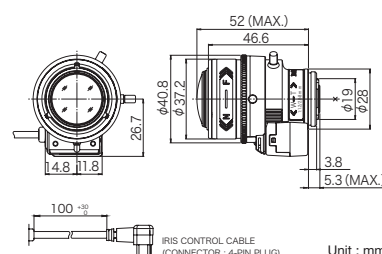
Vari-Focal Wide Angle DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI WIDE DC CS-mt METAL ND 230 AT F1.3 RoHS

HD
3MP

YV2.8x2.8SA-SA2

2.8 x

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



Unit : mm

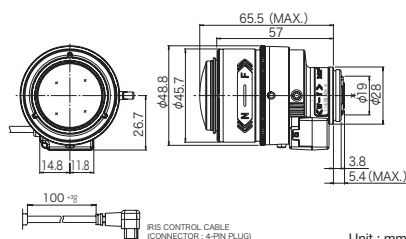
Vari-Focal Wide Angle DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI WIDE DC CS-mt METAL ND 230 AT F1.2 RoHS

HD
3MP

YV4.3x2.8SA-SA2

4.3 x

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



Unit : mm

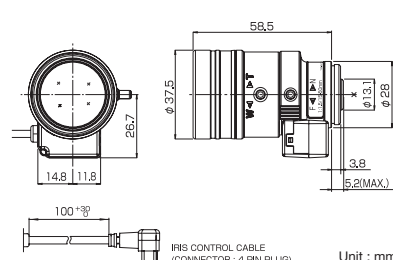
Vari-Focal Wide Angle Telephoto Long Focal DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant
VARI WIDE TELE DC CS-mt METAL ND 230 AT F1.4 RoHS

HD
3MP

YV3.3x15SA-SA2

3.3 x

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



Unit : mm

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

HD
3MP

		Applicable to 1/3	Applicable to 1/3	Applicable to 1/3	Applicable to 1/3
		YV2.7x2.2SA-SA2	YV2.8x2.8SA-SA2	YV4.3x2.8SA-SA2	YV3.3x15SA-SA2
Focal Length (mm)		2.2 - 6 (2.7x)	2.8 - 8 (2.8x)	2.8 - 12 (4.3x)	15 - 50 (3.3x)
Iris Range		F1.3 - T360(Equivalent to F360)	F1.2 - T360(Equivalent to F360)	F1.4 - T360(Equivalent to F360)	F1.5 - T360(Equivalent to F360)
Operation	Zoom	Manual			
	Focus	Manual			
Angle of View (H × V)	1/3"	Auto (DC type)*1			
	1/4"				
Angle of View (H × V)	1/3"	120° 00' × 91° 36'	100° 00' × 73° 45'	100° 02' × 74° 03'	18° 08' × 13° 34'
	1/4"	46° 26' × 34° 59'	35° 03' × 26° 18'	23° 26' × 17° 36'	5° 35' × 4° 12'
Aspect Ratio 16:9	1/3"	91° 36' × 69° 21'	73° 45' × 54° 49'	74° 03' × 55° 06'	13° 34' × 10° 10'
	1/4"	34° 59' × 26° 18'	26° 18' × 19° 44'	17° 36' × 13° 13'	4° 12' × 3° 10'
Focus Range (From the Lens Front) (m)	1/3"	129° 43' × 75° 23'	109° 50' × 59° 51'	109° 33' × 60° 08'	19° 46' × 11° 04'
	1/4"	50° 30' × 28° 38'	38° 11' × 21° 29'	25° 31' × 14° 23'	6° 04' × 3° 26'
Mass (g)	1/3"	99° 23' × 56° 53'	80° 39' × 44° 38'	80° 56' × 44° 51'	14° 47' × 8° 18'
	1/4"	38° 04' × 21° 31'	28° 39' × 16° 07'	19° 10' × 10° 48'	4° 34' × 2° 35'
		55	50	80	60

* 1 : The Iris automatically closes when the camera is turned off.

* Each of the above products is also available in manual type.

* Each of the above products is also available in long cable type (230 mm).

DV3.4x3.8SA-SA1

3.4 x

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

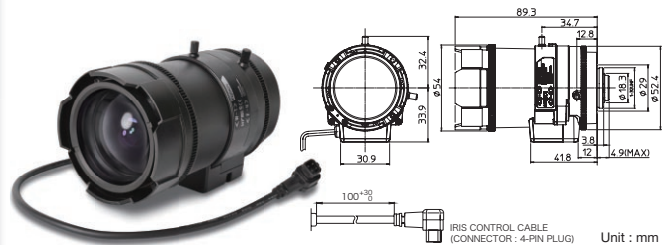


Vari-Focal Wide Angle Telephoto Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant **HD** **VARI WIDE TELE DC C-mt METAL ND AT F1.4 RoHS 3MP**

DV10x8SA-SA1

10 x

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



Vari-Focal Telephoto Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant **HD** **VARI TELE DC C-mt METAL ND AT F1.4 RoHS 3MP**

HD Vari-Focal Day&Night Lens

YV3.3x15HR4A-SA2

3.3 x

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

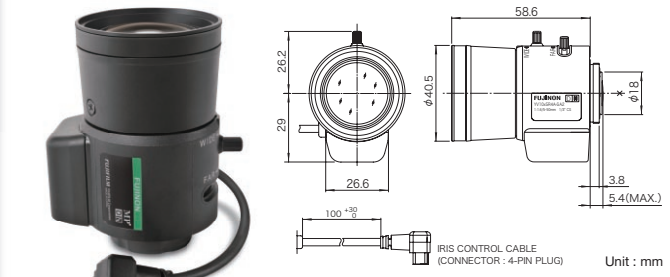


Vari-Focal Telephoto Long Focal DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant **HD** **VARI TELE DC CS-mt METAL ND AT F1.5 RoHS 1.3MP**

YV10x5HR4A-SA2

10 x

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



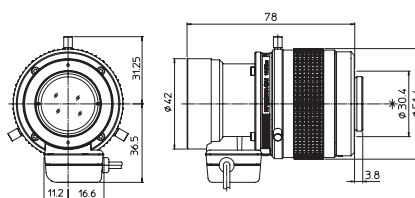
Vari-Focal Wide Angle Telephoto Long Focal DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens Large Aperture Ratio RoHS Compliant **HD** **VARI WIDE TELE DC CS-mt METAL ND AT F1.6 RoHS 1.3MP**

			Applicable to 1/2		Applicable to 1/2		Applicable to 1/3		Applicable to 1/3		
			DV3.4x3.8SA-SA1		DV10x8SA-SA1		YV3.3x15HR4A-SA2		YV10x5HR4A-SA2		
Focal Length (mm)			3.8 - 13 (3.4x)		8 - 80 (10x)		15 - 50 (3.3x)		5 - 50 (10x)		
Iris Range			F1.4 - T360(Equivalent to F360)				F1.5 - T360(Equivalent to F360)		F1.6 - T360(Equivalent to F360)		
Operation	Zoom		Manual Manual Auto (DC type)*1								
	Focus										
Iris											
Angle of View (H × V)	1/2"	WIDE	97° 34' × 71° 47'		44° 21' × 33° 25'		—		—		
		TELE	28° 23' × 21° 18'		4° 38' × 3° 30'		—		—		
	1/3"	WIDE	71° 47' × 53° 15'		33° 25' × 25° 06'		18° 29' × 13° 45'		51° 17' × 39° 36'		
		TELE	21° 18' × 15° 59'		3° 30' × 2° 38'		5° 29' × 4° 09'		5° 30' × 4° 07'		
	1/4"	WIDE	53° 15' × 39° 41'		25° 06' × 18° 51'		13° 45' × 10° 16'		39° 36' × 30° 13'		
		TELE	15° 59' × 11° 59'		2° 38' × 1° 59'		4° 09' × 3° 08'		4° 07' × 3° 06'		
Angle of View (H × V) Aspect Ratio 16:9	1/2"	WIDE	107° 12' × 58° 10'		48° 12' × 27° 21'		—		—		
		TELE	30° 55' × 17° 25'		2° 52' × 5° 02'		—		—		
	1/3"	WIDE	78° 34' × 43° 18'		36° 22' × 20° 32'		20° 13' × 11° 11'		55° 35' × 31° 58'		
		TELE	23° 12' × 13° 04'		3° 48' × 2° 09'		5° 57' × 3° 25'		5° 47' × 3° 20'		
	1/4"	WIDE	58° 10' × 32° 20'		27° 21' × 15° 24'		15° 0' × 8° 22'		42° 19' × 24° 4'		
		TELE	17° 25' × 9° 48'		2° 52' × 1° 37'		4° 31' × 2° 34'		4° 25' × 2° 31'		
Focus Range (From the Lens Front) (m)			∞ - 0.3		∞ - 1.5		∞ - 0.8		∞ - 0.3		
Mass (g)			80		160		50		85		

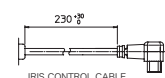
* 1: The iris automatically closes when the camera is turned off.
 ※ Each of the above products is also available in manual type.
 ※ Each of the above products is also available in long cable type (230 mm).

