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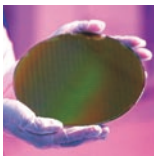
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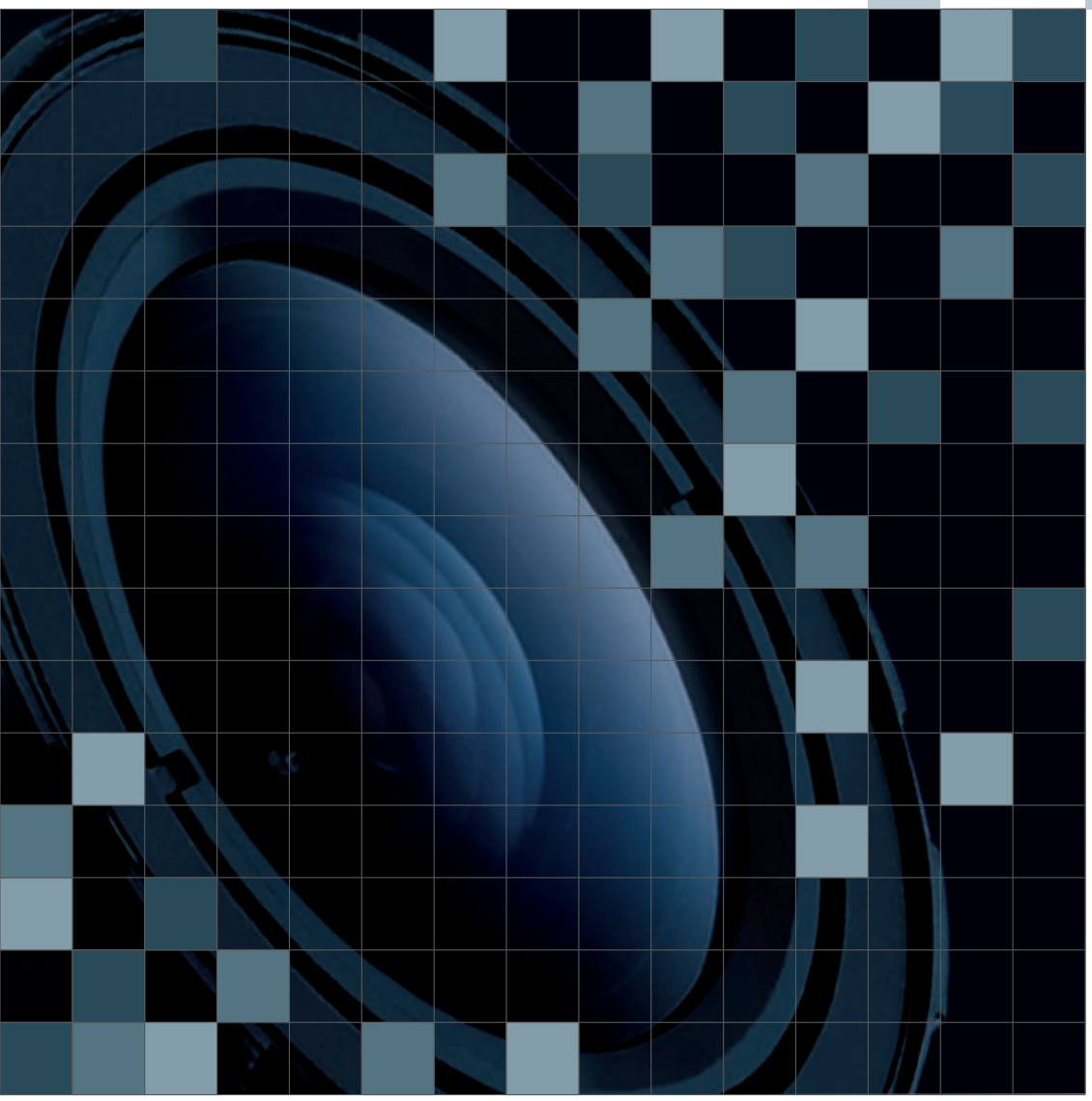




CCTV

Closed Circuit Television Lenses





For Security

Motorized Zoom Lens

Manual Zoom Lens

Board Camera Lens Pan-focus

Varifocal Plus

Vari-Focal Lens

Monofocal Auto-Iris Lens

Pinhole Lens

For Machine Vision

Line-Scan Lens

UV Lens

5 Mega-Pixel Lens

Mega-Pixel Lens

Monofocal Manual Iris Lens

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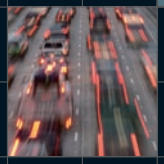
PAN FOCUS

LINE SCAN LENS

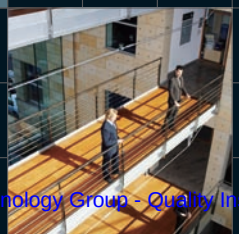
MEGA PIXEL

Varifocal Plus

6X OPTICAL ZOOM



VARI FOCAL



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Products Line Up

MODEL	Focal Length (mm)	Iris Range	Mount	Horizontal Angle of View (°) 1/4 format	1/3 format	1/2 format	2/3 format	Filter Size	Dimensions (D×L) (W×H×L) mm	Weight (g)	Remarks	Page
●1/3 format												
TS10ZME(C70500)	5.8-58	1.2-360	CS	33.77-3.62	44.07-4.78	—	—	49 P=0.75	64.6×70.3×85	380	Video or DC Iris	6
TS10ZME-P(C70501)	5.8-58	1.2-360	CS	33.77-3.62	44.07-4.78	—	—	49 P=0.75	64.6×70.3×85	430	Video or DC Iris	6
TS15ZAME(C70624)	6.0-90	1.2-430	CS	32.96-2.33	43.48-3.08	—	—	62 P=0.75	78×88.5×119	760	Video or DC Iris	7
TS15ZAME-P(C70627)	6.0-90	1.2-430	CS	32.96-2.33	43.48-3.08	—	—	62 P=0.75	78×88.5×119	770	Video or DC Iris, Preset	7
●1/2 format												
H6ZBME(C60809)	8.0-48	1.0-720	C	24.92-4.42	32.98-5.86	43.24-7.73	—	55 P=0.75	64×74.5×97	530	Video or DC Iris	8
H6ZBME-P(C60810)	8.0-48	1.0-720	C	24.92-4.42	32.98-5.86	43.24-7.73	—	55 P=0.75	64×74.5×97	540	Video or DC Iris, Preset	8
HS10ZME(C60700)	7.5-75	1.4-360	CS	26.15-2.83	34.52-3.75	45.05-4.95	—	58 P=0.75	67×75×112	580	Video or DC Iris	9
H10ZME(C60701)	7.5-75	1.2-512	C	26.45-2.84	34.94-3.77	45.63-4.99	—	62 P=0.75	70×80.5×121.5	715	Video or DC Iris	10
H10ZME-P(C60702)	7.5-75	1.2-512	C	26.45-2.84	34.94-3.77	45.63-4.99	—	62 P=0.75	70×80.5×121.5	740	Video or DC Iris, Preset	10
H15ZAME(C60826)	8.0-120	1.6-1000	C	24.76-1.76	32.85-2.34	43.37-3.09	—	62 P=0.75	78×88.5×134	800	Video or DC Iris	11
H15ZAME-P(C60829)	8.0-120	1.6-1000	C	24.76-1.76	32.85-2.34	43.37-3.09	—	62 P=0.75	78×88.5×134	840	Video or DC Iris, Preset	11
H15ZAME-FH(C60830)	8.0-120	1.6-1000	C	24.76-1.76	32.85-2.34	43.37-3.09	—	62 P=0.75	78×88.5×134	840	Video Iris w/Override, Preset *	11
H16ZME(C60726)	7.5-120	1.6-1000	C	26.4-1.8	34.9-2.3	45.8-3.1	—	with Adapter	77.6×85.6×118.8	760	Video or DC Iris	12
H16ZME-P(C60728)	7.5-120	1.6-1000	C	26.4-1.8	34.9-2.3	45.8-3.1	—	with Adapter	77.6×85.6×118.8	780	Video or DC Iris, Preset	12
H16ZME-F(C60727)	7.5-120	1.6-1000	C	26.4-1.8	34.9-2.3	45.8-3.1	—	with Adapter	77.6×85.6×118.8	790	Video Iris w/Override, Preset *	12
H20ZAME-M(C61237)	12-240	1.6-720	C	17.17-0.88	22.95-1.17	30.78-1.56	—	95 P=1.0	116×135×223.5	2,590	Video or DC Iris	13
H20ZAME-P-M(C61241)	12-240	1.6-720	C	17.17-0.88	22.95-1.17	30.78-1.56	—	95 P=1.0	116×135×223.5	2,630	Video or DC Iris, Preset	13
H20ZAME-F-M(C61240)	12-240	1.6-720	C	17.17-0.88	22.95-1.17	30.78-1.56	—	95 P=1.0	116×135×223.5	2,630	Video Iris w/Override, Preset *	13
H55ZAME-F(C61244)	12-1680	4.0-360	C	17.17-0.12	23.18-0.16	31.65-0.22	—	105 P=1.0	155×138×355	5,400	Video Iris w/Override, Preset *	14
●2/3 format												
C6ZAME(C31220)	12.5-75	1.8-720	C	16.05-2.75	21.36-3.66	28.38-4.87	38.72-6.67	49 P=0.75	101.5×92.2×94.5	620	Video Iris	15
C6ZME-P(C31221)	12.5-75	1.8-720	C	16.05-2.75	21.36-3.66	28.38-4.87	38.72-6.67	49 P=0.75	101.5×92.2×94.5	655	Video or DC Iris, Preset	15
C6Z1218M3(C31211)	12.5-75	1.8-C	C	16.07-2.75	21.38-3.66	28.41-4.87	38.76-6.67	49 P=0.75	101.5×92.2×94.5	820	Motorized Iris	16

D/A converter option available on the models marked with (*)

●1/2 format												
H6ZBE(C60811)	8.0-48	1.0-720	C	24.92-4.42	32.98-5.86	43.24-7.73	—	55 P=0.75	69×64×95	465	Video or DC Iris	17
H6Z810(C60812)	8.0-48	1.0-22	C	24.92-4.42	32.99-5.86	43.26-7.73	—	55 P=0.75	57×95	430	Manual Iris, Lock Screws	18
●2/3 format												
C6ZE(C31219)	12.5-75	1.8-720	C	16.05-2.75	21.36-3.66	28.38-4.87	38.72-6.67	49 P=0.75	68×90	385	Video Iris	17
C6Z1218(C31204)	12.5-75	1.8-22	C	16.07-2.75	21.38-3.66	28.41-4.87	38.76-6.67	49 P=0.75	51×90	320	Manual Iris	18

●1/4 format												
QD3ZMED(C40219)	2.8-7.3	1.9-200	Special	73.42-28.74	—	—	—	—	35.1×29.7×26.8	18	DC Iris	19

TS3VP213ED-M(C70228)	2.6-8.0	1.3-200	CS	77.8-26.6	104.4-35.5	—	—	—	44×47.5×44.3	65	1.3 Mega-Pixel DC Iris,Click-Focus	20

●1/3 format												
TS2V214AED(C70220)	2.8-6.0	1.4-300	CS	72.26-35.35	96.70-47.04	—	—	—	40.4×45.7×43.2	59	Video or DC Iris, Day & Night	22
TS3V310ED(C70315)	3.0-8.0	1.0-360	CS	68.98-26.44	93.22-35.26	—	—	—	38.3×44.7×44.4	60	Video or DC Iris, Day & Night	22
TS3V310(C70316)	3.0-8.0	1.0-C	CS	68.98-26.44	93.22-35.26	—	—	—	36.2×44.4	47	Manual Iris, Day & Night	22
TS4V212ED-Q(C70227)	2.8-12	1.2-360	CS	73.0-17.8	98.5-23.8	—	—	—	35×42×53.3	58	DC Iris, Day & Night	23
TS7V714ED-Q(C70700)	7.5-50	1.2-360	CS	27.4-4.3	36.6-5.6	—	—	—	38×46.2×55.2	68	DC Iris, Day & Night	23
TS2V114E(C70100)	1.6-3.4	1.4-64	CS	180-64.89	180-89.55	—	—	—	38.3×44.7×56.7	140	Fish-Eye, DC Iris	24
TS4V214ED(C70223)	2.8-12	1.4-360	CS	71.82-18.05	93.29-23.50	—	—	—	43.0×51.5×68.1	83	DC Iris	24
TS10V518AED(C70509)	5.0-50	1.8-360	CS	37.80-4.14	50.00-5.52	—	—	—	44.5×50.8×61.5	140	DC Iris	24
TS3V212ED(C70224)	2.9-8.5	1.2-300	CS	70.7-25.1	96.2-33.4	—	—	—	38.3×44.7×45	50	DC Iris	24
●1/2 format												
HS2V616ED(C60635)	6.0-12	1.6-300	CS	34.98-17.23	47.38-23.02	65.29-30.82	—	30.5 P=0.5	40.4×45.7×43.5	57	Video or DC Iris, Day & Night	23

●1/3 format												
TS212E(C70210)	2.8	1.2-200	CS	71.54	94.28	—	—	—	36.8×43.5×36.3	54	DC Iris	26
●1/2 format												
H416E(C60405)	4.2	1.6-360	C	47.90	64.30	86.78	—	–	46.5×50.5×45	135	Video Iris	26
H416ER(C60404)	4.2	1.6-360	C	47.90	64.30	86.78	—	–	46.5×50.5×45	135	Video Iris with Override	26
H612E(C60625)	6.0	1.2-360	C	32.96	43.54	56.91	—	43 P=0.75	46.5×50.5×51.1	140	Video Iris	26
H612ER(C60624)	6.0	1.2-360	C	32.96	43.54	56.91	—	43 P=0.75	46.5×50.5×51.1	140	Video Iris with Override	26
H1212E(C61220)	12.0	1.2-360	C	16.94	22.60	30.19	—	43 P=0.75	46.5×50.5×51.1	140	Video Iris	26
H1212ER(C61219)	12.0	1.2-360	C	16.94	22.60	30.19	—	43 P=0.75	46.5×50.5×51.1	140	Video Iris with Override	26
●2/3 format												
C814E(C30821)	8.0	1.4-360	C	25.10	33.22	43.67	58.25	43 P=0.75	46.5×50.5×51.1	140	Video Iris	27
C814ER(C30820)	8.0	1.4-360	C	25.10	33.22	43.67	58.25	43 P=0.75	46.5×50.5×51.1	140	Video Iris with Override	27
C1614E(C31632)	16.0	1.4-360	C	12.72	16.92	22.50	30.76	43 P=0.75	46.5×50.5×46.7	110	Video Iris	27
C1614ER(C31631)	16.0	1.4-360	C	12.72	16.92	22.50	30.76	43 P=0.75	46.5×50.5×46.7	110	Video Iris with Override	27
●1 format												
B1214E(C21223)	12.5	1.4-360	C	16.22	21.55	28.54	38.69	43 P=0.75	46.5×50.5×47.5	140	Video Iris	27
B1214ER(C21221)	12.5	1.4-360	C	16.22	21.55	28.54	38.69	43 P=0.75	46.5×50.5×47.5	140	Video Iris with Override	27
B2514E(C22527)	25.0	1.4-360	C	8.23	10.97	14.62	20.09	43 P=0.75	46.5×50.5×51.8	140	Video Iris	27
B2514ER(C22526)	25.0	1.4-360	C	8.23	10.97	14.62	20.09	43 P=0.75	46.5×50.5×51.8	140	Video Iris with Override	27
B7518AE(C27515)	75.0	1.8-360	C	2.74	3.65	4.87	6.69	49 P=0.75	62×70.5	300	Video Iris	28

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MODEL	Focal Length (mm)	Iris Range	Mount	Horizontal Angle of View (°) 1/4 format	1/3 format	1/2 format	2/3 format	Filter Size	Dimensions (D×L) (W×H×L)mm	Weight (g)	Remarks	Page
Pinhole Lens												
TS420PE(C70403)	4.0	2.0-64	CS	51.24	68.47	—	—	—	36.5×42.3×65.9	79	DC Iris	30
H620PE(C60626)	6.2	2.0-300	C	32.44	42.82	56.12	—	—	39×45.5×83.2	100	Video or DC Iris	30
UV Lens (Ultraviolet Ray)												
●1/2 format												
H2520-UVM(C62500)	25.0	2.0-16	C	8.24	10.98	14.62	—	27 P=0.5	29.5×46	78	200nm-450nm Ray, Lock Screws	34
●1 format												
B2528-UV(C91699)	25.0	2.8-16	C	8.30	11.10	14.80	20.40	25.5 P=0.5	30×25.4	33	365nm Ray	34
B7838-UV(C91698)	78.0	3.8-16	C	2.70	3.50	4.70	6.50	49 P=0.75	62.5×109.3	446	365nm Ray	34

MODEL	Focal Length (mm)	Iris Range	Mount	Magnification	Horizontal Angle of View (°) 1/4 format	1/3 format	1/2 format	2/3 format	Filter Size	Remarks	Page
5 Mega-Pixel Lens											
C5028A-M02(C35003)	50.0	2.8-22	C	0.15-0.23	24-16	32-21	43-28	59-38	52 P=0.75	Lock Screws	36
C5028A-M035(C35002)	50.0	2.8-22	C	0.28-0.4	13-9	17-12	23-16	31-22	52 P=0.75	Lock Screws	36

MODEL	Focal Length (mm)	Iris Range	Mount	Horizontal Angle of View (°) 1/4 format	1/3 format	1/2 format	2/3 format	Filter Size	Dimensions (D×L) (W×H×L)mm	Weight (g)	Remarks	Page
C1614-5M(C31635)	16.0	1.4-16	C	13.20	17.50	23.20	30.80	40.5 P=0.5	ϕ42×47	140	Lock Screws	36
Mega-Pixel Lens												
●1/2 format												
H614-MQ(C60636)	6.0	1.4-16	C	32.30	44.50	57.40	—	30.5 P=0.5	ϕ32×37.5	58	Lock Screws	37
H1214-M(C61232)	12.0	1.4-16	C	16.49	21.88	28.91	—	27 P=0.5	29.5×28.5	55	Lock Screws	38
●2/3 format												
C1614-M(C31634)	16.0	1.4-16	C	12.86	17.11	22.72	30.97	27 P=0.5	29.5×33.2	63	Lock Screws	38
C2514-M(C32500)	25.0	1.4-16	C	8.24	10.97	14.60	20.00	27 P=0.5	29.5×32	55	Lock Screws	38
C3516-M(C33500)	35.0	1.6-16	C	6.07	8.09	10.76	14.76	27 P=0.5	29.5×35.4	64	Lock Screws	38
C5028-M(C35001)	50.0	2.8-22	C	4.12	5.50	7.32	10.05	27 P=0.5	29.5×34	55	Lock Screws	38
C7528-M(C37500)	75.0	2.8-32	C	2.83	3.77	5.03	6.90	30.5 P=0.5	34×59.6	125	Lock Screws	38
Monofocal Manual Iris Lens												
●1/2 format												
H416(C60402)	4.2	1.6-C	C	47.87	64.27	86.77	—	—	42×43.5	120	Lock Screws	40
H612A(C60607)	6.0	1.2-C	C	32.97	43.55	56.93	—	40.5 P=0.5	42×46	125	Lock Screws	40
H1212B(C61215)	12.0	1.2-22	C	16.93	22.60	30.18	—	27 P=0.5	30×35.5	67	Lock Screws	40
●2/3 format												
C418DX(C30405)	4.8	1.8-C	C	41.68	55.11	72.37	96.36	—	40.5×35.5	105	Lock Screws	40
C815B(C30811)	8.5	1.5-C	C	24.02	31.87	42.09	56.49	40.5 P=0.5	42×40	120	Lock Screws	40
C1614A(C31630)	16.0	1.4-22	C	12.70	16.91	22.48	30.72	27 P=0.5	30×33	58	Lock Screws	40
●1 format												
B1214D-2(C21211)	12.5	1.4-C	C	16.21	21.53	28.51	38.65	40.5 P=0.5	42×50	135	Lock Screws	41
B1218A(C21228)	12.5	1.8-C	C	16.53	21.97	29.12	39.56	40.5 P=0.5	42×40	95	Lock Screws	41
B2514D(C22525)	25.0	1.4-22	C	8.23	10.97	14.62	20.10	27 P=0.5	30×37.3	76	Lock Screws	41
B2518(C22516)	25.0	1.8-C	C	8.23	10.95	14.55	19.87	40.5 P=0.5	42×40	87	Lock Screws	41
B5014A(C25011)	50.0	1.4-C	C	4.13	5.50	7.32	10.04	46 P=0.75	48×48	180	Lock Screws	41
B7514C(C27509)	75.0	1.4-C	C	2.75	3.67	4.90	6.75	58 P=0.75	62×79	450	Lock Screws	41

