

# PENTAX



## CCTV

CERTIFIED  
ISO 9001 & ISO 14001

Manual Iris Lens    Auto Iris Lens  
Special Auto / Manual Iris Monofocal Lens  
Manual / Auto-Iris Pinhole Lens  
Auto / Manual Vari-Focal and Zoom Lens  
Special Zoom Lens    CCTV Lens    Accessory





## PENTAX Precision Co., Ltd.

*We, PENTAX Precision Co., Ltd. have over 50 years of experience manufacturing and marketing CCTV lenses on a worldwide basis. As a member of PENTAX group, a world renowned optical products manufacturer and leader in the field of optics and state of the art technology, we continually strive to provide the highest quality, highest performance, most extensive line lenses available.*

*We hope you will take advantage of the opportunity to increase your profitability with the finest ISO 9001 and ISO 14001 CCTV Lenses from the preferred industry leader, PENTAX.*

● ISO 9001

*This is a quality management and quality assurance system which insures all PENTAX lenses are produced under the strictest quality standards available. ISO 9001 includes guidelines for overall quality management, product development and manufacturing as well as marketing and servicing.*

● ISO 14001

*ISO 14001 is an environmental management system process. Our firm's commitment to a healthy, fiscally responsible coexistence with nature and the utmost respect for the environment has allowed us to achieve this prestigious certification.*

*We are honored to be the first lens manufacturer in the CCTV industry to have been awarded both ISO 9001 and 14001 Certification.*

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]		WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT						

## Monofocal Manual Iris Lens

### 1/4 FORMAT

QS210(C40206)	2.2	1.0 - C	CS	92.60				36.8 36.3	44		4
QS310(C40301)	3.0	1.0 - C	CS	64.24				36.8 33.8	40		4
QS610(C40601)	6.0	1.0 - C	CS	34.83				36.8 33.8	37		4

### 1/3 FORMAT

TS212A(C70214)	2.8	1.2 - C	CS	71.54	94.30			36.8 36.3	44		4
TS320NX(C91665)	3.6	2.0	CS	53.90	72.00			30 8	20	FOR B/W CAMERA	
TS412A(C70409)	4	1.2 - C	CS	49.18	63.89			36.8 33.8	39		4
TS820NX(C91666)	8	2.0	CS	23.90	31.40			30 8	18	FOR B/W CAMERA	
TS812A(C70807)	8	1.2 - C	CS	25.05	33.33			36.8 33.8	34		4

### 1/2 FORMAT

HS316A(C60305)	3.7	1.6 - C	CS	53.54	71.02	93.67	30.5 P=0.5	32 35.7	34		5
HS614B(C60622)	6	1.4 - C	CS	33.86	44.55	57.81	30.5 P=0.5	32 35.7	32		5
HS1214D(C61217)	12	1.4 - C	CS	16.55	22.06	29.42	30.5 P=0.5	32 35.7	26		5
H416(C60402)	4.2	1.6 - C	C	47.87	64.27	86.77		42 43.5	120		5
H612A(C60607)	6	1.2 - C	C	32.97	43.55	56.93	40.5 P=0.5	42 46	125	LOCK SCREW EXTRA	5
H1212B(C61215)	12	1.2 - 22	C	16.93	22.60	30.18	27.0 P=0.5	30 35.5	67	LOCK SCREW EXTRA	5

### 2/3, 1 FORMAT

C418DX(C30405)	4.8	1.8 - C	C	41.68	55.11	72.37		40.5 35.5	105	LOCK SCREW EXTRA	6
B618CX-2(C20612)	6.5	1.8 - C	C	29.94	39.73	52.52		48 42	120	LOCK SCREW EXTRA	6
C814(C30808)	8	1.4 - C	C	25.15	33.31	43.88	40.5 P=0.5	42 58	160	LOCK SCREW EXTRA	6
C815B(C30811)	8.5	1.5 - C	C	24.02	31.87	42.09	40.5 P=0.5	42 40	120	LOCK SCREW EXTRA	6
B1214D-2(C21211)	12.5	1.4 - C	C	16.21	21.53	28.51	40.5 P=0.5	42 50	135	LOCK SCREW EXTRA	6
B1218-2(C21212)	12.5	1.8 - C	C	16.48	21.90	29.01	40.5 P=0.5	42 40	95	LOCK SCREW EXTRA	6
C1614A(C31630)	16	1.4 - 22	C	12.70	16.91	22.48	27.0 P=0.5	30 33	58	LOCK SCREW EXTRA	7
B2514D(C22525)	25	1.4 - 22	C	8.23	10.97	14.62	27.0 P=0.5	30 37.3	76	LOCK SCREW EXTRA	7
B2518(C22516)	25	1.8 - C	C	8.23	10.95	14.55	40.5 P=0.5	42 40	87	LOCK SCREW EXTRA	7
B5014A(C25011)	50	1.4 - C	C	4.13	5.50	7.32	46.0 P=0.75	48 48	180	LOCK SCREW EXTRA	7
B5018A-3(C25010)	50	1.8 - C	C	4.13	5.50	7.32	40.5 P=0.5	42 52.5	130	LOCK SCREW EXTRA	7
B7514C(C27509)	75	1.4 - C	C	2.75	3.67	4.90	58.0 P=0.75	62 79	450	LOCK SCREW EXTRA	7

## Machine Vision Lens

### 1/2 FORMAT

H1214-M(C61232)	12	1.4 - 16	C	16.49	21.88	28.91	27.0 P=0.5	29.5 28.5	55	LOCK SCREW	8
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### 2/3 FORMAT

C1614-M(C31634)	16	1.4 - 16	C	12.86	17.11	22.72	27.0 P=0.5	29.5 33.2	63	LOCK SCREW	8
C2514-M(C32500)	25	1.4 - 16	C	8.24	10.97	14.60	27.0 P=0.5	29.5 32	55	LOCK SCREW	8
C3516-M(C33500)	35	1.6 - 16	C	6.07	8.09	10.76	27.0 P=0.5	29.5 35.4	64	LOCK SCREW	8
C5028-M(C35001)	50	2.8 - 22	C	4.12	5.50	7.32	27.0 P=0.5	29.5 34	55	LOCK SCREW	8

## Line-Scan Lens

YF3528(C52915F)	35	2.8 - 22	F	64.4 (45mm Image Format)			62 P=0.75	72 56.8	440	NOT FOR PHOTOGRAPHIC CAMERAS	9
YK3528(C52915K)	35	2.8 - 22	K	64.4 (45mm Image Format)			62 P=0.75	72 57.8	440		(9)
YF5028(C52893F)	50	2.8 - 22	F	47.6 (45mm Image Format)			62 P=0.75	72 56.8	440		9
YK5028(C52893K)	50	2.8 - 22	K	47.6 (45mm Image Format)			62 P=0.75	72 57.8	440		(9)

## UV Lens (Ultraviolet Ray)

H2520-UVM(C62500)	25	2.0 - 16	C	8.24	10.98	14.62	27.0 P=0.5	29.5 46	78	200nm-1000nm Ray	9
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## Pinhole Lens

### 1/3 FORMAT

TS420P(C70404)	4	2.0 - C	CS	51.24	68.47			36.5 65.9	74	MANUAL IRIS	15
TS420PE(C70403)	4	2.0 - 64	CS	51.24	68.47			36.5 42.3 65.9	79	DC IRIS	15

### 1/2 FORMAT

HS620P(C60613)	6.2	2.0 - C	CS	32.44	42.82	56.12		29 88.1	67	MANUAL IRIS	15
H620P(C60612)	6.2	2.0 - C	C	32.44	42.82	56.12		29 83.1	63	MANUAL IRIS	15
HS620PE(C60627)	6.2	2.0 - 300	CS	32.44	42.82	56.12		39 45.5 88.2	105	VIDEO & DC IRIS	15
H620PE(C60626)	6.2	2.0 - 300	C	32.44	42.82	56.12		39 45.5 83.2	100	VIDEO & DC IRIS	15

### 2/3 FORMAT

C934P(C30900)	9	3.4 - 22	C	22.30	29.60	39.11		34 163.8	175	MANUAL IRIS	16
C934PL(C30901)	9	3.4 - 22	C	22.30	29.60	39.11			210	R/A, MANUAL IRIS	16

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]			WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT							

## Monofocal Auto-Iris Lens

### 1/4 FORMAT

QS210E(C40202)	2.2	1.0-200	CS	92.60				36.8	43.5	36.3	54	VIDEO & DC IRIS	10
TS310E(C40300)	3.0	1.0-200	CS	64.24				36.8	43.5	33.8	50	VIDEO & DC IRIS	10
QS610E(C40600)	6.0	1.0-200	CS	34.83				36.8	43.5	33.8	47	VIDEO & DC IRIS	10

### 1/3 FORMAT

TS212E(C70210)	2.8	1.2-200	CS	71.54	94.30			36.8	43.5	36.3	54	VIDEO & DC IRIS	10
TS412E(C70406)	4	1.2-200	CS	49.18	63.89			36.8	43.5	33.8	49	VIDEO & DC IRIS	10
TS812E(C70804)	8	1.2-200	CS	25.05	33.33			36.8	43.5	33.8	44	VIDEO & DC IRIS	10

### 1/2 FORMAT

HS316TE(C60310)	3.7	1.6-90	CS	53.54	71.02	93.67	34 P=0.5	42.8	47.1	36.5	57	VIDEO & DC IRIS	11
HS614TE(C60631)	6	1.4-90	CS	33.86	44.55	57.81	34 P=0.5	42.8	47.1	36.5	60	VIDEO & DC IRIS	11
HS1214TE(C61228)	12	1.4-90	CS	16.55	22.06	29.42	34 P=0.5	42.8	47.1	36.5	46	VIDEO & DC IRIS	11
HS316E(C60309)	3.7	1.6-300	CS	53.54	71.02	93.67	34 P=0.5	42.8	47.1	36.5	57	VIDEO & DC IRIS	11
HS614E(C60630)	6	1.4-300	CS	33.86	44.55	57.81	34 P=0.5	42.8	47.1	36.5	60	VIDEO & DC IRIS	11
HS1214E(C61227)	12	1.4-300	CS	16.55	22.06	29.42	34 P=0.5	42.8	47.1	36.5	46	VIDEO & DC IRIS	11
H416E(C60405)	4.2	1.6-360	C	47.87	64.27	86.77		46.5	50.5	45	135	VIDEO & DC IRIS	12
H612E(C60625)	6	1.2-360	C	32.97	43.55	56.93	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12
H1212E(C61220)	12	1.2-360	C	16.93	22.60	30.18	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12

### 2/3, 1 FORMAT

C418E(C30407)	4.8	1.8-360	C	41.27	54.57	71.65		46.5	50.5	37.5	120	VIDEO & DC IRIS	12
C814E(C30821)	8	1.4-360	C	25.10	33.22	43.67	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12
B1214E(C21223)	12.5	1.4-360	C	16.22	21.55	28.54	43 P=0.75	46.5	50.5	47.5	140	VIDEO & DC IRIS	12
C1614E(C31632)	16	1.4-360	C	12.72	16.92	22.50	43 P=0.75	46.5	50.5	46.7	110	VIDEO & DC IRIS	13
B2514E(C22527)	25	1.4-360	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO & DC IRIS	13
B5018E(C25018)	50	1.8-360	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO & DC IRIS	13
B7518E(C27513)	75	1.8-360	C	2.76	3.67	4.90	49 P=0.75	62	70.5		300	VIDEO & DC IRIS	13

## Ultra-High Speed Auto-Iris Lens

### 1/3 FORMAT

TS209E-ASP(C70204)	2.8	0.95-180	CS	72.69	98.24			48	53	46.9	140	DC IRIS	14
TS407E-ASP(C70405)	4	0.75-180	CS	48.39	62.55		40.5 P=0.5	48	53	53.1	145	DC IRIS	14
TS807E-ASP(C70803)	8	0.75-180	CS	25.07	33.31		40.5 P=0.5	48	53	46.9	135	DC IRIS	14

## Mega-Pixel Auto-Iris Lens

### 1/1.8 FORMAT

H612E-M(C60632)	6	1.2-200	C	44.23 (1/3)	58.70 (1/2)	65.40 (1/1.8)	40.5 P=0.5	47	52.5	53.1	170	VIDEO & DC IRIS	14
H912E-M(C60900)	9	1.2-200	C	29.65 (1/3)	39.38 (1/2)	43.90 (1/1.8)	40.5 P=0.5	47	52.5	51.6	160	VIDEO & DC IRIS	14

## Manual Override (Remote-Control Iris) Lens

### 1/2 FORMAT

H416ER(C60404)	4.2	1.6-360	C	47.87	64.27	86.77		46.5	50.5	45	135	VIDEO IRIS	(12)
H612ER(C60624)	6	1.2-360	C	32.97	43.55	56.93	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)
H1212ER(C61219)	12	1.2-360	C	16.93	22.60	30.18	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)

### 2/3, 1 FORMAT

C418ER(C30406)	4.8	1.8-360	C	41.27	54.57	71.65		46.5	50.5	37.5	120	VIDEO IRIS	(12)
C814ER(C30820)	8	1.4-360	C	25.10	33.22	43.67	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)
B1214ER(C21221)	12.5	1.4-360	C	16.21	21.53	28.51	43 P=0.75	46.5	50.5	47.5	140	VIDEO IRIS	(12)
C1614ER(C31631)	16	1.4-360	C	12.70	16.91	22.48	43 P=0.75	46.5	50.5	46.7	110	VIDEO IRIS	(13)
B2514ER(C22526)	25	1.4-360	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO IRIS	(13)
B5018ER(C25017)	50	1.8-360	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO IRIS	(13)

## High Sensitivity Auto-Iris (F1000/2000) Lens

### 1 FORMAT

B1214E-2000(C21224)	12.5	1.4-2000	C	16.21	21.53	28.51	43 P=0.75	46.5	50.5	47.5	140	VIDEO IRIS	(12)
B2514E-2000(C22528)	25	1.4-2000	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO IRIS	(13)
B5018E-1000(C25019)	50	1.8-1000	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO IRIS	(13)
B7518E-1000(C27514)	75	1.8-1000	C	2.76	3.67	4.90	49 P=0.75	62	70.5		300	VIDEO IRIS	(13)

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]	WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT					
<b>Manual Iris Vari-Focal Lens</b>											
<b>1/4 FORMAT</b>											
QS2V2212	2.2-4.5	1.2 - C	CS	94.48-51.88						COMING SOON	17
QS2V2812(C40207)	2.8-5.8	1.2 - C	CS	76.22-36.40			30.5 P=0.5	36 43.5	45		17
<b>1/3 FORMAT</b>											
TS2V214(C70213)	2.8-6	1.4 - C	CS	72.46-35.15	96.94-46.76			36 43.2	47		18
TS2V314B(C70313)	3.5-8	1.4 - C	CS	58.74-26.55	79.83-35.44		30.5 P=0.5	36 43.5	43	DAY&NIGHT	18
TS2V616A(C70622)	6-12	1.6 - C	CS	34.92-17.21	47.22-22.97		30.5 P=0.5	36 43.5	43		18

<b>Auto-Iris Vari-Focal Lens</b>											
<b>1/4 FORMAT</b>											
QS2V2212E	2.2-4.5	1.2 - 200	CS	94.48-51.88						COMING SOON	17
QS2V2812E(C40205)	2.8-5.8	1.2 - 200	CS	76.22-36.40			30.5 P=0.5	40.4 45.7 43.5	57	VIDEO & DC IRIS	17
<b>1/3 FORMAT</b>											
TS2V114E(C70100)	1.6-3.4	1.4 - 64	CS	180.00-64.89	180.00-89.55			38.3 44.7 56.7	140	FISH EYE, DC IRIS	19
TS2V214AE(C70220)	2.8-6	1.4 - 300	CS	72.26-35.35	96.70-47.04			40.4 45.7 43.2	59	VID & DC IRIS, DAY&NIGHT	18
TS2V314BE(C70312)	3.5-8	1.4 - 300	CS	58.74-26.55	79.83-35.44		30.5 P=0.5	40.4 45.7 43.5	59	VID & DC IRIS, DAY&NIGHT	18
TS2V616AE(C70622)	6-12	1.6 - 300	CS	34.98-17.23	47.37-23.01		30.5 P=0.5	40.4 45.7 43.5	53	VID & DC IRIS, DAY&NIGHT	18
TS10V518E(C70508)	5-50	1.8 - 360	CS	37.80-4.14	50.00-5.52			44.5 50.8 61.5	140	DC IRIS	19

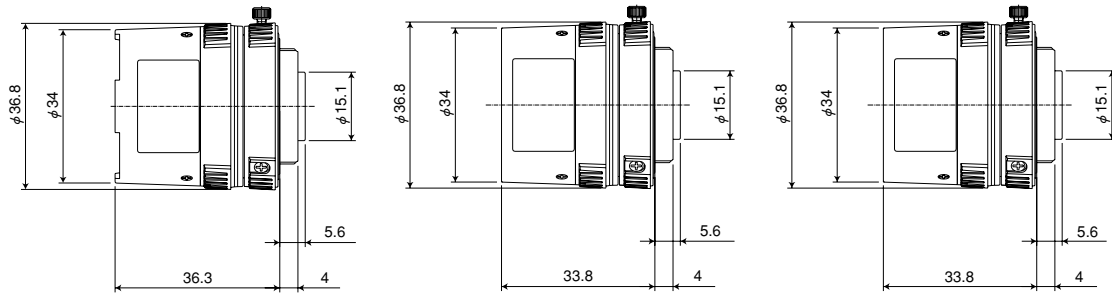
<b>Manual Zoom Lens</b>											
<b>1/3 FORMAT</b>											
TS6ZE(C70605)	6.3-38	1.2 - 512	CS	31.26-5.59	41.12-7.43		49 P=0.75	57.5 77.8	320	VIDEO & DC IRIS	20
<b>1/2 FORMAT</b>											
H6Z810(C60812)	8-48	1.0 - 22	C	24.92-4.42	32.99-5.86	43.26-7.73	55 P=0.75	57 95	430	MANUAL IRIS	20
H6ZBE(C60811)	8-48	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 & DC IRIS	20
<b>2/3 FORMAT</b>											
C6Z1218(C31204)	12.5-75	1.8 - 22	C	16.08-2.75	21.40-3.66	28.44-4.87	49 P=0.75	51 90	320	MANUAL IRIS	20
C6ZE(C31219)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	68 90	385	VIDEO & DC IRIS	20

<b>Motorized Zoom Lens</b>											
<b>1/4 FORMAT</b>											
QS6ZME(C40400)	4.6-28	1.0 - 250	CS	41.64-7.50			49 P=0.75	65 72.8 77	430	VIDEO & DC IRIS	21
<b>1/3 FORMAT</b>											
TS6ZME(C70600)	6.3-38	1.2 - 360	CS	31.26-5.59	41.12-7.43		49 P=0.75	58 63.5 78	410	VIDEO & DC IRIS	22
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 & DC IRIS	22
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 & DC IRIS	22
TS15ZAME(C70624)	6-90	1.2 - 430	CS	32.96-2.33	43.48-3.08		62 P=0.75	78 88.5 119	760	VIDEO & DC IRIS	23
TS15ZAME-P(C70627)*	6-90	1.2 - 430	CS	32.96-2.33	43.48-3.08		62 P=0.75	78 88.5 119	770	VIDEO & DC IRIS	23
TS20ZME(C70900)	9-180	1.2 - 510	CS	22.61-1.15	30.28-1.53		95 P=1.0	116 135 216	2590	VIDEO IRIS	23
TS20ZME-P(C70903)*	9-180	1.2 - 510	CS	22.61-1.15	30.28-1.53		95 P=1.0	116 135 216	2620	VIDEO IRIS	23
<b>1/2 FORMAT</b>											
HS6ZME(C60806)	8-48	1.4 - 360	CS	24.81-4.39	32.78-5.82	42.88-7.69	49 P=0.75	58 63.5 78	400	VIDEO & DC IRIS	24
H6ZBME(C60809)	8-48	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 & DC IRIS	24
H6ZBME-P(C60810)*	8-48	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 & DC IRIS	24
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 & DC IRIS	25
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 & DC IRIS	25
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 & DC IRIS	25
H15ZAME(C60826)	8-120	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 & DC IRIS	26
H15ZAME-P(C60829)*	8-120	1.6 - 1000	C	24.76-1.76	32.85-2.34	43.37-3.09	62 P=0.75	78 88.5 134	810	VIDEO & DC IRIS	26
H20ZME(C61221)	12-240	1.6 - 720	C	17.17-0.88	22.95-1.17	30.78-1.56	95 P=1.0	116 135 216	2590	VIDEO IRIS	26
H20ZME-P(C61224)*	12-240	1.6 - 720	C	17.17-0.88	22.95-1.17	30.78-1.56	95 P=1.0	116 135 216	2620	VIDEO IRIS	26
H55ZME-F(C61233)	12 -1320	4.0 - 360	C	17.17-0.16	23.18-0.21	31.65-0.28	105 P=1.0	155 138 355	5400	VIDEO IRIS, 2X EXTENDER	27
<b>2/3 FORMAT</b>											
C6Z1218M3(C31211)	12.5-75	1.8 - C	C	16.06-2.75	21.40-3.66	28.44-4.87	49 P=0.75	101.5 92.2 94.5	820	MOTORIZED IRIS	28
C6ZAME(C31220)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	101.5 92.2 94.5	620	VIDEO IRIS	28
C6ZME-P(C31221)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	101.5 92.2 94.5	655	VIDEO IRIS	28
C10ZAME(C31002)	10.5-105	1.4 - 1000	C	18.97-2.02	25.24-2.68	33.49-3.56	72 P=0.75	121 109.5 149.5	1380	VIDEO IRIS	29
C10ZAME-P(C31003)*	10.5-105	1.4 - 1000	C	18.97-2.02	25.24-2.68	33.49-3.56	72 P=0.75	121 109.5 149.5	1420	VIDEO IRIS	29
C14ZME(C31009)	10-140	1.9 - 720	C	19.89-1.52	26.41-2.02	34.96-2.68	86 P=1.0	128 118.6 165	2000	VIDEO IRIS	29
C14ZME-P(C31010)*	10-140	1.9 - 720	C	19.89-1.52	26.41-2.02	34.96-2.68	86 P=1.0	128 118.6 165	2040	VIDEO IRIS	29

Manual Override option is available on the models asterisked (\*)

## 1/4 Format Manual Iris

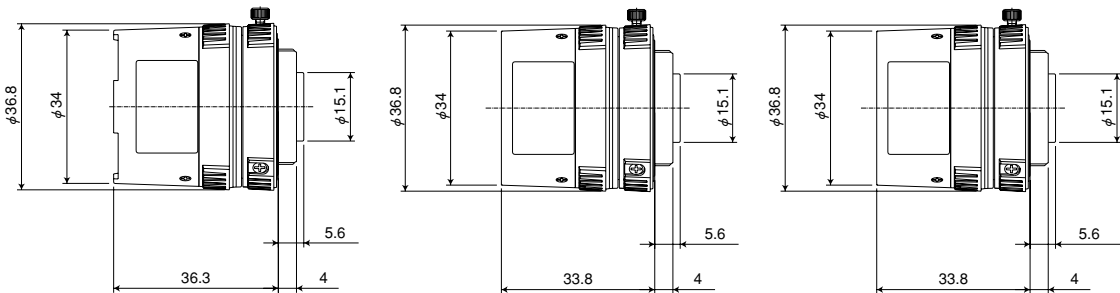
Unit: mm



	QS210 (C40206)	QS310 (C40301)	QS610 (C40601)
Format Size	1/4	1/4	1/4
Focal Length	2.2mm	3.0mm	6.0mm
Max. Aperture Ratio	1 : 1.0	1 : 1.0	1 : 1.0
Iris Range	F1.0 Close	F1.0 Close	F1.0 Close
Horizontal Angle of View (Degrees)	92.60	64.24	34.83
Min. Object Distance	0.15m	0.15m	0.2m
Back Focal Length	7.76mm	7.75mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	44g	40g	37g
Remarks			

## 1/3 Format Manual Iris

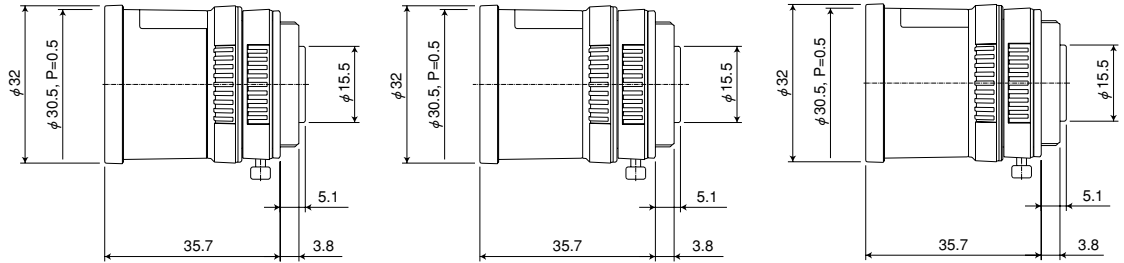
Unit: mm



	TS212A (C70214)	TS412A (C70409)	TS812A (C70807)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2	1 : 1.2
Iris Range	F1.2 Close	F1.2 Close	F1.2 Close
Horizontal Angle of View (Degrees)	71.54	49.18	25.05
Min. Object Distance	0.3m	0.2m	0.3m
Back Focal Length	7.67mm	8.01mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	44g	39g	34g
Remarks			