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

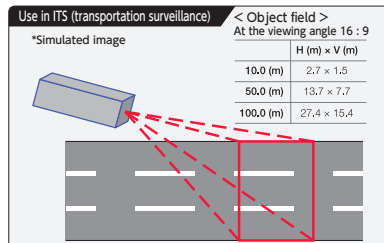
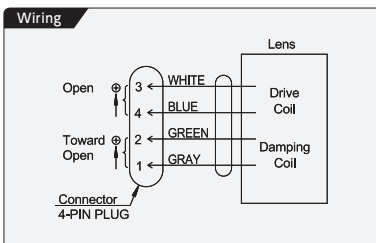
HF35SR4A-SA1L



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

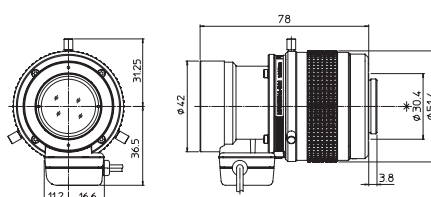


Unit : mm

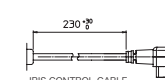


Fixed Focal Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable RoHS Compliant
FIXED TELE DC C-mt METAL ND 230 RoHS 5MP

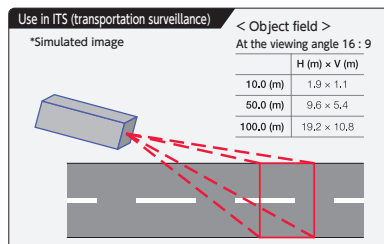
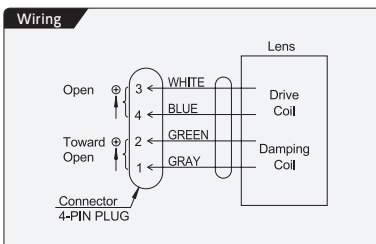
HF50SR4A-SA1L



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



Unit : mm



Fixed Focal Long Focal DC Auto Iris C Mount Metal Mount ND Filter Long Cable RoHS Compliant
FIXED TELE DC C-mt METAL ND 230 RoHS 5MP

		Applicable to 2/3	HF35SR4A-SA1L	Applicable to 2/3	HF50SR4A-SA1L
Focal Length (mm)		35		50	
Iris Range		F2.0 - T360		F2.8 - T360	
Operation	Focus	Manual Auto(DC Type)*1			
	Iris				
Angle of View (H × V)	2/3"	14° 20' × 10° 46'		10° 03' × 7° 33'	
	1/2"	10° 27' × 7° 51'		7° 19' × 5° 30'	
	1/3"	7° 51' × 5° 53'		5° 30' × 4° 07'	
Angle of View (H × V)	2/3"	15° 36' × 8° 48'		10° 57' × 6° 10'	
	1/2"	11° 22' × 6° 25'		7° 58' × 4° 29'	
	1/1"	8° 33' × 4° 49'		5° 59' × 3° 22'	
Focus Range (From the Lens Front) (m)		∞ - 0.75		∞ - 1.0	
Mass (g)		270		260	

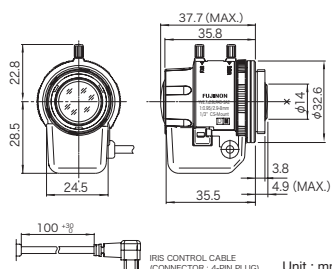
* 1 : The iris automatically closes when the camera is turned off.

※ Each of the above products is also available in manual type.

YV2.7x2.9LR4D-SA2

2.7 x

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



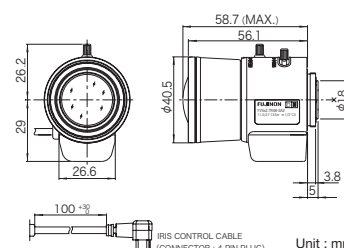
Unit : mm

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

YV5x2.7R4B-SA2

5 x

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



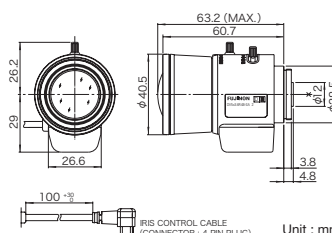
Unit : mm

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

DV5x3.6R4B-SA2

5 x

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



Unit : mm

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

	Applicable to 1/3		Applicable to 1/3		Applicable to 1/2	
	YV2.7x2.9LR4D-SA2		YV5x2.7R4B-SA2		DV5x3.6R4B-SA2	
Focal Length (mm)	2.9 - 8(2.7x)		2.7 - 13.5(5x)		3.6 - 18(5x)	
Iris Range	F0.95 - T360(Equivalent to F360)		F1.3 - T360(Equivalent to F360)		F1.8 - T360(Equivalent to F360)	
Operation	Zoom		Manual		Manual	
	Focus		Manual		Manual	
	Iris		Auto (DC type)*1		Auto (DC type)*1	
Angle of View (H × V)	1/2"	WIDE	-		95° 54' × 72° 24'	
		TELE	-		19° 57' × 15° 09'	
	1/3"	WIDE	94° 37' × 69° 30'		72° 24' × 54° 25'	
		TELE	35° 18' × 26° 26'		15° 09' × 11° 26'	
	1/4"	WIDE	61° 30' × 51° 33'		54° 25' × 40° 50'	
		TELE	26° 26' × 19° 48'		11° 26' × 8° 37'	
Focus Range (From the Lens Front) (m)			∞ - 0.3			
Mass (g)	45		70		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).

※ Each of the above products is also available in manual type.

Vari-Focal

YV2.8x2.8LA-SA2

2.8 x

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



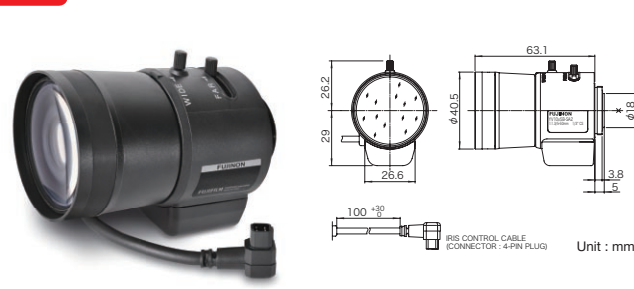
Unit : mm

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

YV10x5B-SA2

10 x

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



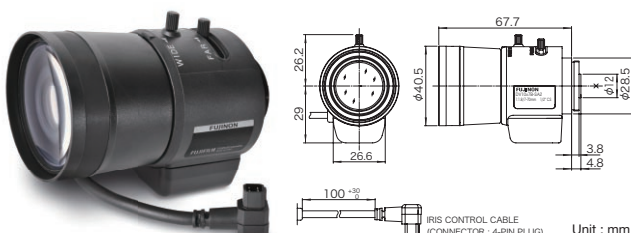
Unit : mm

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

DV10x7B-SA2

10 x

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



Unit : mm

※ To be discontinued when stock runs out.

Vari-Focal Wide Angle Telephoto Long Focal DC Auto Iris CS Mount Metal Mount ND Filter Long Cable Aspherical Lens RoHS Compliant
VARI WIDE TELE DC CS-mt METAL ND 230 AT RoHS

Applicable to 1/3			Applicable to 1/3		Applicable to 1/2	
YV2.8x2.8LA-SA2			YV10x5B-SA2		DV10x7B-SA2	
Focal Length (mm)			2.8 - 8(2.8x)		5 - 50(10x)	
Iris Range			F0.95 - T360(Equivalent to F360)		F1.3 - T360(Equivalent to F360)	
Operation	Zoom		Manual		Manual	
	Focus		Manual		Manual	
			Auto (DC type)*1			
Angle of View (H × V)	1/2"	WIDE	—		50° 01' × 38° 12'	
		TELE	—		5° 12' × 3° 59'	
	1/3"	WIDE	99° 52' × 73° 17'		38° 12' × 28° 56'	
		TELE	35° 14' × 26° 24'		3° 59' × 3° 02'	
	1/4"	WIDE	73° 17' × 54° 19'		28° 56' × 21° 49'	
		TELE	26° 24' × 19° 47'		3° 02' × 2° 17'	
Focus Range (From the Lens Front) (m)			∞ - 0.3			
Mass (g)			45		100	

* 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).

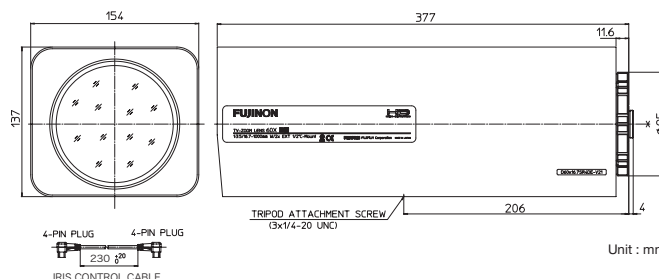
※ Each of the above products is also available in manual type.