MODEL	Focal Length (mm)	Iris Range	Mount	Magnification	Horizontal Angle of View(mm) 4,096x7μm	7,450x4.7μm	4,096x10μm	Filter Size	Dimensions (D×L) (W×H×L)mm	Weight (g)	Remarks	Page
Line-Scan Lens												
YF5028A-02(C52981F)	50.0	2.8-22	F	0.15-0.23	191-125	234-152	273-178	52 P=0.75	60×63.6	425	Not for photographic camera	32
YK5028A-02(C52981K)	50.0	2.8-22	K	0.15-0.23	191-125	234-152	273-178	52 P=0.75	60×64.6	440	Not for photographic camera	32
YF5028A-035(C52980F)	50.0	2.8-22	F	0.28-0.4	102-72	125-88	146-102	52 P=0.75	60×70.4	435	Not for photographic camera	32
YK5028A-035(C52980K)	50.0	2.8-22	K	0.28-0.4	102-72	125-88	146-102	52 P=0.75	60×71.4	450	Not for photographic camera	32
YF/YK3528(C52915F・K)	35.0	2.8-22	F(YF3528)/K(YK3528)	∞-0.5	57(Magnification:0.5×)	70(Magnification:0.5×)	146-102	62 P=0.75	72×56.8(YF3528)/57.8(YK3528)	440	Not for photographic camera	32
YF/YK5028(C52893F・K)	50.0	2.8-22	F(YF5028)/K(YK5028)	∞-0.5	39.9(Magnification:0.5×)	52.6(Magnification:0.5×)	64.5(Magnification:0.5×)	62 P=0.75	72×56.8(YF5028)/57.8(YK5028)	440	Not for photographic camera	32

F(NIKON bayonet mount)

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H55ZAME-5F

Motorized Zoom Lens

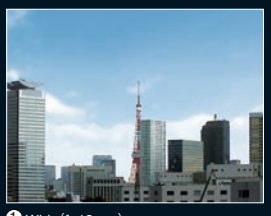
Feature (H55ZAME-F)

- Super-Telephoto capability provides detection at over 4.5 miles
- Preset circuitry easily matches high-performance surveillance systems
- High resolution optics compatible with C-mount 3CCD cameras
- Ultra-High 137.5X Magnification with built-in optical 2.5X extender
- RS232C Serial Communication option
- Atmospheric Interference (Fog, Snow, Sond and other Liquid/Solid particles) Reduction option

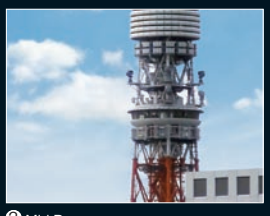
Applications

Surveillance of vast areas, borders, coastlines, parks, town centers and stadiums etc.

Tokyo Tower view from 2.3km away



❶ Wide (f=12mm)



❷ Mid Range



❸ Tele (f=660mm, 55x zoom)



❹ Super-Tele with built-in 2.5X extender (f=1,650mm, 137.5x zoom)

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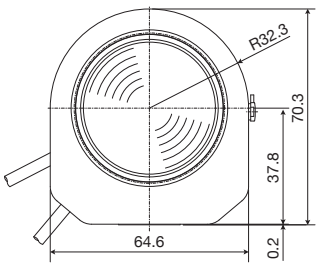
TS10ZME Series

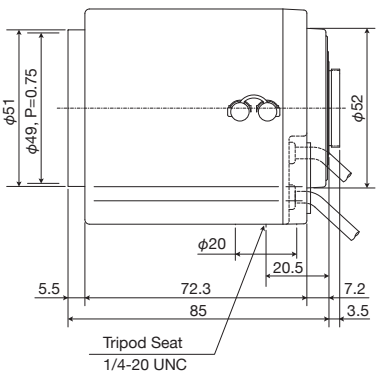


Specifications Code			Standard C70500	Preset C70501
Model	Zoom Operation	Type 1	TS10ZME-1	TS10ZME-1P
		Type 2	TS10ZME-2	TS10ZME-2P
		Type 3	TS10ZME-3	TS10ZME-3P
		Type 5	TS10ZME-5	TS10ZME-5P
Format Size			1/3 format	
Focal Length			5.8～58mm	
Max. Aperture Ratio			1:1.2～1.7	
Iris Range			F1.2～360	
Mount			CS	
Horizontal Angle of View		1/4 format	33.77～3.62°	
		1/3 format	44.07～4.78°	
		1/2 format	—	
		2/3 format	—	
Min. Object Distance			1.8m	
Back Focal Length			8.99mm	
Filter Size			49 P=0.75mm	
Dimensions			64.6×70.3×85mm	
Iris Operation			Auto-Iris (Video or DC)	Auto-Iris (Video)
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.	
Speed of Focus (Near - Far)			Approx. 8 sec.	
Speed of Zoom (Wide - Tele)			Approx. 6.5 sec.	
Weight			380g	430g
Remarks			—	—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48.

Unit:mm





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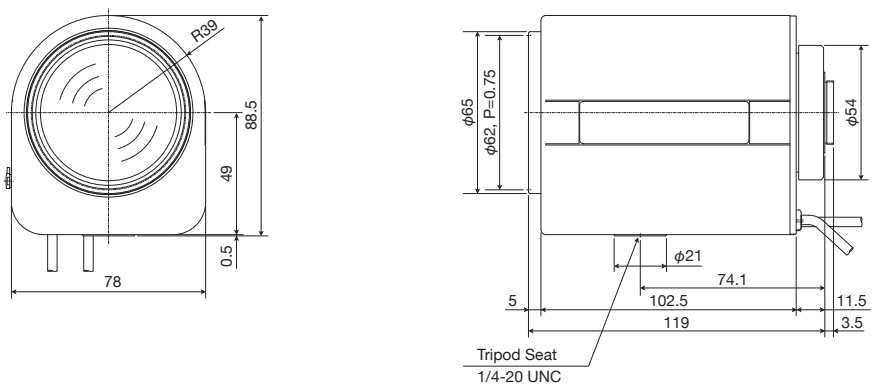
TS15ZAME Series



Specifications Code			Standard C70624	Preset C70627
Model	Zoom Operation	Type 1	TS15ZAME-1	TS15ZAME-1P
		Type 2	TS15ZAME-2	TS15ZAME-2P
		Type 3	TS15ZAME-3	—
		Type 5	TS15ZAME-5	TS15ZAME-5P
Format Size			1/3 format	
Focal Length			6.0～90mm	
Max. Aperture Ratio			1:1.2～1.8	
Iris Range			F1.2～430	
Mount			CS	
Horizontal Angle of View		1/4 format	32.96～2.33°	
		1/3 format	43.48～3.08°	
		1/2 format	—	
		2/3 format	—	
Min. Object Distance			1.5m	
Back Focal Length			10.70mm	
Filter Size			62 P=0.75mm	
Dimensions			78×88.5×119mm	
Iris Operation			Auto-Iris【Video or DC(Model of DC: TS15ZAMED-□□)】	
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.	
Speed of Focus (Near - Far)			Approx. 8 sec.	Approx. 8 sec.
Speed of Zoom (Wide - Tele)			Approx. 6 sec.	Approx. 6 sec.
Weight			760g	770g
Remarks			—	—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48.

Unit:mm



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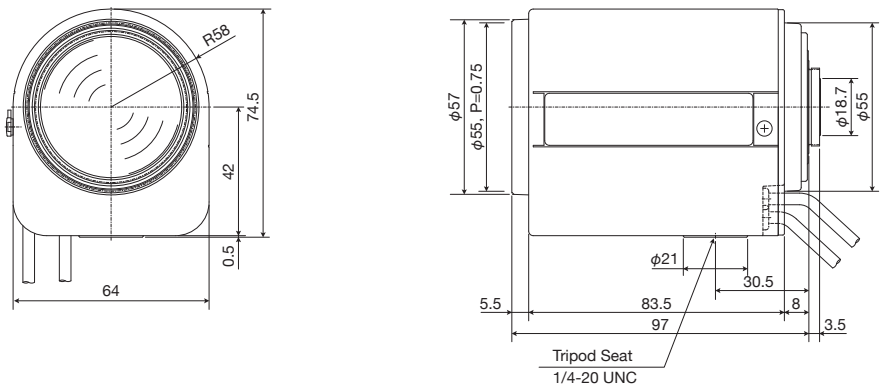
H6ZBME Series



Specifications Code			Standard C60809	Preset C60810
Model	Zoom Operation	Type 1	H6ZBME-1	H6ZBME-1P
		Type 2	H6ZBME-2	H6ZBME-2P
		Type 3	H6ZBME-3	H6ZBME-3P
		Type 5	H6ZBME-5	H6ZBME-5P
Format Size			1/2 format	
Focal Length			8～48mm	
Max. Aperture Ratio			1:1.0～1.2	
Iris Range			F1.0～720	
Mount			C	
Horizontal Angle of View		1/4 format	24.92～4.42°	
		1/3 format	32.98～5.86°	
		1/2 format	43.24～7.73°	
		2/3 format	—	
Min. Object Distance			1.2m	
Back Focal Length			13.65mm	
Filter Size			55 P=0.75mm	
Dimensions			64×74.5×97mm	
Iris Operation			Auto-Iris (Video or DC)	
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.	
Speed of Focus (Near - Far)			Approx. 6 sec.	
Speed of Zoom (Wide - Tele)			Approx. 6 sec.	
Weight			530g	540g
Remarks			—	—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48.

Unit:mm



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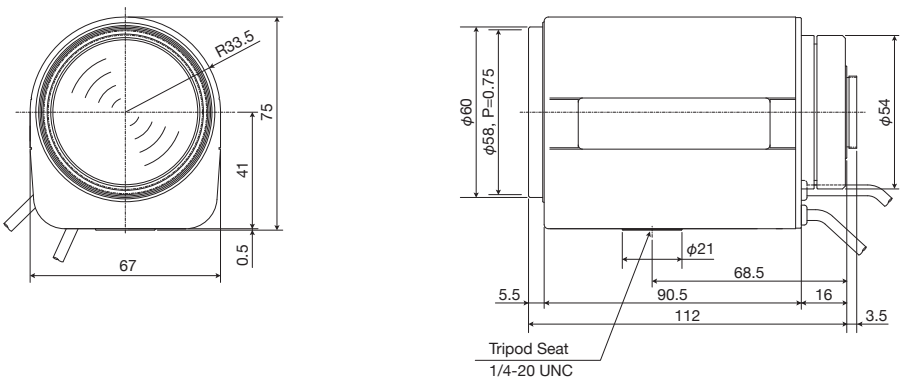
HS10ZME Series



Specifications Code			Standard C60700
Model	Zoom Operation	Type 1	HS10ZME-1
		Type 2	HS10ZME-2
		Type 3	HS10ZME-3
		Type 5	HS10ZME-5
Format Size			1/2 format
Focal Length			7.5～75mm
Max. Aperture Ratio			1:1.4～1.5
Iris Range			F1.4～360
Mount			CS
Horizontal Angle of View		1/4 format	26.15～2.83°
		1/3 format	34.52～3.75°
		1/2 format	45.05～4.95°
		2/3 format	—
Min. Object Distance			1.8m
Back Focal Length			10.75mm
Filter Size			58 P=0.75mm
Dimensions			67×75×112mm
Iris Operation			Auto-Iris (Video or DC)
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.
Speed of Focus (Near - Far)			Approx. 6.5 sec. (Type 2: Approx. 6.0 sec.)
Speed of Zoom (Wide - Tele)			Approx. 5.5 sec. (Type 2: Approx. 5.0 sec.)
Weight			580g
Remarks			—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47.

Unit:mm



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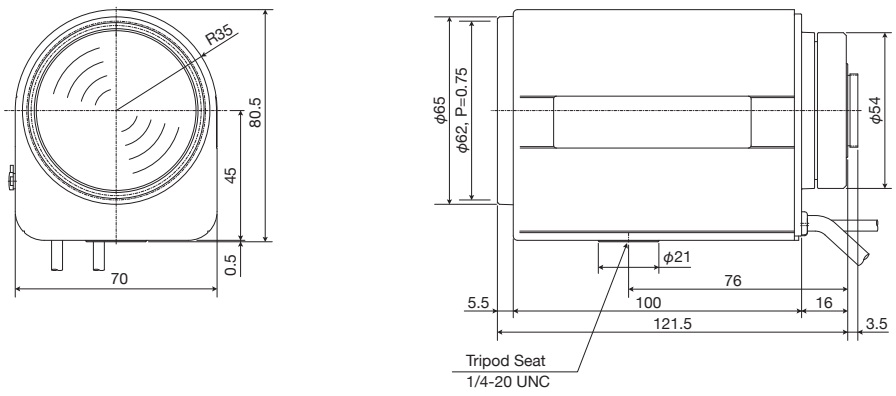
H10ZME Series



Specifications Code			Standard C60701	Preset C60702
Model	Zoom Operation	Type 1	H10ZME-1	H10ZME-1P
		Type 2	H10ZME-2	H10ZME-2P
		Type 3	H10ZME-3	H10ZME-3P
		Type 5	H10ZME-5	H10ZME-5P
Format Size			1/2 format	
Focal Length			7.5～75mm	
Max. Aperture Ratio			1:1.2～1.5	
Iris Range			F1.2～512	
Mount			C	
Horizontal Angle of View		1/4 format	26.45～2.84°	
		1/3 format	34.94～3.77°	
		1/2 format	45.63～4.99°	
		2/3 format	—	
Min. Object Distance			1.8m	
Back Focal Length			14.52mm	
Filter Size			62 P=0.75mm	
Dimensions			70×80.5×121.5mm	
Iris Operation			Auto-Iris(Video or DC)	
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.	
Speed of Focus (Near - Far)			Approx. 5.5 sec.	Approx. 5.5 sec.(Type 1&3: Approx. 6.0 sec.)
Speed of Zoom (Wide - Tele)			Approx. 5.5 sec.	Approx. 5.5 sec.(Type 1&3: Approx. 6.0 sec.)
Weight			715g	740g
Remarks			—	—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48.

Unit:mm



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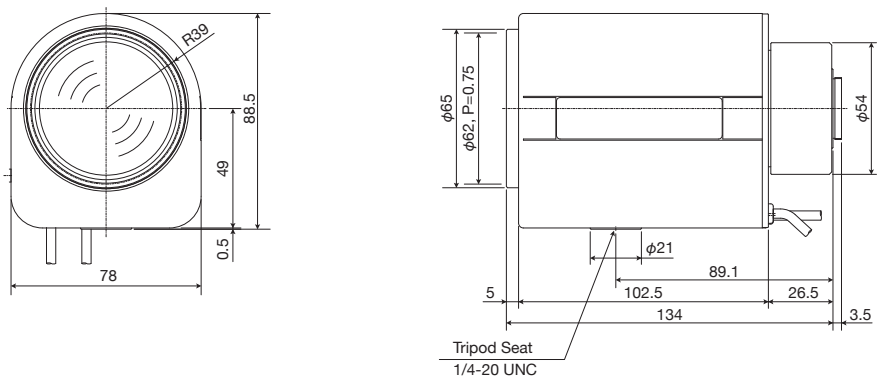
H15ZAME Series



Specifications / Code			Standard C60826	Preset C60829	Full Function (Preset & Iris Override) C60830
Model	Zoom Operation	Type 1	H15ZAME-1	H15ZAME-1P	—
		Type 2	H15ZAME-2	H15ZAME-2P	H15ZAME-2FH
		Type 3	H15ZAME-3	H15ZAME-3P	—
		Type 5	H15ZAME-5	H15ZAME-5P	H15ZAME-5FH
Format Size			1/2 format		
Focal Length			8.0～120mm		
Max. Aperture Ratio			1:1.6～2.4		
Iris Range			F1.6～1000		
Mount			C		
Horizontal Angle of View		1/4 format	24.76～1.76°		
		1/3 format	32.85～2.34°		
		1/2 format	43.37～3.09°		
		2/3 format	—		
Min. Object Distance			1.5m		
Back Focal Length			14.05mm		
Filter Size			62 P=0.75mm		
Dimensions			78×88.5×134mm		
Iris Operation			Auto-Iris【Video or DC(Model Name of DC: H15ZAMED-□□)】		Video Iris with Override
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.		
Speed of Focus (Near - Far)			Approx. 8.0 sec.	Approx. 8.0 sec.	High-Speed: Approx. 2.5 sec.
Speed of Zoom (Wide - Tele)			Approx. 6.0 sec.	Approx. 6.0 sec.	High-Speed: Approx. 2.5 sec.
Weight			800g	840g	
Remarks			—	—	D/A converter option

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48,49,50.

Unit:mm



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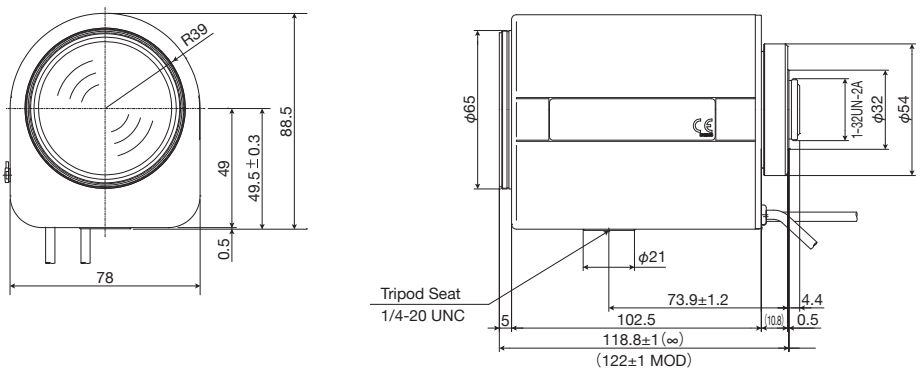
H16ZME Series



Specifications Code			Standard C60726	Preset C60728	Full Function (Preset & Iris Override) C60727
Model	Zoom Operation	Type 1	H16ZME-1	H16ZME-1P	H16ZME-1F
		Type 2	H16ZME-2	H16ZME-2P	H16ZME-2F
		Type 3	H16ZME-3	H16ZME-3P	H16ZME-3F
		Type 5	H16ZME-5	H16ZME-5P	H16ZME-5F
Format Size			1/2 format		
Focal Length			7.5～120mm		
Max. Aperture Ratio			1:1.6～2.3		
Iris Range			F1.6～1000		
Mount			C		
Horizontal Angle of View		1/4 format	26.4～1.8°		
		1/3 format	34.9～2.3°		
		1/2 format	45.8～3.1°		
		2/3 format	—		
Min. Object Distance			1.5m		
Back Focal Length			14mm		
Filter Size			with Adapter		
Dimensions			77.6×85.6×118.8mm		
Iris Operation			Auto-Iris【Video or DC（Model Name of DC: H16ZAMED-□□）】		Video Iris with Override
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.		
Speed of Focus (Near - Far)			Approx. 5.5 sec.		
Speed of Zoom (Wide - Tele)			Approx. 2.5 sec.		
Weight			760g	780g	790g
Remarks			—	—	D/A converter option

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48,49,50.