## 1/2 Format Manual Iris

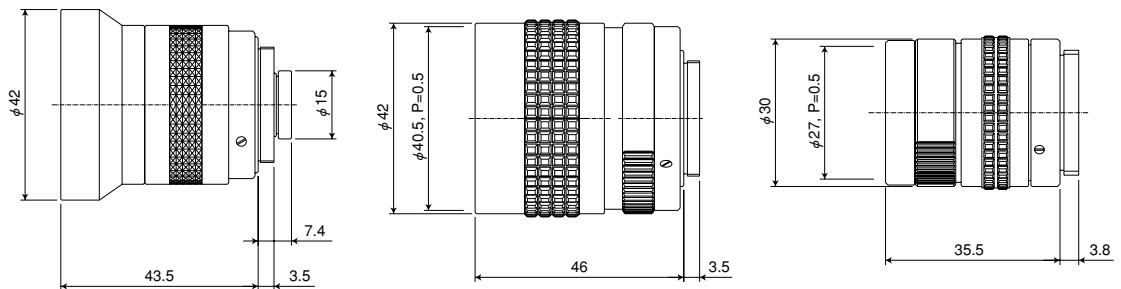
Unit: mm



	HS316A (C60305)	HS614B (C60622)	HS1214D (C61217)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 Close	F1.4 Close	F1.4 Close
Horizontal	1/4 53.54	33.86	16.55
Angle of View	1/3 71.02	44.55	22.06
(Degrees)	1/2 93.67	57.81	29.42
Min. Object Distance	0.2m	0.3m	0.8m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	30.5mm P=0.5mm	30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	34g	32g	26g
Remarks			

## 1/2 Format Manual Iris

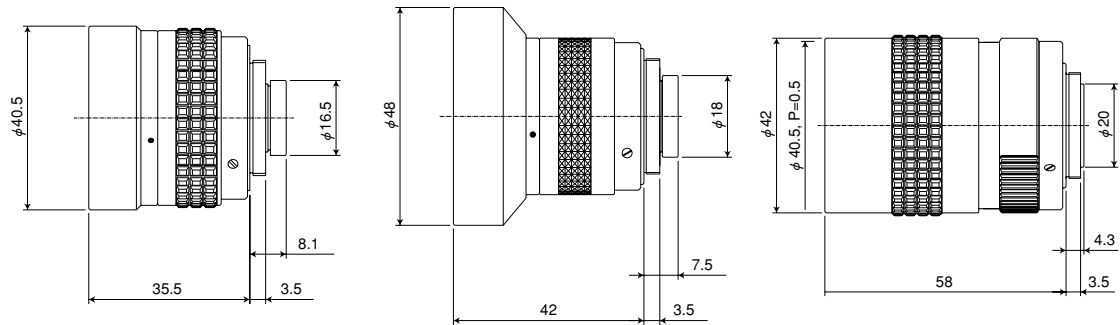
Unit: mm



	H416 (C60402)	H612A (C60607)	H1212B (C61215)
Format Size	1/2	1/2	1/2
Focal Length	4.2mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.2	1 : 1.2
Iris Range	F1.6 Close	F1.2 Close	F1.2 22
Horizontal	1/4 47.87	32.97	16.93
Angle of View	1/3 64.27	43.55	22.60
(Degrees)	1/2 86.77	56.93	30.18
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	27mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	125g	67g
Remarks		Lock Screw Extra	Lock Screw Extra

## 2/3, 1 Format Manual Iris

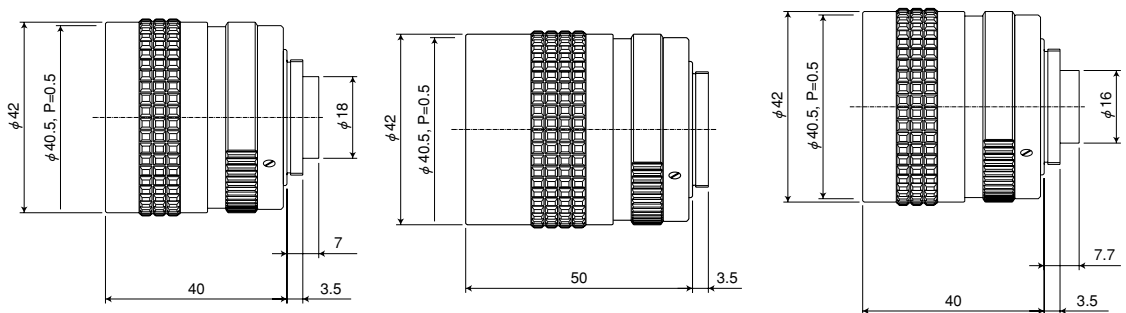
Unit: mm



	C418DX (C30405)	B618CX-2 (C20612)	C814 (C30808)
Format Size	2/3	1	2/3
Focal Length	4.8mm	6.5mm	8mm
Max. Aperture Ratio	1 : 1.8	1 : 1.8	1 : 1.4
Iris Range	F1.8 Close	F1.8 Close	F1.4 Close
Horizontal	41.68	29.94	25.15
Angle of View	55.11	39.73	33.31
(Degrees)	72.37	52.52	43.88
Min. Object Distance	0.3m	0.2m	0.2m
Back Focal Length	9.7mm	10.19mm	14.6mm
Filter size			40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	105g	120g	160g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## 2/3, 1 Format Manual Iris

Unit: mm

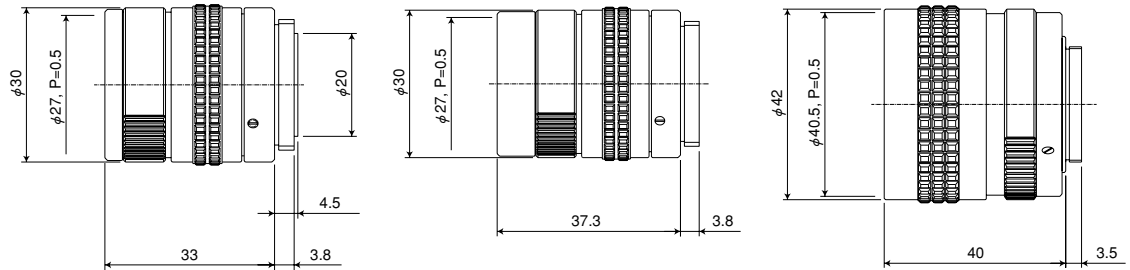


	C815B (C30811)	B1214D-2 (C21211)	B1218-2 (C21212)
Format Size	2/3	1	1
Focal Length	8.5mm	12.5mm	12.5mm
Max. Aperture Ratio	1 : 1.5	1 : 1.4	1 : 1.8
Iris Range	F1.5 Close	F1.4 Close	F1.8 Close
Horizontal	24.02	16.21	16.48
Angle of View	31.87	21.53	21.90
(Degrees)	42.09	28.51	29.01
Min. Object Distance	0.2m	0.3m	0.3m
Back Focal Length	10.9mm	14.4mm	10.1mm
Filter size	40.5mm P=0.5mm	40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	135g	95g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra



## 2/3, 1 Format Manual Iris

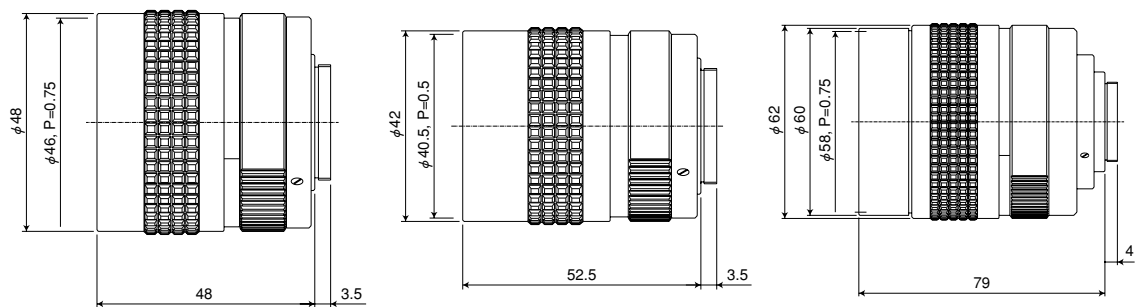
Unit: mm



	C1614A (C31630)	B2514D (C22525)	B2518 (C22516)
Format Size	2/3	1	1
Focal Length	16mm	25mm	25mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.8
Iris Range	F1.4 22	F1.4 22	F1.8 Close
Horizontal Angle of View (Degrees)	1/4 12.70 1/3 16.91 1/2 22.48	8.23 10.97 14.62	8.23 10.95 14.55
Min. Object Distance	0.3m	0.3m	0.6m
Back Focal Length	13.2mm	14.98mm	14.9mm
Filter size	27mm P=0.5mm	27mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	58g	76g	87g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## 1 Format Manual Iris

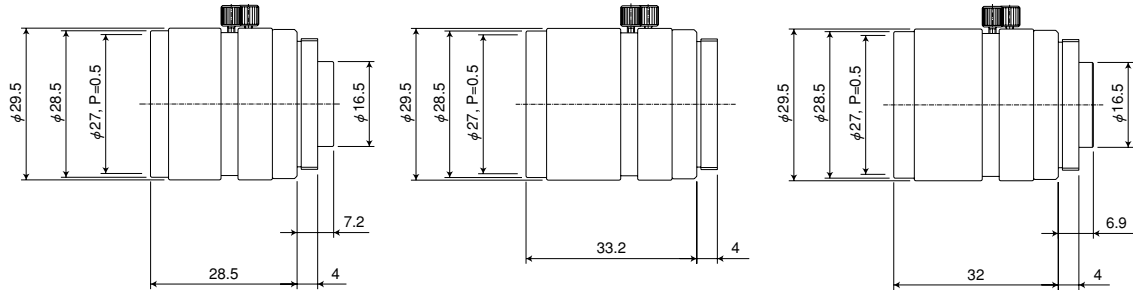
Unit: mm



	B5014A (C25011)	B5018A-3 (C25010)	B7514C (C27509)
Format Size	1	1	1
Focal Length	50mm	50mm	75mm
Max. Aperture Ratio	1 : 1.4	1 : 1.8	1 : 1.4
Iris Range	F1.4 Close	F1.8 Close	F1.4 Close
Horizontal Angle of View (Degrees)	1/4 4.13 1/3 5.50 1/2 7.32	4.13 5.50 7.32	2.75 3.67 4.90
Min. Object Distance	1m	1m	1.2m
Back Focal Length	18.1mm	31.7mm	18.5mm
Filter size	46mm P=0.75mm	40.5mm P=0.5mm	58mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	180g	130g	450g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## Manual Iris for Machine Vision

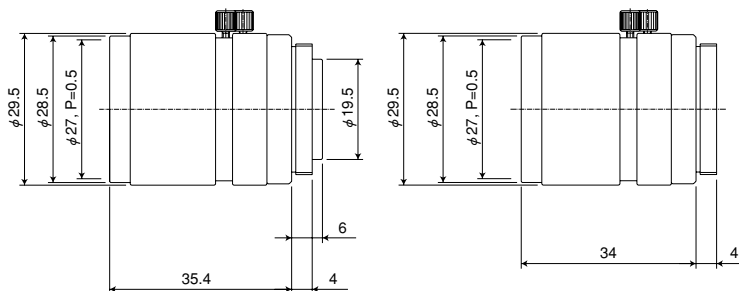
Unit: mm



	H1214-M (C61232)	C1614-M (C31634)	C2514-M (C32500)
Format Size	1/2	2/3	2/3
Focal Length	12mm	16mm	25mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.4
Iris Range	F1.4 16	F1.4 16	F1.4 16
Horizontal	1/4 16.49	1/4 12.86	1/4 8.24
Angle of View	1/3 21.88	1/3 17.11	1/3 10.97
(Degrees)	1/2 28.91	1/2 22.72	1/2 14.60
Min. Object Distance	0.25m	0.25m	0.25m
Back Focal Length	11.50mm	14.61mm	11.50mm
Filter size	27mm P=0.5mm	27mm P=0.5mm	27mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	55g	63g	55g
Remarks	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application

## Manual Iris for Machine Vision

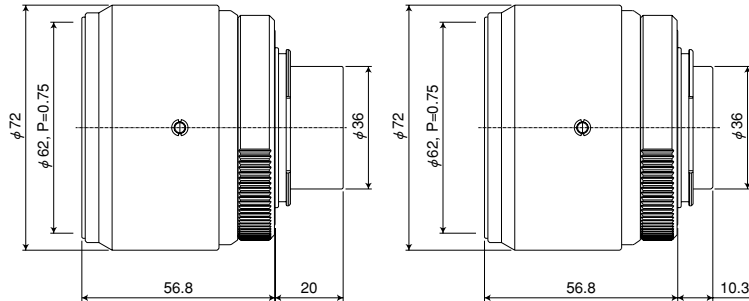
Unit: mm



	C3516-M (C33500)	C5028-M (C35001)	
Format Size	2/3	2/3	
Focal Length	35mm	50mm	
Max. Aperture Ratio	1 : 1.6	1 : 2.8	
Iris Range	F1.6 16	F2.8 22	
Horizontal	1/4 6.07	1/4 4.12	
Angle of View	1/3 8.09	1/3 5.50	
(Degrees)	1/2 10.76	1/2 7.32	
Min. Object Distance	0.4m	0.9m	
Back Focal Length	11.85mm	21.03mm	
Filter size	27mm P=0.5mm	27mm P=0.5mm	
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	64g	55g	
Remarks	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application	

## Manual Iris for Line-Scan Cameras

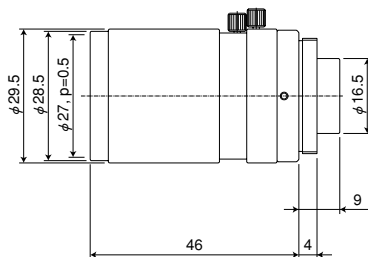
Unit: mm



	YF3528 (C52915F)	YF5028 (C52893F)	
Format Size	45mm Image Circle	45mm Image Circle	
Focal Length	35mm	50mm	
Max. Aperture Ratio	1 : 2.8	1 : 2.8	
Iris Range	F2.8 22	F2.8 22	
Horizontal Angle of View (Degrees)	64.40 (45mm Image Format)	47.60 (45mm Image Format)	
Min. Object Distance	0.19m	0.25m	
Back Focal Length	33.22mm	36.99mm	
Filter size	62mm P=0.75mm	62mm P=0.75mm	
Mount (Flange back)	F-Mount	F-Mount	
Weight	440g	440g	
Remarks	Lock Screw, Click-stop Iris For Close-Up application K-Mount: YK3528 (C52915K)	Lock Screw, Click-stop Iris For Close-Up application K-Mount: YK5028 (C52893K)	

## 1/2 Format Manual Iris for UV (Ultraviolet) Cameras

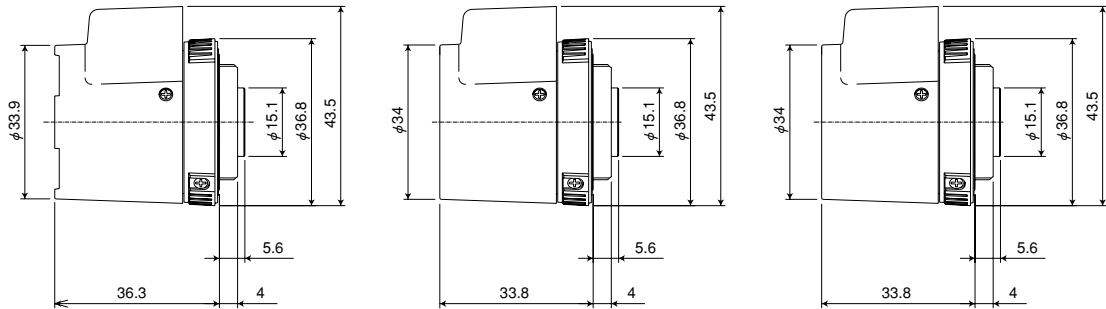
Unit: mm



	H2520-UVM (C62500)	
Format Size	1/2	
Focal Length	25mm	
Max. Aperture Ratio	1 : 2.0	
Iris Range	F2.0 16	
Horizontal Angle of View (Degrees)	8.24	
Min. Object Distance	0.25m	
Back Focal Length	12.01mm (330nm)	
Filter size	27mm P=0.5mm	
Mount (Flange back)	C (17.526mm)	
Weight	78g	
Remarks	Wave Length: 200nm more than 1,000nm (280nm 365nm for up to 2M pixels UV cameras) For Close-Up application	

## 1/4 Format Auto-Iris

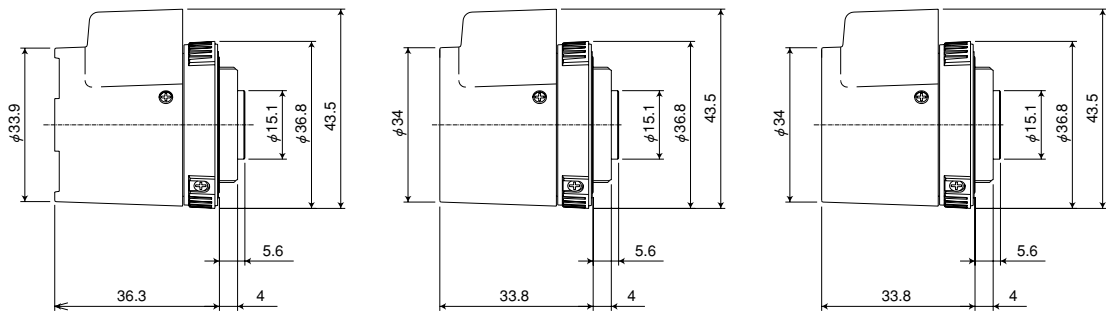
Unit: mm



	QS210E (C40202)	QS310E (C40300)	QS610E (C40600)
Format Size	1/4	1/4	1/4
Focal Length	2.2mm	3.0mm	6.0mm
Max. Aperture Ratio	1 : 1.0	1 : 1.0	1 : 1.0
Iris Range	F1.0 200	F1.0 200	F1.0 200
Horizontal Angle of View (Degrees)	1/4 92.60 1/3 1/2	64.24	34.83
Min. Object Distance	0.15m	0.15m	0.2m
Back Focal Length	7.76mm	7.75mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	54g	50g	47g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/3 Format Auto-Iris

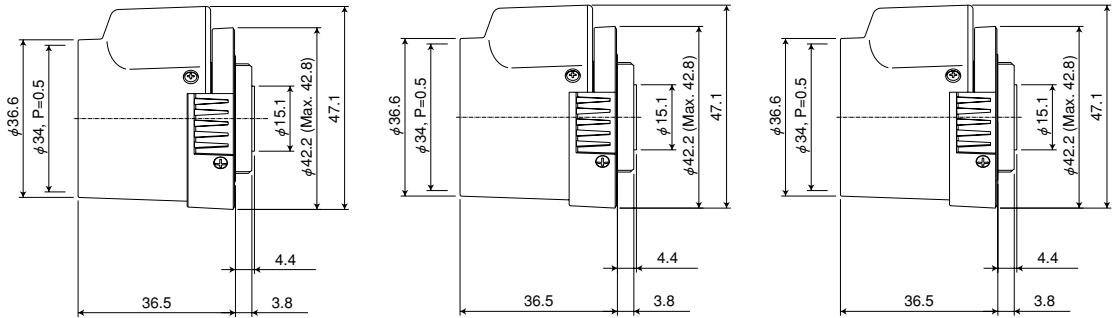
Unit: mm



	TS212E (C70210)	TS412E (C70406)	TS812E (C70804)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2	1 : 1.2
Iris Range	F1.2 200	F1.2 200	F1.2 200
Horizontal Angle of View (Degrees)	1/4 71.54 1/3 94.30 1/2	49.18 63.89	25.05 33.33
Min. Object Distance	0.3m	0.2m	0.2m
Back Focal Length	7.67mm	8.01mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	54g	49g	44g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/2 Format Auto-Iris

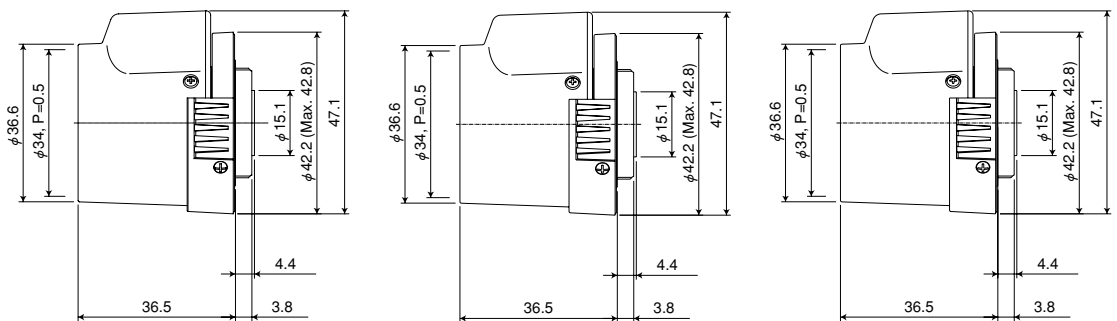
Unit: mm



	HS316TE (C60310)	HS614TE (C60631)	HS1214TE (C61228)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 90	F1.4 90	F1.4 90
Horizontal Angle of View (Degrees)	1/4 53.54 1/3 71.02 1/2 93.67	33.86 44.55 57.81	16.55 22.06 29.42
Min. Object Distance	0.2m	0.2m	0.5m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	34mm P=0.5mm	34mm P=0.5mm	34mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	57g	60g	46g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/2 Format Auto-Iris

Unit: mm

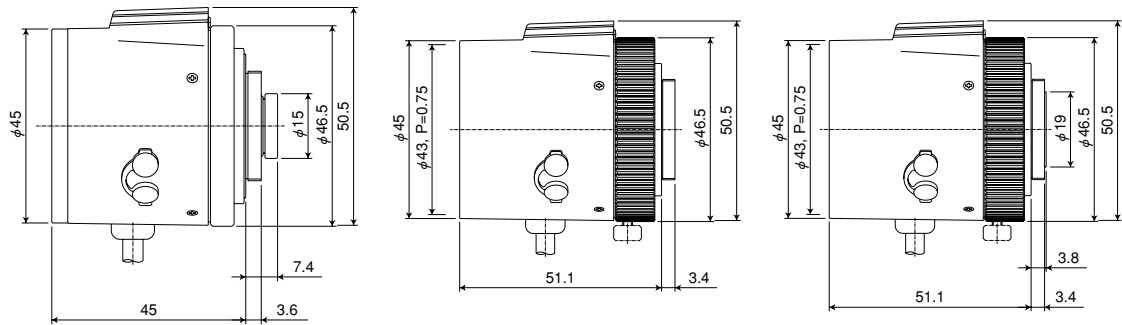


	HS316E (C60309)	HS614E (C60630)	HS1214E (C61227)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 300	F1.4 300	F1.4 300
Horizontal Angle of View (Degrees)	1/4 53.54 1/3 71.02 1/2 93.67	33.86 44.55 57.81	16.55 22.06 29.42
Min. Object Distance	0.2m	0.2m	0.5m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	34mm P=0.5mm	34mm P=0.5mm	34mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	57g	60g	46g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

Monofocal Auto-Iris Lens

## 1/2 Format Auto-Iris

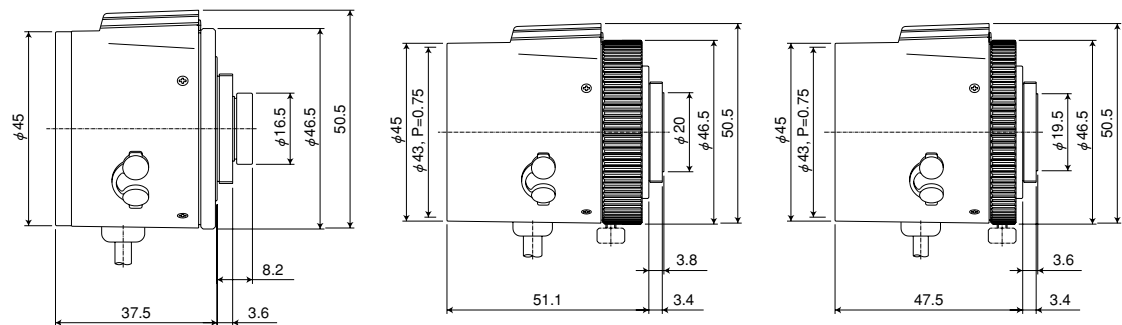
Unit: mm



	H416E (C60405)	H612E (C60625)	H1212E (C61220)
Format Size	1/2	1/2	1/2
Focal Length	4.2mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.2	1 : 1.2
Iris Range	F1.6 360	F1.2 360	F1.2 360
Horizontal	1/4 47.87	32.97	16.93
Angle of View	1/3 64.27	43.55	22.60
(Degrees)	1/2 86.77	56.93	30.18
Min. Object Distance	0.2m	0.2m	0.3m
Back Focal Length	10.4mm	14.3mm	13.9mm
Filter size		43mm P=0.75mm	43mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	135g	140g	140g
Remarks	Video & DC Iris Manual Override: H416ER (C60404)	Video & DC Iris Manual Override: H612ER (C60624)	Video & DC Iris Manual Override: H1212ER (C61219)