D60x16.7SR4DE Series / D60x16.7SR4FE

60x

Applicable to
1/1.8

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



Zoom Motor Drive Telephoto Long Focal Auto Focus Optical Anti-Vibration DC Auto Iris Iris-Remote C Mount Metal Mount Potentiometer ND Filter Extender PC Control Full Servo RoHS Compliant

ZOOM **MOTOR DRIVE** **TELE** **AF** **OS-TECH** **DC** **IRIS-REMOTE** **C-mnt** **METAL** **PRESET** **ND** **2x** **PC** **SERVO** **RoHS**

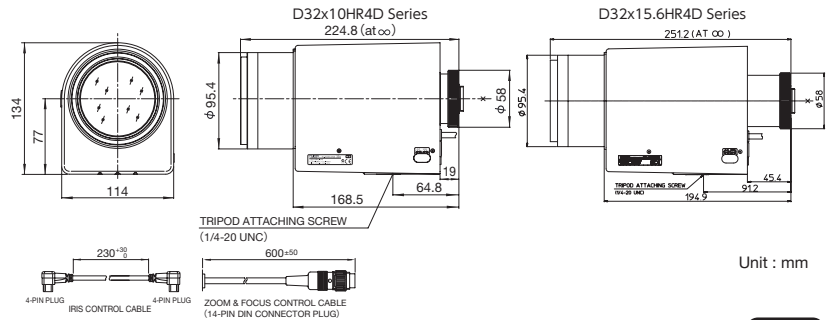
VISIBLE LIGHT CUT **HD 2MP**

				Applicable to 1/1.8					Applicable to 1/1.8					Applicable to 1/1.8	
				D60x16.7SR4DE-V21				D60x16.7SR4DE-ZP1A (AF)				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				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			
Angle of View (H×V)	1/1.8"	1 ×	WIDE	23° 5' × 17° 41'											
			TELE	0° 25' × 0° 19'											
	1/2"	2 ×	WIDE	11° 46' × 8° 54'											
			TELE	0° 12' × 0° 9'											
		1 ×	WIDE	20° 53' × 15° 55'											
			TELE	0° 22' × 0° 17'											
Angle of View (H×V) (16:9)	1/1.8"	1 ×	WIDE	10° 35' × 7° 59'											
			TELE	0° 11' × 0° 8'											
		2 ×	WIDE	24° 56' × 14° 34'											
			TELE	0° 27' × 0° 15'											
	1/2"	1 ×	WIDE	12° 47' × 7° 18'											
			TELE	0° 14' × 0° 8'											
		2 ×	WIDE	22° 35' × 13° 6'											
			TELE	0° 24' × 0° 14'											
Focus Range (From the Lens Front) (m)				∞ - 5											
Object Dimensions at M.O.D. (H × V) (4:3) (mm)	1/1.8"	1 ×	WIDE	1975 × 1504											
			TELE	35 × 27											
	1/2"	2 ×	WIDE	998 × 753											
			TELE	18 × 13											
		1 ×	WIDE	1782 × 1353											
			TELE	32 × 24											
Object Dimensions at M.O.D. (H × V) (16:9) (mm)	1/1.8"	1 ×	WIDE	896 × 676											
			TELE	16 × 12											
		2 ×	WIDE	2137 × 1237											
			TELE	38 × 22											
	1/2"	1 ×	WIDE	1084 × 617											
			TELE	19 × 11											
		2 ×	WIDE	1931 × 1111											
			TELE	34 × 20											
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				P22											

* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

D32x10HR4D Series / D32x15.6HR4D Series

32 x



*Photograph of the D32x10HR4D series model



Applicable to 1/2			Applicable to 1/2		Applicable to 1/2		Applicable to 1/2		
D32x10HR4D-V41			D32x10HR4D-YE1		D32x15.6HR4D-V41		D32x15.6HR4D-YE1		
焦点距離 (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		Auto (Video Type) or Remote*1*2		Auto (DC Type)*1		Auto (Video Type) or Remote*1*2		Auto (DC Type)*1	
Angle of View (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 of View (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			P23						

* 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 28).

Zoom position D60x16.7SR4DE Series

WIDE (16.7mm)

TELE (1,000mm)

*without Extender

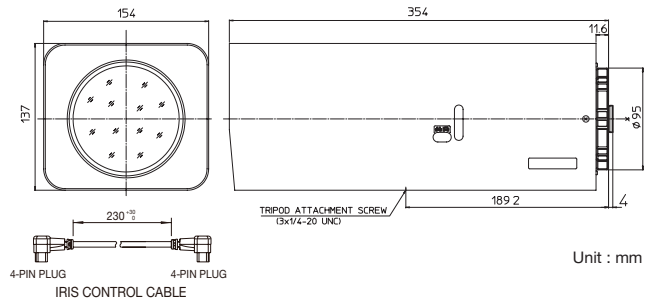


D60x12.5BE-V41 / D60x12.5R3DE Series

Day
Night

60x

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



D60x12.5BE-V41

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

D60x12.5R3DE Series

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

			Applicable to 1/2	Applicable to 1/2	Applicable to 1/2
			D60x12.5BE-V41	D60x12.5R3DE-V41	D60x12.5R3DE-ZP1
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'	
	1/3"	2 ×	WIDE	14° 35' × 10° 58'	
			TELE	0° 15' × 0° 11'	
		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	
	1/3"	2 ×	WIDE	1233 × 924	
			TELE	21 × 15	
		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			P24		

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

* 2 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

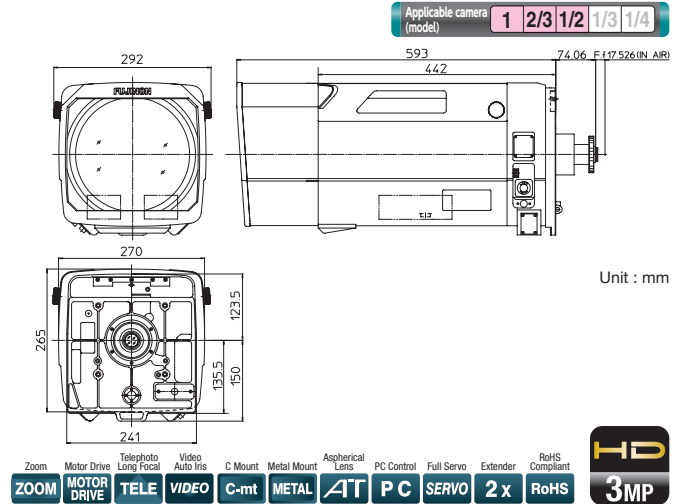
HC16x100R2CE-F11

Day
Night

16 x



*Manufacture on demand



C55x20P-EP1B / C55x20R2Q-EP1B

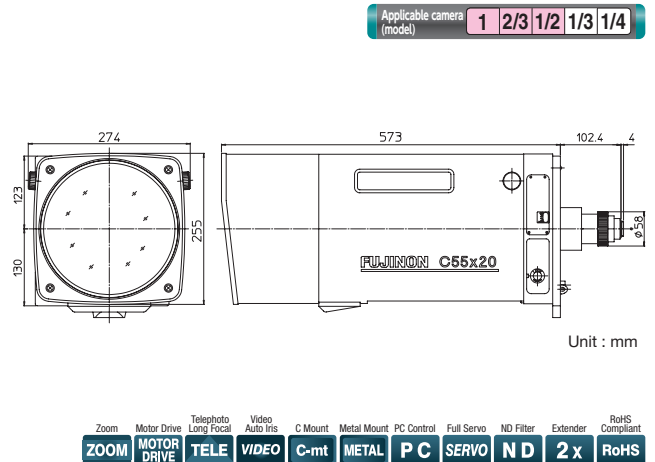
Day
Night

55 x

C55x20R2Q-EP1B



*Manufacture on demand



			Applicable to 1	Applicable to 1	Applicable to 1
			HC16x100R2CE-F11 * 1	C55x20P-EP1B	C55x20R2Q-EP1B
Focal Length (mm)		1 ×	100 - 1600 (16x)	20 - 1100(55x)	
		2 ×	200 - 3200 (16x)	40 - 2200(55x)	
Iris Range		1 ×	F3.4 - F16	F3.0 - T1500(Equivalent to F1500)	
		2 ×	F6.8 - F32	F6.0 - T3000(Equivalent to F3000)	
Operation		Zoom	Servo Control	Servo Control	
		Focus	Servo Control	Servo Control	
		Iris	Auto (Video Type) or Remote	Auto (Video Type) or Servo Control	
Angle Of View (H×V)	1"	1 × WIDE	7° 19' × 5° 30'	35° 29' × 26° 59'	
		2 × TELE	0° 28' × 0° 21'	0° 40' × 0° 30'	
	2 ×	1 × WIDE	3° 40' × 2° 45'	18° 10' × 13° 41'	
		2 × TELE	0° 14' × 0° 10'	0° 20' × 0° 15'	
Focusing Range (From Front Of The Lens)(m)			∞ ~ 5	∞ - 2.4	
Object Dimensions at M.O.D. (H×V) (mm)	1"	1 × WIDE	603 × 452	1400 × 1051	
		2 × TELE	38 × 28	25 × 19	
	2 ×	1 × WIDE	302 × 226	700 × 525	
		2 × TELE	19 × 14	13 × 10	
Back Focal Distance (in air) (mm)			29.38	28.04	
Exit Pupil Position (From Image Plane) (mm)		1 ×	-125	-163	
		2 ×	-111	-131	
Extender			—	2 ×	
Mass (kg)			24	21	

* C55x13.5P-EP1B and C55x13.5R2Q-EP1B are also available.

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

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

HD Vari-Focal

HD Fixed Focal

HD Fish-Eye

Vari-Focal

Zoom

Zoom Lens Wiring

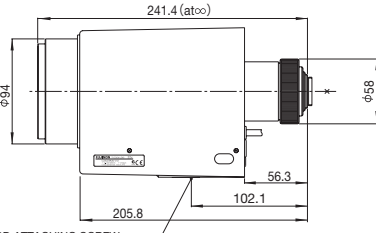
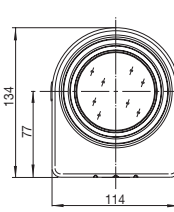
Technical Information

C22x23 Series

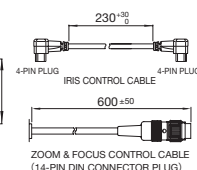
Day
Night

22x

C22x23R2D
Series



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



Unit : mm

C22x23B-V41

Zoom	Motor Drive	Telephoto Long Focal	Remote Iris	Video Auto Iris	IRIS-REMOTE	C-mount	METAL	PRESET	ND Filter	RoHS Compliant
ZOOM	MOTOR DRIVE	TELE	REMOTE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET	ND	RoHS

C22x23R2D Series

Zoom	Motor Drive	Telephoto Long Focal	Video Auto Iris	IRIS-REMOTE	C-mount	METAL	PRESET	ND Filter	PC Control	Full Servo	RoHS Compliant
ZOOM	MOTOR DRIVE	TELE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET	ND	PC	SERVO	RoHS
									-V41	-ZP1	