Unit:mm



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H20ZAME-M Series

20X Zoom

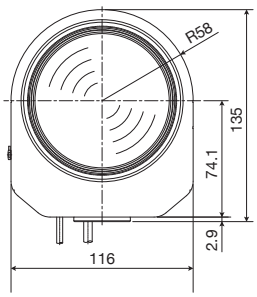
Mega-Pixel

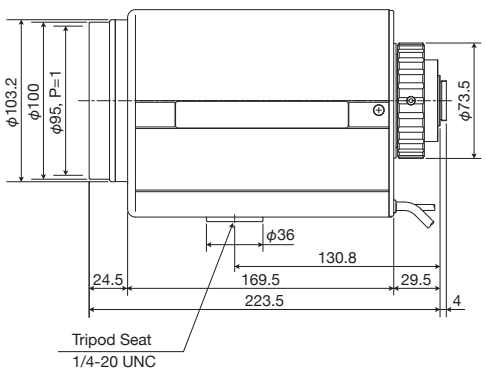


Specifications Code			Standard C61237	Preset C61241	Full Function (Preset & Iris Override) C61240
Model	Zoom Operation	Type 1	H20ZAME-1-M	H20ZAME-1P-M	—
		Type 2	H20ZAME-2-M	H20ZAME-2P-M	H20ZAME-2F-M
		Type 3	H20ZAME-3-M	H20ZAME-3P-M	—
		Type 5	H20ZAME-5-M	H20ZAME-5P-M	H20ZAME-5F-M
Format Size			1/2 format		
Focal Length			12～240mm		
Max. Aperture Ratio			1:1.6～2.8		
Iris Range			F1.6～720		
Mount			C		
Horizontal Angle of View		1/4 format	17.17～0.88°		
		1/3 format	22.95～1.17°		
		1/2 format	30.78～1.56°		
		2/3 format	—		
Min. Object Distance			2.8m		
Back Focal Length			19.82mm		
Filter Size			95 P=1.0mm		
Dimensions			116×135×223.5mm		
Iris Operation			Auto-Iris【Video or DC（Model Name of DC: H20ZAMED-□□）】		Video Iris with Override
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.		
Speed of Focus (Near - Far)			Approx. 4.5 sec.		
Speed of Zoom (Wide - Tele)			Approx. 4.5 sec.		
Weight			2,590g	2,630g	
Remarks			—	—	D/A converter option

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48,49,50.

Unit:mm





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H55ZAME Series

55X Zoom

Built-in 2.5X Extender

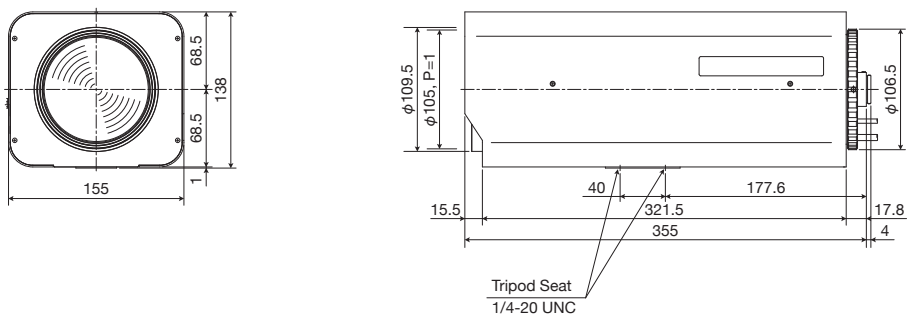
RS232C



Specifications Code			Full Function (Preset & Iris Override) C61244
Model	Zoom Operation	Type 1	—
		Type 2	H55ZAME-2F
		Type 3	—
		Type 5	H55ZAME-5F
Format Size			1/2 format
Focal Length			12～660mm (30.5～1,680mm)
Max. Aperture Ratio			1:4.0 (f=12mm)～18.2 (f=1,680mm)
Iris Range			F4.0～360
Mount			C
Horizontal Angle of View		1/4 format	17.17～0.31° (6.76～0.12°)
		1/3 format	23.18～0.42° (9.03～0.16°)
		1/2 format	31.65～0.56° (12.06～0.22°)
		2/3 format	—
Min. Object Distance			6.0m
Back Focal Length			8.99mm
Filter Size			105 P=1.0mm
Dimensions			155×138×355mm
Iris Operation			Video Iris with Override (with D/A converter)
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.
Speed of Focus (Near - Far)			Approx. 4.5 sec.
Speed of Zoom (Wide - Tele)			Approx. 4.5 sec.
Weight			5,400g
Remarks			without D/A converter option, RS232C Serial Communication option Atmospheric Interference Reduction (PAIR) option

The numerals in parentheses ( ) refer to the figures when the built-in 2.5X extender is in use.
For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 51.

Unit:mm



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C6ZAME Series

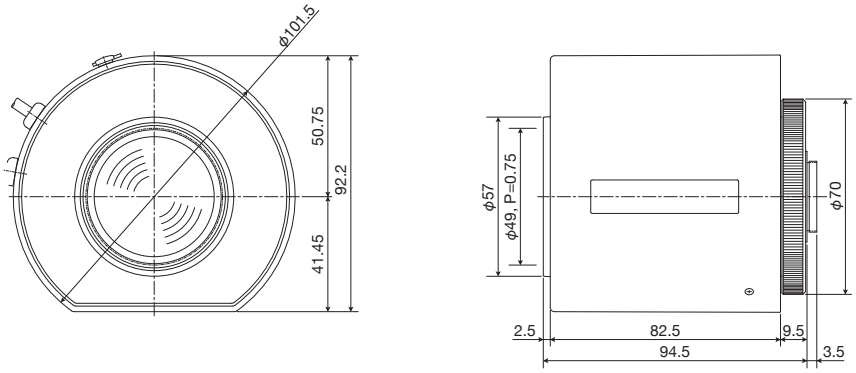


Limited Stock Only

Specifications Code			Standard C31220	Preset C31221
Model	Zoom Operation	Type 1	C6ZAME-1	C6ZME-1P
		Type 2	C6ZAME-2	C6ZME-2P
		Type 3	C6ZAME-3	C6ZME-3P
		Type 5	C6ZAME-5	C6ZME-5P
Format Size			2/3 format	
Focal Length			12.5～75mm	
Max. Aperture Ratio			1:1.8	
Iris Range			F1.8～720	
Mount			C	
Horizontal Angle of View		1/4 format	16.07～2.75°	
		1/3 format	21.36～3.66°	
		1/2 format	28.38～4.87°	
		2/3 format	38.72～6.67°	
Min. Object Distance			1.0m	
Back Focal Length			18.41mm	
Filter Size			49 P=0.75mm	
Dimensions			101.5×92.2×94.5mm	
Iris Operation			Auto-Iris (Video or DC)	Auto-Iris (Video)
Response Speed of Video Iris (Close - Open)			Approx. 1.5 sec.	
Speed of Focus (Near - Far)			Approx. 5.0 sec. (Type 1&3: Approx. 5.5 sec.)	Approx. 5.0 sec.
Speed of Zoom (Wide - Tele)			Approx. 5.0 sec. (Type 1&3: Approx. 5.5 sec.)	Approx. 5.0 sec.
Weight			620g	655g
Remarks			—	—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47,48.

Unit:mm



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C6Z1218M3 Series

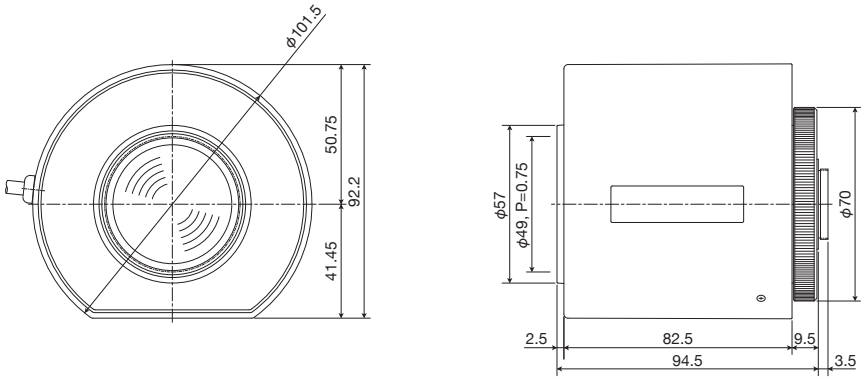
Full Motorized



Specifications Code			Standard C31211
Model	Zoom Operation	Type 1	C6Z1218M3-1
		Type 2	C6Z1218M3-2
		Type 3	C6Z1218M3-3
		Type 5	C6Z1218M3-5
Format Size			2/3 format
Focal Length			12.5～75mm
Max. Aperture Ratio			1:1.8
Iris Range			1.8 - C
Mount			C
Horizontal Angle of View		1/4 format	16.06～2.75°
		1/3 format	21.40～3.66°
		1/2 format	28.44～4.87°
		2/3 format	38.82～6.67°
Min. Object Distance			1.0m
Back Focal Length			18.41mm
Filter Size			49 P=0.75mm
Dimensions			101.5×92.2×94.5mm
Iris Operation			Mortorized Iris (DC motor)
Response Speed of Video Iris (Close - Open)			Approx. 4.0 sec.
Speed of Focus (Near - Far)			Approx. 5.0 sec. (Type 1&3: Approx. 5.5 sec.)
Speed of Zoom (Wide - Tele)			Approx. 5.0 sec. (Type 1&3: Approx. 5.5 sec.)
Weight			820g
Remarks			—

For details of control voltage, current and connection diagrams of each zoom operation type, please refer to page 47.

Unit:mm



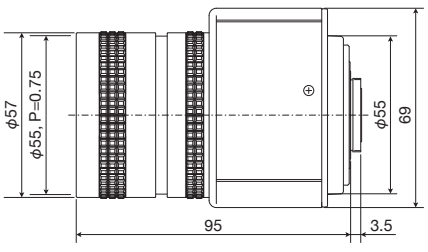
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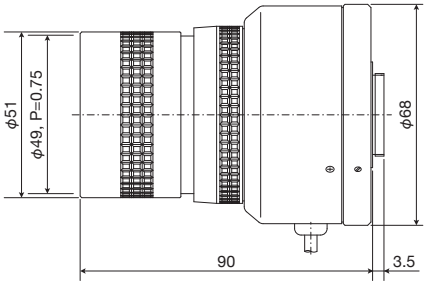


Model Code		H6ZBE C60811	C6ZE C31219
Format Size		1/2 format	2/3 format
Focal Length		8～48mm	12.5～75mm
Max. Aperture Ratio		1:1.0～1.2	1:1.8
Iris Range		1.0～720	1.8～720
Mount		C	C
Horizontal Angle of View	1/4 format	24.92～4.42°	16.05～2.75°
	1/3 format	32.98～5.86°	21.36～3.66°
	1/2 format	43.24～7.73°	28.38～4.87°
	3/2 format	—	38.72～6.67°
Min. Object Distance		0.75m	1.0m
Back Focal Length		13.65mm	18.41mm
Filter Size		55 P=0.75mm	49 P=0.75mm
Dimensions		69×64×95mm	68×90mm
Weight		465g	385g
Remarks		Video or DC Iris	Video Iris

Unit:mm



Unit:mm



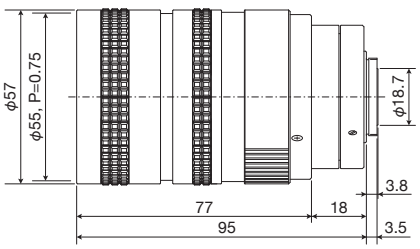
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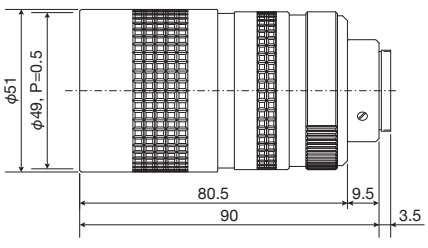


Model Code		H6Z810 C60812	C6Z1218 C31204
Format Size		1/2 format	2/3 format
Focal Length		8～48mm	12.5～75mm
Max. Aperture Ratio		1:1.0～1.2	1:1.8
Iris Range		1.0～22	1.8 ～22
Mount		C	C
Horizontal Angle of View	1/4 format	24.92～4.42°	16.07～2.75°
	1/3 format	32.99～5.86°	21.38～3.66°
	1/2 format	43.26～7.73°	28.41～4.87°
	3/2 format	—	38.76～6.67°
Min. Object Distance		0.75m	1.0m
Back Focal Length		13.65mm	18.41mm
Filter Size		55 P=0.75mm	49 P=0.75mm
Dimensions		57×95mm	51×90mm
Weight		430g	320g
Remarks		Manual Iris, Lock Screws	Manual Iris

Unit:mm



Unit:mm



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Board Camera Lens Pan-focus



QD3ZMED

Board Camera Lens Pan-focus

Feature (QD3ZMED)

- Clear focus for all object distances
- Clear focus across the entire zooming range
- High resolution images continuously provided at all focal lengths
- Smallest zoom in security field

Applications

Surveillance of convenience stores, office buildings, schools. Ideal for Pan, Tilt & Zoom Board Cameras.

Pan-Focus zoom lens



The large depth of field delivers clear focus for all object distances across the entire picture area. Clear pictures are maintained during panning, tilting and zooming.

Ordinary Vari-Focal lens



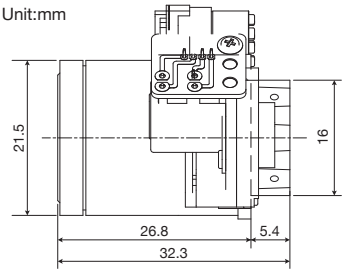
Only the primary object is optimally focused. Focus adjustment is manually required every time the focal length is changed.

Motorized Pan-Focus Zoom



Model Code		QD3ZMED C40219
Format Size		1/4 format
Focal Length		2.8～7.3mm
Max. Aperture Ratio		1:1.9～3.1
Iris Range		1.9～200
Mount		Special
Horizontal Angle of View	1/4 format	73.42°～28.74°
	1/3 format	—
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.75m
Back Focal Length		4.90～9.41mm
Filter Size		—
Dimensions		35.1×29.7×26.8mm
Iris Operation		DC
Weight		18g
Remarks		—

Unit:mm



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For Security

Varifocal Plus



TS3VP213ED-M
(Patent pending)

Varifocal Plus the perfect solution to normal Varifocal limitations

Feature（TS3VP213ED-M）

For Quick, Efficient and Stress free installation, and high resolution images.

- **No defocusing when zooming**
- **Click-stop focus**
- **HD, Mega-Pixel compatible**
- **Reduction of ghost and flare of the image**

Applications

Surveillance of shops, office buildings and schools.
Suitable for both Analogue and IP（HD, Mega-Pixel, VGA）security systems.

Varifocal Plus



No defocusing when zooming.

Conventional Vari-Focal lens

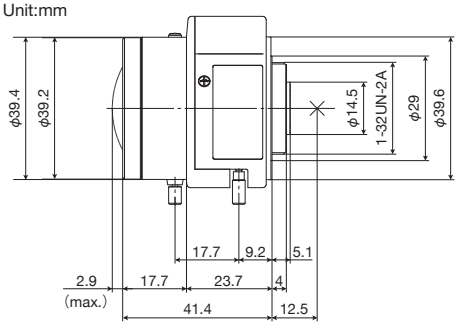


Defocusing when field of view is changed. Awkward setup on IP cameras with image latency.



Model Code		TS3VP213ED-M C70228
Format Size		1/3 format
Focal Length		2.6～8.0mm
Max. Aperture Ratio		1:1.3
Iris Range		1.3～200
Mount		CS
Horizontal Angle of View	1/4 format	77.8～26.6°
	1/3 format	104.4～35.5°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.3m
Back Focal Length		8.02mm
Filter Size		—
Dimensions		44×47.5×44.3mm
Iris Operation		DC
Weight		65g
Remarks		1.3 Mega-Pixel Click-Focus

Unit:mm



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For Security

Vari-Focal Lens

For Day & Night Cameras



TS3V310ED

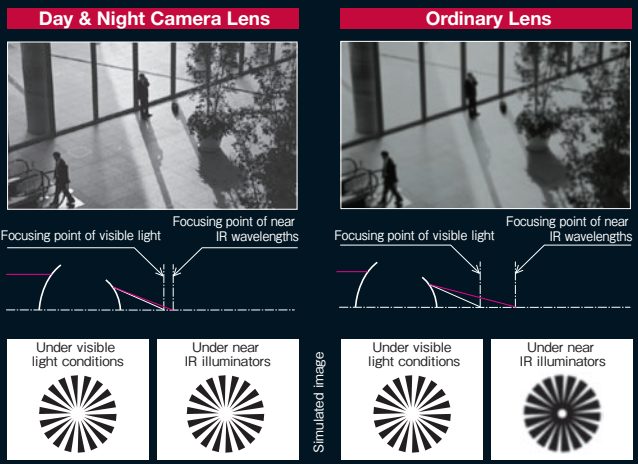
Vari-Focal Lens (For Day & Night Cameras)

Feature (TS3V310ED)

- Minimized focus shift to an unrecognizable level
- Clear and sharp image with high contrast
- Ultra-fast aperture that transmits twice as much light when compared with a F1.4 lens
- Outstanding optical quality and performance in a wide range from visible light to near IR wavelengths.
- Best-selling Day & Night Lens for surveillance applications

Applications

Surveillance of stores, ATM, office buildings, elevators, etc.



Ordinary lenses are designed to correct chromatic aberration in the visible light wavelength range from 400nm to 700nm. Day & Night lenses are designed to make all light rays from visible to near IR wavelengths converge on the cameras CCD at the same focusing point. This means that Day & Night lenses do not require the focus to be readjusted even when the lighting conditions change from daylight to night-time, under near IR illumination.