## 2/3, 1 Format Auto-Iris

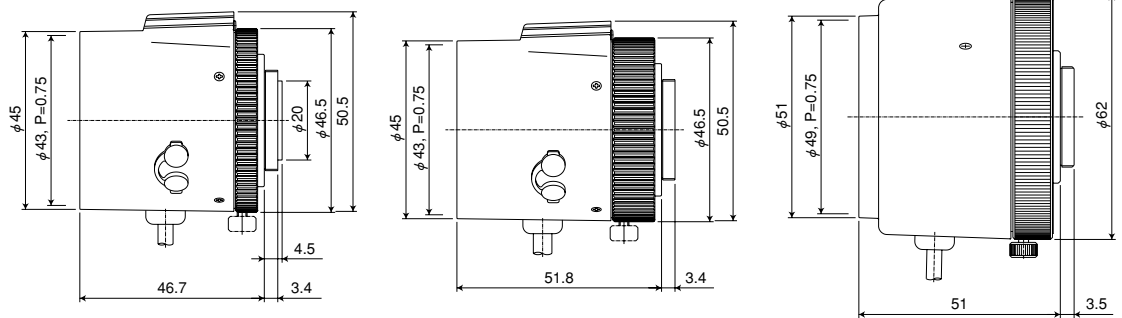
Unit: mm



	C418E (C30407)	C814E (C30821)	B1214E (C21223)
Format Size	2/3	2/3	1
Focal Length	4.8mm	8mm	12.5mm
Max. Aperture Ratio	1 : 1.8	1 : 1.4	1 : 1.4
Iris Range	F1.8 360	F1.4 360	F1.4 360
Horizontal	1/4 41.27	25.10	16.22
Angle of View	1/3 54.57	33.22	21.55
(Degrees)	1/2 71.65	43.67	28.54
Min. Object Distance	0.3m	0.2m	0.3m
Back Focal Length	9.71mm	14.5mm	14.4mm
Filter size		43mm P=0.75mm	43mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	140g	140g
Remarks	Video & DC Iris Manual Override: C418ER (C30406)	Video & DC Iris Manual Override: C814ER (C30820)	Video & DC Iris Manual Override: B1214ER (C21221) F1.4-2000: B1214E-2000 (C21224)

## 2/3, 1 Format Auto-Iris

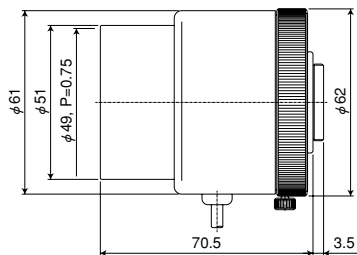
Unit: mm



	C1614E (C31632)	B2514E (C22527)	B5018E (C25018)
Format Size	2/3	1	1
Focal Length	16mm	25mm	50mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.8
Iris Range	F1.4 360	F1.4 360	F1.8 360
Horizontal	1/4	12.72	8.23
Angle of View	1/3	16.92	10.97
(Degrees)	1/2	22.50	14.62
Min. Object Distance	0.5m	0.9m	1m
Back Focal Length	13.2mm	14.98mm	31.7mm
Filter size	43mm P=0.75mm	43mm P=0.75mm	49mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	110g	140g	230g
Remarks	Video & DC Iris Manual Override: C1614ER (C31631)	Video & DC Iris Manual Override: B2514ER (C22526) F1.4-2000: B2514E-2000 (C22528)	Video & DC Iris Manual Override: B5018ER (C25017) F1.8-1000: B5018E-1000 (C25019)

## 1 Format Auto-Iris

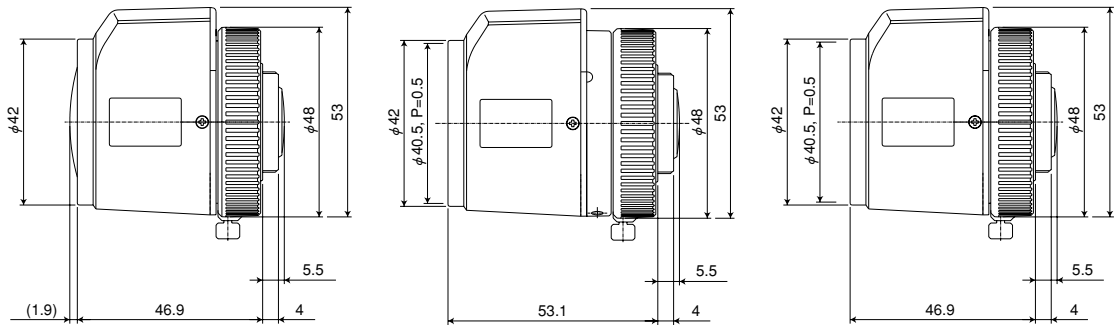
Unit: mm



	B7518E (C27513)		
Format Size	1		
Focal Length	75mm		
Max. Aperture Ratio	1 : 1.8		
Iris Range	F1.8 360		
Horizontal	1/4	2.76	
Angle of View	1/3	3.67	
(Degrees)	1/2	4.90	
Min. Object Distance	2.5m		
Back Focal Length	28.3mm		
Filter size	49mm P=0.75mm		
Mount (Flange back)	C (17.526mm)		
Weight	300g		
Remarks	Video & DC Iris F1.8-1000: B7518E-1000 (C27514)		

## 1/3 Format Ultra-High Speed Auto-Iris

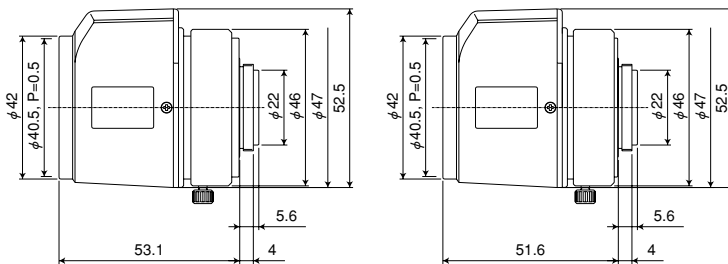
Unit: mm



	TS209E-ASP (C70204)	TS407E-ASP (C70405)	TS807E-ASP (C70803)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 0.95	1 : 0.75	1 : 0.75
Iris Range	F0.95 180	F0.75 180	F0.75 180
Horizontal Angle of View (Degrees)	1/4 72.69 1/3 98.24 1/2	48.39 62.55	25.07 33.31
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	7.51mm	7.51mm	7.98mm
Filter size		40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	140g	145g	135g
Remarks	DC Iris	DC Iris	DC Iris

## 1/1.8 Format Mega-Pixel Auto-Iris

Unit: mm

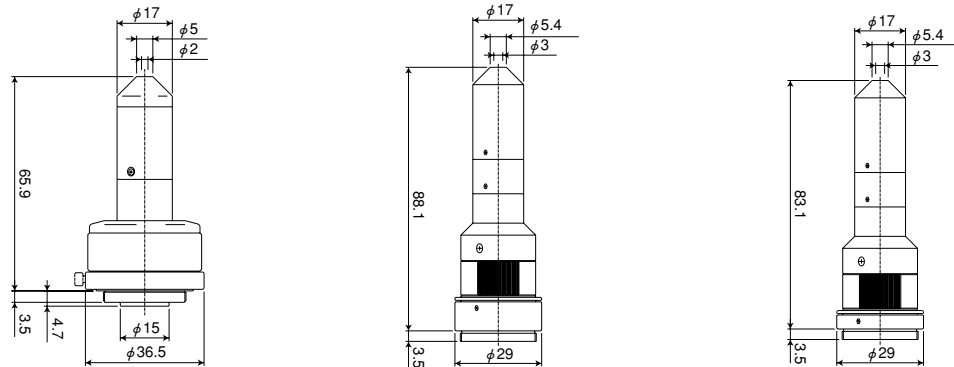


	H612E-M (C60632)	H912E-M (C60900)
Format Size	1/1.8	1/1.8
Focal Length	6mm	9mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2
Iris Range	F1.2 200	F1.2 200
Horizontal Angle of View (Degrees)	1/3 44.23 1/2 58.70 1/1.8 65.40	29.65 39.38 43.90
Min. Object Distance	0.12m	0.2m
Back Focal Length	12.13mm	12.22mm
Filter size	40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)
Weight	170g	160g
Remarks	Video & DC Iris Up to 3M pixels cameras	Video & DC Iris Up to 3M pixels cameras



## 1/3, 1/2 Format Manual Iris Pinhole

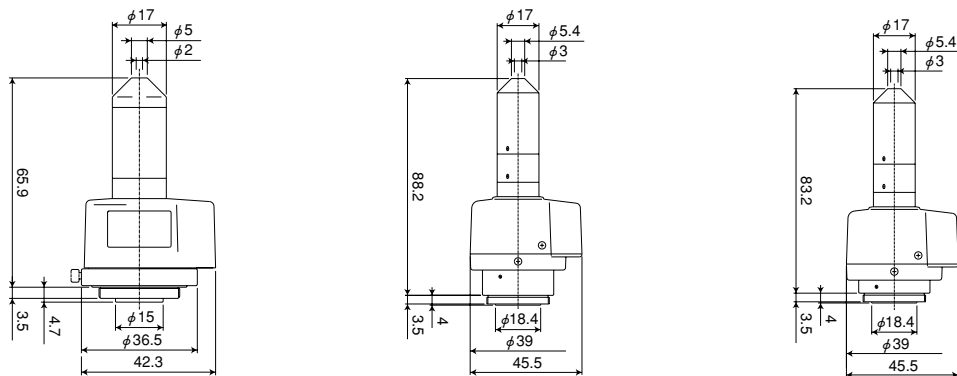
Unit: mm



	TS420P (C70404)	HS620P (C60613)	H620P (C60612)
Format Size	1/3	1/2	1/2
Focal Length	4mm	6.2mm	6.2mm
Max. Aperture Ratio	1 : 2.0	1 : 2.0	1 : 2.0
Iris Range	F2.0 Close	F2.0 Close	F2.0 Close
Horizontal 1/4	51.24	32.44	32.44
Angle of View 1/3 (Degrees)	68.47	42.82	42.82
Angle of View 1/2 (Degrees)		56.12	56.12
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	8.55mm	14.23mm	14.23mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	C (17.526mm)
Weight	74g	67g	63g
Remarks	Straight pinhole	Straight pinhole	Straight pinhole

## 1/3, 1/2 Format Auto-Iris Pinhole

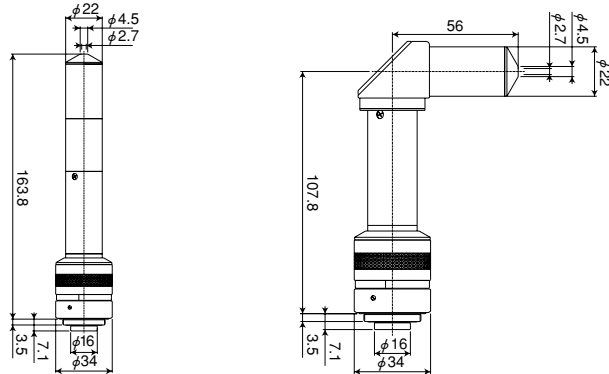
Unit: mm



	TS420PE (C70403)	HS620PE (C60627)	H620PE (C60626)
Format Size	1/3	1/2	1/2
Focal Length	4mm	6.2mm	6.2mm
Max. Aperture Ratio	1 : 2.0	1 : 2.0	1 : 2.0
Iris Range	F2.0 64	F2.0 300	F2.0 300
Horizontal 1/4	51.24	32.44	32.44
Angle of View 1/3 (Degrees)	68.47	42.82	42.82
Angle of View 1/2 (Degrees)		56.12	56.12
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	8.55mm	14.23mm	14.23mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	C (17.526mm)
Weight	79g	105g	100g
Remarks	DC Iris Straight pinhole	Video & DC Iris Straight pinhole	Video & DC Iris Straight pinhole

## 2/3 Format Manual Iris Pinhole

Unit: mm

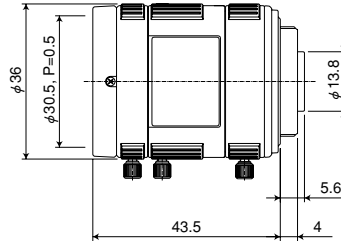


	C934P (C30900)	C934PL (C30901)	
Format Size	2/3	2/3	
Focal Length	9mm	9mm	
Max. Aperture Ratio	1 : 3.4	1 : 3.4	
Iris Range	F3.4 22	F3.4 22	
Horizontal 1/4	22.30	22.30	
Angle of View 1/3 (Degrees)	29.60	29.60	
1/2	39.11	39.11	
Min. Object Distance	0.3m	0.3m	
Back Focal Length	11.8mm	11.8mm	
Filter size			
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	175g	210g	
Remarks	Streight Pinhole	Right Angle Pinhole	

## 1/4 Format Manual Iris Vari-Focal

Unit: mm

Coming Soon

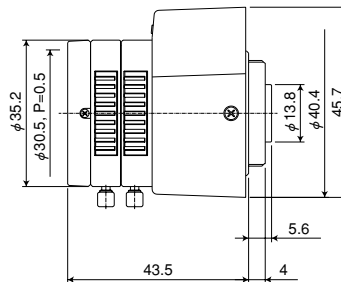


	QS2V2212	QS2V2812 (C40207)	
Format Size	1/4	1/4	
Focal Length	2.2 4.5mm	2.8 5.8mm	
Max. Aperture Ratio	1 : 1.2	1 : 1.2	
Iris Range	F1.2 Close	F1.2 Close	
Horizontal Angle of View (Degrees)	1/4 1/3 1/2	94.48 51.88	76.22 36.40
Min. Object Distance		0.3m	
Back Focal Length		Min. 7.50mm	
Filter size		30.5mm P=0.5mm	
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	
Weight		45g	
Remarks			

## 1/4 Format Auto-Iris Vari-Focal

Unit: mm

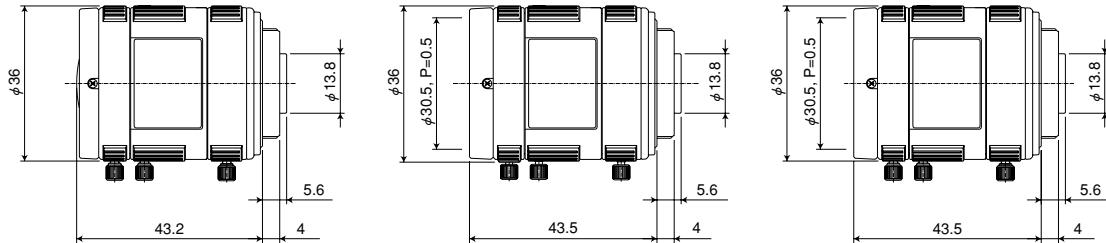
Coming Soon



	QS2V2212E	QS2V2812E (C40205)	
Format Size	1/4	1/4	
Focal Length	2.2 4.5mm	2.8 5.8mm	
Max. Aperture Ratio	1 : 1.2	1 : 1.2	
Iris Range	F1.2 200	F1.2 200	
Horizontal Angle of View (Degrees)	1/4 1/3 1/2	94.48 51.88	76.22 36.40
Min. Object Distance		0.3m	
Back Focal Length		Min. 7.50mm	
Filter size		30.5mm P=0.5mm	
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	
Weight		57g	
Remarks		Video & DC Iris	

## 1/3 Format Manual Iris Vari-Focal

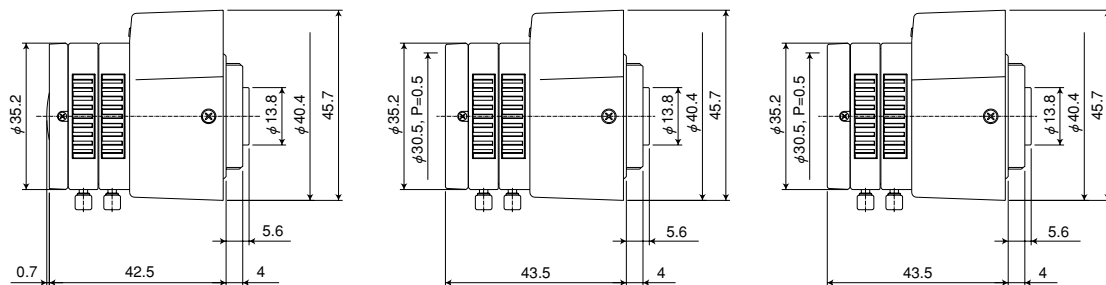
Unit: mm



	TS2V214 (C70213)	TS2V314B (C70313)	TS2V616 (C70612)
Format Size	1/3	1/3	1/3
Focal Length	2.8 6mm	3.5 8mm	6 12mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.6
Iris Range	F1.4 Close	F1.4 Close	F1.6 Close
Horizontal	1/4 72.46 35.15	58.74 26.55	34.92 17.21
Angle of View	1/3 96.94 46.76	79.83 35.44	47.22 22.97
(Degrees)	1/2		
Min. Object Distance	0.3m	0.35m	1.0m
Back Focal Length	Min. 7.54mm	Min. 7.65mm	Min. 7.79mm
Filter size		30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	47g	43g	43g
Remarks		Day & Night optics	

## 1/3 Format Auto-Iris Vari-Focal

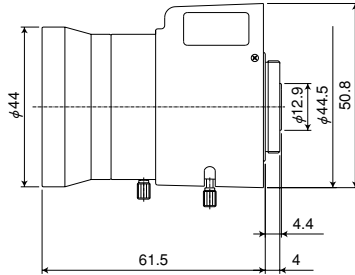
Unit: mm



	TS2V214AE (C70220)	TS2V314BE (C70312)	TS2V616AE (C70622)
Format Size	1/3	1/3	1/3
Focal Length	2.8 6mm	3.5 8mm	6 12mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.6
Iris Range	F1.4 300	F1.4 300	F1.6 300
Horizontal	1/4 72.26 35.35	58.74 26.55	34.98 17.23
Angle of View	1/3 96.70 47.04	79.83 35.44	47.37 23.01
(Degrees)	1/2		
Min. Object Distance	0.3m	0.35m	1.0m
Back Focal Length	Min. 7.54mm	Min. 7.65mm	Min. 7.79mm
Filter size		30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	59g	59g	53g
Remarks	Video Iris DC-Iris: TS2V214AED Day & Night optics	Video Iris DC-Iris: TS2V314BED Day & Night optics	Video Iris DC-Iris: TS2V616AED Day & Night optics

## 1/3 Format Auto-Iris Vari-Focal

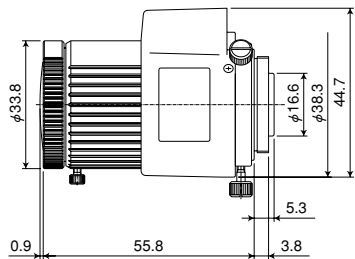
Unit: mm



		TS10V518E (C70508)		
Format Size		1/3		
Focal Length		5 50mm		
Max. Aperture Ratio		1 : 1.8		
Iris Range		F1.8 360		
Horizontal	1/4	37.80	4.14	
Angle of View	1/3	50.00	5.52	
(Degrees)	1/2			
Min. Object Distance		0.6m		
Back Focal Length		Min. 7.6mm		
Filter size				
Mount (Flange back)		CS (12.5mm)		
Weight		140g		
Remarks		DC Iris		

## 1/3 Format Auto-Iris Fish-Eye Vari-Focal

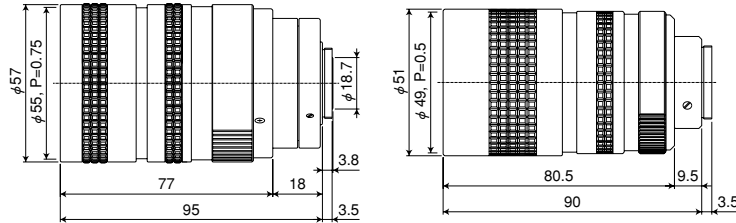
Unit: mm



		TS2V114E (C70100)		
Format Size		1/3		
Focal Length		1.6 3.4mm		
Max. Aperture Ratio		1 : 1.4		
Iris Range		F1.4 64		
Horizontal	1/4	180	64.89	
Angle of View	1/3	180	89.55	
(Degrees)	1/2			
Min. Object Distance		0.5m		
Back Focal Length		8.07mm		
Filter size				
Mount (Flange back)		CS (12.5mm)		
Weight		140g		
Remarks		DC Iris Fish-Eye lens		

## 1/2, 2/3 Format Manual Zoom

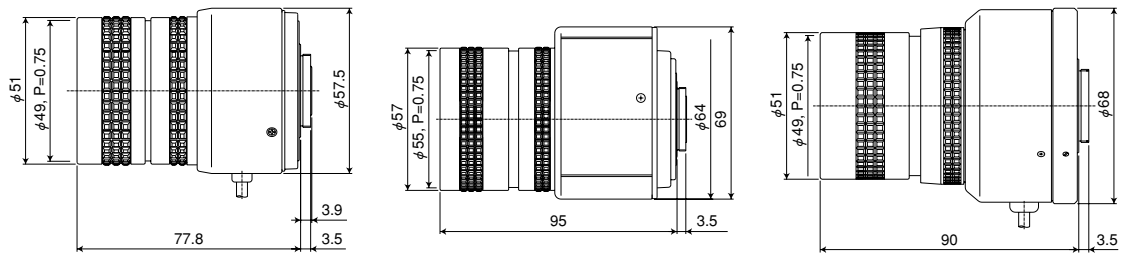
Unit: mm



	H6Z810 (C60812)	C6Z1218 (C31204)	
Format Size	1/2	2/3	
Focal Length	8 48mm	12.5 75mm	
Max. Aperture Ratio	1 : 1.0 1.2	1 : 1.8	
Iris Range	F1.0 22	F1.8 22	
Horizontal	1/4 24.92 4.42	16.08 2.75	
Angle of View	1/3 32.99 5.86	21.40 3.66	
(Degrees)	1/2 43.26 7.73	28.44 4.87	
Min. Object Distance	1.2m	1.0m	
Back Focal Length	13.65mm	18.41mm	
Filter size	55mm P=0.75mm	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	430g	320g	
Remarks	Lock Screws Extra	Lock Screws Extra Click-stop Iris	

## 1/3, 1/2, 2/3 Format Manual Zoom (Auto-Iris)

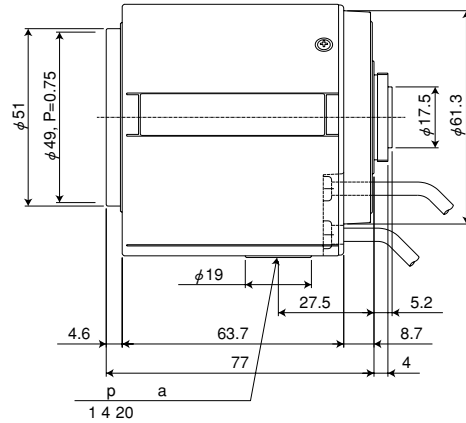
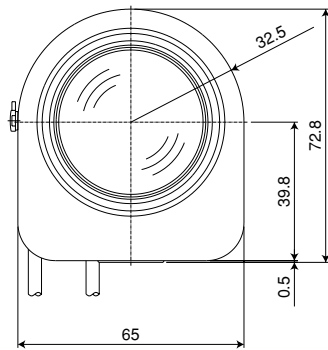
Unit: mm



	TS6ZE (C70605)	H6ZBE (C60811)	C6ZE (C31219)
Format Size	1/3	1/2	2/3
Focal Length	6.3 38mm	8 48mm	12.5 75mm
Max. Aperture Ratio	1 : 1.2	1 : 1.0 1.2	1 : 1.8
Iris Range	F1.2 512	F1.0 720	F1.8 720
Horizontal	1/4 31.26 5.59	24.92 4.42	16.06 2.75
Angle of View	1/3 41.12 7.43	32.98 5.86	21.38 3.66
(Degrees)	1/2 43.24 7.73	28.41 4.87	
Min. Object Distance	1.8m	1.2m	1.0m
Back Focal Length	9.23mm	13.65mm	18.41mm
Filter size	49mm P=0.75mm	55mm P=0.75mm	49mm P=0.75mm
Mount (Flange back)	CS (12.5mm)	C (17.526mm)	C (17.526mm)
Weight	320g	465g	385g
Remarks	Video & DC Iris Lock Screws Extra	Video & DC Iris Lock Screws Extra	Video & DC Iris Lock Screws Extra

## 1/4 Format 6x Motorized Zoom

Unit: mm



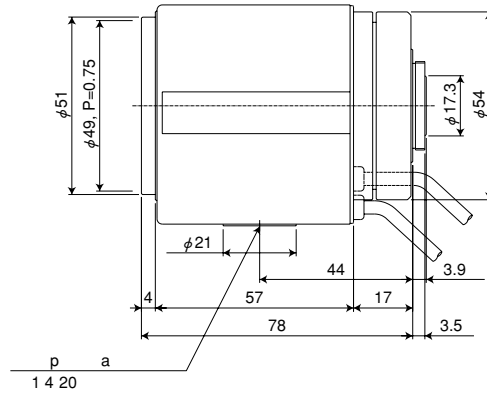
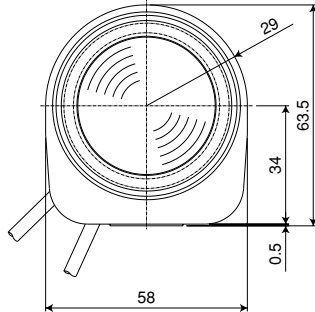
### Basic Specification