		Applicable to 1	C22x23B-V41	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		P25					

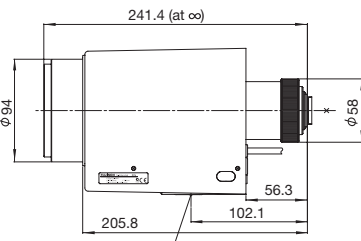
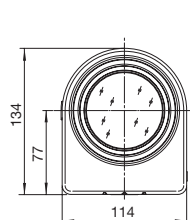
* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

C22x17 Series

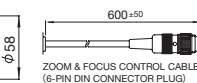
Day
Night

22x

C22x17R2D
Series



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



Unit : mm

Zoom	Motor Drive	Wide Angle	Telephoto Long Focal	Remote Iris	Video Auto Iris	IRIS-REMOTE	C-mount	METAL	PRESET	ND Filter	RoHS Compliant
ZOOM	MOTOR DRIVE	WIDE	TELE	REMOTE	VIDEO	IRIS-REMOTE	C-mt	METAL	PRESET	ND	RoHS

-M41 -V41 -S41 -Y41 -V41 -S41 -Y41 -V41 -S41 -Y41

Applicable to 1			C22x17A-M41		Applicable to 1		C22x17B-S41		Applicable to 1		C22x17B-Y41		Applicable to 1		C22x17R2D-V41		Applicable to 1		C22x17R2D-ZP1			
Focal Length (mm)			17 - 374(22x)																			
Iris Range			F2.3 - F22 • Close				F2.3 - T3000(Equivalent to F3000)															
Operation			Zoom		Motor Drive												Servo Control					
			Focus		Motor Drive												Servo Control					
Angle Of View (H × V)			1"		WIDE TELE		Motor Drive				Auto(Video Type)						Auto(Video Type)or Remote*1				Auto(Video Type) or Servo Control	
Focusing Range (From Front Of The Lens) (m)			∞ - 3																			
ObjectDimensions at M.O.D.(H×V) (mm)			1"		WIDE TELE		2178 × 1633															
99 × 74																						
Back Focal Distance (in air) (mm)			66.93				67.38															
Exit Pupil Position (From Image Plane) (mm)			-127																			
Filter Thread (mm)			M82 × 0.75																			
Mass (kg)			2.3				2.5						2.3									
Wiring Diagram			P25				P26						P25									

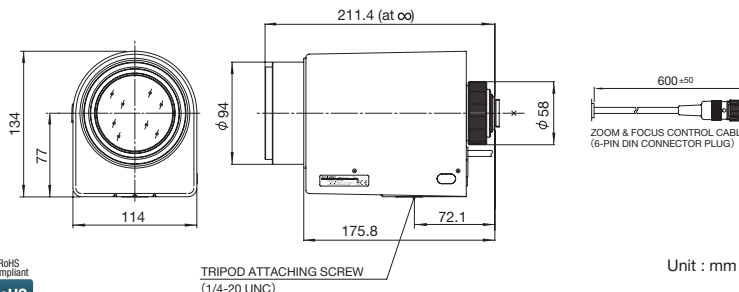
* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

H22x11.5 Series

22 x



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



Zoom Motor Drive Wide Angle Telephoto Long Focal Remote Iris Video Auto Iris C Mount Metal Mount Potentiometer ND Filter Large Aperture Ratio RoHS Compliant

ZOOM **MOTOR DRIVE** **WIDE** **TELE** **REMOTE** **VIDEO** **C-mt** **METAL** **PRESET** **ND** **F1.6** **RoHS**

-M41 -S41 -Y41

Applicable to 2/3		H22x11.5A-M41	Applicable to 2/3		H22x11.5B-S41	Applicable to 2/3		H22x11.5B-Y41
Focal Length (mm)		F1.6 - F22 · Close		11.5 - 253(22x)				
Iris Range				F1.6 - T2000(Equivalent to F2000)				
Operation	Zoom			Motor Drive				
	Focus			Motor Drive				
Angle Of View (H×V)		Motor Drive		Auto(Video Type)				
Focusing Range (From Front Of The Lens) (m)	2/3"			41' 52" × 32' 01"				
	WIDE TELE			2' 00" × 1' 30"				
Object Dimensions at M.O.D.(H×V) (mm)				∞ - 3				
Back Focal Distance (in air) (mm)	2/3"			2213 × 1660				
	WIDE TELE			101 × 75				
Exit Pupil Position (From Image Plane) (mm)		35.95		-103		36.16		
Filter Thread (mm)				M82 × 0.75				
Mass (kg)				2.3				
Wiring Diagram		P25				P26		

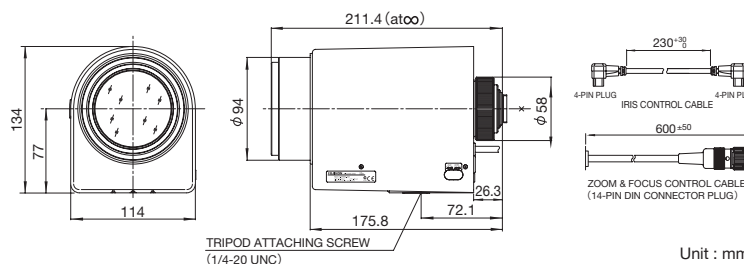
H22x11.5R2D Series

Day Night

22 x



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



Zoom Motor Drive Wide Angle Telephoto Long Focal Remote Iris Video Auto Iris Iris-Remote C Mount Metal Mount Potentiometer ND Filter PC Control Full Servo Large Aperture Ratio RoHS Compliant

ZOOM **MOTOR DRIVE** **WIDE** **TELE** **VIDEO** **IRIS-REMOTE** **C-mt** **METAL** **PRESET** **ND** **PC** **SERVO** **F1.6** **RoHS**

-V41 -ZP1 -ZP1

Applicable to 2/3		H22x11.5R2D-V41	Applicable to 2/3		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	
Angle Of View (H×V)		Auto(Video Type), Remote*1		Auto(Video Type), Remote*1 or Servo Control	
Focusing Range (From Front Of The Lens) (m)	2/3"			41' 52" × 32' 01"	
	WIDE TELE			2' 00" × 1' 30"	
Object Dimensions at M.O.D.(H×V) (mm)				∞ - 3	
Back Focal Distance (in air) (mm)	2/3"			2213 × 1660	
	WIDE TELE			101 × 75	
Exit Pupil Position (From Image Plane) (mm)		36.16		-103	
Filter Thread (mm)				M82 × 0.75	
Mass (kg)				2.5	
Wiring Diagram		P25			

* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

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

HD Vari-Focal

HD Fixed Focal

HD Fish-Eye

Vari-Focal

Zoom

Zoom Lens Wiring

Technical Information

D22x9.1 Series

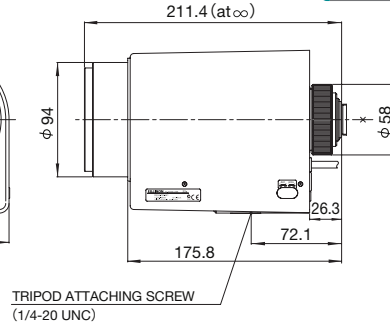
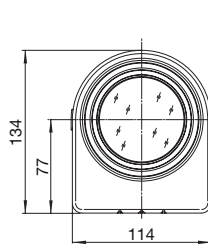
Day
Night

22x

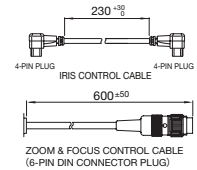
D22x9.1R2D-V41



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



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



Unit : mm

TRIPOD ATTACHING SCREW
(1/4-20 UNC)

	Applicable to 1/2		Applicable to 1/2		Applicable to 1/2	
	D22x9.1B-S41		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 TELE	38° 45' × 29° 33'			
Focusing Range (From Front Of The Lens) (m)			∞ - 3			
Object Dimensions at M.O.D.(H×V) (mm)	1/2"	WIDE TELE	2034 × 1526			
Back Focal Distance (in air) (mm)	23.93		93 × 69		24.05	
Exit Pupil Position (From Image Plane) (mm)	-676		M82 × 0.75		-672	
Filter Thread (mm)						
Mass (kg)	2.3				2.5	
Wiring Diagram	P26				P25	

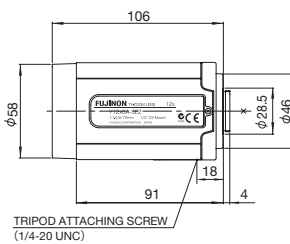
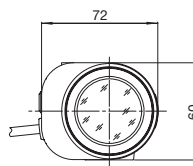
* 1 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

Y12x6A Series

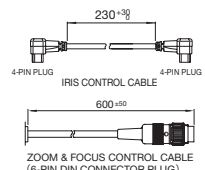
12x



Zoom Motor Drive Wide Angle Telephoto Long Focal DC Auto Iris CS Mount Metal Mount Potentiometer ND Filter Large Aperture Ratio RoHS Compliant
ZOOM MOTOR DRIVE WIDE TELE DC CS-mt METAL PRESET ND F1.5 RoHS
-YE2



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



Unit : mm

TRIPOD ATTACHING SCREW
(1/4-20 UNC)

	Applicable to 1/3		Applicable to 1/3	
	Y12x6A-SE2		Y12x6A-YE2	
Focal Length (mm)			6 - 72(12x)	
Iris Range			F1.5 - T400(Equivalent to F400)	
Operation	Zoom		Motor Drive	
	Focus		Motor Drive	
	Iris		Auto(DC Type)*1	
Angle Of View (H×V)	1/3"	WIDE TELE	43° 36' × 33° 24'	
Focusing Range (From Front Of The Lens) (m)			∞ - 1.3	
Object Dimensions at M.O.D.(H×V) (mm)	1/3"	WIDE TELE	1003 × 753	
Back Focal Distance (in air) (mm)			84 × 63	
Exit Pupil Position (From Image Plane) (mm)			11.69	
Filter Thread (mm)			-6028	
Mass (g)	330		M55 × 0.75	
Coil Resistance			350	
Current Consumption			Drive Coil 180 Ω Damping Coil 720 Ω	
Wiring Diagram			22mA (Max.) at DC 4V P23	

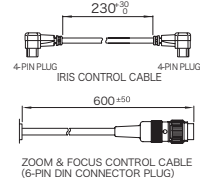
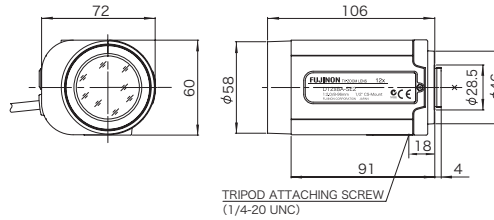
* 1 : When power is turned off, iris will automatically close.