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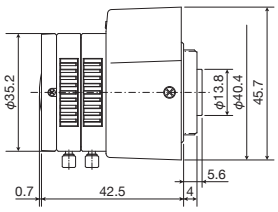
Day & Night



Limited Stock Only

Model Code		TS2V214AED C70220
Format Size		1/3 format
Focal Length		2.8～6mm
Max. Aperture Ratio		1:1.4
Iris Range		1.4～300
Mount		CS
Horizontal Angle of View	1/4 format	72.26～35.35°
	1/3 format	96.70～47.04°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.3m
Back Focal Length		7.54mm
Filter Size		—
Dimensions		40.4×45.7×43.2mm
Iris Operation		Video or DC
Weight		59g
Remarks		Day & Night

Unit:mm

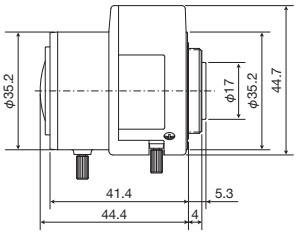


Day & Night



Model Code		TS3V310ED C70315
Format Size		1/3 format
Focal Length		3～8mm
Max. Aperture Ratio		1:1.0
Iris Range		1.0-360
Mount		CS
Horizontal Angle of View	1/4 format	68.98～26.44°
	1/3 format	93.22～35.26°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.3m
Back Focal Length		7.50mm
Filter Size		—
Dimensions		38.3×44.7×44.4mm
Iris Operation		Video or DC
Weight		60g
Remarks		Day & Night

Unit:mm

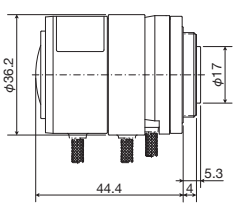


Day & Night



Model Code		TS3V310 C70316
Format Size		1/3 format
Focal Length		3～8mm
Max. Aperture Ratio		1:1.0
Iris Range		1.0～C
Mount		CS
Horizontal Angle of View	1/4 format	68.98～26.44°
	1/3 format	93.22～35.26°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.3m
Back Focal Length		7.50mm
Filter Size		—
Dimensions		36.2×44.4mm
Iris Operation		—
Weight		47g
Remarks		Day & Night

Unit:mm



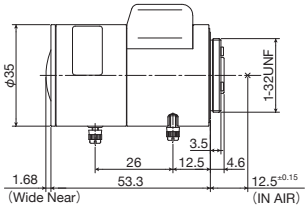
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Day & Night



Model Code		TS4V212ED-Q C70227
Format Size		1/3 format
Focal Length		2.8～12mm
Max. Aperture Ratio		1:1.2
Iris Range		1.2～360
Mount		CS
Horizontal Angle of View	1/4 format	23.8～17.8°
	1/3 format	98.5～23.8°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.2m
Back Focal Length		8.1mm
Filter Size		—
Dimensions		35×42×53.3mm
Iris Operation		DC
Weight		57g
Remarks		Day & Night

Unit:mm

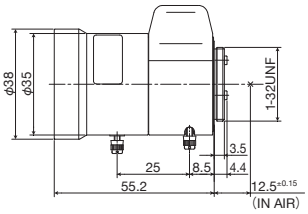


Day & Night



Model Code		TS7V714ED-Q C70700
Format Size		1/3 format
Focal Length		7.5～50mm
Max. Aperture Ratio		1:1.4
Iris Range		1.2～360
Mount		CS
Horizontal Angle of View	1/4 format	27.4～4.3°
	1/3 format	36.6～5.64°
	1/2 format	—
	2/3 format	—
Min. Object Distance		0.5m
Back Focal Length		9.6mm
Filter Size		—
Dimensions		38×46.2×55.2mm
Iris Operation		DC
Weight		68g
Remarks		Day & Night

Unit:mm

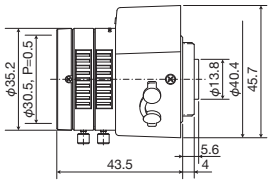


Day & Night



Model Code		HS2V616ED C60635
Format Size		1/2 format
Focal Length		6～12mm
Max. Aperture Ratio		1:1.6
Iris Range		1.6～300
Mount		CS
Horizontal Angle of View	1/4 format	34.98～17.23°
	1/3 format	47.38～23.02°
	1/2 format	65.29～30.82°
	2/3 format	—
Min. Object Distance		1.0m
Back Focal Length		7.55mm
Filter Size		30.5 P=0.5mm
Dimensions		40.4×45.7×43.5mm
Iris Operation		Video or DC
Weight		57g
Remarks		Day & Night

Unit:mm



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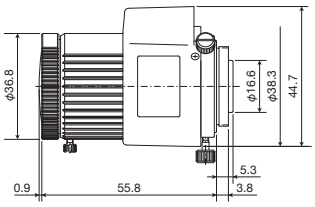
Fish-Eye



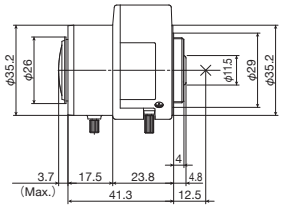


Model Code		TS2V114E C70100	TS3V212ED C70224
Format Size		1/3 format	1/3 format
Focal Length		1.6～3.4mm	2.9～8.5mm
Max. Aperture Ratio		1:1.4	1:1.2
Iris Range		1.4～64	1.2～300
Mount		CS	CS
Horizontal Angle of View	1/4 format	180～64.89°	70.7～25.1°
	1/3 format	180～89.55°	96.2～33.4°
	1/2 format	—	—
	2/3 format	—	—
Min. Object Distance		0.5m	0.35m
Back Focal Length		8.07mm	7.95mm
Filter Size		—	—
Dimensions		38.3×44.7×56.73mm	38.3×44.7×45mm
Iris Operation		DC	DC
Weight		140g	50g
Remarks		—	—

Unit:mm



Unit:mm

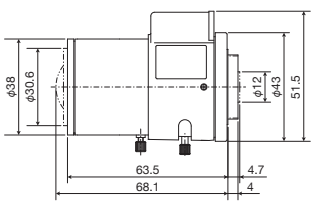




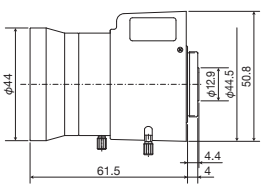


Model Code		TS4V214ED C70223	TS10V518AED C70509
Format Size		1/3 format	1/3 format
Focal Length		2.8～12mm	5～50mm
Max. Aperture Ratio		1:1.4	1:1.8
Iris Range		1.4～360	1.8～360
Mount		CS	CS
Horizontal Angle of View	1/4 format	71.82～18.05°	37.80～4.14°
	1/3 format	93.29～23.50°	50.00～5.52°
	1/2 format	—	—
	2/3 format	—	—
Min. Object Distance		0.25m	0.6m
Back Focal Length		8.57mm	7.60mm
Filter Size		—	—
Dimensions		43.0×51.5×68.1mm	44.5×50.8×61.5mm
Iris Operation		DC	DC
Weight		83g	140g
Remarks		—	—

Unit:mm



Unit:mm



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Monofocal Auto-Iris Lens



TS212E

Monofocal Auto-Iris Lens

Feature

- Standard lens for security applications
- A wide range from 2.8mm (1/3" format) to 75mm (1" format)
- Durable metal construction of C-mount lenses, Compact design of CS-mount lenses
- Iris override option available for C-Mount lenses

Applications

Surveillance of stores, office buildings, elevators



Standard lens for security applications

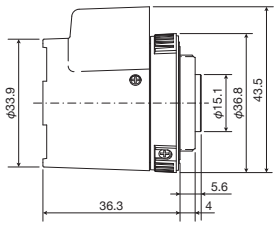
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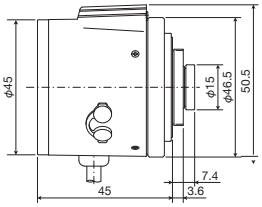


Model / Code		TS212E C70210	Standard H416E C60405	Iris Override H416ER C60404
Format Size		1/3 format	1/2 format	
Focal Length		2.8mm	4.2mm	
Max. Aperture Ratio		1:1.2	1:1.6	
Iris Range		1.2～200	1.6～360	
Mount		CS	C	
Horizontal Angle of View	1/4 format	71.54°	47.90°	
	1/3 format	94.28°	64.30°	
	1/2 format	—	86.78°	
	2/3 format	—	—	
Max. Aperture Ratio		0.3m	0.2m	
Back Focal Length		7.67mm	10.42mm	
Filter Size		—	—	
Dimensions		36.8×43.5×36.3mm	46.5×50.5×45mm	
Iris Operation		DC	Video	Video Iris with Override
Weight		54g	135g	
Remarks		—	—	

Unit:mm



Unit:mm

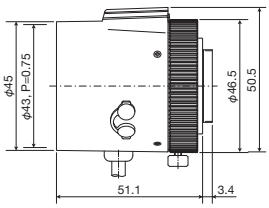




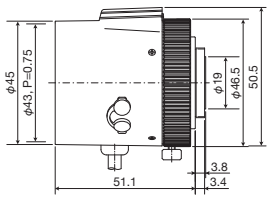


Model / Code		Standard H612E C60625	Iris Override H612ER C60624	Standard H1212E C61220	Iris Override H1212ER C61219
Format Size		1/2 format		1/2 format	
Focal Length		6.0mm		12.0mm	
Max. Aperture Ratio		1:1.2		1:1.2	
Iris Range		1.2～360		1.2～360	
Mount		C		C	
Horizontal Angle of View	1/4 format	32.96°		16.94°	
	1/3 format	43.54°		22.60°	
	1/2 format	56.93°		30.19°	
	2/3 format	—		—	
Max. Aperture Ratio		0.2m		0.3m	
Back Focal Length		14.31mm		13.87mm	
Filter Size		43 P=0.75mm		43 P=0.75mm	
Dimensions		46.5×50.5×51.1mm		46.5×50.5×51.1mm	
Iris Operation		Video	Video Iris with Override	Video	Video Iris with Override
Weight		140g		140g	
Remarks		—		—	

Unit:mm



Unit:mm



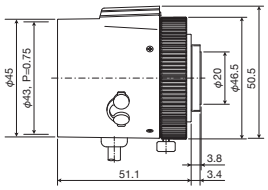
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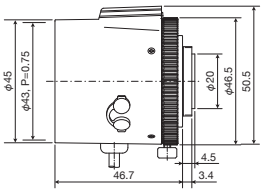


Model / Code	Standard C814E C30821	Iris Override C814ER C30820	Standard C1614E C31632	Iris Override C1614ER C31631
Format Size	2/3 format		2/3 format	
Focal Length	8.0mm		16.0mm	
Max. Aperture Ratio	1:1.4		1:1.4	
Iris Range	1.4～360		1.4～360	
Mount	C		C	
Horizontal Angle of View 1/4 format	25.10°		12.72°	
Horizontal Angle of View 1/3 format	33.22°		16.92°	
Horizontal Angle of View 1/2 format	43.67°		22.50°	
Horizontal Angle of View 2/3 format	58.25°		30.76°	
Max. Aperture Ratio	0.2m		0.5m	
Back Focal Length	14.50mm		13.20mm	
Filter Size	43 P=0.75mm		43 P=0.75mm	
Dimensions	46.5×50.5×51.1mm		46.5×50.5×46.7mm	
Iris Operation	Video	Video Iris with Override	Video	Video Iris with Override
Weight	140g		110g	
Remarks	—		—	

Unit:mm



Unit:mm



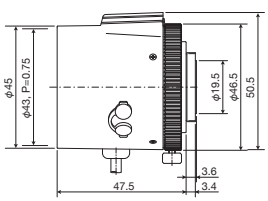


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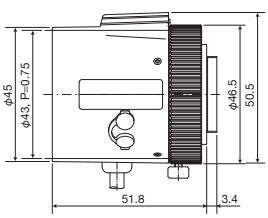


Model / Code	Standard B1214E C21223	Iris Override B1214ER C21221	Standard B2514E C22527	Iris Override B2514ER C22526
Format Size	1 format		1 format	
Focal Length	12.5mm		25.0mm	
Max. Aperture Ratio	1:1.4		1:1.4	
Iris Range	1.4～360		1.4～360	
Mount	C		C	
Horizontal Angle of View 1/4 format	16.22°		8.23°	
Horizontal Angle of View 1/3 format	21.55°		10.97°	
Horizontal Angle of View 1/2 format	28.54°		14.62°	
Horizontal Angle of View 2/3 format	38.69°		20.09°	
Max. Aperture Ratio	0.3m		0.9m	
Back Focal Length	14.40mm		14.98mm	
Filter Size	43 P=0.75mm		43 P=0.75mm	
Dimensions	46.5×50.5×47.5mm		46.5×50.5×51.8mm	
Iris Operation	Video	Video Iris with Override	Video	Video Iris with Override
Weight	140g		140g	
Remarks	—		—	

Unit:mm



Unit:mm

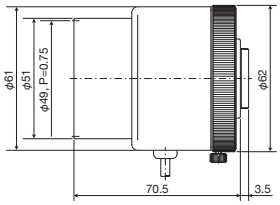


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Model Code		B7518AE C27515
Format Size		1 format
Focal Length		75.0mm
Max. Aperture Ratio		1:1.8
Iris Range		1.8～360
Mount		C
Horizontal Angle of View	1/4 format	2.74°
	1/3 format	3.65°
	1/2 format	4.87°
	2/3 format	6.69°
Max. Aperture Ratio		2.5m
Back Focal Length		28.70mm
Filter Size		49 P=0.75mm
Dimensions		62×70.50mm
Iris Operation		Video
Weight		300g
Remarks		—

Unit:mm



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Pinhole Lens



TS420PE

Pinhole Lens

Feature

- Minimized viewing diameter
- Monitoring through a small opening in the wall or ceiling
- Suitable for covert surveillance

Applications

Surveillance of ATM user's face or operation, cashiers, etc.



Suitable for covert surveillance

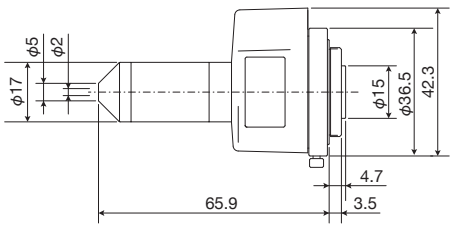
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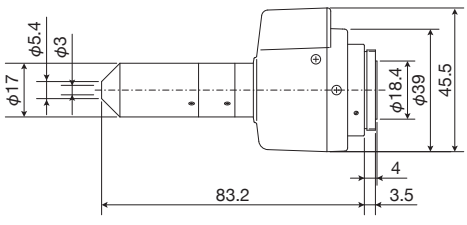


Model Code		TS420PE C70403	H620PE C60626
Format Size		1/3 format	1/2 format
Focal Length		4.0mm	6.2mm
Max. Aperture Ratio		1:2.0	1:2.0
Iris Range		2.0-64	2.0～300
Mount		CS	C
Horizontal Angle of View	1/4 format	51.24°	32.44°
	1/3 format	68.47°	42.82°
	1/2 format	—	56.12°
	2/3 format	—	—
Min. Object Distance		0.3m	0.3m
Back Focal Length		8.55mm	14.23mm
Filter Size		—	—
Dimensions		36.5×42.3×65.9mm	39×45.5×83.2mm
Iris Operation		DC	DC
Weight		79g	100g
Remarks		—	—

Unit:mm



Unit:mm



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For Machine Vision

Line-Scan Lens



YF5028A-02

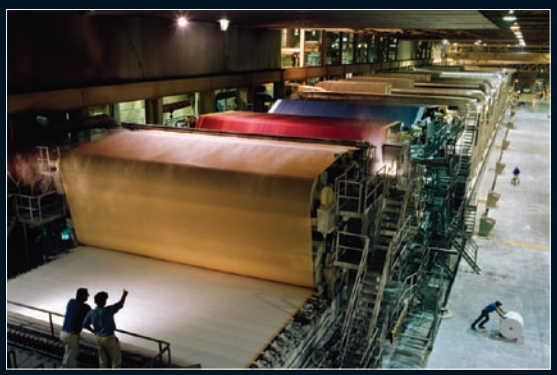
Line-Scan Lens

Feature

- Ultra-High Resolution·High Contrast
- Abundant Light Distribution
- Minimized distortion
- Reliable Lock Mechanism

Applications

Inspection of steel, pulp, fiber/textile, film, and other flat materials



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F type Mount
K-Mount

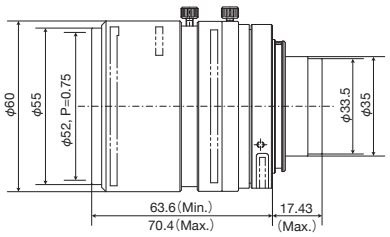


F type Mount
K-Mount

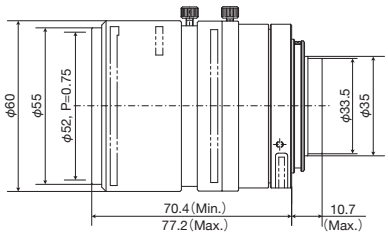


Model Code		YF5028A-02 C52981F	YK5028A-02 C52981K	YF5028A-035 C52980F	YK5028A-035 C52980K
Format Size		45mm Image Circle		45mm Image Circle	
Focal Length		50.0mm		50.0mm	
Max. Aperture Ratio		1:2.8		1:2.8	
Iris Range		2.8～22		2.8～22	
Mount		F (NIKON bayonet mount)	K	F (NIKON bayonet mount)	K
Horizontal Field of View	4,096 x 7μm	191～125mm		102～72mm	
	7,450 x 4.7μm	234～152mm		125～88mm	
	4,096 x 10μm	273～178mm		146～102mm	
Working Distance		361～242mm		201～146mm	
Back Focal Length		30.43～34.54mm		37.2～43.3mm	
Filter Size		52 P=0.75mm		52 P=0.75mm	
Dimensions		ϕ60×63.6mm	ϕ60×64.6mm	ϕ60×70.4mm	ϕ60×71.4mm
Min.～Max. Magnification		0.15～0.23X		0.28～0.4X	
Weight		425g	440g	435g	450g
Remarks		Focus & Iris Lock Screws Not for Photographic Cameras		Focus & Iris Lock Screws Not for Photographic Cameras	

Unit:mm



Unit:mm



F type Mount
K-Mount

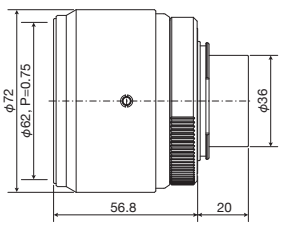


F type Mount
K-Mount

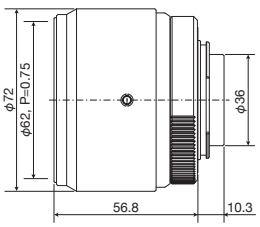


Model Code		YF3528 C52915F	YK3528 C52915K	YF5028 C52893F	YK5028 C52893K
Format Size		45mm Image Circle		45mm Image Circle	
Focal Length		35.0mm		50.0mm	
Max. Aperture Ratio		1:2.8		1:2.8	
Iris Range		2.8～22		2.8～22	
Mount		F (NIKON bayonet mount)	K	F (NIKON bayonet mount)	K
Horizontal Field of View	4,096 x 7μm	57mm (Magnification : 0.5x)		39.9mm (Magnification : 0.5x)	
	7,450 x 4.7μm	70mm (Magnification : 0.5x)		52.6mm (Magnification : 0.5x)	
	4,096 x 10μm	81mm (Magnification : 0.5x)		64.5mm (Magnification : 0.5x)	
Working Distance		190mm		250mm	
Back Focal Length		33.22mm		36.99mm	
Filter Size		62 P=0.75mm		62 P=0.75mm	
Dimensions		ϕ72×56.8mm	ϕ72×57.8mm	ϕ72×56.8mm	ϕ72×57.8mm
Min.～Max. Magnification		∞～0.5X		∞～0.5X	
Weight		440g		440g	
Remarks		Focus: Lock Screw, Iris: Click-Stop Not for Photographic Cameras		Focus: Lock Screw, Iris: Click-Stop Not for Photographic Cameras	

Unit:mm



Unit:mm



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For Machine Vision

UV Lens



H2520-UVM

UV Lens (Ultraviolet Ray)

Feature (H2520-UVM)

- **High performance UV lens compatible with 2 mega-pixel cameras***
- **Compact design, ideal for integration into machine vision systems**
- **Lockable focus and iris rings prevent movement during vibration and shock***
- **Extended wavelength range (200nm to 1000nm)***

***H2520-UVM only**

Applications

Detection of forgery, falsified documents, bills and credit cards, surface inspection of circuits for soldering defects



UV Lens (H2520-UVM) with near UV light
The texture of material and unevenness of ink can be recognized.