Format Size	1/4
Focal Length	4.6 28mm
Max. Aperture Ratio	1 : 1.0
Iris Range	F1.0 250
Horizontal Angle of View (Degrees)	1/4 41.64 7.50
Vertical Angle of View (Degrees)	1/3 1/2
Min. Object Distance	1.5m
Back Focal Length	7.89mm
Filter size	49mm P=0.75mm
Mount (Flange back)	CS (12.5mm)

	QS6ZME (C40400)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 4.0 sec	
Weight	430g	
Remarks		

## 1/3 Format 6x Motorized Zoom

Unit: mm



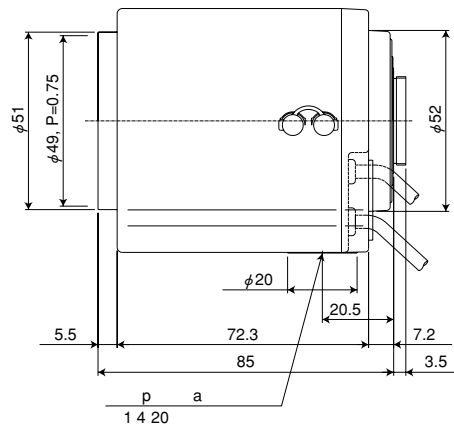
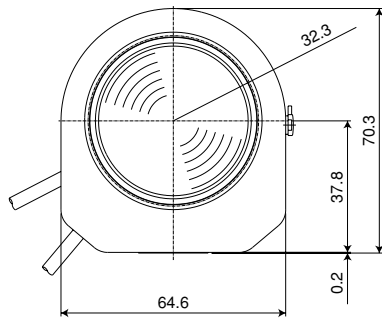
### Basic Specification

Format Size	1/3	
Focal Length	6.3	38mm
Max. Aperture Ratio	1 : 1.2	
Iris Range	F1.2	360
Horizontal Angle of View (Degrees)	1/4	31.26 5.59
Vertical Angle of View (Degrees)	1/3	41.12 7.43
Min. Object Distance	1.8m	
Back Focal Length	9.23mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS6ZME (C70600)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 5.0 sec	
Weight	410g	
Remarks		

## 1/3 Format 10x Motorized Zoom

Unit: mm



### Basic Specification

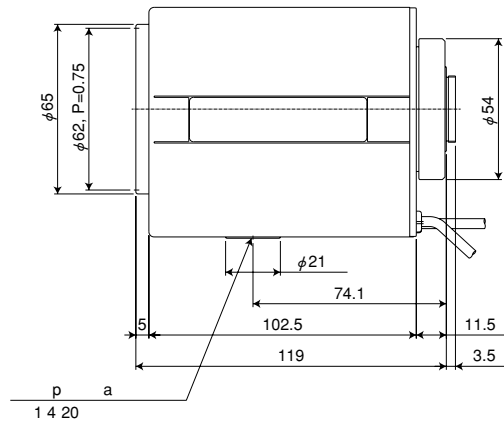
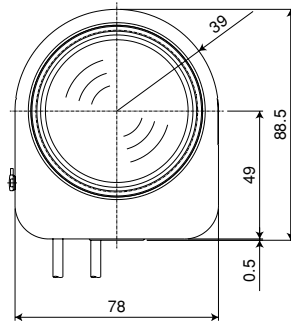
Format Size	1/3	
Focal Length	5.8	58mm
Max. Aperture Ratio	1 : 1.2 1.7	
Iris Range	F1.2	360
Horizontal Angle of View (Degrees)	1/4	33.77 3.62
Vertical Angle of View (Degrees)	1/3	44.07 4.78
Min. Object Distance	1.8m	
Back Focal Length	8.99mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS10ZME (C70500)	TS10ZME-P (C70501)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec
Zoom	Motorized Approx. 6.5 sec	Motorized with Pre-Set Approx. 6.5 sec
Weight	380g	430g
Remarks		Manual Override (only Video Iris) TS10ZME-F (C70506)



## 1/3 Format 15x Motorized Zoom

Unit: mm



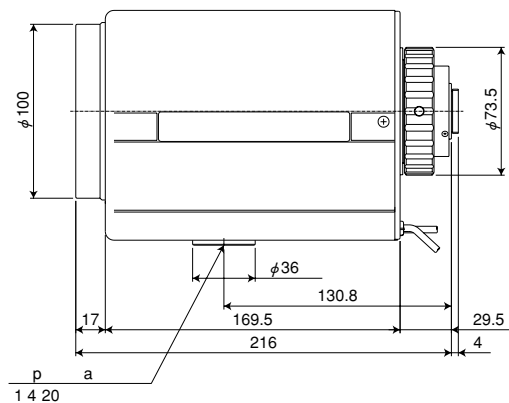
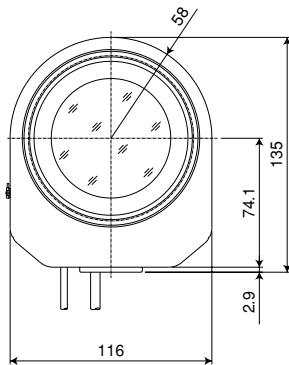
### Basic Specification

Format Size	1/3	
Focal Length	6.0 90mm	
Max. Aperture Ratio	1 : 1.2 1.8	
Iris Range	F1.2 430	
Horizontal Angle of View (Degrees)	1/4	32.96 2.33
Vertical Angle of View (Degrees)	1/3	43.48 3.08
Min. Object Distance	1.5m	
Back Focal Length	10.7mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS15ZAME (C70624)	TS15ZAME-P (C70627)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	760g	770g
Remarks		Manual Override (only Video Iris) TS15ZAME-F (C70625)

## 1/3 Format 20x Motorized Zoom

Unit: mm



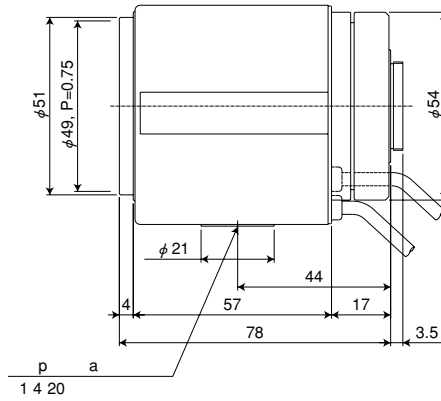
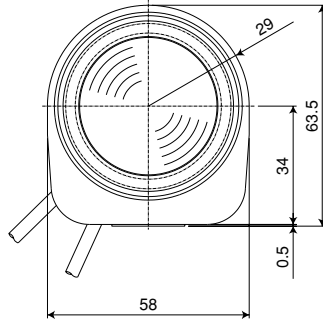
### Basic Specification

Format Size	1/3	
Focal Length	9 180mm	
Max. Aperture Ratio	1 : 1.2 2.1	
Iris Range	F1.2 510	
Horizontal Angle of View (Degrees)	1/4	22.61 1.15
Vertical Angle of View (Degrees)	1/3	30.28 1.53
Min. Object Distance	2.2m	
Back Focal Length	14.25mm	
Filter size	95mm P=1.0mm	
Mount (Flange back)	CS (12.5mm)	

	TS20ZME (C70900)	TS20ZME-P (C70903)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Zoom	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Weight	2590g	2620g
Remarks		Manual Override TS20ZME-F (C70901)

## 1/2 Format 6x Motorized Zoom

Unit: mm



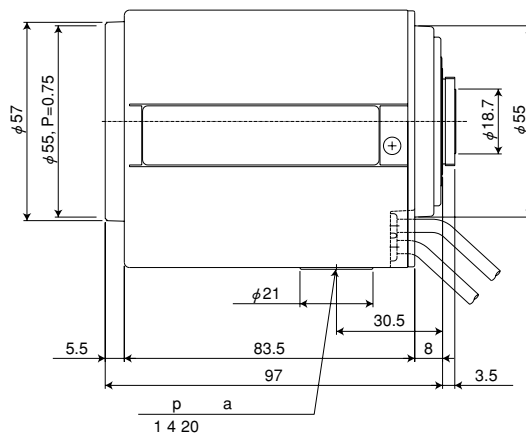
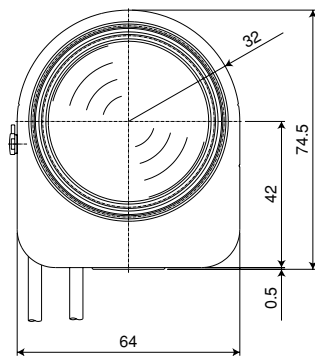
### Basic Specification

Format Size	1/2	
Focal Length	8.0 48mm	
Max. Aperture Ratio	1 : 1.4	
Iris Range	F1.4 360	
Horizontal Angle of View (Degrees)	1/4	24.81 4.39
	1/3	32.78 5.82
	1/2	42.88 7.69
Min. Object Distance	1.8m	
Back Focal Length	11.6mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	HS6ZME (C60806)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.0 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 5.0 sec	
Weight	400g	
Remarks		

## 1/2 Format 6x Motorized Zoom

Unit: mm



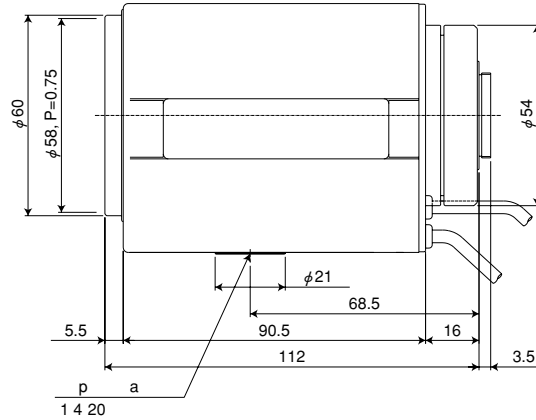
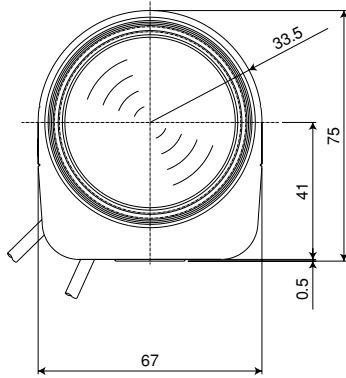
### Basic Specification

Format Size	1/2	
Focal Length	8 48mm	
Max. Aperture Ratio	1 : 1.0 1.2	
Iris Range	F1.0 720	
Horizontal Angle of View (Degrees)	1/4	24.92 4.42
	1/3	32.98 5.86
	1/2	43.24 7.73
Min. Object Distance	1.2m	
Back Focal Length	13.65mm	
Filter size	55mm P=0.75mm	
Mount (Flange back)	C (17.256mm)	

	H6ZBME (C60809)	H6ZBME-P (C60810)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	530g	540g
Remarks		Manual Override (only Video Iris) H6ZBME-F (C60813)

## 1/2 Format 10x Motorized Zoom

Unit: mm



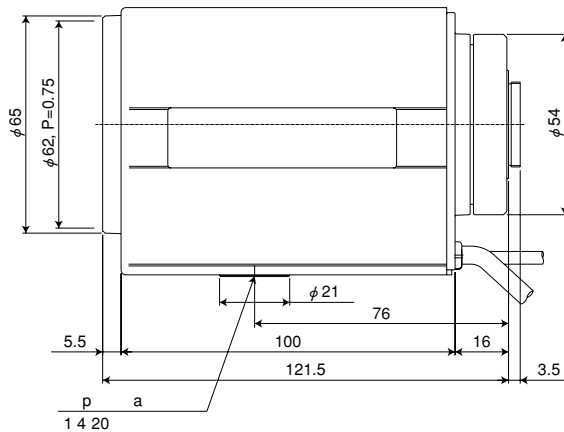
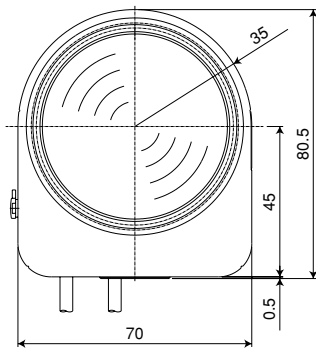
### Basic Specification

Format Size	1/2	
Focal Length	7.5 75mm	
Max. Aperture Ratio	1 : 1.4 1.5	
Iris Range	F1.4 360	
Horizontal Angle of View (Degrees)	1/4	26.15 2.83
	1/3	34.52 3.75
	1/2	45.05 4.95
Min. Object Distance	1.8m	
Back Focal Length	10.75mm	
Filter size	58.0mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	HS10ZME (C60700)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 6.5 sec *	
Zoom	Motorized Approx. 5.5 sec **	
Weight	580g	
Remarks	* 6.0 sec for Type 2 ** 5.0 sec for Type 2	

## 1/2 Format 10x Motorized Zoom

Unit: mm



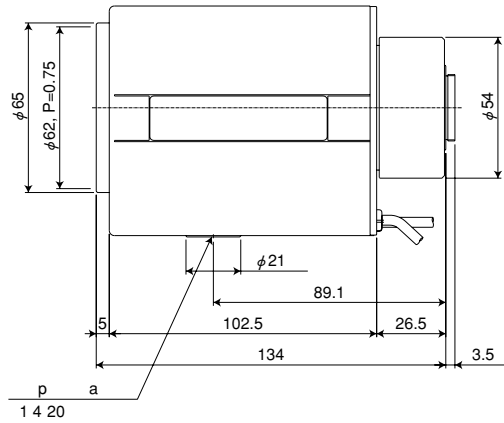
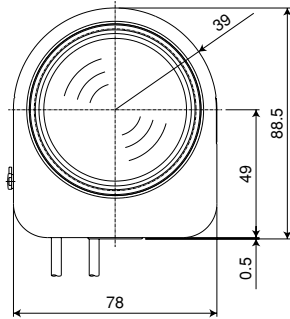
### Basic Specification

Format Size	1/2	
Focal Length	7.5 75mm	
Max. Aperture Ratio	1 : 1.2 1.5	
Iris Range	F1.2 512	
Horizontal Angle of View (Degrees)	1/4	26.45 2.84
	1/3	34.94 3.77
	1/2	45.63 4.99
Min. Object Distance	1.8m	
Back Focal Length	14.52mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	H10ZME (C60701)	H10ZME-P (C60702)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 5.5 sec *	Motorized with Pre-Set Approx. 5.5 sec *
Zoom	Motorized Approx. 5.5 sec *	Motorized with Pre-Set Approx. 5.5 sec *
Weight	715g	740g
Remarks	* 6.0 sec for Type 1&3	Manual Override (only Video Iris) H10ZME-F (C60704) * 6.0 sec for Type 1&3

## 1/2 Format 15x Motorized Zoom

Unit: mm



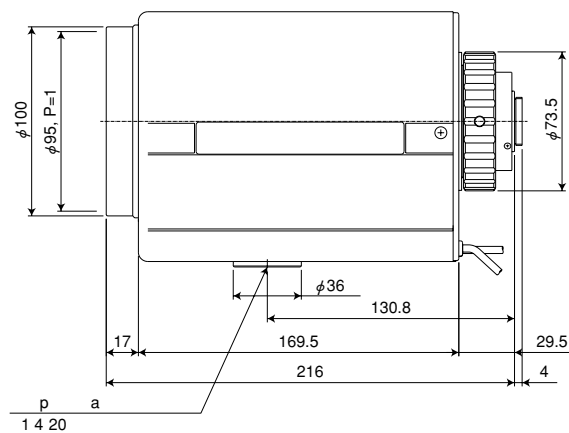
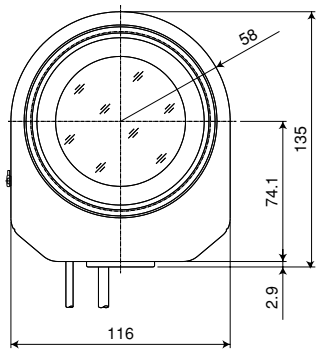
### Basic Specification

Format Size	1/2	
Focal Length	8 120mm	
Max. Aperture Ratio	1 : 1.6 2.4	
Iris Range	F1.6 1000	
Horizontal	1/4	24.76 1.76
Angle of View (Degrees)	1/3	32.85 2.34
	1/2	43.37 3.09
Min. Object Distance	1.5m	
Back Focal Length	14.05mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	H15ZAME (C60826)	H15ZAME-P (C60829)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec *
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	800g	810g
Remarks		Manual Overrided (only Video Iris) H15ZAME-F (C60827) * 6.0 sec for Type 1&3

## 1/2 Format 20x Motorized Zoom

Unit: mm



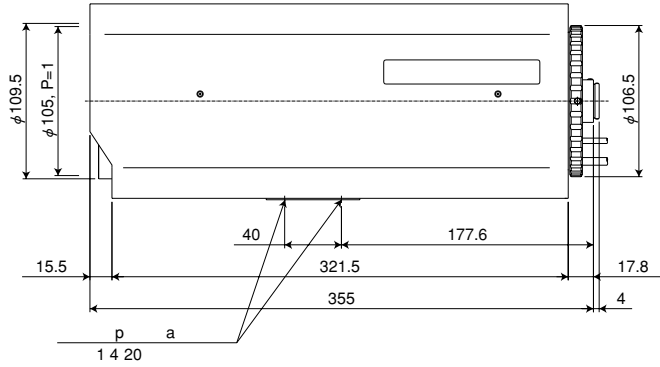
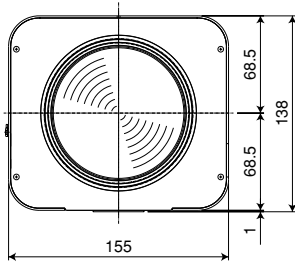
### Basic Specification

Format Size	1/2	
Focal Length	12 240mm	
Max. Aperture Ratio	1 : 1.6 2.8	
Iris Range	F1.6 720	
Horizontal	1/4	17.17 0.88
Angle of View (Degrees)	1/3	22.95 1.17
	1/2	30.78 1.56
Min. Object Distance	2.8m	
Back Focal Length	19.82mm	
Filter size	95mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

	H20ZME (C61221)	H20ZME-P (C61224)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Zoom	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Weight	2590g	2620g
Remarks		Manual Override H20ZME-F (C61222)

## 1/2 Format 55x (110x) Motorized Zoom

Unit: mm



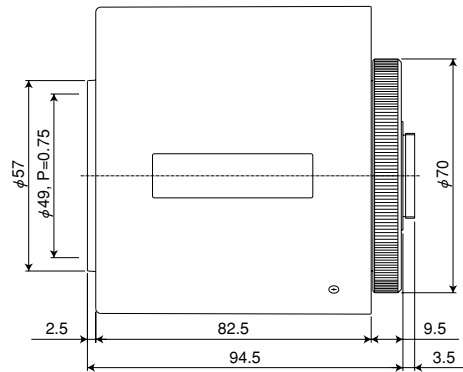
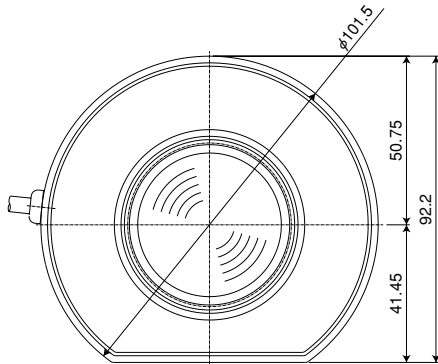
### Basic Specification

Format Size	1/2	
Focal Length	12 660mm (24 1320mm)	
Max. Aperture Ratio	1 : 4.0 14.4	
Iris Range	F4.0 360	
Horizontal	1/4	17.17 0.31 (8.53 0.16)
Angle of View (Degrees)	1/3	23.18 0.42 (11.40 0.21)
	1/2	31.65 0.56 (15.27 0.28)
Min. Object Distance	5m	
Back Focal Length	8.99mm	
Filter size	105mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

H55ZME-F (C61233)		
Iris	Auto-Iris with Manual Override Approx. 1.5 sec (Video Iris)	
Focus	Motorized with Pre-Set Approx. 4.5 sec	
Zoom	Motorized with Pre-Set Approx. 4.5 sec	
Extender	Motorized Approx. 1.5 sec	
Weight	5400g	
Remarks	Built-In 2x Extender	

## 2/3 Format 6x Motorized Zoom (Motorized Iris)

Unit: mm



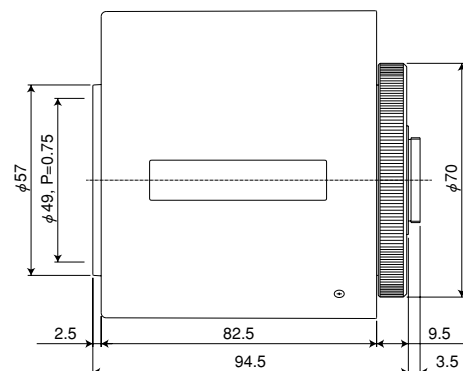
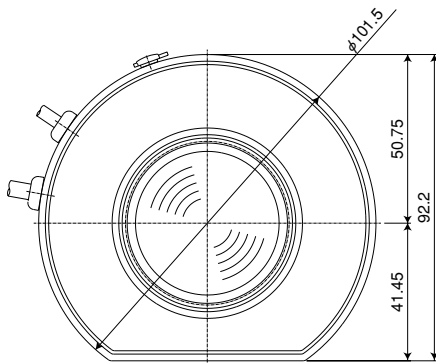
### Basic Specification

Format Size	2/3	
Focal Length	12.5 75mm	
Max. Aperture Ratio	1 : 1.8	
Iris Range	F1.8 Close	
Horizontal Angle of View (Degrees)	1/4	16.06 2.75
	1/3	21.40 3.66
	1/2	28.44 4.87
Min. Object Distance	1m	
Back Focal Length	18.41mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C6Z1218M3 (C31211)	
Iris	Motorized Approx. 4.0 sec	
Focus	Motorized Approx. 5.0 sec *	
Zoom	Motorized Approx. 5.0 sec *	
Weight	820g	
Remarks	* 5.5 sec for Type 1 & 3	

## 2/3 Format 6x Motorized Zoom

Unit: mm



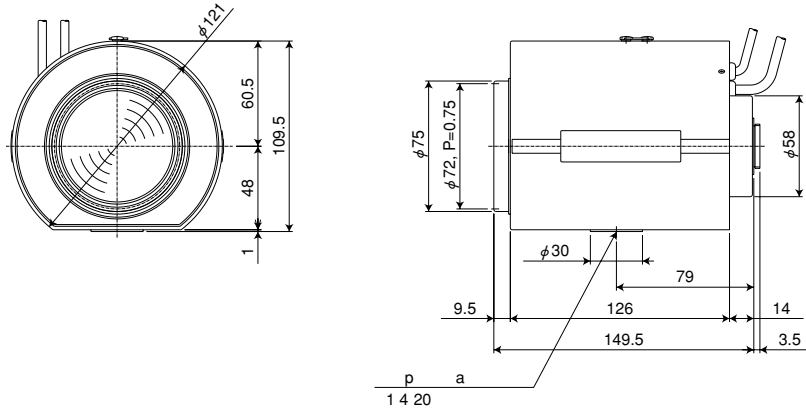
### Basic Specification

Format Size	2/3	
Focal Length	12.5 75mm	
Max. Aperture Ratio	1 : 1.8	
Iris Range	F1.8 720	
Horizontal Angle of View (Degrees)	1/4	16.06 2.75
	1/3	21.38 3.66
	1/2	28.41 4.87
Min. Object Distance	1m	
Back Focal Length	18.41mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C6ZAME (C31220)	C6ZME-P (C31221)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 5.0 sec *	Motorized with Pre-Set Approx. 5.0 sec *
Zoom	Motorized Approx. 5.0 sec *	Motorized with Pre-Set Approx. 5.0 sec *
Weight	620g	655g
Remarks	* 5.5 sec for Type 1 & 3	

## 2/3 Format 10x Motorized Zoom

Unit: mm



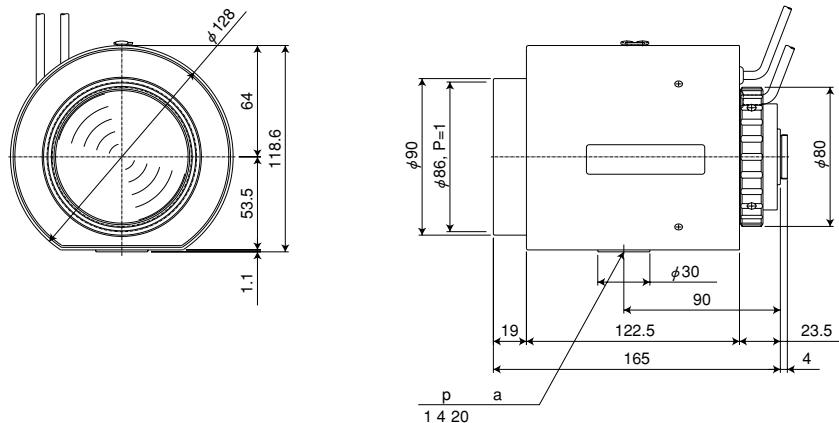
### Basic Specification

Format Size	2/3	
Focal Length	10.5	105mm
Max. Aperture Ratio	1 : 1.4 1.6	
Iris Range	F1.4 1000	
Horizontal Angle of View (Degrees)	1/4	18.97 2.02
Vertical Angle of View (Degrees)	1/3	25.24 2.68
Horizontal Angle of View (Degrees)	1/2	33.49 3.56
Min. Object Distance	1m	
Back Focal Length	18.49mm	
Filter size	72mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C10ZAME (C31002)	C10ZAME-P (C31003)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 5.5 sec	Motorized with Pre-Set Approx. 5.5 sec
Zoom	Motorized Approx. 5.5 sec	Motorized with Pre-Set Approx. 5.5 sec
Weight	1380g	1420g
Remarks		Manual Override C10ZAME-F (C31005)