D12x8A Series

12 x



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



Unit : mm

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

Applicable to 1/2

D12x8A-SE2

Applicable to 1/2

D12x8A-YE2

Focal Length (mm)	8 - 96(12x)	
Iris Range	F2.0 - 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'
		TELE 2° 52' × 2° 09'
Focusing Range (From Front Of The Lens) (m)	∞ - 1.3	
Object Dimensions at M.O.D.(H×V) (mm)	1/2"	WIDE 1003 × 753
		TELE 84 × 63
	1/3"	WIDE 752 × 565
		TELE 63 × 47
Back Focal Distance (in air) (mm)	16.22	
Exit Pupil Position (From Image Plane) (mm)	-51	
Filter Thread (mm)	M55 × 0.75	
Mass (g)	330	350
Wiring Diagram	P23	

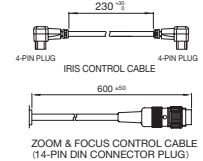
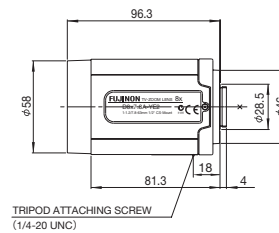
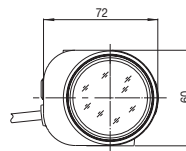
* 1 : When power is turned off, iris will automatically close.

D8x7.8HA Series

8 x



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



Unit : mm

Zoom Motor Drive Wide Angle Video Auto Iris Iris-Remote CS Mount Metal Mount Potentiometer ND Filter Large Aperture Ratio RoHS Compliant
ZOOM MOTOR DRIVE WIDE DC VIDEO IRIS-REMOTE CS-mt METAL PRESET ND F1.2 RoHS
-YE2 -SE2 -V42 -V42 -YE2 -V42



Applicable to 1/2

D8x7.8HA-YE2

Applicable to 1/2

D8x7.8HA-SE2

Applicable to 1/2

D8x7.8HA-V42

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	
Object Dimensions 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	P23	P24

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

* 2 : For details on the Iris-Remote connection, see the relevant Technical Reference (Page 28).

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

HD Vari-Focal

HD Fixed Focal

HD Fish-Eye

Vari-Focal

Zoom

Zoom Lens Wiring

Technical Information

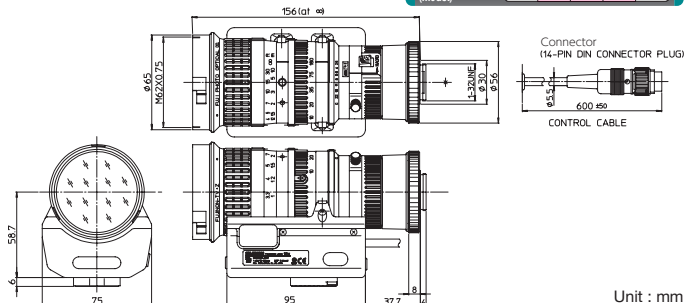
H16x10A-X41

16 x



*Manufacture on demand

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



Unit : mm

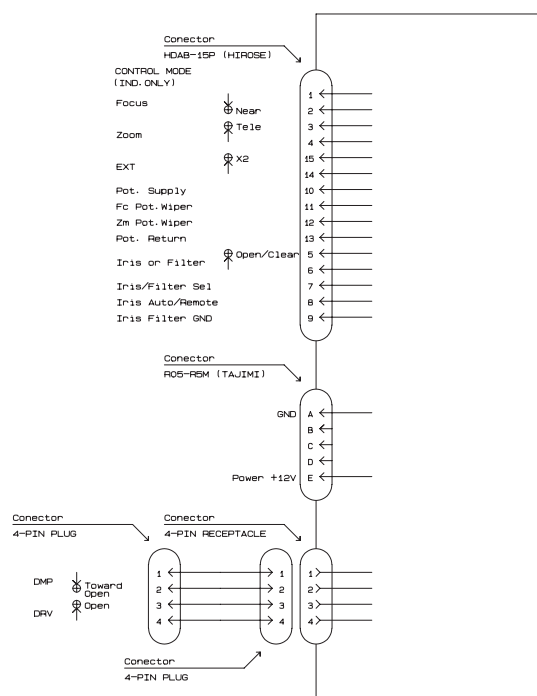
Zoom Motor Drive Wide Angle Telephoto Long Focal Remote Iris C-Mnt Metal Mount Potentiometer RoHS Compliant

Applicable to 2/3		H16x10A-X41	
Focal Length (mm)		10 - 160(16x)	Focusing Range (From Front Of The Lens) (m)
Iris Range		F2.5 - F22 (close)	$\infty - 1$
Operation	Zoom	Motor Drive	Object Dimensions at M.O.D.(H x V) (mm)
	Focus	Motor Drive	2/3" WIDE 862 x 620
Angle Of View (H x V)	WIDE	Motor Drive	54 x 40
	TELE	Motor Drive	14.77
Wiring Diagram	2/3"	3° 16' x 2° 27'	Exit Pupil Position (From Image Plane) (mm)
			186.00
			Filter Thread (mm)
			M62 x 0.75
			Mass (kg)
			0.9