Ordinary Lens with visible light

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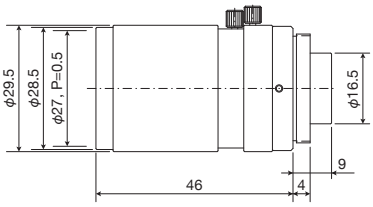
Mega-Pixel



Limited Stock Only

Model Code		H2520-UVM C62500
Format Size		1/2 format
Focal Length		25.0mm
Max. Aperture Ratio		1:2.0
Iris Range		2.0～16
Mount		C
Horizontal Angle of View	1/4 format	8.24°
	1/3 format	10.98°
	1/2 format	14.62°
	2/3 format	—
Min. Object Distance		0.25m
Back Focal Length		12.01mm
Filter Size		27.0 P=0.5mm
Dimensions		29.5×46mm
Weight		78g
Remarks		200nm-1000nm Ray (280nm-365nm for 2 Mega-Pixel) Lock Screws

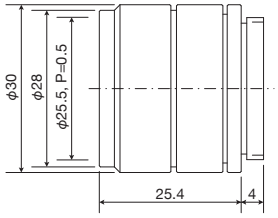
Unit:mm





Model Code		B2528-UV C91699
Format Size		1 format
Focal Length		25.0mm
Max. Aperture Ratio		1:2.8
Iris Range		2.8～16
Mount		C
Horizontal Angle of View	1/4 format	8.30°
	1/3 format	11.10°
	1/2 format	14.80°
	2/3 format	20.40°
Min. Object Distance		0.2m
Back Focal Length		22.07mm
Filter Size		25.5 P=0.5mm
Dimensions		30×25.4mm
Weight		33g
Remarks		365nm (230nm-800nm with Band Pass Filter)

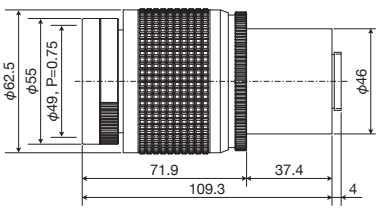
Unit:mm





Model Code		B7838-UV C91698
Format Size		1 format
Focal Length		78.0mm
Max. Aperture Ratio		1:3.8
Iris Range		3.8～16
Mount		C
Horizontal Angle of View	1/4 format	2.70°
	1/3 format	3.50°
	1/2 format	4.70°
	2/3 format	6.50°
Min. Object Distance		0.44m
Back Focal Length		71.31mm
Filter Size		49 P=0.75mm
Dimensions		62.5×109.3mm
Weight		446g
Remarks		365nm (230nm-800nm with Band Pass Filter)

Unit:mm



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For Machine Vision

5 Mega-Pixel Lens



C1614-5M

5 Mega-Pixel Lens

Feature

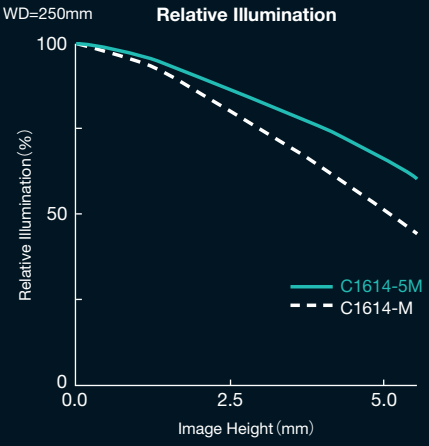
- Ultra-high resolution compatible with 5 mega-pixel (2/3" format) cameras
- Low Vignetting
- Low Distortion
- Optimum total performance for close up applications
- Compact design and ideal for integration into high performance machine vision systems
- Locking focus & iris rings to prevent movement from vibration and shock

Applications

Pattern-Matching, Alignment, Defect detection, Surface inspection and any application that requires ultra-high quality image reproduction.



PENTAX 5 Mega-Pixel lens series offer an exceptional Vignetting ratio (less brightness reduction from center to corners).

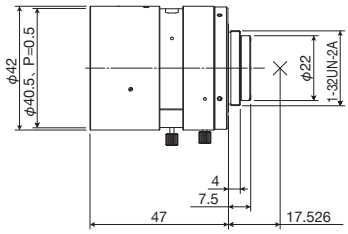


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Model Code		C1614-5M C31635
Format Size		2/3 format
Focal Length		16mm
Max. Aperture Ratio		1:1.4
Iris Range		1.4～16
Mount		C
Horizontal Angle of View	1/4 format	13.2°
	1/3 format	17.5°
	1/2 format	23.2°
	2/3 format	30.8°
Min. Object Distance		0.1m
Back Focal Length		11.5mm
Filter Size		40.5 P=0.5mm
Dimensions		φ42×47mm
Weight		140g
Remarks		Lock Screws, 5 Mega-Pixel (2/3 format)

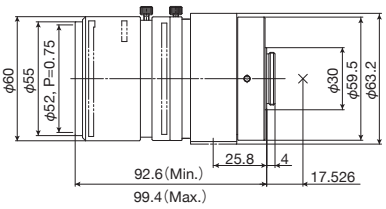
Unit: mm





Model Code		C5028A-M02 C35003
Format Size		2/3 format
Focal Length		50mm
Max. Aperture Ratio		1:2.8
Iris Range		2.8～22
Mount		C
Min. Object Distance		0.15～0.23X
Horizontal Angle of View	1/4 format	24～16mm
	1/3 format	32～21mm
	1/2 format	43～28mm
	2/3 format	59～38mm
Work Distance		361～242mm
Back Focal Length		30.43～34.54mm
Filter Size		52.0 P=0.75mm
Dimensions		φ63×66.4mm
Weight		560g
Remarks		Focus & Iris Lock Screws 5 Mega-Pixel (2/3 format) / 4 Mega-Pixel (1.1 format)

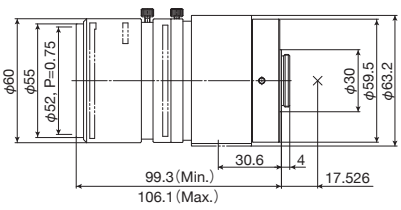
Unit: mm





Model Code		C5028A-M035 C35002
Format Size		2/3 format
Focal Length		50mm
Max. Aperture Ratio		1:2.8
Iris Range		2.8～22
Mount		C
Min. Object Distance		0.28～0.4X
Horizontal Angle of View	1/4 format	13～9mm
	1/3 format	17～12mm
	1/2 format	23～16mm
	2/3 format	31～22mm
Work Distance		201～146mm
Back Focal Length		37.2～43.3mm
Filter Size		52.0 P=0.75mm
Dimensions		φ63×74.2mm
Weight		580g
Remarks		Focus & Iris Lock Screws 5 Mega-Pixel (2/3 format) / 4 Mega-Pixel (1.1 format)

Unit: mm



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For Machine Vision

Mega-Pixel Lens



C1614-M

Mega-Pixel Lens

Feature

- High resolution compatible with 2 mega-pixel cameras
- Optimum optical performance produced at short distance objects
- Compact in design and ideal for integration into machine vision systems
- Lockable focus & iris rings prevent movement during vibration and shock

Applications

Defect detection of printed circuit boards, wafer, etc.

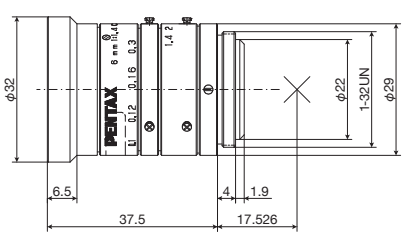

Mega-Pixel Lens with
Mega-Pixel Camera


Ordinary Lens with
Mega-Pixel Camera



Model Code		H614-MQ C60636
Format Size		1/2 format
Focal Length		6.0mm
Max. Aperture Ratio		1:1.4
Iris Range		1.4~16
Mount		C
Horizontal Angle of View	1/4 format	32.3°
	1/3 format	44.5°
	1/2 format	57.4°
	2/3 format	—
Min. Object Distance		0.2m
Back Focal Length		12.32mm
Filter Size		30.5 P=0.5mm
Dimensions		32×37.5mm
Weight		58g
Remarks		Lock Screws

Unit:mm



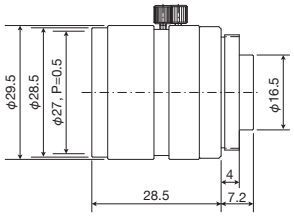
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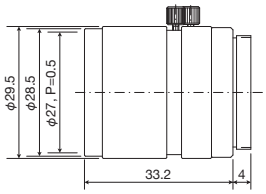


Model Code		H1214-M C61232	C1614-M C31634	C2514-M C32500
Format Size		1/2 format	2/3 format	2/3 format
Focal Length		12.0mm	16.0mm	25.0mm
Max. Aperture Ratio		1:1.4	1:1.4	1:1.4
Iris Range		1.4～16	1.4～16	1.4～16
Mount		C	C	C
Horizontal Angle of View	1/4 format	16.49°	12.86°	8.24°
	1/3 format	21.88°	17.11°	10.97°
	1/2 format	28.91°	22.72°	14.60°
	2/3 format	—	30.97°	20.00°
Min. Object Distance		0.25m	0.25m	0.25m
Back Focal Length		11.50mm	14.61mm	11.50mm
Filter Size		27.0 P=0.5mm	27.0 P=0.5mm	27.0 P=0.5mm
Dimensions		29.5×28.5mm	29.5×33.2mm	29.5×32mm
Weight		55g	63g	55g
Remarks		Lock Screws	Lock Screws	Lock Screws

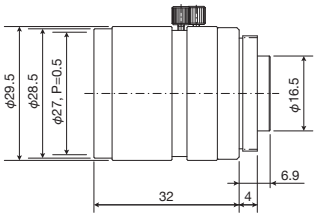
Unit:mm



Unit:mm



Unit:mm

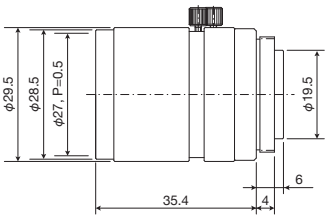




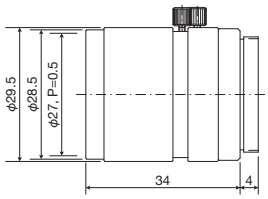


Model Code		C3516-M C33500	C5028-M C35001	C7528-M C37500
Format Size		2/3 format	2/3 format	2/3 format
Focal Length		35.0mm	50.0mm	75.0mm
Max. Aperture Ratio		1:1.6	1:2.8	1:2.8
Iris Range		1.6～16	2.8～22	2.8～32
Mount		C	C	C
Horizontal Angle of View	1/4 format	6.07°	4.12°	2.83°
	1/3 format	8.09°	5.50°	3.77°
	1/2 format	10.76°	7.32°	5.03°
	2/3 format	14.76°	10.05°	6.90°
Min. Object Distance		0.4m	0.9m	0.7m
Back Focal Length		11.85mm	21.03mm	30.94mm
Filter Size		27.0 P=0.5mm	27.0 P=0.5mm	30.5 P=0.5mm
Dimensions		29.5×35.4mm	29.5×34mm	34×59.6mm
Weight		64g	55g	125g
Remarks		Lock Screws	Lock Screws	Lock Screws

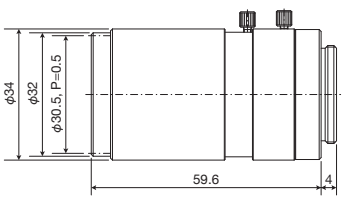
Unit:mm



Unit:mm



Unit:mm



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For Machine Vision

Monofocal Manual Iris Lens



B2514D

Monofocal Manual Iris Lens

Feature

- Standard lens for Machine Vision applications
- High resolution compatible with VGA cameras
- A wide product range compatible with cameras from 1/3" to 1" format
- Lockable focus & iris rings prevent movement during vibration and shock

Applications

Pattern recognition, Gauging, Inspection of pharmaceutical/ medical devices, food/beverage inspection



Popularly used in various factories as the standard Machine Vision Lens.

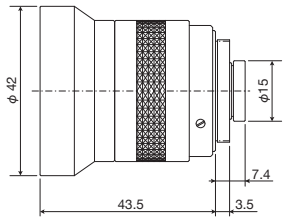
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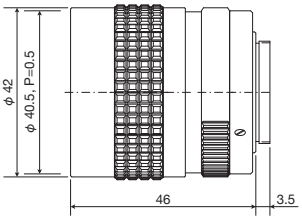


Model / Code		H416 C60402	H612A C60607	H1212B C61215
Format Size		1/2 format	1/2 format	1/2 format
Focal Length		4.2mm	6.0mm	12.0mm
Max. Aperture Ratio		1:1.6	1:1.2	1:1.2
Iris Range		1.6~C	1.2~C	1.2~22
Mount		C	C	C
Horizontal Angle of View	1/4 format	47.87°	32.97°	16.93°
	1/3 format	64.27°	43.55°	22.60°
	1/2 format	86.77°	56.93°	30.18°
	2/3 format	—	—	—
Min. Object Distance		0.2m	0.2m	0.2m
Back Focal Length		10.42mm	14.31mm	13.87mm
Filter Size		—	40.5mm P=0.5mm	27.0mm P=0.5mm
Dimensions		42×43.5mm	42×46mm	30×35.5mm
Weight		120g	125g	67g
Remarks		Lock Screws	Lock Screws	Lock Screws

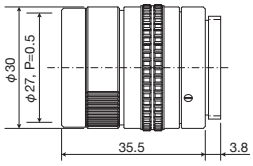
Unit:mm



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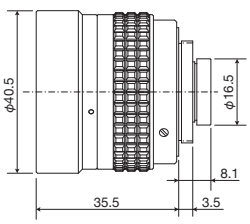




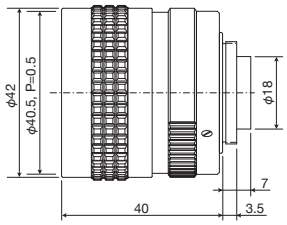


Model / Code		C418DX C30405	C815B C30811	C1614A C31630
Format Size		2/3 format	2/3 format	2/3 format
Focal Length		4.8mm	8.5mm	16.0mm
Max. Aperture Ratio		1:1.8	1:1.5	1:1.4
Iris Range		1.8~C	1.5~C	1.4~22
Mount		C	C	C
Horizontal Angle of View	1/4 format	41.68°	24.02°	12.70°
	1/3 format	55.11°	31.87°	16.91°
	1/2 format	72.37°	42.09°	22.48°
	2/3 format	96.36°	56.49°	30.72°
Min. Object Distance		0.3m	0.2m	0.3m
Back Focal Length		9.71mm	10.88mm	13.22mm
Filter Size		—	40.5mm P=0.5mm	27.0mm P=0.5mm
Dimensions		40.5×35.5mm	42×40mm	30×33mm
Weight		105g	120g	58g
Remarks		Lock Screws	Lock Screws	Lock Screws

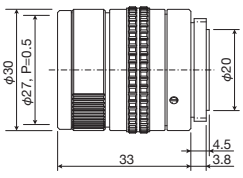
Unit:mm



Unit:mm



Unit:mm



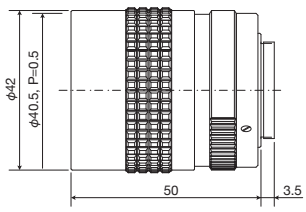
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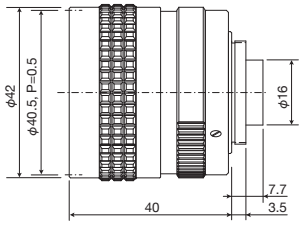


Model / Code		B1214D-2 C21211	B1218A C21228	B2514D C22525
Format Size		1 format	1 format	1 format
Focal Length		12.5mm	12.5mm	25.0mm
Max. Aperture Ratio		1:1.4	1:1.8	1:1.4
Iris Range		1.4~C	1.8~C	1.4~22
Mount		C	C	C
Horizontal Angle of View	1/4 format	16.21°	16.53°	8.23°
	1/3 format	21.53°	21.97°	10.97°
	1/2 format	28.51°	29.12°	14.62°
	2/3 format	38.65°	39.56°	20.10°
Min. Object Distance		0.3m	0.3m	0.3m
Back Focal Length		14.40mm	10.36mm	14.98mm
Filter Size		40.5mm P=0.5mm	40.5mm P=0.5mm	27.0mm P=0.5mm
Dimensions		42×50mm	42×40mm	30×37.3mm
Weight		135g	95g	76g
Remarks		Lock Screws	Lock Screws	Lock Screws

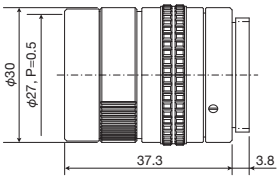
Unit:mm



Unit:mm



Unit:mm

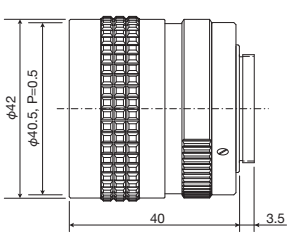




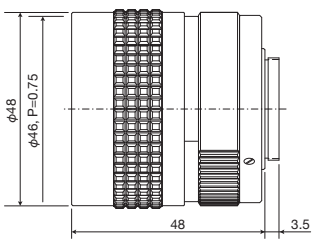


Model / Code		B2518 C22516	B5014A C25011	B7514C C27509
Format Size		1 format	1 format	1 format
Focal Length		25.0mm	50.0mm	75.0mm
Max. Aperture Ratio		1:1.8	1:1.4	1:1.4
Iris Range		1.8~C	1.4~C	1.4~C
Mount		C	C	C
Horizontal Angle of View	1/4 format	8.23°	4.13°	2.75°
	1/3 format	10.95°	5.50°	3.67°
	1/2 format	14.55°	7.32°	4.90°
	2/3 format	19.87°	10.04°	6.75°
Min. Object Distance		0.6m	1.0m	1.2m
Back Focal Length		15.80mm	18.10mm	18.50mm
Filter Size		40.5mm P=0.5mm	46.0mm P=0.75mm	58.0mm P=0.75mm
Dimensions		42×40mm	48×48mm	62×79mm
Weight		87g	180g	450g
Remarks		Lock Screws	Lock Screws	Lock Screws

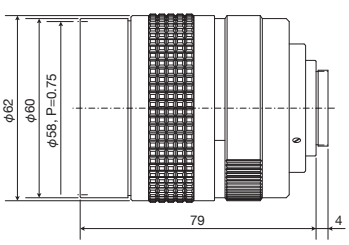
Unit:mm



Unit:mm



Unit:mm



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Manual Iris Lens / Machine Vision Lens / Line-Scan Lens / UV Lens

Y K 5 0 2 8 A □ - 0 2
❶ ❷ ❸ ❹ ❺ ❻ ⓫

Auto-Iris Lens / Pinhole Lens

B □ 5 0 1 8 □ E R
❶ ❷ ❸ ❹ ❺ ❻ ⓫

Motorized Zoom Lens / Manual Zoom Lens

T S 1 5 Z A M E - 3 F
❶ ❷ ❼ ❽ ❺ ❾ ❿ ⓫

Vari-Focal Lens

T S 2 V 2 1 4 A E D
❶ ❷ ❼ ❽ ❸ ❹ ❺ ❾

Board Camera Lens Pan-focus

Q D 2 V 2 2 1 4 A E - D N
❶ ❷ ❼ ❽ ❸ ❹ ❺ ❾ ⓫

❶ Format Size

Sign	Meaning
Y	Larger than 1 format
B	1
C	2/3
H	1/2
T	1/3
Q	1/4

❷ Mount

Sign	Meaning
-	C
S	CS
D	Integral type
K	K
F	F

❸ Focal Length

・Shown in integer, omit fractions

❹ Maximum Aperture

・Omit decimal point

❺ History of improvement

・Shown with a letter in alphabetical order. The signs of ❻ and ❾ are not used.

❻ Focus·Iris【shown with combination below】

Sign	Meaning
X	Fixed Focus
E	Auto-Iris
P	Pinhole

❼ Zoom Ratio

・Magnification is shown in integer.

❽ Variable Focal Length

Sign	Meaning
Z	Zoom Lens
V	Vari-Focal Lens

❾ Focus·Zoom·Iris

【shown with combination below in M,E,D order】

Sign	Meaning
M	Motor Driven
E	Auto-Iris
D	DC Iris

❿ Control Voltage & Method【shown after-(hyphen)】

Sign	Meaning
1	DC6V Polarity Switching Type
2	DC ± 12V Common Type
3	DC ± 6V Common Type
5	DC12V Polarity Switching Type

⓫ Other Features【shown after-(hyphen)】

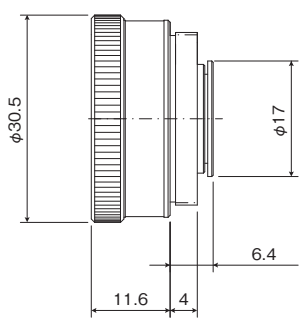
Sign	Meaning
02, 035	Optical Magnification (used for model name of 50mm Line-Scan Lens)
DN	Day & Night Lens
UV	UV Lens
M	Mega-Pixel Lens
R	Video Iris with Override
P	Preset
F	Prest & Iris Override
I	IR Coating Lens
H	High Speed Zoom/Focus

Example
UVM : UV Lens for Mega-Pixel Cameras
RI : IR Coating Auto-Iris Lens with Iris Override

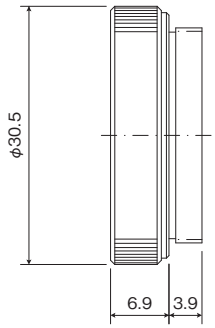
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Extender

2-EX(C80001)



S2-EX(C80034)



Specifications

	2-EX(C80001)	S2-EX(C80034)
Magnification of Focal Length	2X	2X
Flange Back Length	17.526mm	12.5mm
Weight	40g	27g
Compatibility	C-Mount	CS-Mount

Note

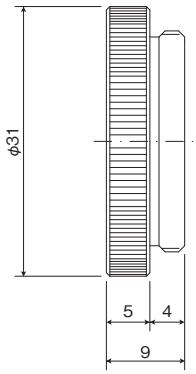
1) According to the doubled focal length, the angle of view gets half and F No. will be double.
2) Minimum object distance and zoom ratio remains the same.