## 2/3 Format 14x Motorized Zoom

Unit: mm



### Basic Specification

Format Size	2/3	
Focal Length	10	140mm
Max. Aperture Ratio	1 : 1.9	
Iris Range	F1.9 720	
Horizontal Angle of View (Degrees)	1/4	19.89 1.52
Vertical Angle of View (Degrees)	1/3	26.41 2.02
Horizontal Angle of View (Degrees)	1/2	34.96 2.68
Min. Object Distance	2.8m	
Back Focal Length	20.35mm	
Filter size	86mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

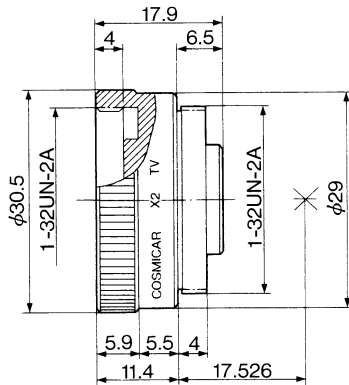
	C14ZME (C31009)	C14ZME-P (C31010)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 9.0 sec	Motorized with Pre-Set Approx. 9.0 sec
Zoom	Motorized Approx. 9.5 sec	Motorized with Pre-Set Approx. 9.5 sec
Weight	2000g	2040g
Remarks		Manual Override C14ZME-F (C31012)

## Extender

Unit: mm

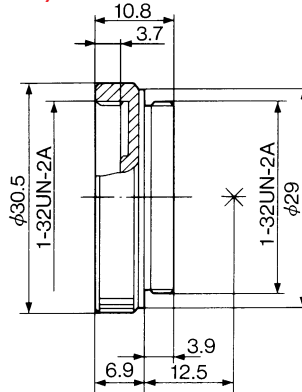
2x Extender for C-Mount

**2-EX (C80001)**



2x Extender for CS-Mount

**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 lenses	CS mount lenses

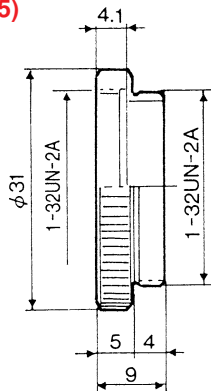
### Note

- 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

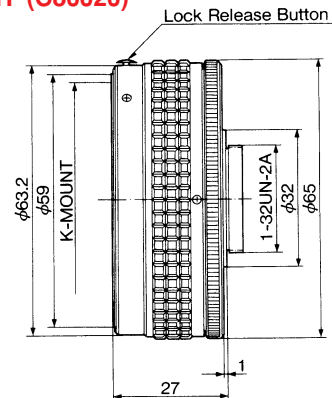
C-CS Mount Adapter (5mm Ring)

**C-CS-A (C80035)**



PENTAX Bayonet Mount for 35mm Photo Lens

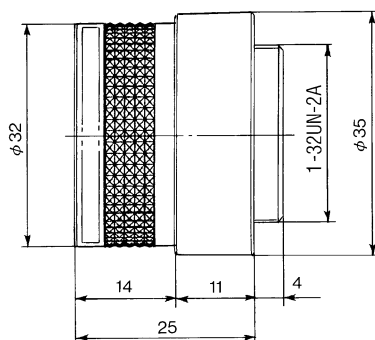
**KC-MOUNT (C80020)**



## Dummy Lens

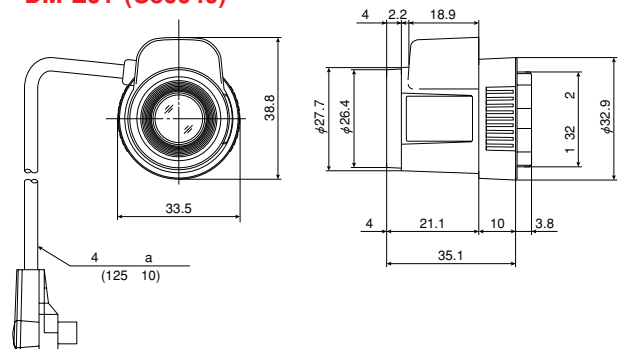
Monofocal type

**DM-163 (C80039)**



Vari-Focal type

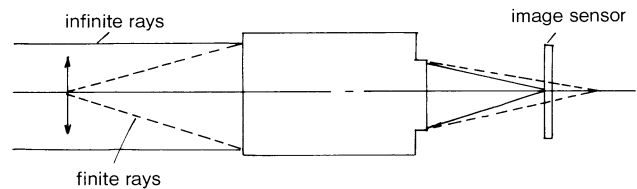
**DM-E01 (C80040)**





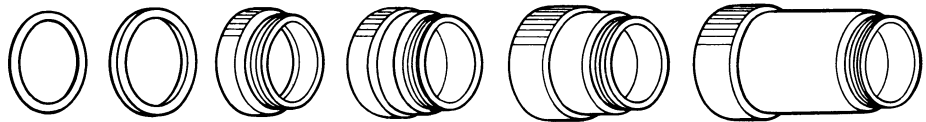
## Extension Tube Set (Macro Ring)

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 seen 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.



### EX-C6 (C90100)

LENGTH    0.5mm    1.0mm    5mm    10mm    20mm    40mm

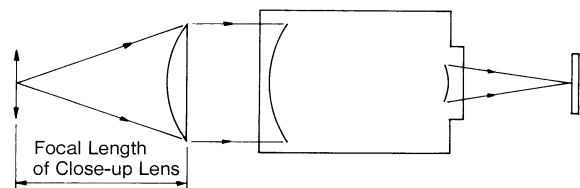


### Specifications

Maximum Diameter		φ 31mm					
Length	Model No.	1	2	3	4	5	6
	: mm	0.5	1	5	10	20	40

## 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. 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.

### Specifications

Model No.	1	2	3
Close-Up No.	No.1	No.2	No.3
Dioptrie	1	2	3
Focusing Range (Infinity)	1000mm	500mm	333mm

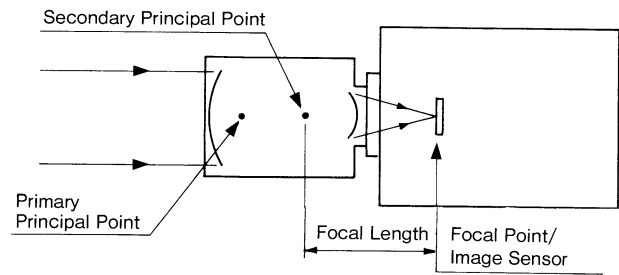
### Note

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.

CCTV is widely accepted as an important and valuable tool in many areas. Manual iris lenses for constant, stable lighting conditions and auto iris lenses for variable lighting conditions. Select the best suited lens for optimum performance in each application.

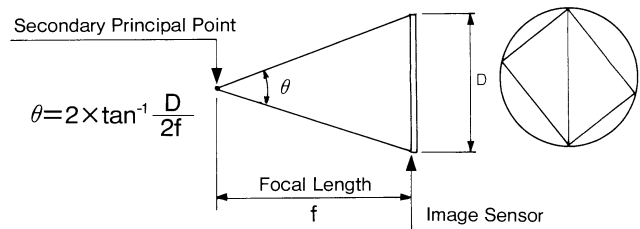
## Focal Length

Rays from infinitely distant 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

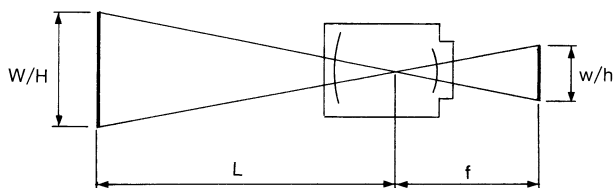
The F number is the index for the amount of light that passes through a lens. The smaller the number, the greater the amount of light. The F number is a ratio between focal length and effective aperture as follows.

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

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

$$H = 4.5\text{m} = 4,500\text{mm} \quad L = 10\text{m} = 10,000\text{mm}$$

$$h = \frac{f}{L} \times H = \frac{3.6}{10,000} \times 4,500 = 1.62\text{mm}$$

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

## Depth of Field

When an object is focused, it is typically observed that 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.

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

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

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

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

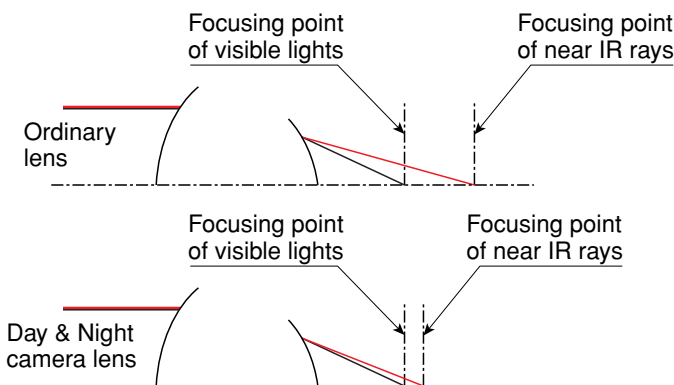
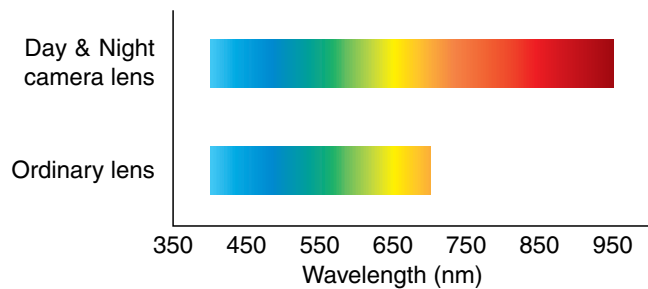
Depth of field increases when:  
focal length is shorter  
F-number is larger (F/1.4 F/5.6)  
Object distance is longer

## Day & Night Lens

Ordinary lenses are designed and chromatic aberration corrected in visible lights wave-lengths range from 400nm to 700nm.

The Day & Night camera lenses are designed to make all light rays from visible to near IR rays directed to the CCD in the camera at the same focusing point.

Chromatic aberration correction range



Meaning Day & Night camera lenses do not require the focus to be readjusted even when the lighting conditions have changed from daytime sun light to night-time, under near IR illuminators conditions.

## Connection For Auto-Iris

Wiring Diagram	Model
	DC Iris Monofocal and Varifocal Lenses
	DC Iris (with shield) Zoom Lenses
	Video Iris CS-Mount Monofocal Lenses CS-Mount Zoom Lenses (Except TS6ZE) H620PE
	Video Iris (with LEVEL Remote) C-Mount Monofocal Lenses (Except H620PE) C-Mount Zoom Lenses TS6ZE
	Manual Override Lenses

Colour of leads is subject to change.

## Wiring Diagram for Motorized Zoom Lens

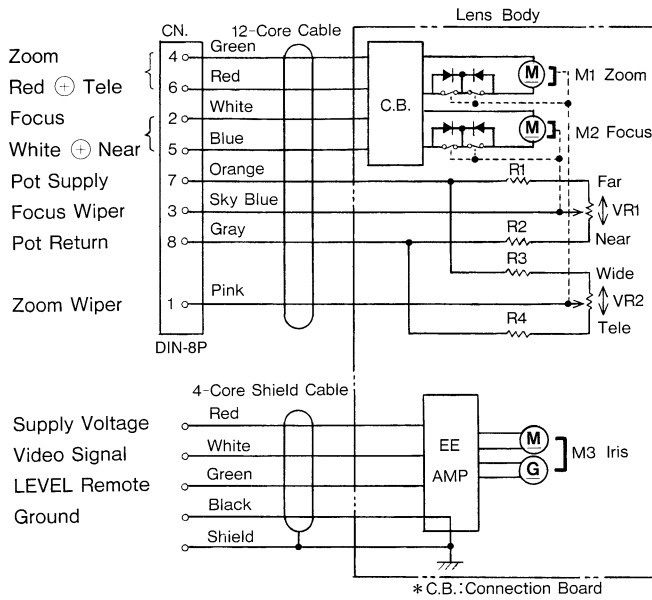
Auto-Iris & Motorized Zoom Lenses	3M Zoom Lenses
<p>TYPE 1 (DC6V) TYPE 5 (DC12V)</p>	
<p>TYPE 2 (DC 12V)</p>	
<p>TYPE 3 (DC 6V)</p>	

Yellow and Black lead wires are for Remote Control ALC, and they are not connected to the connector, as shown in diagram.  
Please note some lenses have no function of ALC Remote.  
NFU : Noise Filter Unit.

## Wiring Diagram for P type zoom lenses

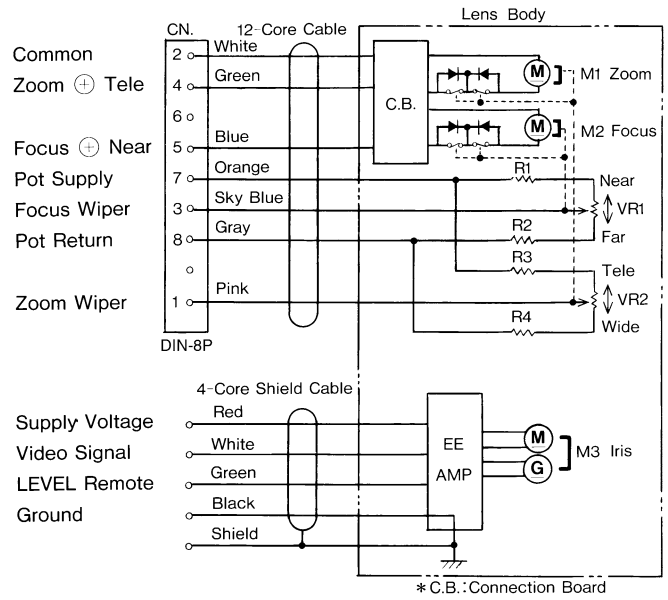
Motorized Zoom and Focus with Pre-set, Auto-Iris

TYPE 1 (DC6V) / TYPE 5 (DC12V)



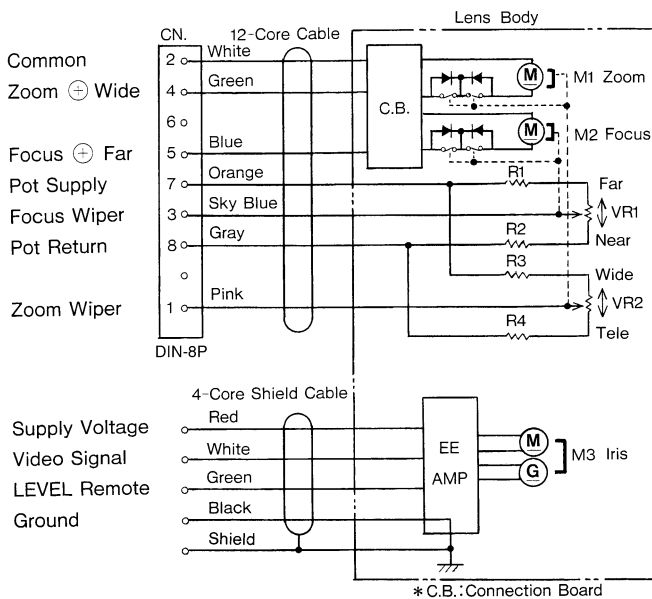
R1,R2,R3,R4	1K $\Omega$	1% 0.1W
VR1,VR2	5K $\Omega$	15% 0.2W

TYPE 2 (DC 12V)



R1,R2,R3,R4	1K $\Omega$	1% 0.1W
VR1,VR2	5K $\Omega$	15% 0.2W

TYPE 3 (DC 6V)



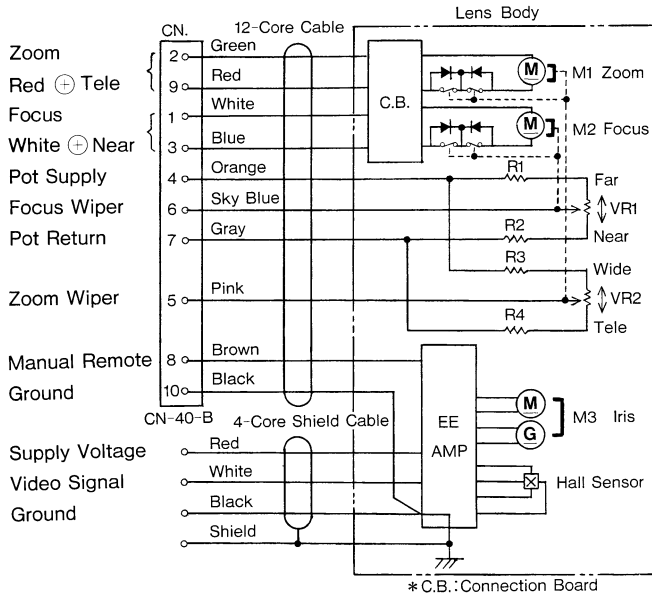
R1,R2,R3,R4	1K $\Omega$	1% 0.1W
VR1,VR2	5K $\Omega$	15% 0.2W

Kindly note some lenses have different diagram. Please contact us to clarify it.

## Wiring Diagram for F type zoom lenses

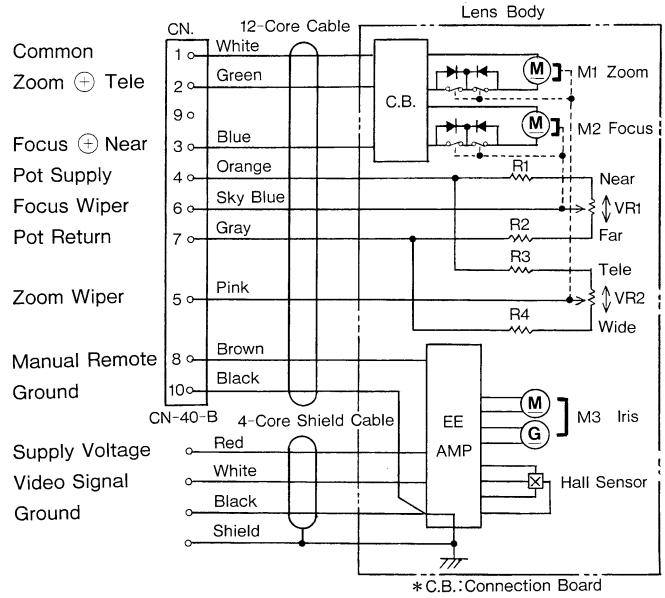
Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override

TYPE 1 (DC6V) / TYPE 5 (DC12V)



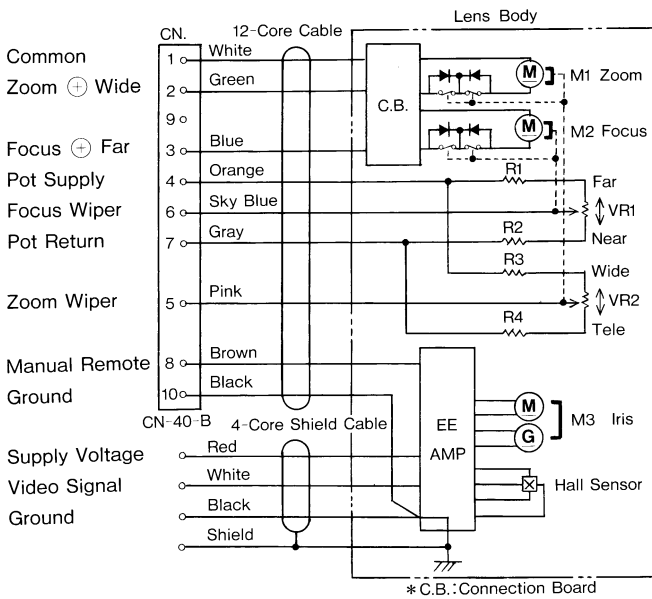
R1,R2,R3,R4	1KΩ	1%	0.1W
VR1,VR2	5KΩ	15%	0.2W

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

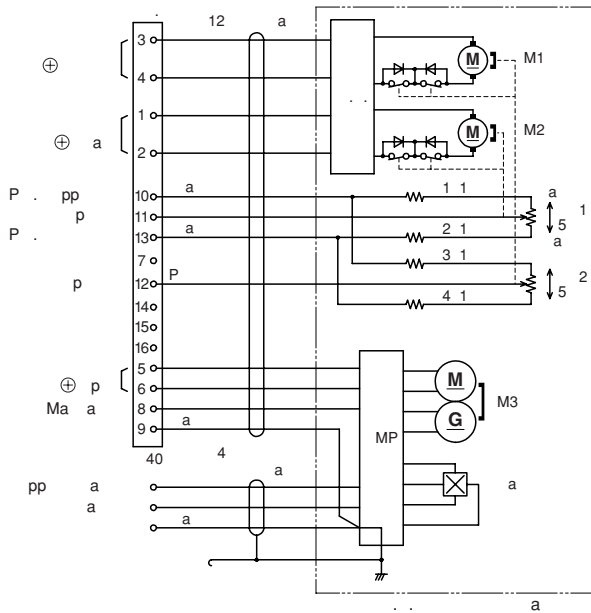
Kindly note some lenses have different diagram. Please contact us to clarify it.

## Wiring Diagram for F type zoom lenses (with D/A converter)

Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override

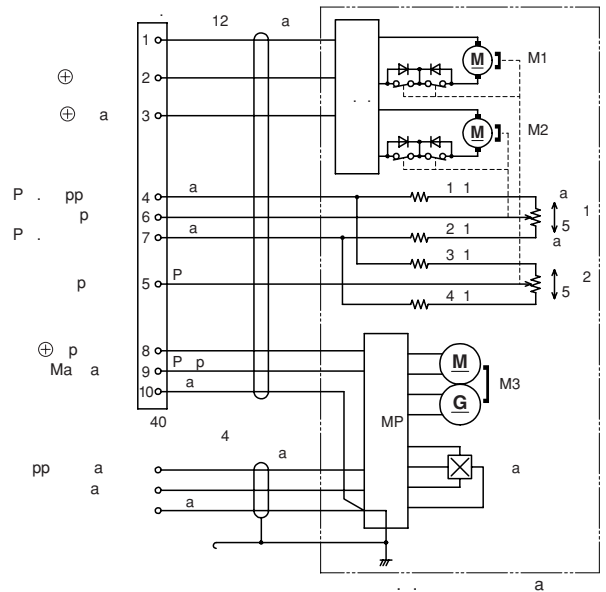
\*D/A converter is option for F type zoom lenses.

TYPE 1 (DC6V) / TYPE 5 (DC12V)



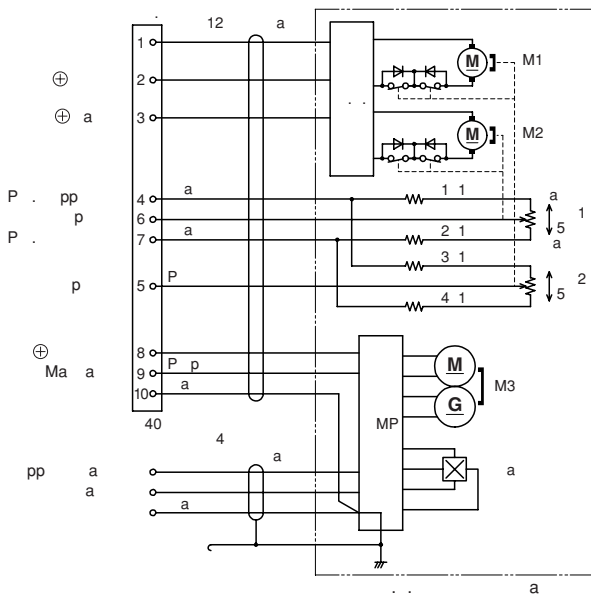
R1,R2,R3,R4	1KΩ	1%	0.1W
VR1,VR2	5KΩ	15%	0.2W

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

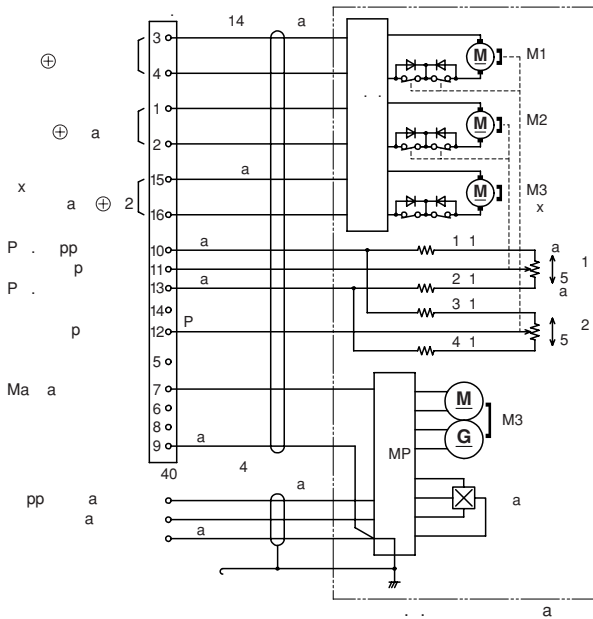
Kindly note some lenses have different diagram. Please contact us to clarify it.