P26

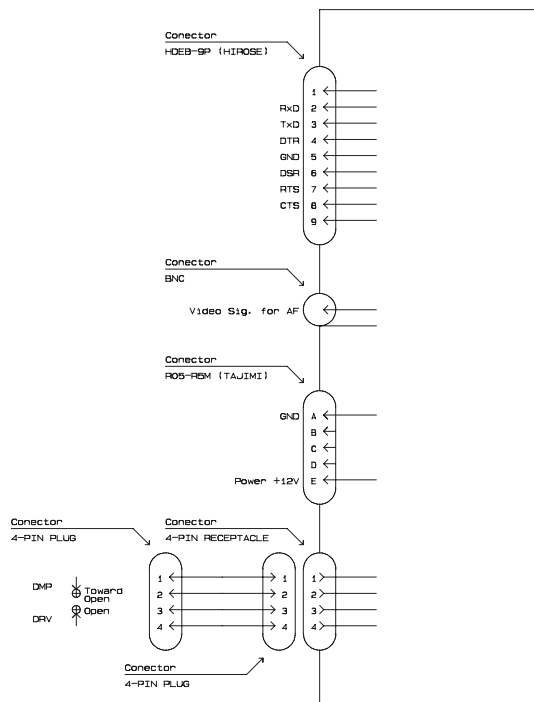
Zoom Lens Wiring

D60x16.7SR4DE-V21 P14



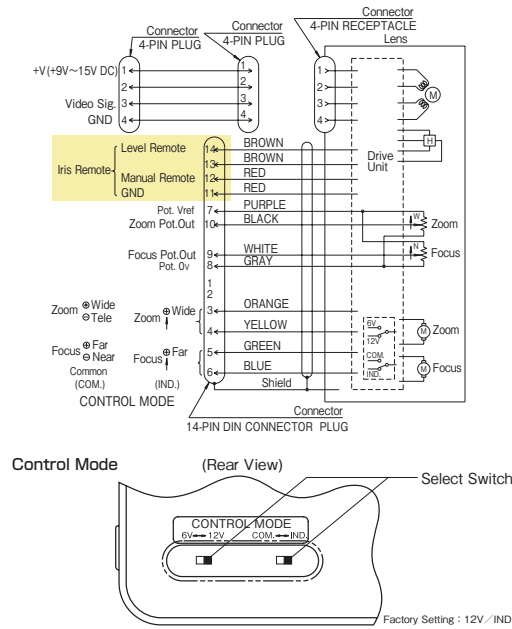
D60x16.7SR4DE-ZP1A P14

D60x16.7SR4FE-ZP1C P14



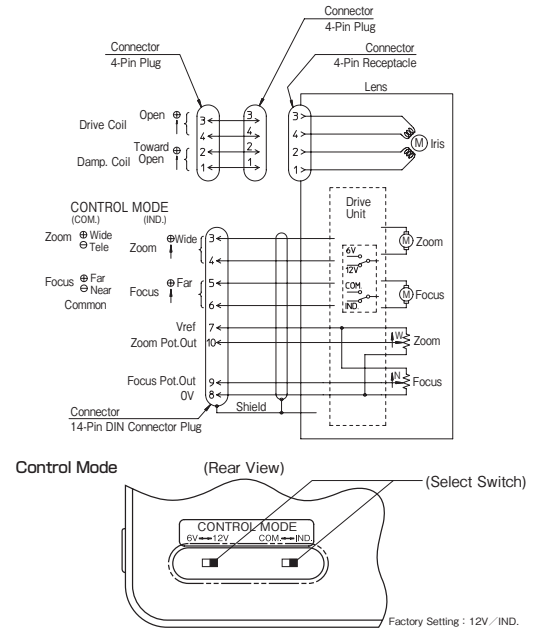
D32x10HR4D-V41
D32x15.6HR4D-V41

P15
P15



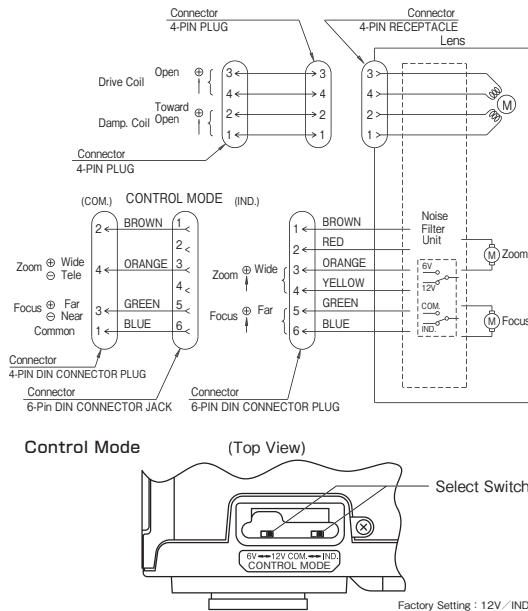
D32x10HR4D-YE1
D32x15.6HR4D-YE1

P15
P15



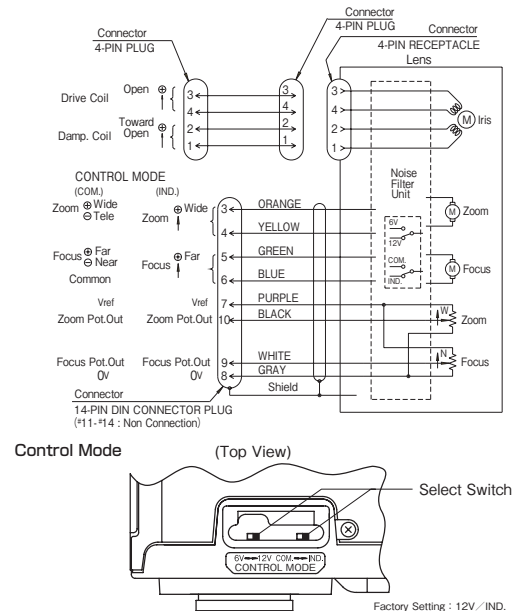
D8x7.8HA-SE2
Y12x6A-SE2
D12x8A-SE2

P21
P20
P21



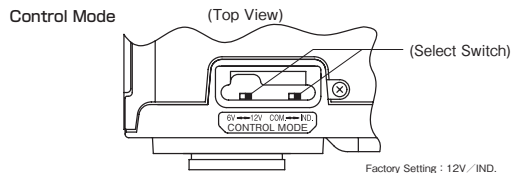
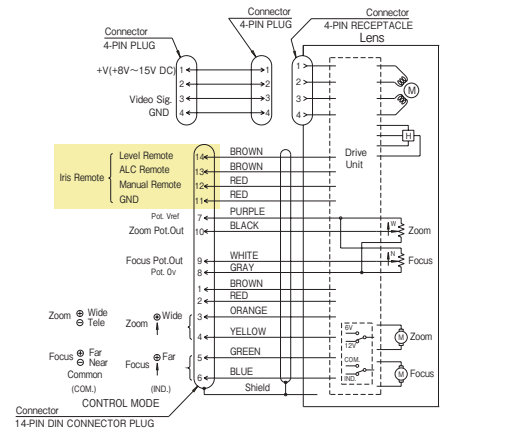
D8x7.8HA-YE2
Y12x6A-YE2
D12x8A-YE2

P21
P20
P21



D8x7.8HA-V42

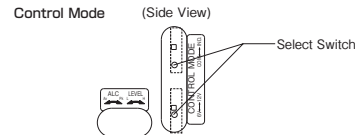
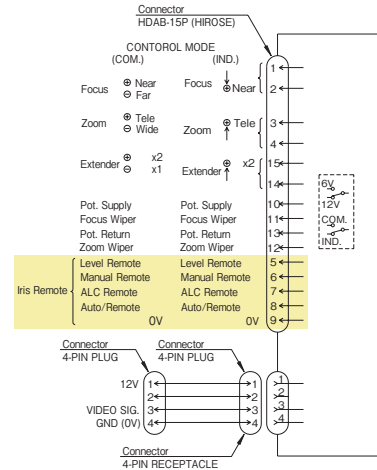
P21



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

D60x12.5BE-V41

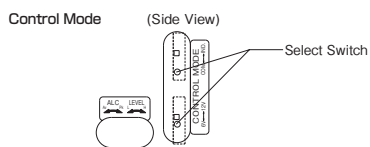
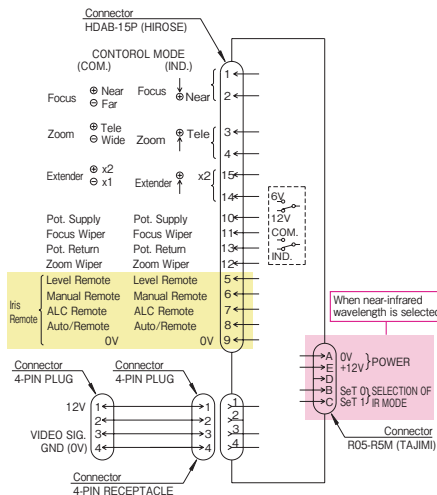
P16



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

D60x12.5R3DE-V41

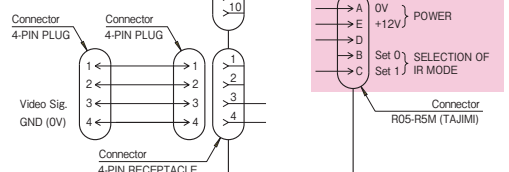
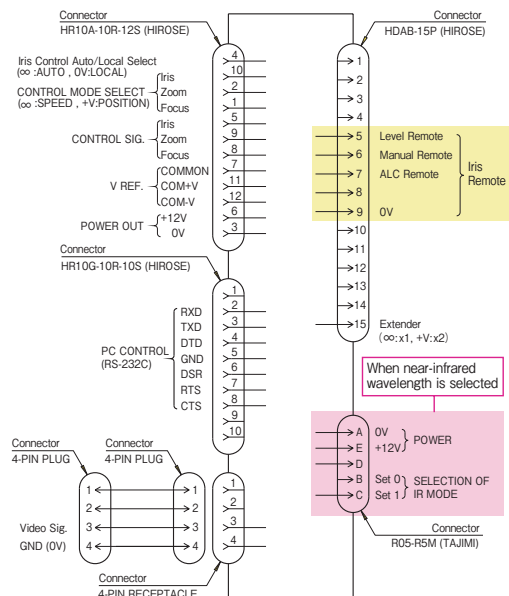
P16



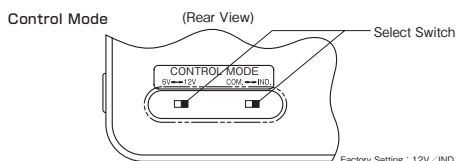
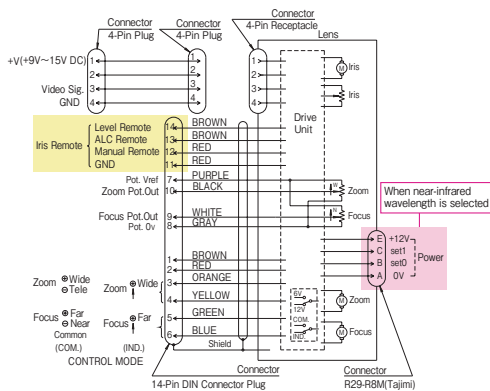
Controller Output	Select Switch Position
6V	6V / IND.
±6V	6V / COM.
12V	12V / IND.
±12V	12V / COM.

D60x12.5R3DE-ZP1

P16

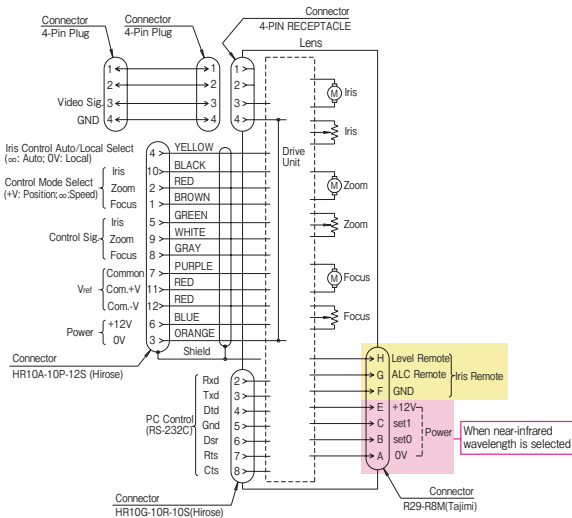


D22x9.1R2D-V41 _____ **P20**
H22x11.5R2D-V41 _____ **P19**
G22x17R2D-V41 _____ **P18**
G22x23R2D-V41 _____ **P18**

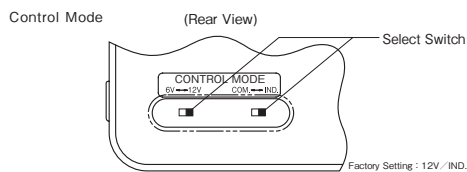
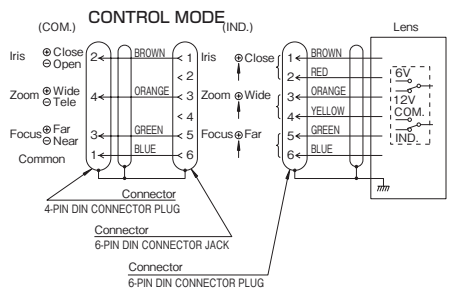


Controller Output	Select Switch Position
6V	6V / IND.
±6V	6V / COM.
12V	12V / IND.
±12V	12V / COM.