Mount Adapter

C-CS-A

C-CS Mount Adapter(5mm Ring)

C-CS-A(C80035)

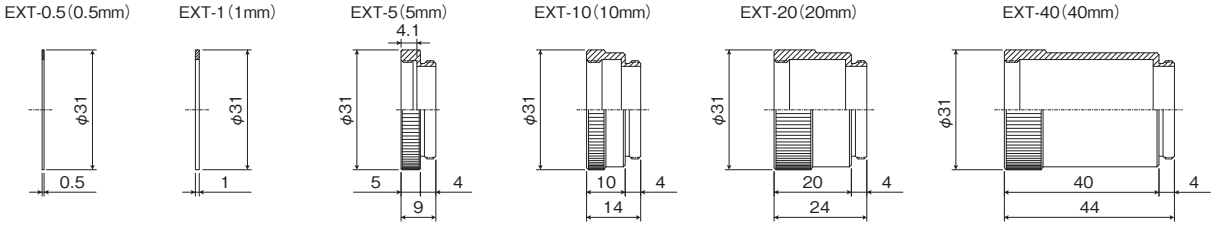


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Extension Tube Set (Macro Ring)

Extension Tube Set (Macro Ring) is inserted in between the lens and camera to shift the focus point further than the mechanical limit for close-up focus.

EX-C6 (C90100)



Specifications

Model No.	EXT-0.5	EXT-1	EXT-5	EXT-10	EXT-20	EXT-40
Length (mm)	0.5	1	5	10	20	40
Max. Diameter	31mm					

Note

Extension Tube is not suitable for zoom lens.
Please refer to information about Close-Up Application on Page 56.

Close-Up Lens

Close-Up Lens is effective to come closer to an object than the minimum object distance of a lens.

Specifications

Model No.	1	2	3
Close-Up No.	No. 1	No. 2	No. 3
Dioptie	+1	+2	+3
Focusing Range (Inf.)	1000mm	500mm	333mm

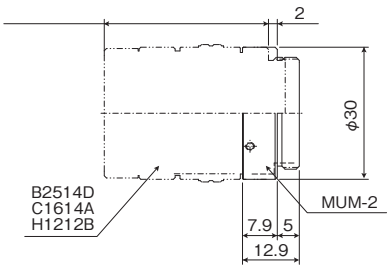
Note

Regardless of the focal length of a lens as long as focus is set to infinity, focus is obtained at a point equal to the distance from the tip of the lens to the focal length of the close-up lens.

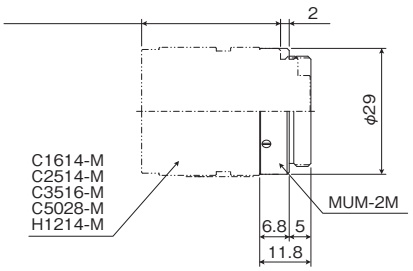
Macro Focus Mount

Macro Focus Mounts extend the flange back length by 2mm by replacing the original C-mount of lens.

MUM-2 (C80038)



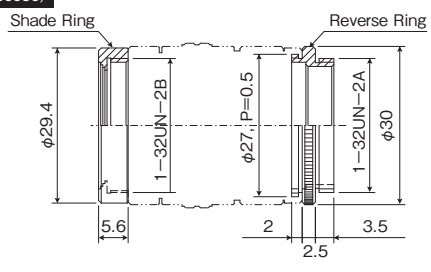
MUM-2M (C80057)



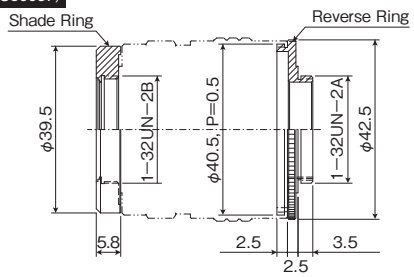
Reverse Ring

When the magnification is more than 1:1 (the image sensor is larger than the object), attaching the lens reversely improves image quality.
Reverse Ring is used to assist when attaching the lens reversely.

RR-27 (C80036)



RR-40.5 (C80037)

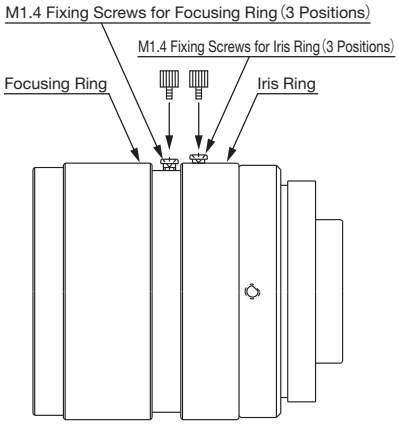


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Lock Screws

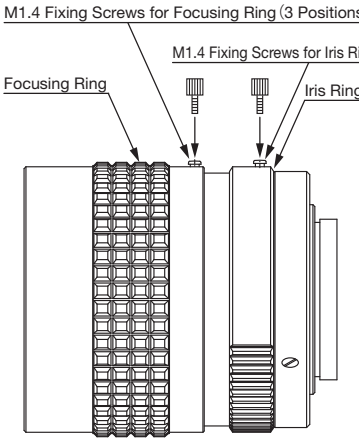
	Iris	Focus	Supplied	Mount Position
Mega-Pixel Lens				
C7528-M	M2.0×2.8	M2.0×M5.0	Thumb Screw (x2)	Adjustable
C5028-M	M1.4×2.2	M1.4×3.0		
C3516-M				
C2514-M				
C1614-M				
H1214-M				
H1214-MQ				
C5028A-M02	Thumb Screw	Thumb Screw		
C5028A-M035				
H1614-5M	M1.4×2.2	M1.4×2.5		
Monofocal Manual Iris Lens (1 format)				
B1214D-2	M1.4×3.5	M1.4×1.4	Thumb Screw (x2)	Adjustable
B1218A				
B2514D	M1.4×2.8	M1.4×2.0		
B2518	M1.4×3.5	M1.4×1.4		
B5014A	M1.4×4.0	M1.4×1.6		
B7514C	M1.4×4.5	M1.4×2.2		
Monofocal Manual Iris Lens (2/3 format)				
C418DX	M1.4×3.5	–	Thumb Screw (x1)	Adjustable
C815B		M1.4×1.4	Thumb Screw (x2)	
C1614A	M1.4×2.8	M1.4×2.0		
Monofocal Manual Iris Lens (1/2 format)				
H416	M1.4×3.5	–	Thumb Screw (x1)	Adjustable
H612A		M1.4×1.4	Thumb Screw (x2)	
H1212B	M1.4×2.8	M1.4×2.0		
UV Lens				
H2520-UVM	M1.4×2.2	M1.4×2.2	Thumb Screw (x2)	Adjustable
B2528-UV	–	–	–	–
B7838-UV	–	–	–	–
Line Scan Lens				
YF/YK3528	Click-stop	Thumb Screw	–	–
YF/YK5028			–	–
YF/YK5028A-02	M2.5×6.0	M2.5×6.0	Thumb Screw (x2)	–
YF/YK5028A-035				–

Lens is supplied locked by 6 x M1.4 Fixing Screws. Remove 6 x Fixing Screws and replace with 2 x Thumb Screws (supplied) as required.

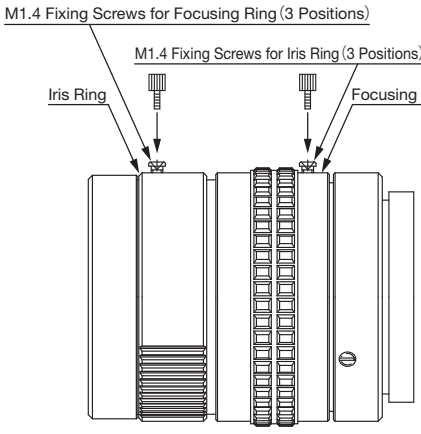


C7528-M (M2.0 Fixing Screws), C5028-M, C3516-M, C2514-M, C1614-M, H1214-M, H2520-UVM

※Do not lose any other screw.

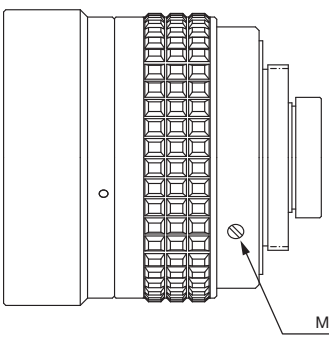


B5014A, B2518, B1218A, B1214D-2, C815B, H612A, H416 (Iris Ring only), C418DX (Iris Ring only)



B2514D, C1614A, H1212B

How to adjust Indicator Position by Rotating Mount

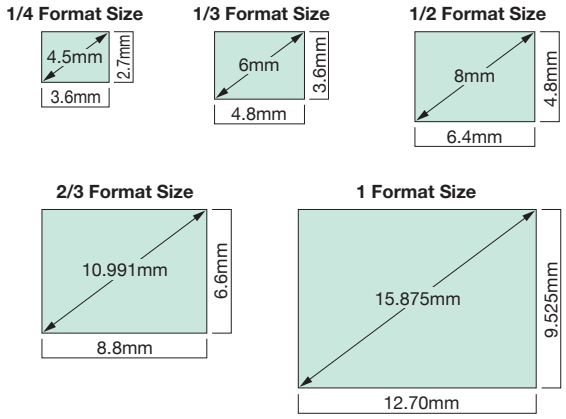


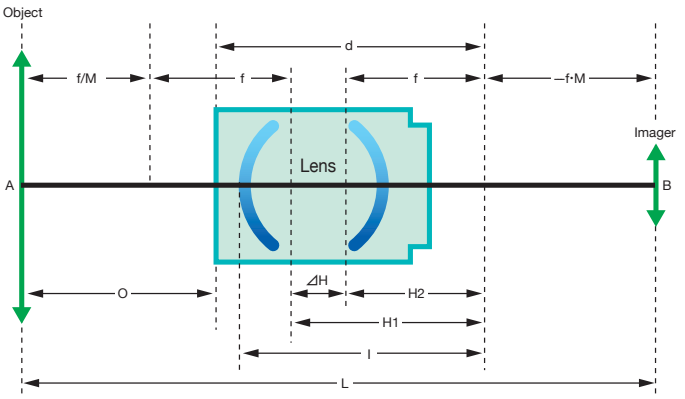
● The mount position of the lens can be adjusted as follows.

1. Loosen the mount fixing screws (3-4 positions) on the mount.
2. Rotate the mount for the suitable indicator position.
3. Tighten the mount fixing screws at torque 8～12N・cm evenly.

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Optical Calculation for Close-Up Monitoring





1. Obtain a rough idea of the focal length required for your application with the object distance and the magnification between the object size and image size by using the following formula :

   $f = O \times M$

2. Then, select one of the closest PENTAX lenses to the above figure, and then calculate the overall distance, L, by adding up figures indicated in the attached table.

   $L = f / M + f + f + \Delta H + f \times M$

3. Finally, you can get an exact object distance, O, or the length of the extension tube, fxM, by the following substractions :

   $O = L - d - f \times M$ or $f \times M = L - O - d$

A	Object Size (Vertical or Horizontal)
B	Imager Format Size (Vertical or Horizontal)
M	Magnification (B/A)
f	Focal Length
⊿H	Interval of Principal Positions
H1	1st Principal Position
H2	2nd Principal Position
d	Distance between the front end of lens barrel and the focal point
I	Distance between the 1st lens element and the focal point
f·M	Length of the extension tube or the spacer to be placed between the camera and the lens
O	Object Distance (Distance between the front end of lens barrel and the object)

Optical Data

Unit: [mm] ※[%]

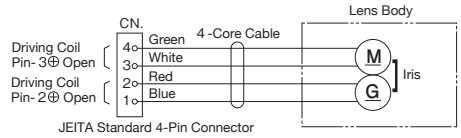
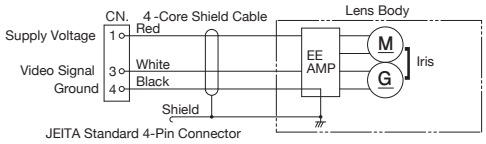
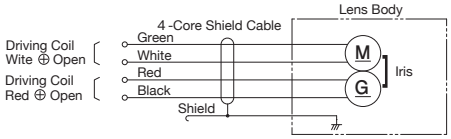
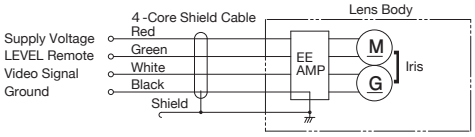
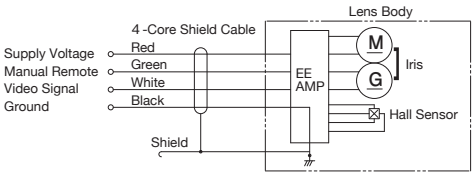
Model	Focal Length (f)	1st Principal Position (H1)	2st Principal Position (H2)	Distance between H1 and H2 (⊿H)	Optical Path Length (I)	Total Length (d)	Entrance Pupil Position	Diameter of Entrance Pupil	Exit Pupil Position	Diameter of Exit Pupil Position	Distortion	Vignetting ※	Back Focus Length (in air)	Mechanical Focus (Adjustable focusing range by rotating focus ring)	Remarks
Line-Scan Lens (7,450 pixel)															
YK3528	36.3	- 61.8	- 36.3	25.5	89.9	103.3	- 72.3	13.2	- 51.0	18.6	0.14	34.0	33.2	20.1	M=-0.2,Diagonal y=22.5
YF3528	36.3	- 61.8	- 36.3	25.5	89.9	103.3	- 72.3	13.2	- 51.0	18.6	0.14	34.0	33.2	20.1	M=-0.2,Diagonal y=22.5
YK5028A-02	51.38	- 80.02	- 61.66	18.36	109.69	76.69	- 77.22	18.14	- 59.00	17.20	- 0.07	65.95	33.01	2.88	M=-0.2,Diagonal y=22.5
YF5028A-02	51.38	- 80.02	- 61.66	18.36	109.69	76.69	- 77.22	18.14	- 59.00	17.20	- 0.07	65.95	33.01	2.88	M=-0.2,Diagonal y=22.5
YK5028A-035	51.12	- 88.05	- 69.01	19.03	116.92	76.19	- 85.65	13.01	- 66.73	17.20	- 0.01	67.77	40.73	3.88	M=-0.35,Diagonal y=22.5
YF5028A-035	51.12	- 88.05	- 69.01	19.03	116.92	76.19	- 85.65	13.01	- 66.73	17.20	- 0.01	67.77	40.73	3.88	M=-0.35,Diagonal y=22.5
UV Lens															
H2520-UVM	25.0	- 43.6	- 25.0	18.6	51.2	63.5	- 36.3	12.7	- 19.4	9.8	0.00	73.4	12.0	3.8	Wave length:330nm,M=-0.1
B2528-UV	25.0	- 24.9	- 25.0	0.2	34.9	42.9	- 25.9	–	- 26.1	–	- 4.05	87.7	12.8	4.1	Wave length:266nm,y=8.0
B7838-UV	77.5	- 77.6	- 77.5	0.1	96.8	126.8	- 78.8	–	- 78.8	–	- 0.22	98.4	71.3	23.1	Wave length:250nm,y=8.0
Mega-Pixel Lens															
C7528-M	72.8	- 57.4	- 72.8	- 15.4	72.8	77.2	16.1	25.9	- 36.2	12.9	0.00	96.5	30.9	10.5	W.D.=250mm,y=5.5
C5028-M	50.0	- 47.4	- 50.0	- 2.6	46.5	51.5	- 3.2	18.2	- 26.5	9.7	- 0.11	79.4	21.0	3.5	W.D.=250mm,y=5.5
C3516-M	34.0	- 10.9	- 34.0	- 23.0	47.1	52.9	- 11.3	20.8	- 34.3	21.0	- 0.92	61.5	11.9	3.5	W.D.=250mm,y=5.5
C2514-M	25.0	- 14.5	- 25.0	- 10.5	39.5	49.5	- 19.6	17.6	- 31.4	22.1	- 1.15	48.0	11.5	3.5	W.D.=250mm,y=5.5
C1614-M	16.0	- 18.0	- 16.0	2.0	46.6	50.7	- 30.2	11.3	- 68.0	47.9	- 1.98	43.9	14.6	1.5	W.D.=250mm,y=5.5
H1214-M	12.4	- 17.8	- 12.4	5.4	41.0	46.0	- 25.8	9.1	- 34.5	25.3	- 0.71	59.0	11.5	1.5	W.D.=250mm,y=4.0
H614-MQ	6.0	- 35.2	- 6.0	29.2	42.0	47.2	- 39.5	–	- 21.8	–	- 4.30	54.6	12.4	–	W.D.=280mm,y=4.0
5 Mega-Pixel Lens															
C5028A-M02	51.38	- 80.02	- 61.66	18.36	109.69	76.69	- 77.22	18.14	- 59.00	17.20	0.00	98.08	33.01	2.88	M=-0.2
C5028A-M035	51.12	- 88.05	- 69.01	19.03	116.92	76.19	- 85.65	18.01	- 66.73	17.20	0.00	98.32	40.73	3.88	M=-0.35
C1614-5M	16.0	- 29.6	- 16.0	13.6	58.9	65.0	- 40.9	11.2	- 54.3	37.9	0.48	60.1	11.5	2.3	W.D.=250mm,y=5.5
Monofocal Manual Iris Lens (1 format)															
B1214D-2	12.7	- 34.3	- 12.7	21.7	63.5	67.5	- 42.2	8.7	- 33.9	23.4	- 1.68	20.0	14.4	0.7	
B1218A	12.4	- 24.6	- 12.4	12.2	39.5	57.8	- 31.8	6.9	- 29.9	16.6	- 3.81	28.8	10.4	0.6	
B2514D	25.1	- 25.6	- 25.1	0.5	51.4	54.8	- 30.3	18.2	- 30.8	22.4	- 2.77	37.1	15.0	2.6	
B2518	25.0	- 22.1	- 25.0	- 2.9	31.1	57.5	- 12.0	14.6	- 17.8	10.4	1.40	31.7	14.9	1.2	
B5014A	49.9	- 47.3	- 49.9	- 2.6	57.4	65.5	-8.1	37.5	- 28.0	21.0	0.81	59.3	18.1	2.8	
B7514C	75.0	3.4	- 75.0	- 78.4	94.3	96.5	63.1	55.0	- 41.7	30.6	- 1.74	57.4	18.5	5.2	
Monofocal Manual Iris Lens (2/3 format)															
C418DX	4.9	- 36.9	- 4.9	32.0	51.4	53.0	- 41.2	2.7	- 46.2	25.5	- 29.74	25.9	9.8	–	
C815B	8.5	- 31.2	- 8.5	22.6	53.6	57.5	- 39.1	5.9	- 120.1	82.7	- 4.24	29.2	10.9	0.6	
C1614A	16.2	- 20.1	- 16.2	3.9	41.0	50.5	- 30.3	12.6	- 44.4	34.5	- 1.92	57.0	13.2	1.1	
Monofocal Manual Iris Lens (1/2 format)															
H416	4.3	- 42.0	- 4.3	37.7	59.3	61.0	- 45.9	2.8	- 47.1	29.9	- 35.82	43.0	10.4	–	
H612A	6.2	- 38.9	- 6.2	32.7	58.1	63.5	- 44.5	5.5	- 70.3	62.3	- 5.81	42.0	14.3	0.3	
H1212B	12.2	- 26.7	- 12.2	14.5	47.6	53.0	- 38.5	10.7	- 322.6	282.8	- 4.26	45.9	13.9	1.1	

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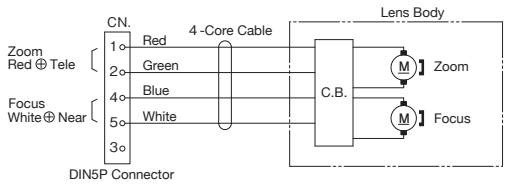
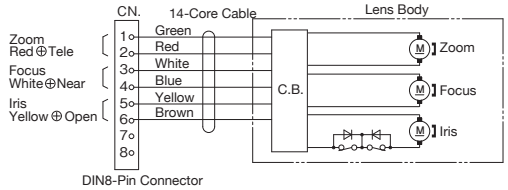
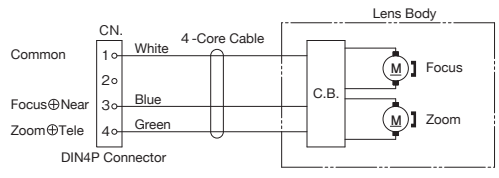
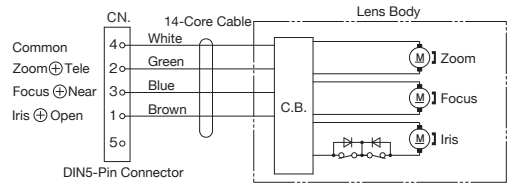
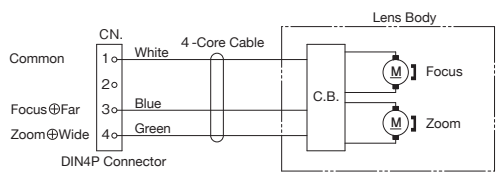
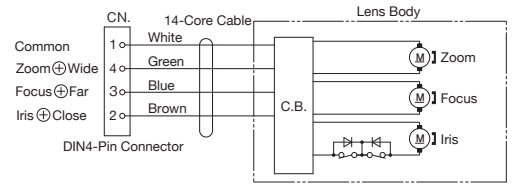
Video Iris and DC Iris

Auto Iris offers DC Driven and Video Driven types. Video Driven Iris is equipped with an amplifier inside and is operated by Video Signal and DC Power Supply from the camera.DC Driven Iris is not equipped with an amplifier and is operated by DC Power Supply (Driving and Damping) controlled by the circuit inside the camera.