## Wiring Diagram for H55ZME-F (Built-In 2x Extender)

Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override  
Built-In Motorized 2x Extender

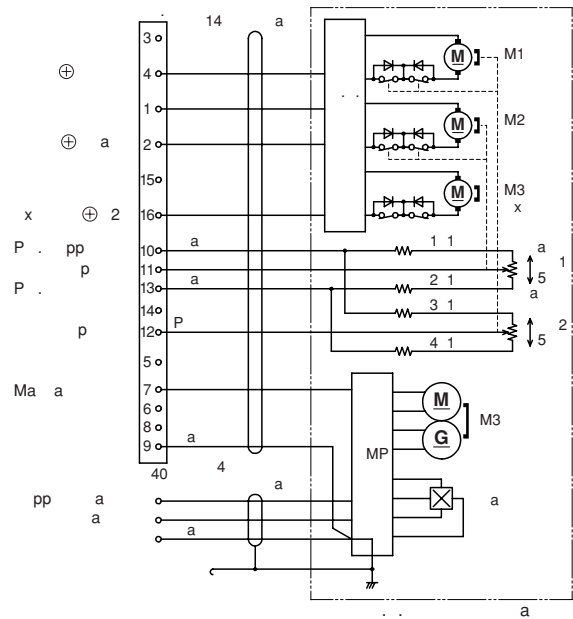
### Without D/A Converter type

TYPE 5 (DC12V)



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

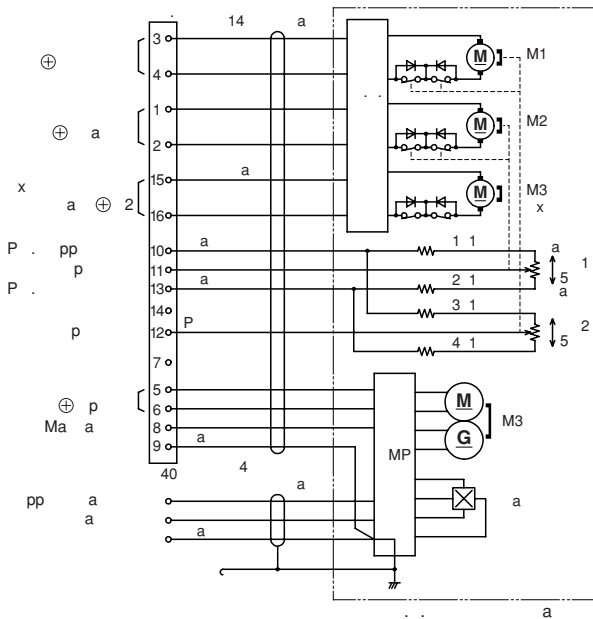
TYPE 2 (DC 12V)



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

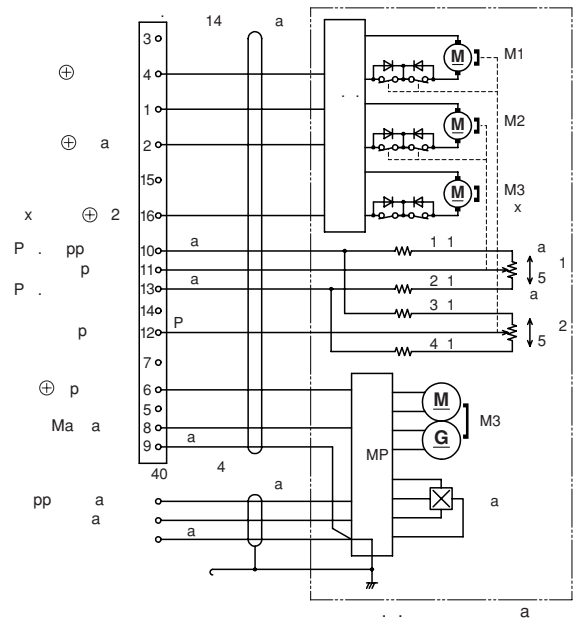
### With D/A Converter type

TYPE 5 (DC12V)



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

TYPE 2 (DC 12V)



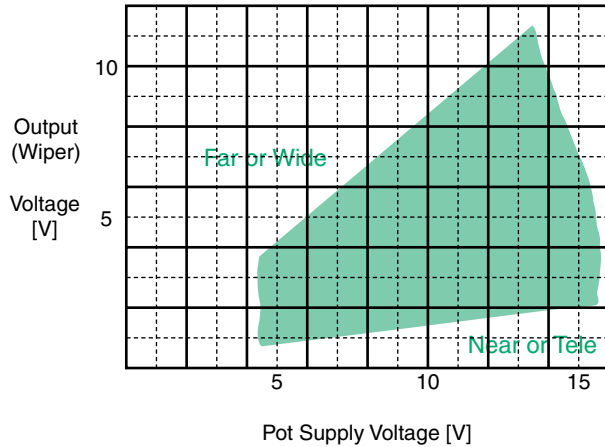
R1,R2,R3,R4	1KΩ	1%	0.1W
VR1,VR2	5KΩ	15%	0.2W

Kindly note some lenses have different diagram. Please contact us to clarify it.

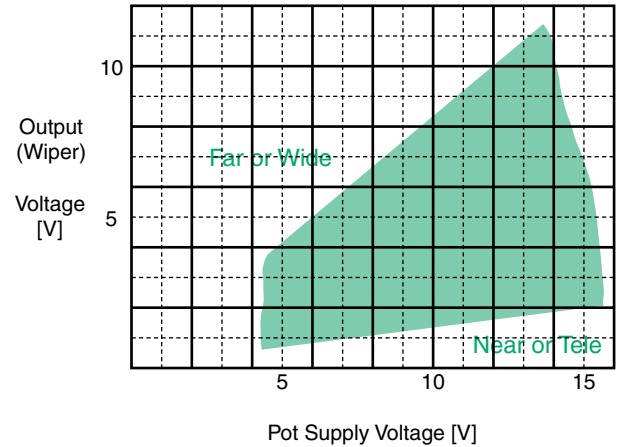


## Pot (Pre-Set) Supply Output range Characteristics

TYPE 1 & 3

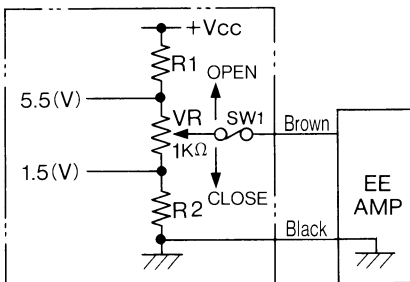


TYPE 2 & 5



## Manual Override (without D/A Converter)

Manual Override and ALC can be controlled remotely as per the following schematic diagrams.



Manual Override

SW1(Switch)	IRIS MODE
Open or Ground	Auto
Close	Manual Remote

Vcc represents supply voltage from a lens controller.

## Temperature Range

### 1) Definition

#### 1. Applicable Temperature Range

This is the range in which a lens is specified to operate, as stated in the catalog. Additionally, the lens will not draw more current and operate at a faster speed than the rating indicated in the catalog.

#### 2. Operation Temperature Range

This is the range that a lens operates in at an acceptable speed, drawing slightly more current than the rating that is indicated in the catalog., however, the lens will maintain its quality, performance and reliability characteristics.

### 2) Temperature Range

	Applicable Temperature Range		Operation Temperature Range	
Fixed Focal Auto-Iris	20	50	30	70
QS6Z, TS6Z, HS6Z, C6Z, C14Z	10	50	20	70
Other Zoom Lenses	10	50	30	70

**ANGLES OF VIEW**

UNIT: Degrees

Model	For 1/4 Format			For 1/3 Format			For 1/2 Format			For 2/3 Format		
	Diagonal 4.5mm	Horizontal 3.6mm	Vertical 2.7mm	Diagonal 6.0mm	Horizontal 4.8mm	Vertical 3.6mm	Diagonal 8.0mm	Horizontal 6.4mm	Vertical 4.8mm	Diagonal 10.991mm	Horizontal 8.8mm	Vertical 6.6mm
2.2mm F1.0 QS210*	114.06	92.60	70.12									
2.8mm F0.95 TS209E-ASP	91.76	72.69	54.13	125.16	98.24	72.69						
2.8mm F1.2 TS212*	88.60	71.54	54.11	117.79	94.30	71.54						
3mm F1.0 QS310*	77.92	64.24	49.11									
3.7mm F1.6 HS316*	66.68	53.54	40.26	88.09	71.02	53.54	115.26	93.67	71.02			
4mm F0.75 TS407E-ASP	59.17	48.39	36.86	74.61	62.55	48.39						
4mm F1.2 TS412*	60.35	49.18	37.36	76.71	63.89	49.18						
4mm F2.0 TS420P*	64.14	51.24	38.39	86.17	68.47	51.24						
4.2mm F1.6 H416*	60.14	47.87	35.76	81.05	64.27	47.87	110.22	86.77	64.27			
4.8mm F1.8 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
4.8mm F1.8 C418E	51.27	41.27	31.10	67.46	54.57	41.27	87.77	71.65	54.57	114.78	95.40	73.72
6mm F1.0 QS610*	43.24	34.83	26.23									
6mm F1.2 H612E-M	41.50	33.26	24.99	55.11	44.23	33.26	72.89	58.70	44.23			
6mm F1.2 H612*	40.93	32.97	24.84	53.68	43.55	32.97	68.89	56.93	43.55			
6mm F1.4 HS614*	41.92	33.86	25.57	54.64	44.55	33.86	69.27	57.81	44.55			
6.2mm F2.0 HS/H620P*	40.26	32.44	24.46	52.86	42.82	32.44	68.66	56.12	42.82			
6.5mm F1.8 B618CX-2	37.29	29.94	22.51	49.35	39.73	29.94	64.91	52.52	39.73	86.66	70.92	54.09
8mm F0.75 TS807E-ASP	31.27	25.07	18.81	41.17	33.31	25.07						
8mm F1.2 TS812*	31.27	25.05	18.80	41.33	33.33	25.05						
8mm F1.4 C814	31.29	25.15	18.93	41.28	33.31	25.15	53.92	43.88	33.31	70.50	58.67	45.17
8mm F1.4 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
8.5mm F1.5 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
9mm F1.2 H912E-M	27.81	22.28	16.73	36.96	29.65	22.28	48.97	39.38	29.65			
9mm F3.4 C934P*	27.79	22.30	16.77	36.76	29.60	22.30	48.25	39.11	29.60	63.79	52.63	40.28
12mm F1.2 H1212*	21.18	16.93	12.70	28.28	22.60	16.93	37.83	30.18	22.60			
12mm F1.4 H1214-M	20.54	16.49	12.40	27.17	21.88	16.49	35.69	28.91	21.88			
12mm F1.4 HS1214*	20.68	16.55	12.41	27.58	22.06	16.55	36.78	29.42	22.06			
12.5mm F1.4 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
12.5mm F1.4 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
12.5mm F1.8 B1218-2	20.55	16.48	12.38	27.25	21.90	16.48	35.98	29.01	21.90	48.49	39.39	29.89
16mm F1.4 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
16mm F1.4 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
16mm F1.4 C1614E	15.87	12.72	9.55	21.11	16.92	12.72	28.02	22.50	16.92	38.26	30.76	23.19
25mm F1.4 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
25mm F1.4 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
25mm F1.4 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
25mm F1.8 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
25mm F2.0 H2520-UVM	10.30	8.24	6.18	13.71	10.98	8.24	18.24	14.62	10.98			
35mm F1.6 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
50mm F1.4 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
50mm F1.8 B5018A-3	5.16	4.13	3.10	6.87	5.50	4.13	9.14	7.32	5.50	12.51	10.04	7.55
50mm F1.8 B5018E	5.16	4.13	3.10	6.87	5.50	4.13	9.14	7.32	5.50	12.51	10.04	7.55
50mm F2.8 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
75mm F1.4 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
75mm F1.8 B7518E	3.44	2.76	2.07	4.59	3.67	2.76	6.12	4.90	3.67	8.40	6.73	5.05

**PENTAX**

 CERTIFIED ISO 9001 & ISO 14001  
 CE MARKING EN50130-4/A-1: 1998

## ANGLES OF VIEW

Model	For 1/4 Format			For 1/3 Format			For 1/2 Format			For 2/3 Format			UNIT: Degrees
	Diagonal 4.5mm	Horizontal 3.6mm	Vertical 2.7mm	Diagonal 6.0mm	Horizontal 4.8mm	Vertical 3.6mm	Diagonal 8.0mm	Horizontal 6.4mm	Vertical 4.8mm	Diagonal 10.991mm	Horizontal 8.8mm	Vertical 6.6mm	
1.6-3.4mm F1.4 TS2V114E	180-83.10	180-64.89	107.98-47.84	180-118.31	180-89.55	180-64.89							
2.2-4.5mm F1.2 QS2V2212*	120.00-65.09	94.48-51.88	69.94-38.80										
2.8-5.8mm F1.2 QS2V2812*	98.48-45.67	76.22-36.40	55.85-27.23										
2.8-6mm F1.4 TS2V214	90.80-43.85	72.46-35.15	54.24-26.40	121.71-58.26	96.94-46.76	72.46-35.15							
2.8-6mm F1.4 TS2V214AE	90.54-44.13	72.26-35.35	54.08-26.54	121.44-58.68	96.70-47.04	72.26-35.35							
3.5-8mm F1.4 TS2V314B	74.45-33.22	58.74-26.55	43.57-19.90	102.34-44.37	79.83-35.44	58.74-26.55							
3.5-8mm F1.4 TS2V314BE	74.45-33.22	58.74-26.55	43.57-19.90	102.35-44.37	79.83-35.44	58.74-26.55							
6-12mm F1.6 TS2V616	44.09-21.53	34.92-17.21	26.01-12.90	60.26-28.76	47.22-22.97	34.92-17.21							
6-12mm F1.6 TS2V616AE	44.21-21.56	34.98-17.23	26.03-12.91	60.62-28.85	47.37-23.01	34.97-17.23							
5-50mm F1.8 TS10V518E	47.25-5.18	37.80-4.14	28.35-3.11	63.00-6.90	50.00-5.52	37.80-4.14							
4.6-28mm F1.0 QS6ZME*	50.83-9.30	41.64-7.50	31.71-5.66										
6.3-38mm F1.2 TS6ZE	38.70-6.97	31.26-5.59	23.60-4.20	50.39-9.23	41.12-7.43	31.26-5.59							
5.8-58mm F1.2 TS10ZME*	41.57-4.49	33.77-3.62	25.61-2.73	53.35-5.88	44.07-4.78	33.77-3.62							
6-90mm F1.2 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							
9-180mm F1.2 TS20ZME*	28.35-1.43	22.61-1.15	16.93-0.87	38.16-1.90	30.28-1.53	22.61-1.15							
8-48mm F1.0 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				
8-48mm F1.0 H6Z8*	30.98-5.50	24.92-4.42	18.76-3.33	40.74-7.27	32.98-5.86	24.92-4.42	52.72-9.51	43.24-7.73	32.98-5.86				
8-48mm F1.4 H56ZME	30.81-5.46	24.81-4.39	18.70-3.30	40.42-7.23	32.78-5.82	24.81-4.39	52.07-9.48	42.88-7.69	32.78-5.82				
7.5-75mm F1.4 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	55.25-6.18	45.05-4.95	34.52-3.75				
7.5-75mm F1.2 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	54.43-6.09	45.63-4.99	34.94-3.77				
8-120mm F1.6 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				
12-240mm F1.6 H20ZME*	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				
12-660mm F4 H55ZME-F	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				
24-1320mm F8 H55ZME(with 2X)	10.68-0.20	8.53-0.16	6.39-0.12	14.29-0.26	11.40-0.21	8.53-0.16	19.20-0.35	15.27-0.28	11.40-0.21				
12.5-75mm F1.8 C6Z1218	20.07-3.43	16.08-2.75	12.07-2.06	26.69-4.57	21.40-3.66	16.08-2.75	35.39-6.07	28.44-4.87	21.40-3.66	48.08-8.30	38.82-6.67	29.32-5.02	
12.5-75mm F1.8 C6ZE	20.05-3.43	16.06-2.75	12.06-2.06	26.66-4.57	21.38-3.66	16.06-2.75	35.35-6.07	28.41-4.87	21.38-3.66	48.03-8.30	38.78-6.67	29.29-5.02	
12.5-75mm F1.8 C6Z1218M3	20.07-3.43	16.08-2.75	12.07-2.06	26.69-4.57	21.40-3.66	16.08-2.75	35.39-6.07	28.44-4.87	21.40-3.66	48.08-8.30	38.82-6.67	29.32-5.02	
12.5-75mm F1.8 C6ZAME*	20.05-3.43	16.06-2.75	12.06-2.06	26.66-4.57	21.38-3.66	16.06-2.75	35.35-6.07	28.41-4.87	21.38-3.66	48.03-8.30	38.78-6.67	29.29-5.02	
10.5-105mm F1.4 C10ZAME*	23.68-2.52	18.97-2.02	14.25-1.51	31.44-3.34	25.24-2.68	18.97-2.02	41.56-4.42	33.49-3.56	25.24-2.68	56.05-5.98	45.52-4.84	34.51-3.67	
10-140mm F1.9 C14ZME*	24.79-1.90	19.89-1.52	14.95-1.14	32.84-2.52	26.41-2.02	19.89-1.52	43.35-3.33	34.96-2.68	26.41-2.02	59.12-4.49	47.49-3.64	36.02-2.76	

## For 1 Format

Model	For 1 Format		
	Diagonal 15.875mm	Horizontal 12.7mm	Vertical 9.525mm
6.5mm F1.8 B618CX-2	116.08	97.88	76.21
12.5mm F1.4 B1214D-2	65.08	53.95	41.59
12.5mm F1.4 B1214E	65.22	54.04	41.64
12.5mm F1.8 B1218-2	66.71	55.18	42.42
25mm F1.4 B2514D	36.10	28.95	21.74
25mm F1.4 B2514E	36.08	28.94	21.73
25mm F1.8 B2518	34.79	28.24	21.44
50mm F1.4 B5014A	17.93	14.41	10.85
50mm F1.8 B5018A-3	17.89	14.40	10.85
50mm F1.8 B5018E	17.89	14.40	10.85
75mm F1.4 B7514C	12.30	9.78	7.30
75mm F1.8 B7518E	12.10	9.69	7.28

## For 1/1.8 Format

Model	For 1/1.8 Format		
	Diagonal 8.94mm	Horizontal 7.15mm	Vertical 5.36mm
6mm F1.2 H612E-M	81.00	65.40	49.30
9mm F1.2 H912E-M	54.40	43.90	33.10



## PENTAX Precision Co., Ltd.

*We, PENTAX Precision Co., Ltd. have over 50 years of experience manufacturing and marketing CCTV lenses on a worldwide basis. As a member of PENTAX group, a world renowned optical products manufacturer and leader in the field of optics and state of the art technology, we continually strive to provide the highest quality, highest performance, most extensive line lenses available.*

*We hope you will take advantage of the opportunity to increase your profitability with the finest ISO 9001 and ISO 14001 CCTV Lenses from the preferred industry leader, PENTAX.*

● ISO 9001

*This is a quality management and quality assurance system which insures all PENTAX lenses are produced under the strictest quality standards available. ISO 9001 includes guidelines for overall quality management, product development and manufacturing as well as marketing and servicing.*

● ISO 14001

*ISO 14001 is an environmental management system process. Our firm's commitment to a healthy, fiscally responsible coexistence with nature and the utmost respect for the environment has allowed us to achieve this prestigious certification.*

*We are honored to be the first lens manufacturer in the CCTV industry to have been awarded both ISO 9001 and 14001 Certification.*

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]		WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT						

## Monofocal Manual Iris Lens

### 1/4 FORMAT

QS210(C40206)	2.2	1.0 - C	CS	92.60				36.8 36.3	44		4
QS310(C40301)	3.0	1.0 - C	CS	64.24				36.8 33.8	40		4
QS610(C40601)	6.0	1.0 - C	CS	34.83				36.8 33.8	37		4

### 1/3 FORMAT

TS212A(C70214)	2.8	1.2 - C	CS	71.54	94.30			36.8 36.3	44		4
TS320NX(C91665)	3.6	2.0	CS	53.90	72.00			30 8	20	FOR B/W CAMERA	
TS412A(C70409)	4	1.2 - C	CS	49.18	63.89			36.8 33.8	39		4
TS820NX(C91666)	8	2.0	CS	23.90	31.40			30 8	18	FOR B/W CAMERA	
TS812A(C70807)	8	1.2 - C	CS	25.05	33.33			36.8 33.8	34		4

### 1/2 FORMAT

HS316A(C60305)	3.7	1.6 - C	CS	53.54	71.02	93.67	30.5 P=0.5	32 35.7	34		5
HS614B(C60622)	6	1.4 - C	CS	33.86	44.55	57.81	30.5 P=0.5	32 35.7	32		5
HS1214D(C61217)	12	1.4 - C	CS	16.55	22.06	29.42	30.5 P=0.5	32 35.7	26		5
H416(C60402)	4.2	1.6 - C	C	47.87	64.27	86.77		42 43.5	120		5
H612A(C60607)	6	1.2 - C	C	32.97	43.55	56.93	40.5 P=0.5	42 46	125	LOCK SCREW EXTRA	5
H1212B(C61215)	12	1.2 - 22	C	16.93	22.60	30.18	27.0 P=0.5	30 35.5	67	LOCK SCREW EXTRA	5

### 2/3, 1 FORMAT

C418DX(C30405)	4.8	1.8 - C	C	41.68	55.11	72.37		40.5 35.5	105	LOCK SCREW EXTRA	6
B618CX-2(C20612)	6.5	1.8 - C	C	29.94	39.73	52.52		48 42	120	LOCK SCREW EXTRA	6
C814(C30808)	8	1.4 - C	C	25.15	33.31	43.88	40.5 P=0.5	42 58	160	LOCK SCREW EXTRA	6
C815B(C30811)	8.5	1.5 - C	C	24.02	31.87	42.09	40.5 P=0.5	42 40	120	LOCK SCREW EXTRA	6
B1214D-2(C21211)	12.5	1.4 - C	C	16.21	21.53	28.51	40.5 P=0.5	42 50	135	LOCK SCREW EXTRA	6
B1218-2(C21212)	12.5	1.8 - C	C	16.48	21.90	29.01	40.5 P=0.5	42 40	95	LOCK SCREW EXTRA	6
C1614A(C31630)	16	1.4 - 22	C	12.70	16.91	22.48	27.0 P=0.5	30 33	58	LOCK SCREW EXTRA	7
B2514D(C22525)	25	1.4 - 22	C	8.23	10.97	14.62	27.0 P=0.5	30 37.3	76	LOCK SCREW EXTRA	7
B2518(C22516)	25	1.8 - C	C	8.23	10.95	14.55	40.5 P=0.5	42 40	87	LOCK SCREW EXTRA	7
B5014A(C25011)	50	1.4 - C	C	4.13	5.50	7.32	46.0 P=0.75	48 48	180	LOCK SCREW EXTRA	7
B5018A-3(C25010)	50	1.8 - C	C	4.13	5.50	7.32	40.5 P=0.5	42 52.5	130	LOCK SCREW EXTRA	7
B7514C(C27509)	75	1.4 - C	C	2.75	3.67	4.90	58.0 P=0.75	62 79	450	LOCK SCREW EXTRA	7

## Machine Vision Lens

### 1/2 FORMAT

H1214-M(C61232)	12	1.4 - 16	C	16.49	21.88	28.91	27.0 P=0.5	29.5 28.5	55	LOCK SCREW	8
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### 2/3 FORMAT

C1614-M(C31634)	16	1.4 - 16	C	12.86	17.11	22.72	27.0 P=0.5	29.5 33.2	63	LOCK SCREW	8
C2514-M(C32500)	25	1.4 - 16	C	8.24	10.97	14.60	27.0 P=0.5	29.5 32	55	LOCK SCREW	8
C3516-M(C33500)	35	1.6 - 16	C	6.07	8.09	10.76	27.0 P=0.5	29.5 35.4	64	LOCK SCREW	8
C5028-M(C35001)	50	2.8 - 22	C	4.12	5.50	7.32	27.0 P=0.5	29.5 34	55	LOCK SCREW	8

## Line-Scan Lens

YF3528(C52915F)	35	2.8 - 22	F	64.4 (45mm Image Format)			62 P=0.75	72 56.8	440	NOT FOR PHOTOGRAPHIC CAMERAS	9
YK3528(C52915K)	35	2.8 - 22	K	64.4 (45mm Image Format)			62 P=0.75	72 57.8	440		(9)
YF5028(C52893F)	50	2.8 - 22	F	47.6 (45mm Image Format)			62 P=0.75	72 56.8	440		9
YK5028(C52893K)	50	2.8 - 22	K	47.6 (45mm Image Format)			62 P=0.75	72 57.8	440		(9)