H22x11.5R2D-ZP1 _____ **P19**
C22x17R2D-ZP1 _____ **P18**
C22x23R2D-ZP1 _____ **P18**

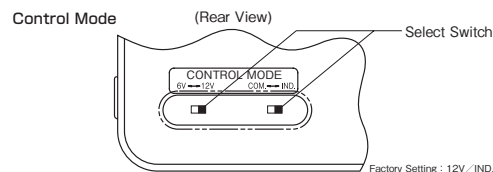
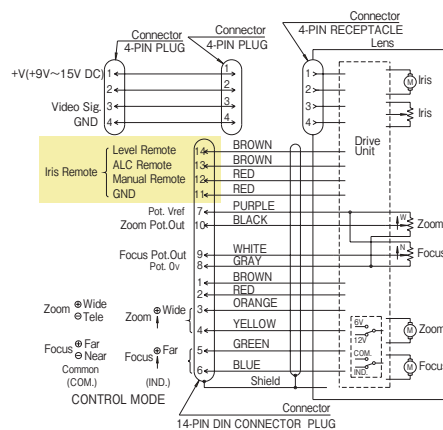


H22x11.5A-M41 _____ **P19**
G22x17A-M41 _____ **P18**



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

C22x23B-V41 _____ **P18**



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

HD Vari-Focal

HD Fixed Focal

HD Fish-Eye

Vari-Focal

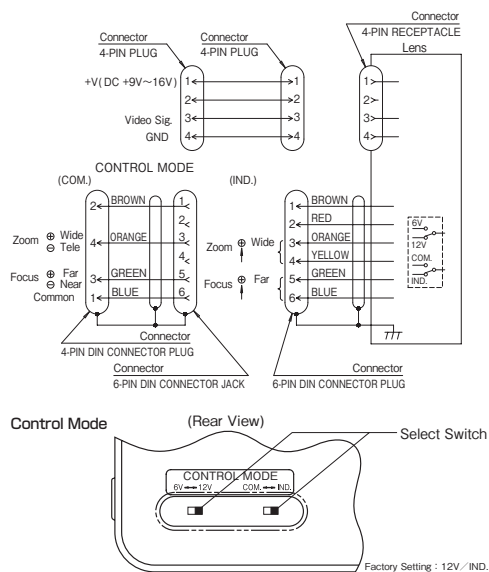
Zoom

Zoom Lens Wiring

Technical Information

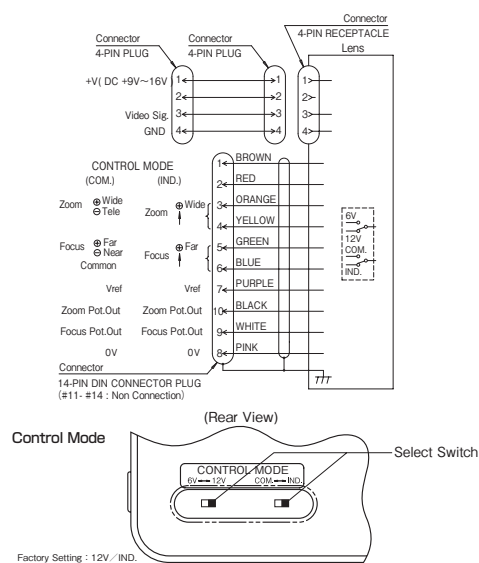
Zoom Lens Wiring

D22x9.1B-S41 _____ **P20**
H22x11.5B-S41 _____ **P19**
C22x17B-S41 _____ **P18**



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

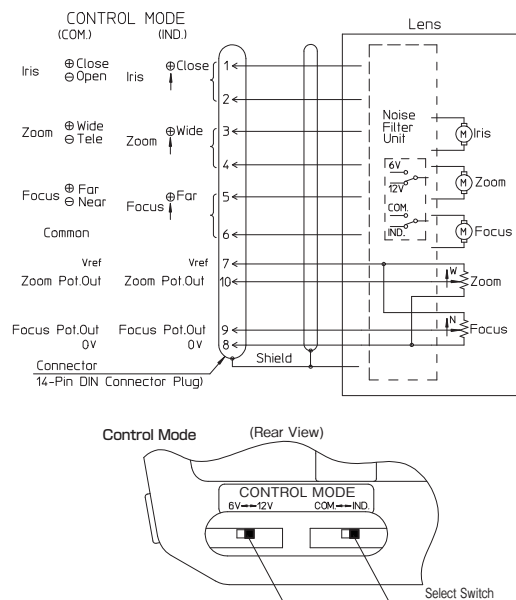
D22x9.1B-Y41 _____ **P20**
H22x11.5B-Y41 _____ **P19**
C22x17B-Y41 _____ **P18**



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

H16x10A-X41 _____ **P22**

WIRING DIAGRAM



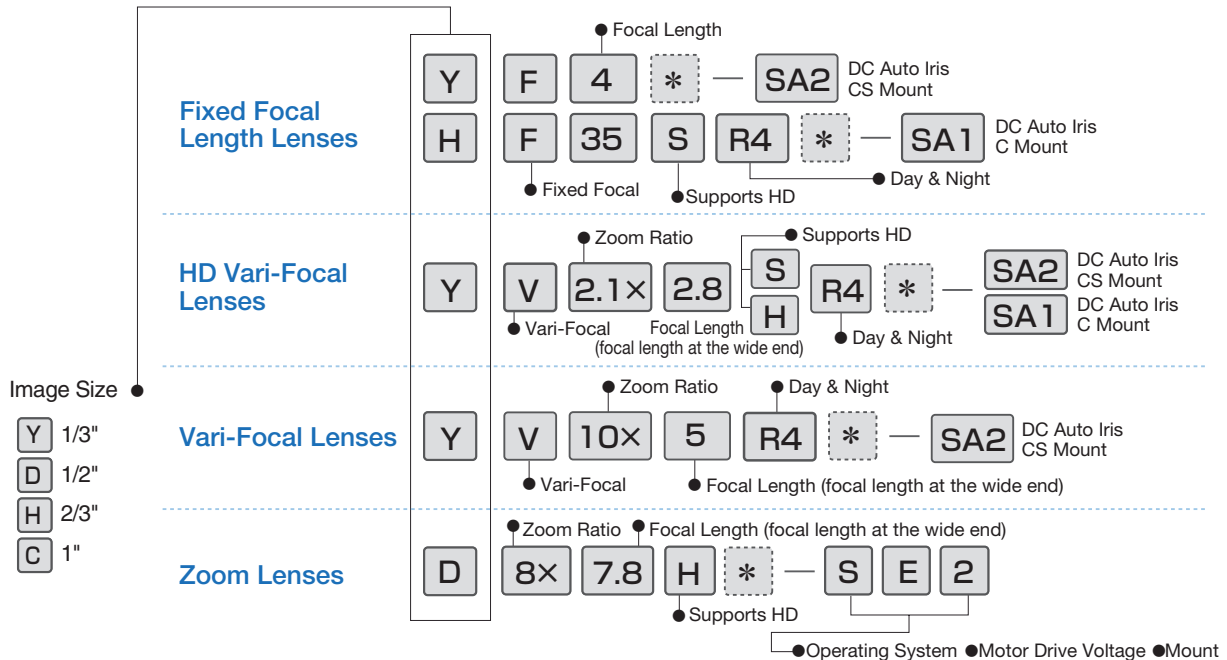
Controller Output	Select Switch Position
6V	6V / IND.
±6V	6V / COM.
12V	12V / IND.
±12V	12V / COM.

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	5 Mpx HD HD 5MP High performance to fully exploit 5 megapixel HD cameras' high resolution	3 Mpx HD HD 3MP High performance to fully exploit 3 megapixel HD cameras' high resolution	2 Mpx HD HD 2MP High performance to fully exploit 2 megapixel HD cameras' high resolution	1.3 Mpx HD 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, enabling the downsizing of your system	Potential Meter PRESET Enables to preset the 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 230 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.