Connection for Auto-Iris

Wiring Diagram	Model
	DC Iris (JEITA Standard 4-Pin connector)
	Video Iris 1 (JEITA Standard 4-Pin connector)
	DC
	Video Iris 2
	Iris Override

Wiring Diagram for Motorized Zoom Lens

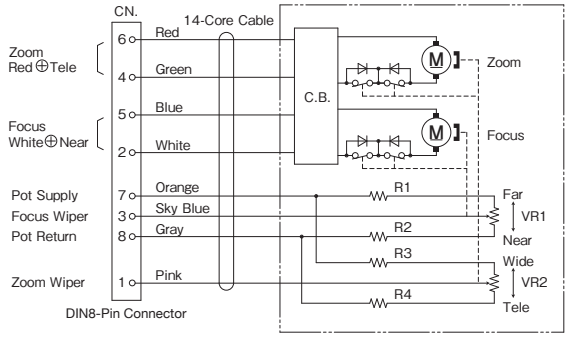
Type	Auto-Iris & Motorized Zoom lenses	Full Motorized Zoom lenses
Type 1 (DC6V) Type 5 (DC12V)		
Type 2 (DC±12V)		
Type 3 (DC±6V)		

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■ Wiring Diagram for P type Zoom Lenses

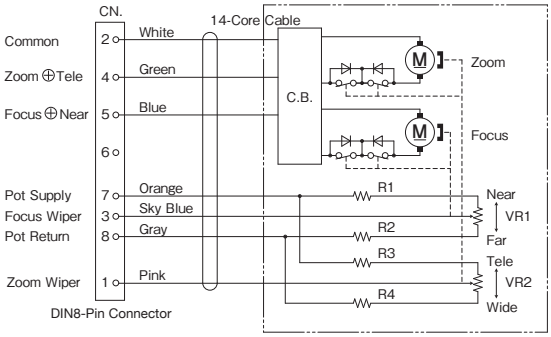
■Motorized Zoom and Focus with Preset ■Auto-Iris

Type 1 (DC6V) ／ Type 5 (DC12V)



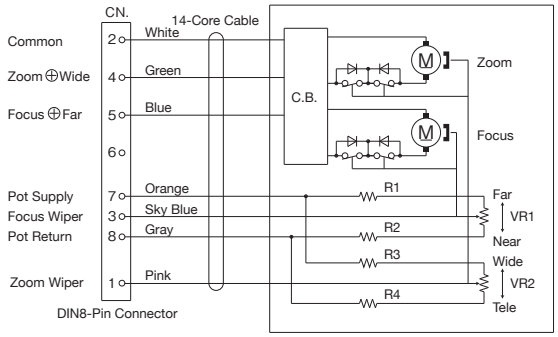
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 2 (DC±12V)



R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 3 (DC±6V)



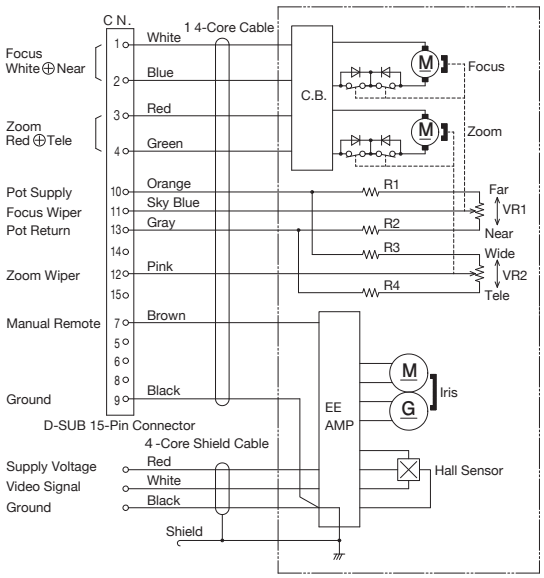
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

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■ Wiring Diagram for F Type Zoom Lenses (Full Function)

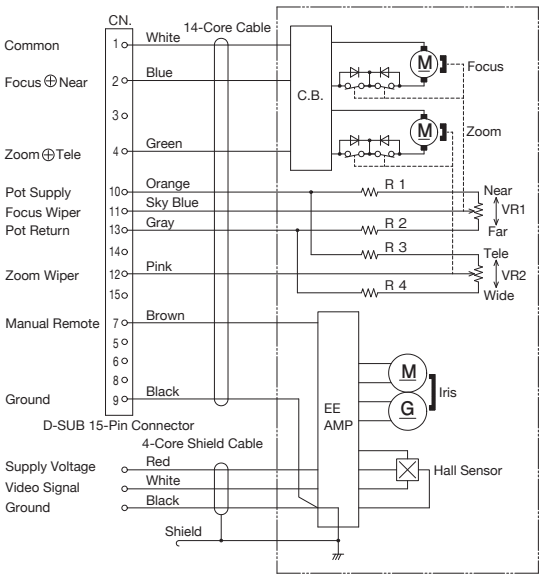
■Motorized Zoom and Focus with Preset ■Video Iris with Override

Type 1 (DC6V) / Type 5 (DC12V)



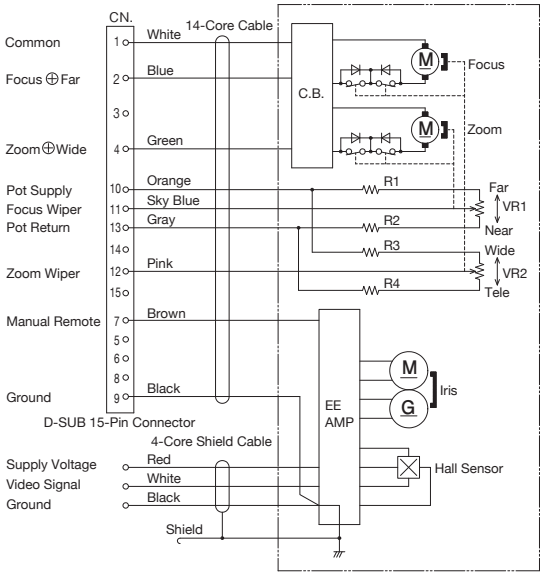
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 2 (DC±12V)



R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 3 (DC±6V)



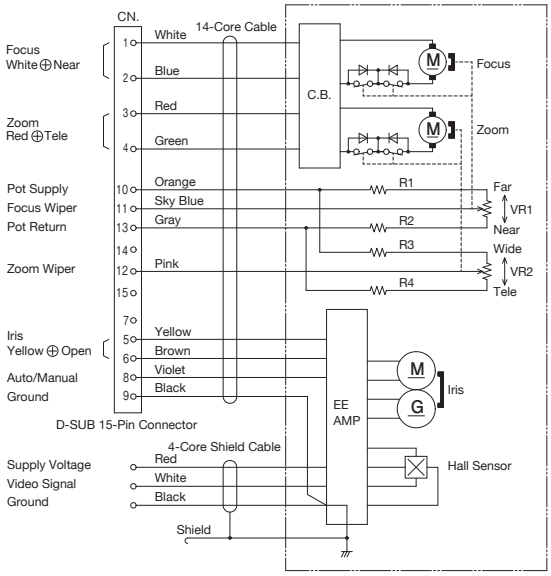
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

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■ Wiring Diagram for F Type Zoom Lenses (Full Function) (with D/A Converter)

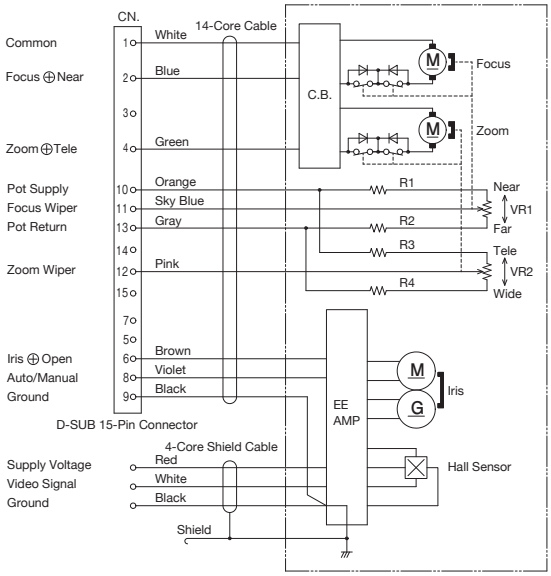
■Motorized Zoom and Focus with Preset ■Video Iris with Override　　*D/A converter is option for F type of zoom lenses.

Type 1 (DC6V) / Type 5 (DC12V)



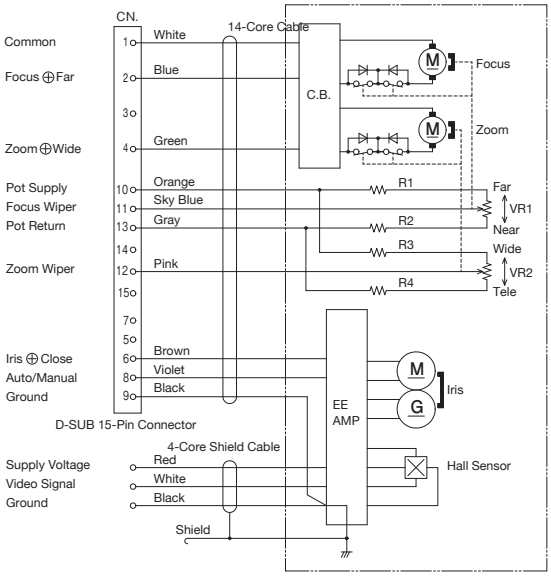
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 2 (DC±12V)



R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 3 (DC±6V)



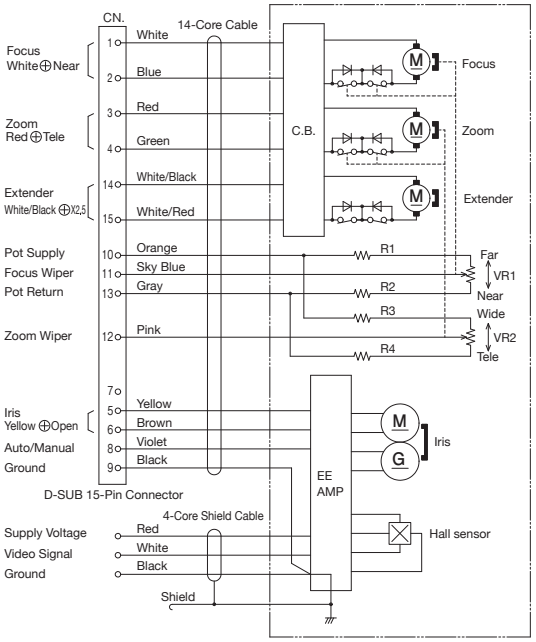
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

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■ Wiring Diagram for H55ZAME-F (Built-In 2.5X Extender)

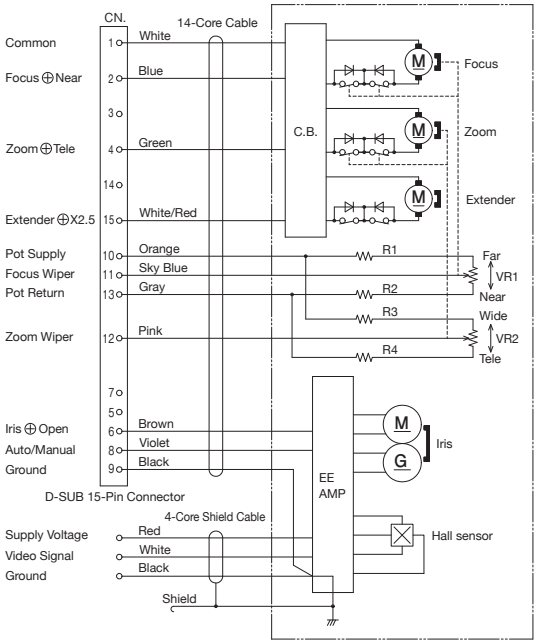
■Motorized Zoom and Focus with Preset ■Video Iris with Override ■Built-In Motorized 2.5X Extender
*D/A converter is the standard for H55ZAME-F.

Type 5 (DC12V) with D/A Converter



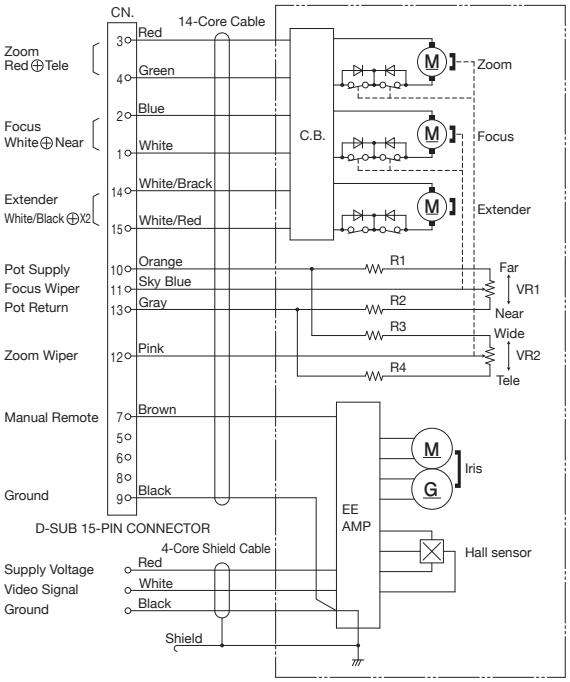
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 2 (DC±12V) with D/A Converter



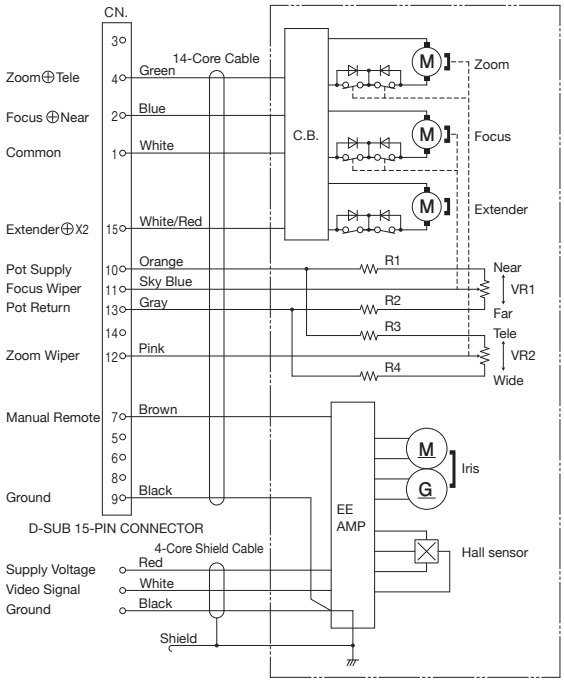
R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 5 (DC12V)



R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

Type 2 (DC±12V)

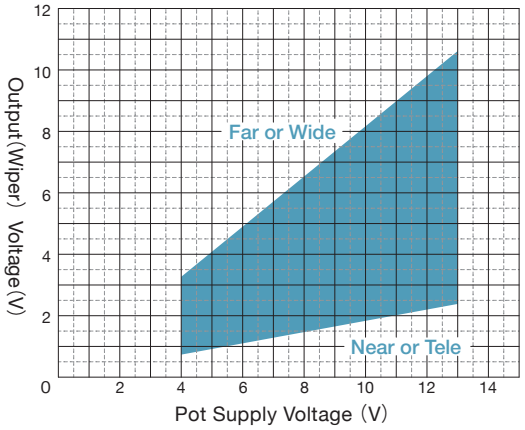


R1、R2、R3、R4	1KΩ±1% 0.1W
VR1、VR2	5KΩ±15% 0.2W

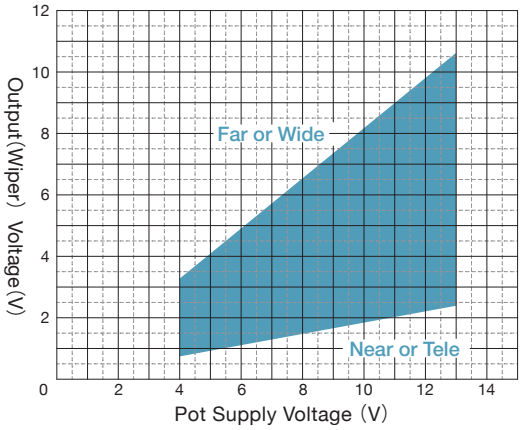
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Pot (Preset) Supply Output Range Characteristics

Type 1 & 3

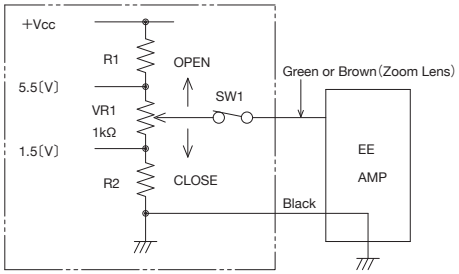


Type 2 & 3



Video Iris with Override (without D/A Converter)

Iris Override (without D/A converter) and "ALC" can be controlled remotely as per the following schematic diagram.



SW (Switch)	IRIS MODE
Open or Ground	Auto
Close	Manual Remote

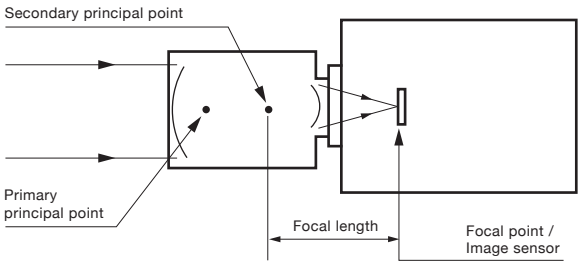
Input Voltage (Vcc) (V)	Resistor (R1) (KΩ)	Resistor (R2) (KΩ)
13	1.8	0.33
12.5	1.6	0.33
12	1.5	0.33
11.5	1.3	0.33
10.5	1.3	0.33
10	1.2	0.33
9.5	1	0.33
9	0.91	0.33
8.5	0.82	0.33
8	0.68	0.33
7.5	0.58	0.33
7	0.47	0.33
6.5	0.33	0.33
6	0.22	0.33
5.5	0.1	0.33
5	0	0.33

*Vcc represents supply voltage from a lens controller.