## UV Lens (Ultraviolet Ray)

H2520-UVM(C62500)	25	2.0 - 16	C	8.24	10.98	14.62	27.0 P=0.5	29.5 46	78	200nm-1000nm Ray	9
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## Pinhole Lens

### 1/3 FORMAT

TS420P(C70404)	4	2.0 - C	CS	51.24	68.47			36.5 65.9	74	MANUAL IRIS	15
TS420PE(C70403)	4	2.0 - 64	CS	51.24	68.47			36.5 42.3 65.9	79	DC IRIS	15

### 1/2 FORMAT

HS620P(C60613)	6.2	2.0 - C	CS	32.44	42.82	56.12		29 88.1	67	MANUAL IRIS	15
H620P(C60612)	6.2	2.0 - C	C	32.44	42.82	56.12		29 83.1	63	MANUAL IRIS	15
HS620PE(C60627)	6.2	2.0 - 300	CS	32.44	42.82	56.12		39 45.5 88.2	105	VIDEO & DC IRIS	15
H620PE(C60626)	6.2	2.0 - 300	C	32.44	42.82	56.12		39 45.5 83.2	100	VIDEO & DC IRIS	15

### 2/3 FORMAT

C934P(C30900)	9	3.4 - 22	C	22.30	29.60	39.11		34 163.8	175	MANUAL IRIS	16
C934PL(C30901)	9	3.4 - 22	C	22.30	29.60	39.11			210	R/A, MANUAL IRIS	16

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]			WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT							

## Monofocal Auto-Iris Lens

### 1/4 FORMAT

QS210E(C40202)	2.2	1.0-200	CS	92.60				36.8	43.5	36.3	54	VIDEO & DC IRIS	10
TS310E(C40300)	3.0	1.0-200	CS	64.24				36.8	43.5	33.8	50	VIDEO & DC IRIS	10
QS610E(C40600)	6.0	1.0-200	CS	34.83				36.8	43.5	33.8	47	VIDEO & DC IRIS	10

### 1/3 FORMAT

TS212E(C70210)	2.8	1.2-200	CS	71.54	94.30			36.8	43.5	36.3	54	VIDEO & DC IRIS	10
TS412E(C70406)	4	1.2-200	CS	49.18	63.89			36.8	43.5	33.8	49	VIDEO & DC IRIS	10
TS812E(C70804)	8	1.2-200	CS	25.05	33.33			36.8	43.5	33.8	44	VIDEO & DC IRIS	10

### 1/2 FORMAT

HS316TE(C60310)	3.7	1.6-90	CS	53.54	71.02	93.67	34 P=0.5	42.8	47.1	36.5	57	VIDEO & DC IRIS	11
HS614TE(C60631)	6	1.4-90	CS	33.86	44.55	57.81	34 P=0.5	42.8	47.1	36.5	60	VIDEO & DC IRIS	11
HS1214TE(C61228)	12	1.4-90	CS	16.55	22.06	29.42	34 P=0.5	42.8	47.1	36.5	46	VIDEO & DC IRIS	11
HS316E(C60309)	3.7	1.6-300	CS	53.54	71.02	93.67	34 P=0.5	42.8	47.1	36.5	57	VIDEO & DC IRIS	11
HS614E(C60630)	6	1.4-300	CS	33.86	44.55	57.81	34 P=0.5	42.8	47.1	36.5	60	VIDEO & DC IRIS	11
HS1214E(C61227)	12	1.4-300	CS	16.55	22.06	29.42	34 P=0.5	42.8	47.1	36.5	46	VIDEO & DC IRIS	11
H416E(C60405)	4.2	1.6-360	C	47.87	64.27	86.77		46.5	50.5	45	135	VIDEO & DC IRIS	12
H612E(C60625)	6	1.2-360	C	32.97	43.55	56.93	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12
H1212E(C61220)	12	1.2-360	C	16.93	22.60	30.18	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12

### 2/3, 1 FORMAT

C418E(C30407)	4.8	1.8-360	C	41.27	54.57	71.65		46.5	50.5	37.5	120	VIDEO & DC IRIS	12
C814E(C30821)	8	1.4-360	C	25.10	33.22	43.67	43 P=0.75	46.5	50.5	51.1	140	VIDEO & DC IRIS	12
B1214E(C21223)	12.5	1.4-360	C	16.22	21.55	28.54	43 P=0.75	46.5	50.5	47.5	140	VIDEO & DC IRIS	12
C1614E(C31632)	16	1.4-360	C	12.72	16.92	22.50	43 P=0.75	46.5	50.5	46.7	110	VIDEO & DC IRIS	13
B2514E(C22527)	25	1.4-360	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO & DC IRIS	13
B5018E(C25018)	50	1.8-360	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO & DC IRIS	13
B7518E(C27513)	75	1.8-360	C	2.76	3.67	4.90	49 P=0.75	62	70.5		300	VIDEO & DC IRIS	13

## Ultra-High Speed Auto-Iris Lens

### 1/3 FORMAT

TS209E-ASP(C70204)	2.8	0.95-180	CS	72.69	98.24			48	53	46.9	140	DC IRIS	14
TS407E-ASP(C70405)	4	0.75-180	CS	48.39	62.55		40.5 P=0.5	48	53	53.1	145	DC IRIS	14
TS807E-ASP(C70803)	8	0.75-180	CS	25.07	33.31		40.5 P=0.5	48	53	46.9	135	DC IRIS	14

## Mega-Pixel Auto-Iris Lens

### 1/1.8 FORMAT

H612E-M(C60632)	6	1.2-200	C	44.23 (1/3)	58.70 (1/2)	65.40 (1/1.8)	40.5 P=0.5	47	52.5	53.1	170	VIDEO & DC IRIS	14
H912E-M(C60900)	9	1.2-200	C	29.65 (1/3)	39.38 (1/2)	43.90 (1/1.8)	40.5 P=0.5	47	52.5	51.6	160	VIDEO & DC IRIS	14

## Manual Override (Remote-Control Iris) Lens

### 1/2 FORMAT

H416ER(C60404)	4.2	1.6-360	C	47.87	64.27	86.77		46.5	50.5	45	135	VIDEO IRIS	(12)
H612ER(C60624)	6	1.2-360	C	32.97	43.55	56.93	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)
H1212ER(C61219)	12	1.2-360	C	16.93	22.60	30.18	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)

### 2/3, 1 FORMAT

C418ER(C30406)	4.8	1.8-360	C	41.27	54.57	71.65		46.5	50.5	37.5	120	VIDEO IRIS	(12)
C814ER(C30820)	8	1.4-360	C	25.10	33.22	43.67	43 P=0.75	46.5	50.5	51.1	140	VIDEO IRIS	(12)
B1214ER(C21221)	12.5	1.4-360	C	16.21	21.53	28.51	43 P=0.75	46.5	50.5	47.5	140	VIDEO IRIS	(12)
C1614ER(C31631)	16	1.4-360	C	12.70	16.91	22.48	43 P=0.75	46.5	50.5	46.7	110	VIDEO IRIS	(13)
B2514ER(C22526)	25	1.4-360	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO IRIS	(13)
B5018ER(C25017)	50	1.8-360	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO IRIS	(13)

## High Sensitivity Auto-Iris (F1000/2000) Lens

### 1 FORMAT

B1214E-2000(C21224)	12.5	1.4-2000	C	16.21	21.53	28.51	43 P=0.75	46.5	50.5	47.5	140	VIDEO IRIS	(12)
B2514E-2000(C22528)	25	1.4-2000	C	8.23	10.97	14.62	43 P=0.75	46.5	50.5	51.8	140	VIDEO IRIS	(13)
B5018E-1000(C25019)	50	1.8-1000	C	4.13	5.50	7.32	49 P=0.75	62	51		230	VIDEO IRIS	(13)
B7518E-1000(C27514)	75	1.8-1000	C	2.76	3.67	4.90	49 P=0.75	62	70.5		300	VIDEO IRIS	(13)

MODEL	FOCAL LENGTH [MM]	IRIS RANGE	MOUNT	HORIZONTAL ANGLE OF VIEW			FILTER SIZE [MM]	DIMENSIONS (D L)(W H L) [MM]	WEIGHT (G)	REMARKS	PAGE
				1/4 FORMAT	1/3 FORMAT	1/2 FORMAT					
<b>Manual Iris Vari-Focal Lens</b>											
<b>1/4 FORMAT</b>											
QS2V2212	2.2-4.5	1.2 - C	CS	94.48-51.88						COMING SOON	17
QS2V2812(C40207)	2.8-5.8	1.2 - C	CS	76.22-36.40			30.5 P=0.5	36 43.5	45		17
<b>1/3 FORMAT</b>											
TS2V214(C70213)	2.8-6	1.4 - C	CS	72.46-35.15	96.94-46.76			36 43.2	47		18
TS2V314B(C70313)	3.5-8	1.4 - C	CS	58.74-26.55	79.83-35.44		30.5 P=0.5	36 43.5	43	DAY&NIGHT	18
TS2V616(C70612)	6-12	1.6 - C	CS	34.92-17.21	47.22-22.97		30.5 P=0.5	36 43.5	43		18

## Auto-Iris Vari-Focal Lens

<b>1/4 FORMAT</b>											
QS2V2212E	2.2-4.5	1.2 - 200	CS	94.48-51.88						COMING SOON	17
QS2V2812E(C40205)	2.8-5.8	1.2 - 200	CS	76.22-36.40			30.5 P=0.5	40.4 45.7 43.5	57	VIDEO & DC IRIS	17
<b>1/3 FORMAT</b>											
TS2V114E(C70100)	1.6-3.4	1.4 - 64	CS	180.00-64.89	180.00-89.55			38.3 44.7 56.7	140	FISH EYE, DC IRIS	19
TS2V214AE(C70220)	2.8-6	1.4 - 300	CS	72.26-35.35	96.70-47.04			40.4 45.7 43.2	59	VID & DC IRIS, DAY&NIGHT	18
TS2V314BE(C70312)	3.5-8	1.4 - 300	CS	58.74-26.55	79.83-35.44		30.5 P=0.5	40.4 45.7 43.5	59	VID & DC IRIS, DAY&NIGHT	18
TS2V616AE(C70622)	6-12	1.6 - 300	CS	34.98-17.23	47.37-23.01		30.5 P=0.5	40.4 45.7 43.5	53	VID & DC IRIS, DAY&NIGHT	18
TS10V518E(C70508)	5-50	1.8 - 360	CS	37.80-4.14	50.00-5.52			44.5 50.8 61.5	140	DC IRIS	19

## Manual Zoom Lens

<b>1/3 FORMAT</b>											
TS6ZE(C70605)	6.3-38	1.2 - 512	CS	31.26-5.59	41.12-7.43		49 P=0.75	57.5 77.8	320	VIDEO & DC IRIS	20
<b>1/2 FORMAT</b>											
H6Z810(C60812)	8-48	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	20
H6ZBE(C60811)	8-48	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 & DC IRIS	20
<b>2/3 FORMAT</b>											
C6Z1218(C31204)	12.5-75	1.8 - 22	C	16.08-2.75	21.40-3.66	28.44-4.87	49 P=0.75	51 90	320	MANUAL IRIS	20
C6ZE(C31219)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	68 90	385	VIDEO & DC IRIS	20

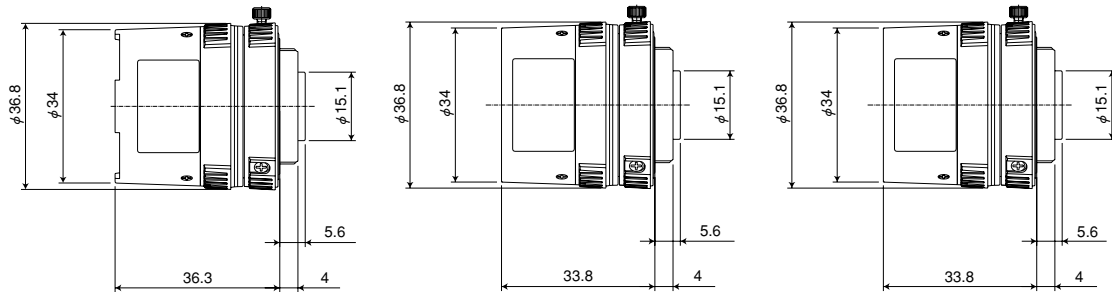
## Motorized Zoom Lens

<b>1/4 FORMAT</b>											
QS6ZME(C40400)	4.6-28	1.0 - 250	CS	41.64-7.50			49 P=0.75	65 72.8 77	430	VIDEO & DC IRIS	21
<b>1/3 FORMAT</b>											
TS6ZME(C70600)	6.3-38	1.2 - 360	CS	31.26-5.59	41.12-7.43		49 P=0.75	58 63.5 78	410	VIDEO & DC IRIS	22
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 & DC IRIS	22
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 & DC IRIS	22
TS15ZAME(C70624)	6-90	1.2 - 430	CS	32.96-2.33	43.48-3.08		62 P=0.75	78 88.5 119	760	VIDEO & DC IRIS	23
TS15ZAME-P(C70627)*	6-90	1.2 - 430	CS	32.96-2.33	43.48-3.08		62 P=0.75	78 88.5 119	770	VIDEO & DC IRIS	23
TS20ZME(C70900)	9-180	1.2 - 510	CS	22.61-1.15	30.28-1.53		95 P=1.0	116 135 216	2590	VIDEO IRIS	23
TS20ZME-P(C70903)*	9-180	1.2 - 510	CS	22.61-1.15	30.28-1.53		95 P=1.0	116 135 216	2620	VIDEO IRIS	23
<b>1/2 FORMAT</b>											
HS6ZME(C60806)	8-48	1.4 - 360	CS	24.81-4.39	32.78-5.82	42.88-7.69	49 P=0.75	58 63.5 78	400	VIDEO & DC IRIS	24
H6ZBME(C60809)	8-48	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 & DC IRIS	24
H6ZBME-P(C60810)*	8-48	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 & DC IRIS	24
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 & DC IRIS	25
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 & DC IRIS	25
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 & DC IRIS	25
H15ZAME(C60826)	8-120	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 & DC IRIS	26
H15ZAME-P(C60829)*	8-120	1.6 - 1000	C	24.76-1.76	32.85-2.34	43.37-3.09	62 P=0.75	78 88.5 134	810	VIDEO & DC IRIS	26
H20ZME(C61221)	12-240	1.6 - 720	C	17.17-0.88	22.95-1.17	30.78-1.56	95 P=1.0	116 135 216	2590	VIDEO IRIS	26
H20ZME-P(C61224)*	12-240	1.6 - 720	C	17.17-0.88	22.95-1.17	30.78-1.56	95 P=1.0	116 135 216	2620	VIDEO IRIS	26
H55ZME-F(C61233)	12 -1320	4.0 - 360	C	17.17-0.16	23.18-0.21	31.65-0.28	105 P=1.0	155 138 355	5400	VIDEO IRIS, 2X EXTENDER	27
<b>2/3 FORMAT</b>											
C6Z1218M3(C31211)	12.5-75	1.8 - C	C	16.06-2.75	21.40-3.66	28.44-4.87	49 P=0.75	101.5 92.2 94.5	820	MOTORIZED IRIS	28
C6ZAME(C31220)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	101.5 92.2 94.5	620	VIDEO IRIS	28
C6ZME-P(C31221)	12.5-75	1.8 - 720	C	16.06-2.75	21.38-3.66	28.41-4.87	49 P=0.75	101.5 92.2 94.5	655	VIDEO IRIS	28
C10ZAME(C31002)	10.5-105	1.4 - 1000	C	18.97-2.02	25.24-2.68	33.49-3.56	72 P=0.75	121 109.5 149.5	1380	VIDEO IRIS	29
C10ZAME-P(C31003)*	10.5-105	1.4 - 1000	C	18.97-2.02	25.24-2.68	33.49-3.56	72 P=0.75	121 109.5 149.5	1420	VIDEO IRIS	29
C14ZME(C31009)	10-140	1.9 - 720	C	19.89-1.52	26.41-2.02	34.96-2.68	86 P=1.0	128 118.6 165	2000	VIDEO IRIS	29
C14ZME-P(C31010)*	10-140	1.9 - 720	C	19.89-1.52	26.41-2.02	34.96-2.68	86 P=1.0	128 118.6 165	2040	VIDEO IRIS	29

Manual Override option is available on the models asterisked (\*)

## 1/4 Format Manual Iris

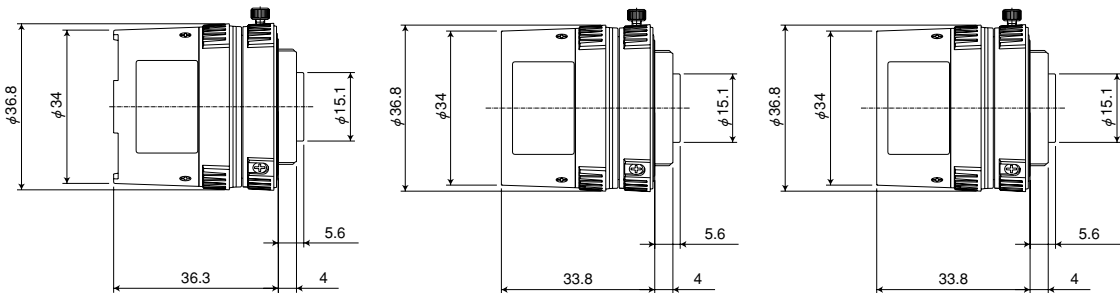
Unit: mm



	QS210 (C40206)	QS310 (C40301)	QS610 (C40601)
Format Size	1/4	1/4	1/4
Focal Length	2.2mm	3.0mm	6.0mm
Max. Aperture Ratio	1 : 1.0	1 : 1.0	1 : 1.0
Iris Range	F1.0 Close	F1.0 Close	F1.0 Close
Horizontal Angle of View (Degrees)	92.60	64.24	34.83
Min. Object Distance	0.15m	0.15m	0.2m
Back Focal Length	7.76mm	7.75mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	44g	40g	37g
Remarks			

## 1/3 Format Manual Iris

Unit: mm

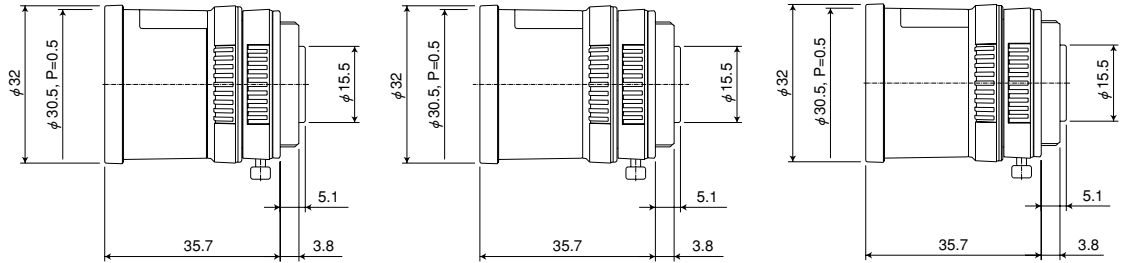


	TS212A (C70214)	TS412A (C70409)	TS812A (C70807)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2	1 : 1.2
Iris Range	F1.2 Close	F1.2 Close	F1.2 Close
Horizontal Angle of View (Degrees)	71.54	49.18	25.05
Min. Object Distance	0.3m	0.2m	0.3m
Back Focal Length	7.67mm	8.01mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	44g	39g	34g
Remarks			



## 1/2 Format Manual Iris

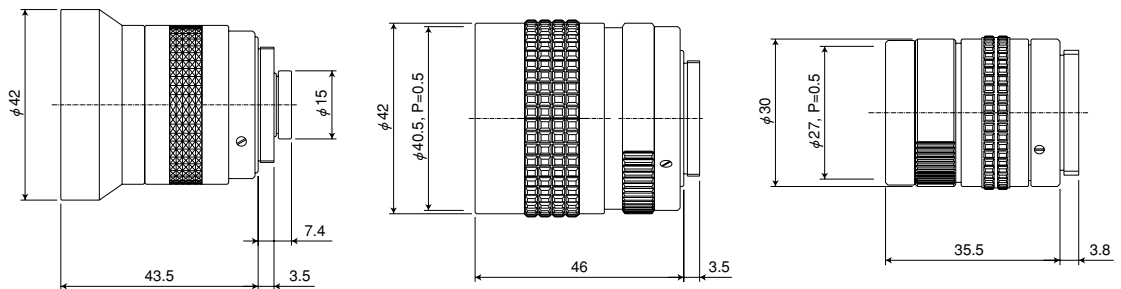
Unit: mm



	HS316A (C60305)	HS614B (C60622)	HS1214D (C61217)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 Close	F1.4 Close	F1.4 Close
Horizontal	1/4 53.54	33.86	16.55
Angle of View	1/3 71.02	44.55	22.06
(Degrees)	1/2 93.67	57.81	29.42
Min. Object Distance	0.2m	0.3m	0.8m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	30.5mm P=0.5mm	30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	34g	32g	26g
Remarks			

## 1/2 Format Manual Iris

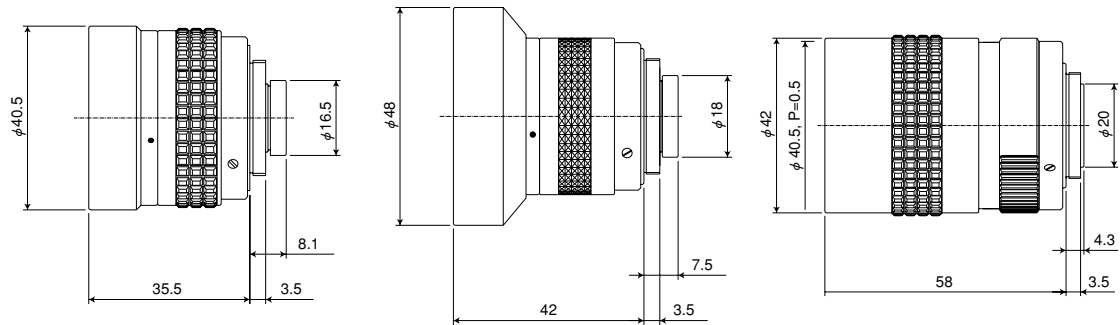
Unit: mm



	H416 (C60402)	H612A (C60607)	H1212B (C61215)
Format Size	1/2	1/2	1/2
Focal Length	4.2mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.2	1 : 1.2
Iris Range	F1.6 Close	F1.2 Close	F1.2 22
Horizontal	1/4 47.87	32.97	16.93
Angle of View	1/3 64.27	43.55	22.60
(Degrees)	1/2 86.77	56.93	30.18
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	27mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	125g	67g
Remarks		Lock Screw Extra	Lock Screw Extra

## 2/3, 1 Format Manual Iris

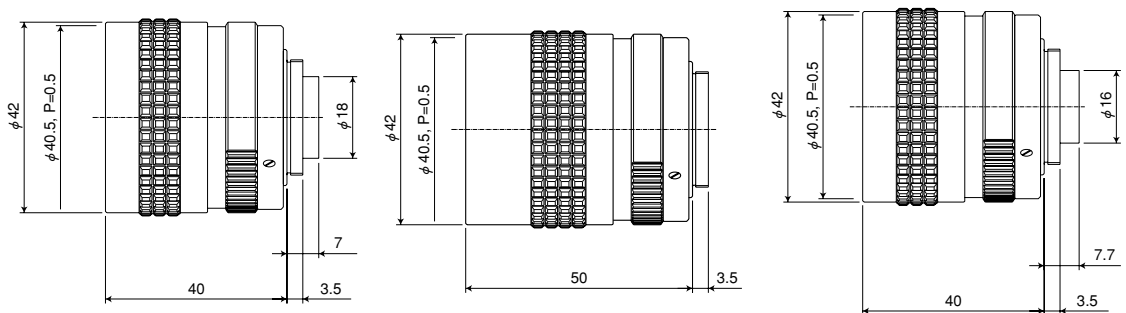
Unit: mm



	C418DX (C30405)	B618CX-2 (C20612)	C814 (C30808)
Format Size	2/3	1	2/3
Focal Length	4.8mm	6.5mm	8mm
Max. Aperture Ratio	1 : 1.8	1 : 1.8	1 : 1.4
Iris Range	F1.8 Close	F1.8 Close	F1.4 Close
Horizontal	1/4 41.68	29.94	25.15
Angle of View	1/3 55.11	39.73	33.31
(Degrees)	1/2 72.37	52.52	43.88
Min. Object Distance	0.3m	0.2m	0.2m
Back Focal Length	9.7mm	10.19mm	14.6mm
Filter size			40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	105g	120g	160g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## 2/3, 1 Format Manual Iris