HD Vari-Focal

HD Fixed Focal

HD Fish-Eye

Vari-Focal

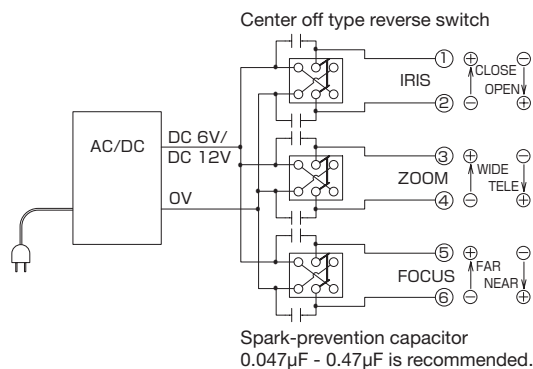
Zoom

Zoom Lens Wiring

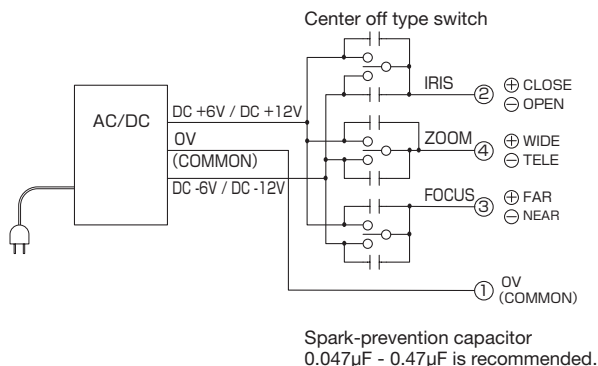
Technical Information

Recommended Lens Control Circuit

Operation System - M Type Zoom Lens [Independent Mode]

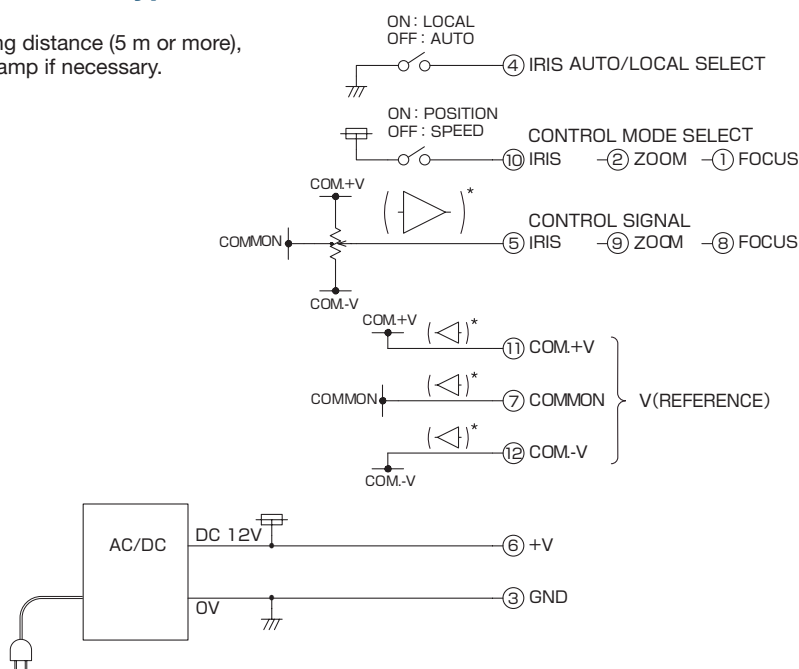


Operation System - M Type Zoom Lens [Common Mode]



Operation System - R Type Zoom Lens

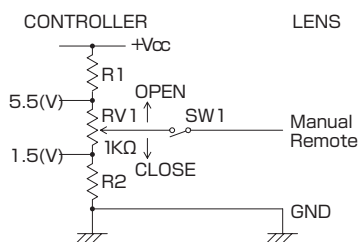
* In case of long distance (5 m or more),
use a buffer amp if necessary.



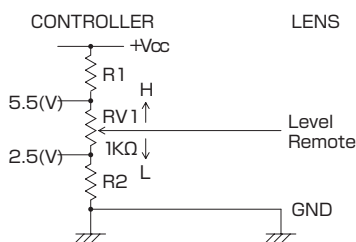
● "Independent mode" and "Common mode" can be selected with the control switch on the lenses.

Operation System - Iris Remote

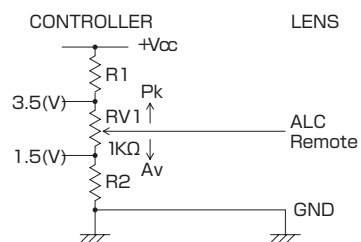
Manual Remote



Level Remote



ALC Remote

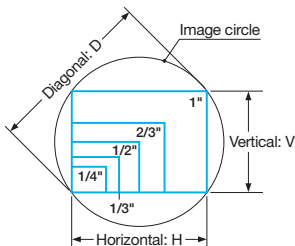


Terminology

Image Sizes

- There are several types of imaging sensors for CCTV cameras, with different image sizes.

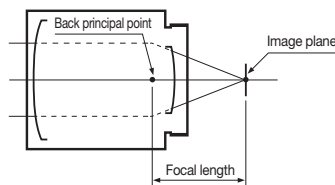
The aspect ratio of a CCTV camera is normally 4:3 (H:V).



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

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.



C/CS-Mount

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

Standard

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

Interchangeability

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

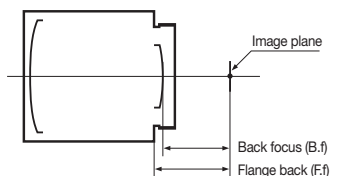
*1 Length in air

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

Flange Back and Back Focal Distance

- Flange back will be the distance between the mechanical mount surface and image plane.

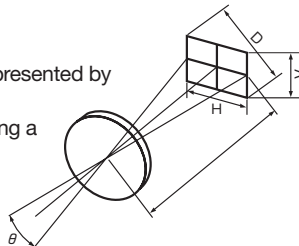
Back focal distance will be the distance between the rear end of the lens part and the image plane.



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.

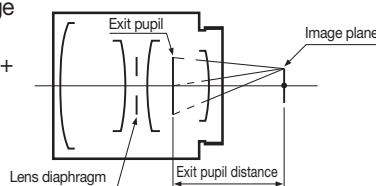
- The F No. is a value determined on the assumption that the transmittance of the lens is 100%. Virtually all lenses however, have different spectral transmittance, and thus, the same F No. can have different levels of brightness. To eliminate this inconvenience, a system has been developed to consider 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:

$$F \text{ No.} = \frac{f}{d} \quad \begin{array}{l} f: \text{Focal length of a lens} \\ d: \text{Effective diameter of a lens} \end{array}$$

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

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.

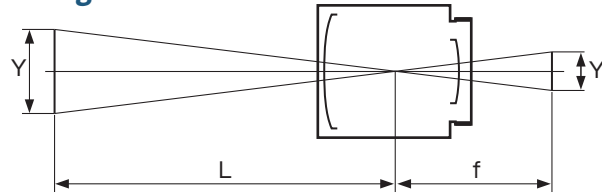


M.O.D.

- 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

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

(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.

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

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

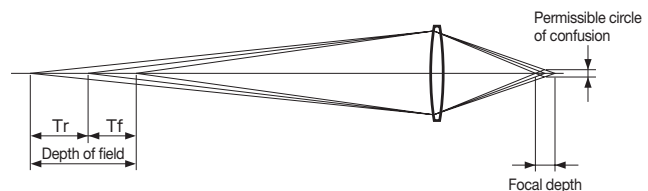
$$\text{Backward depth of field } T_r = \frac{\delta \cdot F \cdot L^2}{f^2 - \delta \cdot F \cdot L}$$

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

$$\text{Depth of field} = T_r + T_f$$

$$\text{Focal depth} = 2\delta \cdot F$$

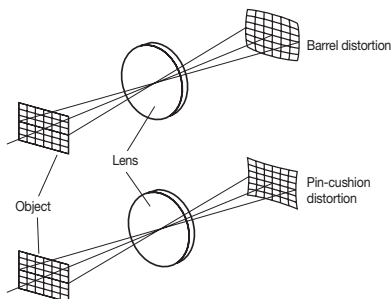
f: Focal distance
F: F No.
 δ : Permissible circle diameter of confusion
L: Object distance



Technical Reference

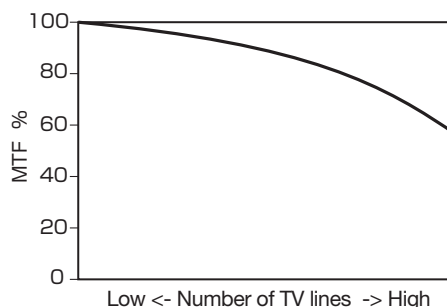
Distortion

- 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.

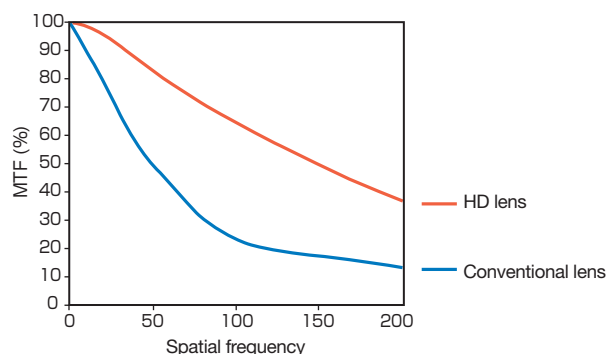


HD Lens

- 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.

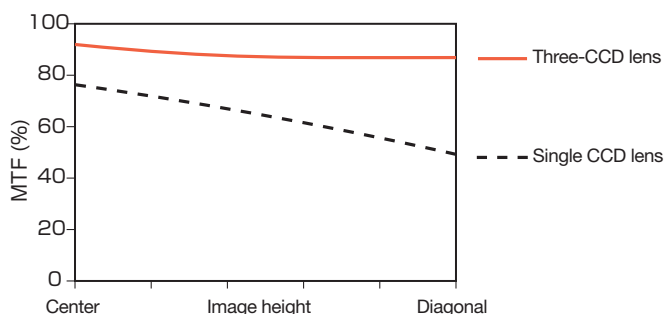
The chart at the right shows the difference between an HD lens and a conventional CCTV lens.

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.

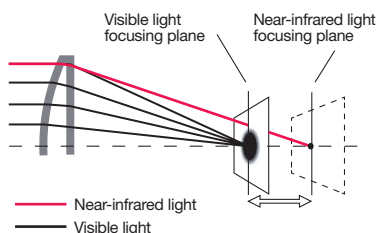


Day & Night Lens

- 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)

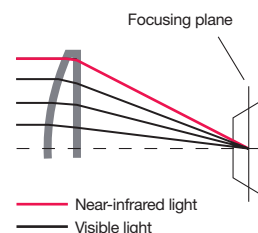
is mounted on a day & night camera, and used under near-infrared light.



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



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For your safety

Be certain to read the instructions for use before using any equipment.

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