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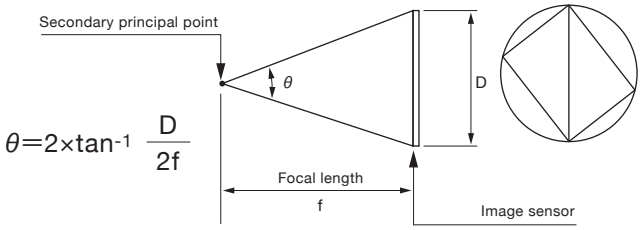
Focal Length

Rays from infinitely distance objects are condensed internally in the lens at a common point on the optical axis. The point at which the image sensor of the CCTV camera is positioned, is called a focal point. By virtue of design, lenses have 2 principal points, a primary principal point & a secondary principal point, the distance between the secondary principal point and the focal point (image sensor) determines the focal length of the lens.



Angle of View

The angle formed by the 2 lines from the secondary principal point to the image sensor is called the angle of view. Therefore, the focal length of the lens is fixed regardless of the image format size of the CCTV camera. Conversely, the angle of view varies in accordance with the image size. The focal lengths in the catalog are nominal and the angles of view calculated by the formula referring to the focal lengths are approximate.



$$\theta = 2 \times \tan^{-1} \frac{D}{2f}$$

F-Number

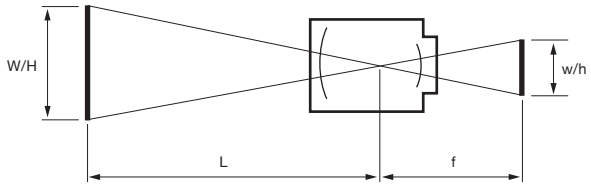
The F number is the index for the amount of light that passes through a lens. The smaller the number, the greater the amount of light. The F number is a ratio between focal length and effective aperture as follows.

$$\text{F Number} = \frac{f}{D}$$

f = focal length
D = effective diameter

Field of View

The field of view varies along with the focal length of the lens as follows.



$$\frac{w}{W} = \frac{h}{H} = \frac{f}{L}$$

W : width of object
H : height of object
w : width of format
1/2 format = 6.4mm, 1/3 format = 4.8mm,
1/4 format = 3.6mm
h : height of format
1/2 format = 4.8mm, 1/3 format = 3.6mm,
1/4 format = 2.7mm
f : focal length
L : object distance

Example : Full image of 4.5m-high object on a TV monitor camera: 1/3 format, Object distance: 10m
H = 4.5m = 4,500mm L = 10m = 10,000mm

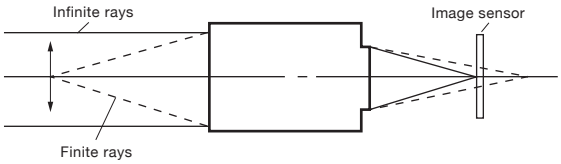
$$\frac{h}{H} = \frac{f}{L} \longrightarrow \frac{3.6}{4{,}500} = \frac{f}{10{,}000} \longrightarrow f=8\text{mm}$$

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Close-Up Application

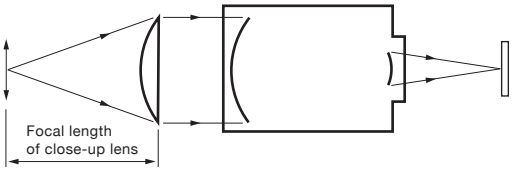
1) Extension Tube (Macro Ring)

When the rays originate from a finite object distance, the rays are condensed at a point further than the focal point, while the rays from infinite distance are condensed at the actual focal point. The focus adjustment moves the lens barrel toward the object to shift the focusing point at the image sensor. However, the amount of focusing adjustment is mechanically limited as sees by the minimum object distance. Extension Tube (Macro Ring) is inserted in between the lens and camera to shift the focus point further than the mechanical limit for close-up focus.



2) Close-Up Lens

The close-up lens has a positive meniscus lens as a supplementary lens. Generally, 3 types of close-up lenses are available, close-up lens No.1, 2 & 3 have 1,000mm (1,000mm/1), 500mm (1,000mm/2), 333mm (1,000mm/3) respectively. When an object is placed at the focal point of the close-up lens, the rays from the object are converted by the close-up lens to be parallel rays against the optical axis as seen on the right.



This lens is effective when wishing to come closer to an object than the min. object distance of a lens, or taking close-up pictures of small objects.

Depth of Field

When an object is focused, it is typically observed than the area in front and behind the object is also in focus. The range in focus is called depth of field. When the background is extended to infinity, the object distance (focusing distance) is called hyper focal distance. Depth of field is calculated by using the following formula.

$$H = \frac{f^2}{C \times F}$$

$$T1 = \frac{B(H+f)}{H + B}$$

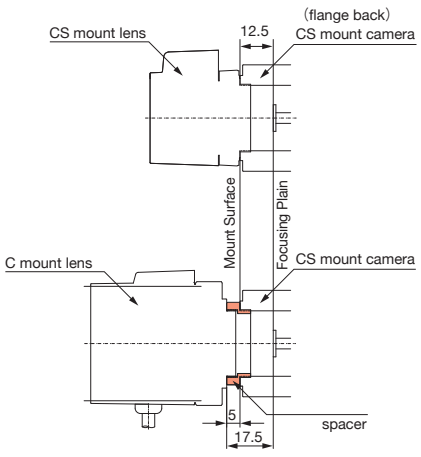
$$T2 = \frac{B(H-f)}{H - B}$$

F = F No.
H = hyper focal distance
f = focal length
B = object distance (measured from image sensor)
T1 = near limit
T2 = far limit
C = circle of least confusion
1/2 format = 0.015mm, 1/3 format = 0.011mm,
1/4 format = 0.008mm

Depth of field increases when:
*Focal length is shorter
*F-number is larger (F/1.4 < F/5.6)
*Object distance is longer

CS and C mount

CS mount as present CCTV market standard is specially designed for CCTV camera lens developed by PENTAX. This is to minuturize the size and to improve the performance of lens by shortening the flange back by 5mm comparing to C mount.C and CS mount lenses are available in the present market, and CS mount is only applicable to CS mount camera.C mount lens is applicable not only to C mount camera but also to CS mount camera by using 5mm Adapter Ring (as C-CS-A).



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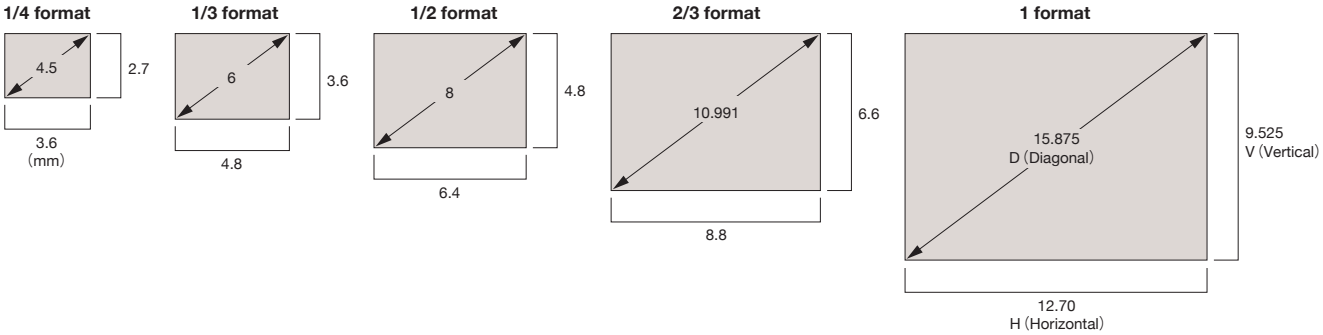
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Format Size



Model	1/4 format : Angle of View (°)			1/3 format : Angle of View (°)			1/2 format : Angle of View (°)			2/3 format : Angle of View (°)			1 format : Angle of View (°)		
	D	H	V	D	H	V	D	H	V	D	H	V	D	H	V
Motorized Zoom Lens															
1/3 format TS10ZME	41.57-4.49	33.77-3.62	25.61-2.73	53.36-5.88	44.07-4.78	33.77-3.62	–	–	–	–	–	–	–	–	–
1/3 format TS15ZAME	40.89-2.90	32.96-2.33	24.86-1.76	53.59-3.80	43.48-3.08	32.96-2.33	–	–	–	–	–	–	–	–	–
1/2 format H6ZBME	30.98-5.50	24.92-4.42	18.76-3.33	40.74-7.27	32.98-5.86	24.92-4.42	52.72-9.52	43.24-7.73	32.98-5.86	–	–	–	–	–	–
1/2 format HS10ZME	32.46-3.52	26.15-2.83	19.71-2.12	42.50-4.65	34.52-3.75	26.15-2.83	54.43-6.09	45.05-4.95	34.52-3.75	–	–	–	–	–	–
1/2 format H10ZME	32.85-3.54	26.45-2.84	19.93-2.13	43.04-4.69	34.94-3.77	26.45-2.84	55.25-6.18	45.63-4.99	34.94-3.77	–	–	–	–	–	–
1/2 format H15ZAME	30.84-2.19	24.76-1.76	18.62-1.32	40.78-2.90	32.85-2.34	24.76-1.76	53.64-3.81	43.37-3.09	32.85-2.34	–	–	–	–	–	–
1/2 format H16ZME	32.80-2.20	26.40-1.80	19.90-1.30	43.10-2.90	34.90-2.30	26.40-1.80	56.20-3.80	45.80-3.10	34.90-2.30	–	–	–	–	–	–
1/2 format H20ZAME-M	21.50-1.10	17.17-0.88	12.86-0.66	28.81-1.46	22.95-1.17	17.17-0.88	38.89-1.94	30.78-1.56	22.95-1.17	–	–	–	–	–	–
1/2 format H55ZAME	21.65-0.39	17.17-0.31	12.79-0.23	29.47-0.52	23.18-0.42	17.17-0.31	40.84-0.69	31.65-0.56	23.18-0.42	–	–	–	–	–	–
1/2 format H55ZAME(w/2.5x)	8.46-0.15	6.76-0.12	5.07-0.09	11.30-0.20	9.03-0.16	6.76-0.12	15.12-0.27	12.06-0.22	9.03-0.16	–	–	–	–	–	–
2/3 format C6ZAME	20.04-3.43	16.05-2.75	12.05-2.06	26.63-4.57	21.36-3.66	16.05-2.75	35.30-6.07	28.38-4.87	21.36-3.66	47.94-8.30	38.72-6.67	29.25-5.02	–	–	–
2/3 format C6Z1218M3	20.06-3.43	16.07-2.75	12.06-2.06	26.66-4.57	21.38- 3.66	16.07-2.75	35.34-6.07	28.41-4.87	21.38-3.66	47.99-8.30	38.76-6.67	29.28-5.02	–	–	–
Manual Zoom Lens															
1/2 format H6ZBE	30.98-5.50	24.92-4.42	18.76-3.33	40.74-7.27	32.98-5.86	24.92-4.42	52.72-9.52	43.24-7.73	32.98-5.86	–	–	–	–	–	–
1/2 format H6Z810	30.99-5.50	24.92-4.42	18.76-3.33	40.75-7.27	32.99-5.86	24.92-4.42	52.74-9.52	43.26-7.73	32.99-5.86	–	–	–	–	–	–
2/3 format C6ZE	20.04-3.43	16.05-2.75	12.05-2.06	26.63-4.57	21.36-3.66	16.05-2.75	35.30-6.07	28.38-4.87	21.36-3.66	47.94-8.30	38.72-6.67	29.25-5.02	–	–	–
2/3 format C6Z1218	20.06-3.43	16.07-2.75	12.06-2.06	26.66-4.57	21.38-3.66	16.07-2.75	35.34-6.07	28.41-4.87	21.38-3.66	47.99-8.30	38.76-6.67	29.28-5.02	–	–	–
Varifocal Plus															
1/3 format TS3VP213ED-M	97.70-33.30	77.80-26.60	58.10-20.00	131.10-44.30	104.40-35.50	77.80-26.60	–	–	–	–	–	–	–	–	–
Vari-Focal Lens															
1/3 format TS2V114E	180-83.11	180-64.89	107.98-47.84	180-118.31	180-89.55	180-64.89	–	–	–	–	–	–	–	–	–
1/3 format TS2V214AED	90.54-44.13	72.26-35.35	54.08-26.54	121.44-58.68	96.70-47.04	72.26-35.35	–	–	–	–	–	–	–	–	–
1/3 format TS3V212ED	89.70-31.30	70.70-25.10	52.50-18.80	123.40-41.80	96.20-33.40	70.70-25.10	–	–	–	–	–	–	–	–	–
1/3 format TS3V310ED	87.06-33.06	68.98-26.44	51.30-19.84	118.46-44.08	93.22-35.26	68.98-26.44	–	–	–	–	–	–	–	–	–
1/3 format TS3V310	87.06-33.06	68.98-26.44	51.30-19.84	118.46-44.08	93.22-35.26	68.98-26.44	–	–	–	–	–	–	–	–	–
1/3 format TS4V212ED-Q	92.00-22.30	73.00-17.80	54.30-13.40	124.90-29.70	98.50-23.80	73.00-17.80	–	–	–	–	–	–	–	–	–
1/3 format TS4V214ED	89.21-22.53	71.82-18.05	54.07-13.55	115.04-29.30	93.29-23.50	70.58-17.70	–	–	–	–	–	–	–	–	–
1/3 format TS7V714ED-Q	34.20-5.30	27.40-4.30	20.40-3.20	46.20-7.00	36.60-5.60	27.40-4.30	–	–	–	–	–	–	–	–	–
1/3 format TS10V518AED	47.25-5.18	37.80-4.14	28.35-3.11	63.00-6.90	50.00-5.52	37.80-4.14	–	–	–	–	–	–	–	–	–
1/2 format HS2V616ED	44.22-21.57	34.98-17.23	26.03-12.91	60.60-28.86	47.38-23.02	34.98-17.23	86.44-38.80	65.29-30.82	47.38-23.02	–	–	–	–	–	–

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Model		1/4 format : Angle of View (°)			1/3 format : Angle of View (°)			1/2 format : Angle of View (°)			2/3 format : Angle of View (°)			1 format : Angle of View (°)		
		D	H	V	D	H	V	D	H	V	D	H	V	D	H	V
Board Camera Lens Pan-focus																
1/4 format	QD3ZMED	92.23-35.84	73.42-28.74	54.77-21.59	–	–	–	–	–	–	–	–	–	–	–	–
Monofocal Auto-Iris Lens																
1/3 format	TS212E	88.60	71.54	54.09	117.79	94.28	71.54	–	–	–	–	–	–	–	–	–
1/2 format	H416E	60.14	47.87	35.76	81.05	64.27	47.87	110.21	86.77	64.27	–	–	–	–	–	–
	H612E	40.93	32.97	24.84	53.68	43.55	32.97	68.89	56.93	43.55	–	–	–	–	–	–
	H1212E	21.18	16.93	12.70	28.28	22.60	16.93	37.83	30.18	22.60	–	–	–	–	–	–
2/3 format	C814E	31.21	25.10	18.91	41.11	33.22	25.10	53.57	43.67	33.22	70.08	58.25	44.94	–	–	–
	C1614E	15.87	12.72	9.55	21.11	16.92	12.72	28.02	22.50	16.92	38.25	30.76	23.19	–	–	–
1 format	B1214E	20.22	16.22	12.19	26.80	21.55	16.22	35.35	28.54	21.55	47.55	38.69	29.40	65.22	54.04	41.64
	B2514E	10.29	8.23	6.17	13.71	10.97	8.23	18.27	14.62	10.97	25.09	20.09	15.08	36.08	28.94	21.73
	B7518AE	3.42	2.74	2.05	4.56	3.65	2.74	6.08	4.87	3.65	8.35	6.69	5.02	12.03	9.64	7.23
Pinhole Lens																
1/3 format	TS420PE	64.14	51.24	38.39	86.17	68.47	51.24	–	–	–	–	–	–	–	–	–
1/2 format	H620PE	40.26	32.44	24.46	52.86	42.82	32.44	68.66	56.12	42.82	–	–	–	–	–	–
UV Lens (Ultraviolet Ray)																
1/2 format	H2520-UVM	10.30	8.24	6.18	13.71	10.98	8.24	18.24	14.62	10.98	–	–	–	–	–	–
1 format	B2528-UV	10.40	8.30	6.20	13.90	11.10	8.30	18.90	14.80	11.10	25.50	20.40	15.30	37.20	29.68	22.20
	B7838-UV	3.30	2.70	2.00	4.40	3.50	2.70	5.90	4.70	3.50	8.10	6.50	4.90	11.80	9.50	7.10
5 Mega-Pixel Lens																
2/3 format	C1614-5M	16.40	13.20	9.90	21.80	17.50	13.20	28.80	23.20	17.50	37.90	30.80	23.40	–	–	–
Mega-Pixel Lens																
1/2 format	H614-MQ	40.80	32.30	24.90	58.60	44.50	33.90	69.00	57.40	44.30	–	–	–	–	–	–
	H1214-M	20.54	16.49	12.39	27.17	21.88	16.49	35.69	28.91	21.88	–	–	–	–	–	–
2/3 format	C1614-M	16.05	12.86	9.66	21.32	17.11	12.86	28.25	22.72	17.11	38.28	30.97	23.41	–	–	–
	C2514-M	10.29	8.24	6.18	13.70	10.97	8.24	18.21	14.60	10.97	24.89	20.00	15.05	–	–	–
	C3516-M	7.58	6.07	4.55	10.10	8.09	6.07	13.43	10.76	8.09	18.39	14.76	11.10	–	–	–
	C5028-M	5.15	4.12	3.09	6.86	5.50	4.12	9.14	7.32	5.50	12.53	10.05	7.55	–	–	–
	C7528-M	3.54	2.83	2.13	4.71	3.77	2.83	6.28	5.03	3.77	8.61	6.90	5.18	–	–	–
Monofocal Manual Iris Lens																
1/2 format	H416	60.14	47.87	35.76	81.05	64.27	47.87	110.21	86.77	64.27	–	–	–	–	–	–
	H612A	40.93	32.97	24.84	53.68	43.55	32.97	68.89	56.93	43.55	–	–	–	–	–	–
	H1212B	21.18	16.93	12.70	28.28	22.60	16.93	37.83	30.18	22.60	–	–	–	–	–	–
2/3 format	C418DX	51.78	41.68	31.40	68.14	55.11	41.68	88.66	72.37	55.11	115.94	96.36	74.46	–	–	–
	C815B	29.92	24.02	18.07	39.57	31.87	24.02	51.85	42.09	31.87	67.87	56.49	43.34	–	–	–
	C1614A	15.86	12.70	9.54	21.09	16.91	12.70	27.99	22.48	16.91	38.19	30.72	23.17	–	–	–
1 format	B1214D-2	20.21	16.21	12.19	26.78	21.53	16.21	35.32	28.51	21.53	47.48	38.65	29.37	65.08	53.95	41.59
	B1218A	20.61	16.53	12.42	27.35	21.97	16.53	36.13	29.12	21.97	48.73	39.56	30.01	67.20	55.49	42.61
	B2514D	10.29	8.23	6.17	13.71	10.97	8.23	18.27	14.62	10.97	25.10	20.10	15.08	36.10	28.95	21.74
	B2518	10.27	8.23	6.18	13.66	10.95	8.23	18.11	14.55	10.95	24.64	19.87	15.00	34.79	28.24	21.44
	B5014A	5.16	4.13	3.10	6.87	5.50	4.13	9.14	7.32	5.50	12.52	10.04	7.55	17.93	14.41	10.85
	B7514C	3.44	2.75	2.06	4.59	3.67	2.75	6.13	4.90	3.67	8.45	6.75	5.05	12.30	9.78	7.30

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