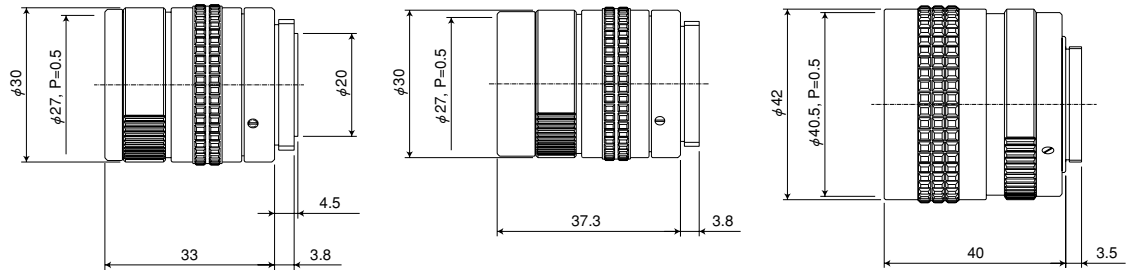
Unit: mm



	C815B (C30811)	B1214D-2 (C21211)	B1218-2 (C21212)
Format Size	2/3	1	1
Focal Length	8.5mm	12.5mm	12.5mm
Max. Aperture Ratio	1 : 1.5	1 : 1.4	1 : 1.8
Iris Range	F1.5 Close	F1.4 Close	F1.8 Close
Horizontal	1/4 24.02	16.21	16.48
Angle of View	1/3 31.87	21.53	21.90
(Degrees)	1/2 42.09	28.51	29.01
Min. Object Distance	0.2m	0.3m	0.3m
Back Focal Length	10.9mm	14.4mm	10.1mm
Filter size	40.5mm P=0.5mm	40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	135g	95g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## 2/3, 1 Format Manual Iris

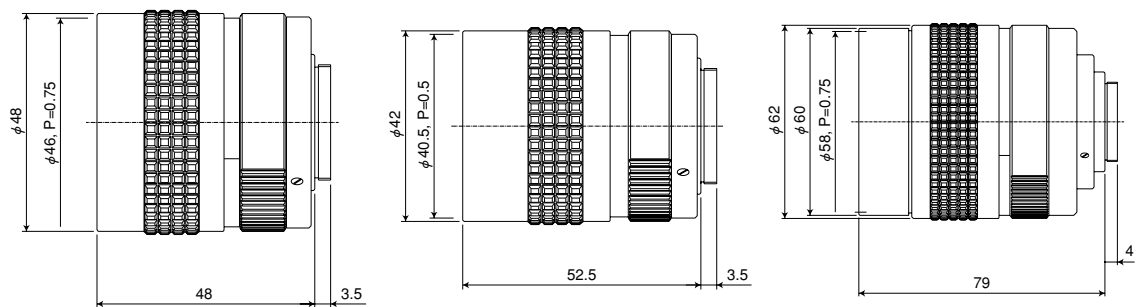
Unit: mm



	C1614A (C31630)	B2514D (C22525)	B2518 (C22516)
Format Size	2/3	1	1
Focal Length	16mm	25mm	25mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.8
Iris Range	F1.4 22	F1.4 22	F1.8 Close
Horizontal Angle of View (Degrees)	1/4 12.70 1/3 16.91 1/2 22.48	8.23 10.97 14.62	8.23 10.95 14.55
Min. Object Distance	0.3m	0.3m	0.6m
Back Focal Length	13.2mm	14.98mm	14.9mm
Filter size	27mm P=0.5mm	27mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	58g	76g	87g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## 1 Format Manual Iris

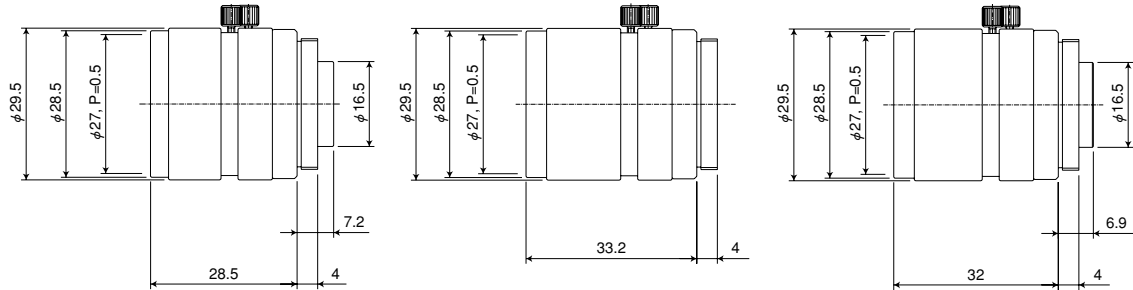
Unit: mm



	B5014A (C25011)	B5018A-3 (C25010)	B7514C (C27509)
Format Size	1	1	1
Focal Length	50mm	50mm	75mm
Max. Aperture Ratio	1 : 1.4	1 : 1.8	1 : 1.4
Iris Range	F1.4 Close	F1.8 Close	F1.4 Close
Horizontal Angle of View (Degrees)	1/4 4.13 1/3 5.50 1/2 7.32	4.13 5.50 7.32	2.75 3.67 4.90
Min. Object Distance	1m	1m	1.2m
Back Focal Length	18.1mm	31.7mm	18.5mm
Filter size	46mm P=0.75mm	40.5mm P=0.5mm	58mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	180g	130g	450g
Remarks	Lock Screw Extra	Lock Screw Extra	Lock Screw Extra

## Manual Iris for Machine Vision

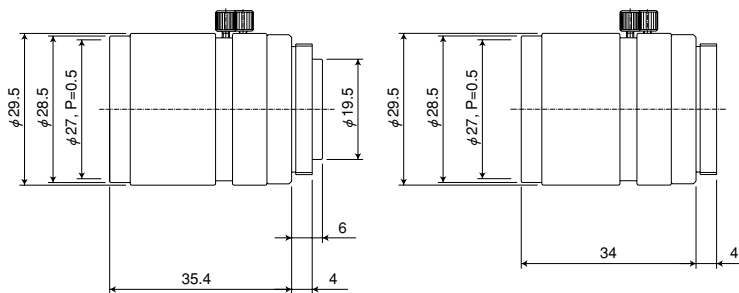
Unit: mm



	H1214-M (C61232)	C1614-M (C31634)	C2514-M (C32500)
Format Size	1/2	2/3	2/3
Focal Length	12mm	16mm	25mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.4
Iris Range	F1.4 16	F1.4 16	F1.4 16
Horizontal	1/4 16.49	1/4 12.86	1/4 8.24
Angle of View	1/3 21.88	1/3 17.11	1/3 10.97
(Degrees)	1/2 28.91	1/2 22.72	1/2 14.60
Min. Object Distance	0.25m	0.25m	0.25m
Back Focal Length	11.50mm	14.61mm	11.50mm
Filter size	27mm P=0.5mm	27mm P=0.5mm	27mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	55g	63g	55g
Remarks	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application

## Manual Iris for Machine Vision

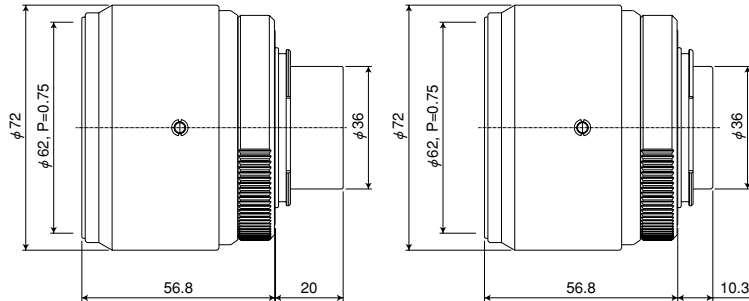
Unit: mm



	C3516-M (C33500)	C5028-M (C35001)	
Format Size	2/3	2/3	
Focal Length	35mm	50mm	
Max. Aperture Ratio	1 : 1.6	1 : 2.8	
Iris Range	F1.6 16	F2.8 22	
Horizontal	1/4 6.07	1/4 4.12	
Angle of View	1/3 8.09	1/3 5.50	
(Degrees)	1/2 10.76	1/2 7.32	
Min. Object Distance	0.4m	0.9m	
Back Focal Length	11.85mm	21.03mm	
Filter size	27mm P=0.5mm	27mm P=0.5mm	
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	64g	55g	
Remarks	Lock Screw Up to 2M pixels cameras For Close-Up application	Lock Screw Up to 2M pixels cameras For Close-Up application	

## Manual Iris for Line-Scan Cameras

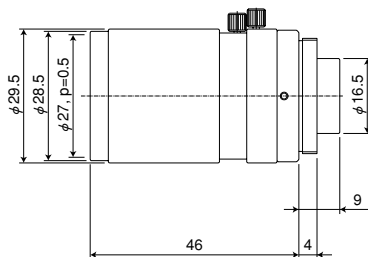
Unit: mm



	YF3528 (C52915F)	YF5028 (C52893F)	
Format Size	45mm Image Circle	45mm Image Circle	
Focal Length	35mm	50mm	
Max. Aperture Ratio	1 : 2.8	1 : 2.8	
Iris Range	F2.8 22	F2.8 22	
Horizontal Angle of View (Degrees)	64.40 (45mm Image Format)	47.60 (45mm Image Format)	
Min. Object Distance	0.19m	0.25m	
Back Focal Length	33.22mm	36.99mm	
Filter size	62mm P=0.75mm	62mm P=0.75mm	
Mount (Flange back)	F-Mount	F-Mount	
Weight	440g	440g	
Remarks	Lock Screw, Click-stop Iris For Close-Up application K-Mount: YK3528 (C52915K)	Lock Screw, Click-stop Iris For Close-Up application K-Mount: YK5028 (C52893K)	

## 1/2 Format Manual Iris for UV (Ultraviolet) Cameras

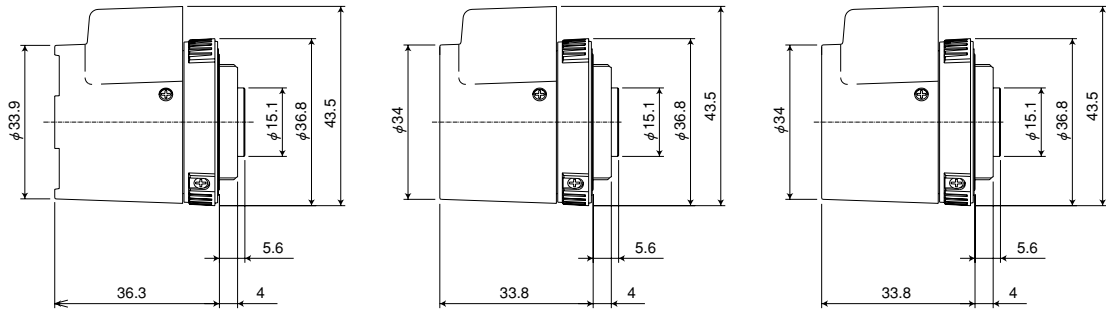
Unit: mm



	H2520-UVM (C62500)	
Format Size	1/2	
Focal Length	25mm	
Max. Aperture Ratio	1 : 2.0	
Iris Range	F2.0 16	
Horizontal Angle of View (Degrees)	8.24	
Horizontal Angle of View (Degrees)	10.98	
Horizontal Angle of View (Degrees)	14.62	
Min. Object Distance	0.25m	
Back Focal Length	12.01mm (330nm)	
Filter size	27mm P=0.5mm	
Mount (Flange back)	C (17.526mm)	
Weight	78g	
Remarks	Wave Length: 200nm more than 1,000nm (280nm 365nm for up to 2M pixels UV cameras) For Close-Up application	

## 1/4 Format Auto-Iris

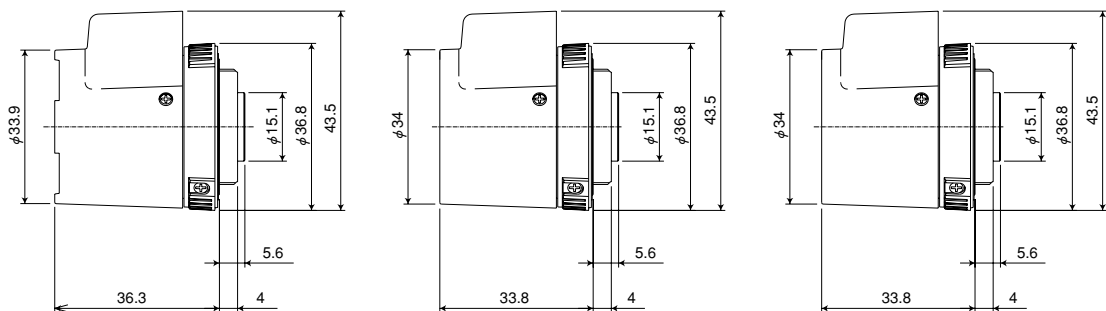
Unit: mm



	QS210E (C40202)	QS310E (C40300)	QS610E (C40600)
Format Size	1/4	1/4	1/4
Focal Length	2.2mm	3.0mm	6.0mm
Max. Aperture Ratio	1 : 1.0	1 : 1.0	1 : 1.0
Iris Range	F1.0 200	F1.0 200	F1.0 200
Horizontal Angle of View (Degrees)	92.60	64.24	34.83
Min. Object Distance	0.15m	0.15m	0.2m
Back Focal Length	7.76mm	7.75mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	54g	50g	47g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/3 Format Auto-Iris

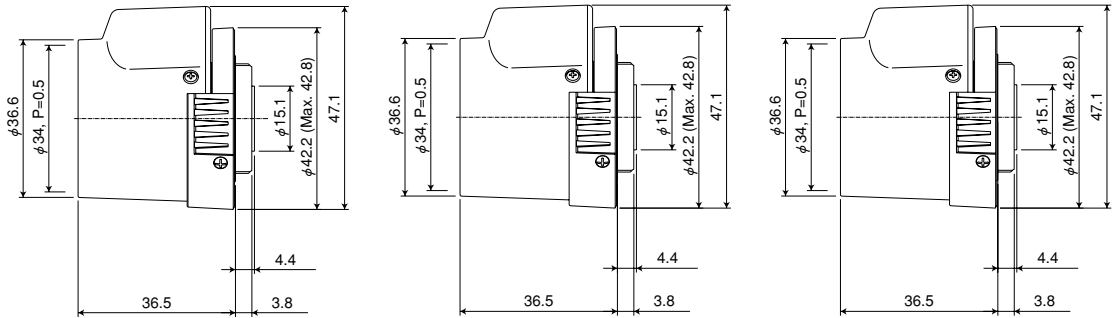
Unit: mm



	TS212E (C70210)	TS412E (C70406)	TS812E (C70804)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2	1 : 1.2
Iris Range	F1.2 200	F1.2 200	F1.2 200
Horizontal Angle of View (Degrees)	71.54	49.18	25.05
Min. Object Distance	0.3m	0.2m	0.2m
Back Focal Length	7.67mm	8.01mm	7.73mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	54g	49g	44g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/2 Format Auto-Iris

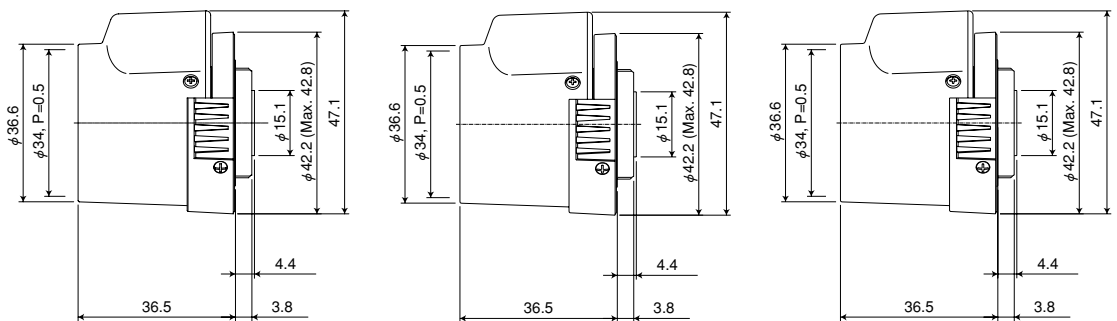
Unit: mm



	HS316TE (C60310)	HS614TE (C60631)	HS1214TE (C61228)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 90	F1.4 90	F1.4 90
Horizontal Angle of View (Degrees)	1/4 53.54 1/3 71.02 1/2 93.67	33.86 44.55 57.81	16.55 22.06 29.42
Min. Object Distance	0.2m	0.2m	0.5m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	34mm P=0.5mm	34mm P=0.5mm	34mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	57g	60g	46g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

## 1/2 Format Auto-Iris

Unit: mm

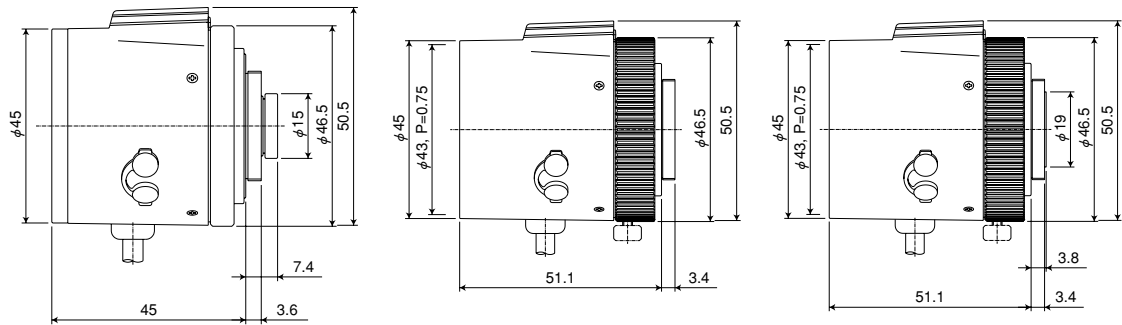


	HS316E (C60309)	HS614E (C60630)	HS1214E (C61227)
Format Size	1/2	1/2	1/2
Focal Length	3.7mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.4	1 : 1.4
Iris Range	F1.6 300	F1.4 300	F1.4 300
Horizontal Angle of View (Degrees)	1/4 53.54 1/3 71.02 1/2 93.67	33.86 44.55 57.81	16.55 22.06 29.42
Min. Object Distance	0.2m	0.2m	0.5m
Back Focal Length	8.99mm	10.49mm	10.38mm
Filter size	34mm P=0.5mm	34mm P=0.5mm	34mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	57g	60g	46g
Remarks	Video & DC Iris	Video & DC Iris	Video & DC Iris

Monofocal Auto-Iris Lens

## 1/2 Format Auto-Iris

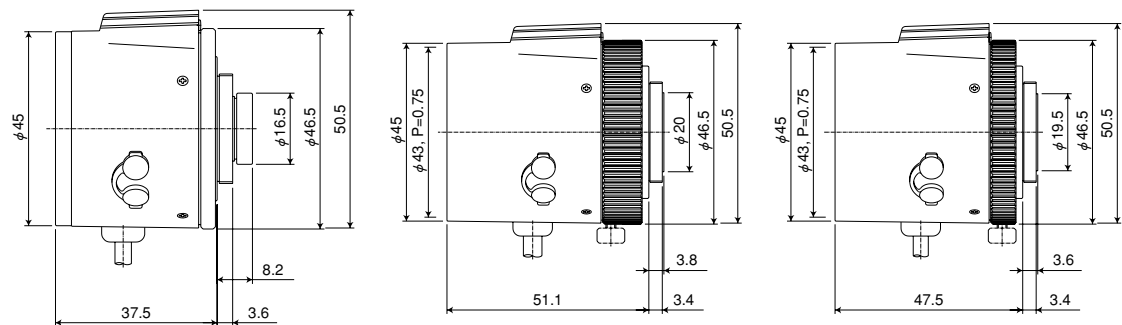
Unit: mm



	H416E (C60405)	H612E (C60625)	H1212E (C61220)
Format Size	1/2	1/2	1/2
Focal Length	4.2mm	6mm	12mm
Max. Aperture Ratio	1 : 1.6	1 : 1.2	1 : 1.2
Iris Range	F1.6 360	F1.2 360	F1.2 360
Horizontal	1/4 47.87	32.97	16.93
Angle of View	1/3 64.27	43.55	22.60
(Degrees)	1/2 86.77	56.93	30.18
Min. Object Distance	0.2m	0.2m	0.3m
Back Focal Length	10.4mm	14.3mm	13.9mm
Filter size		43mm P=0.75mm	43mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	135g	140g	140g
Remarks	Video & DC Iris Manual Override: H416ER (C60404)	Video & DC Iris Manual Override: H612ER (C60624)	Video & DC Iris Manual Override: H1212ER (C61219)

## 2/3, 1 Format Auto-Iris

Unit: mm

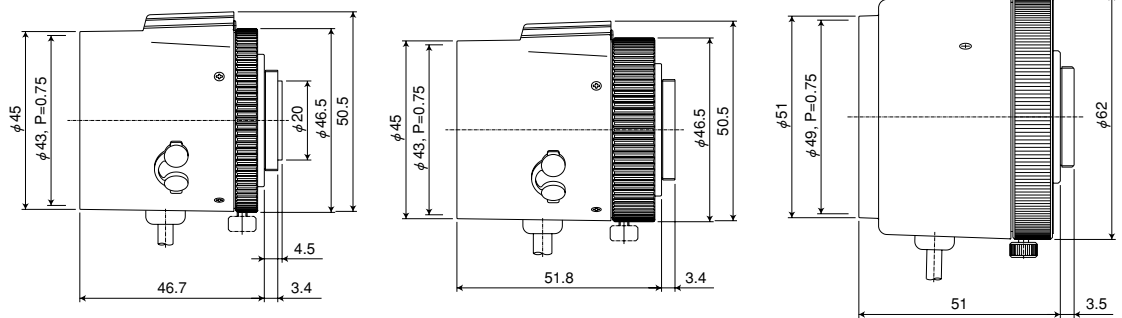


	C418E (C30407)	C814E (C30821)	B1214E (C21223)
Format Size	2/3	2/3	1
Focal Length	4.8mm	8mm	12.5mm
Max. Aperture Ratio	1 : 1.8	1 : 1.4	1 : 1.4
Iris Range	F1.8 360	F1.4 360	F1.4 360
Horizontal	1/4 41.27	25.10	16.22
Angle of View	1/3 54.57	33.22	21.55
(Degrees)	1/2 71.65	43.67	28.54
Min. Object Distance	0.3m	0.2m	0.3m
Back Focal Length	9.71mm	14.5mm	14.4mm
Filter size		43mm P=0.75mm	43mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	120g	140g	140g
Remarks	Video & DC Iris Manual Override: C418ER (C30406)	Video & DC Iris Manual Override: C814ER (C30820)	Video & DC Iris Manual Override: B1214ER (C21221) F1.4-2000: B1214E-2000 (C21224)



## 2/3, 1 Format Auto-Iris

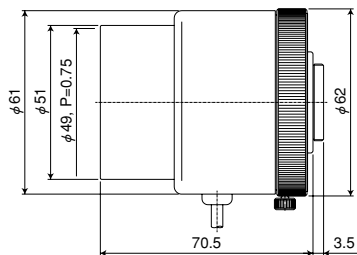
Unit: mm



	C1614E (C31632)	B2514E (C22527)	B5018E (C25018)
Format Size	2/3	1	1
Focal Length	16mm	25mm	50mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.8
Iris Range	F1.4 360	F1.4 360	F1.8 360
Horizontal	1/4	12.72	8.23
Angle of View	1/3	16.92	10.97
(Degrees)	1/2	22.50	14.62
Min. Object Distance	0.5m	0.9m	1m
Back Focal Length	13.2mm	14.98mm	31.7mm
Filter size	43mm P=0.75mm	43mm P=0.75mm	49mm P=0.75mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)	C (17.526mm)
Weight	110g	140g	230g
Remarks	Video & DC Iris Manual Override: C1614ER (C31631)	Video & DC Iris Manual Override: B2514ER (C22526) F1.4-2000: B2514E-2000 (C22528)	Video & DC Iris Manual Override: B5018ER (C25017) F1.8-1000: B5018E-1000 (C25019)

## 1 Format Auto-Iris

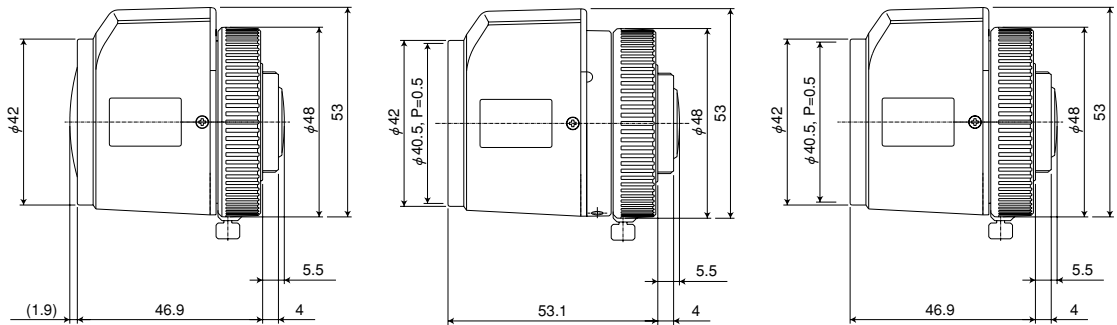
Unit: mm



	B7518E (C27513)		
Format Size	1		
Focal Length	75mm		
Max. Aperture Ratio	1 : 1.8		
Iris Range	F1.8 360		
Horizontal	1/4	2.76	
Angle of View	1/3	3.67	
(Degrees)	1/2	4.90	
Min. Object Distance	2.5m		
Back Focal Length	28.3mm		
Filter size	49mm P=0.75mm		
Mount (Flange back)	C (17.526mm)		
Weight	300g		
Remarks	Video & DC Iris F1.8-1000: B7518E-1000 (C27514)		

## 1/3 Format Ultra-High Speed Auto-Iris

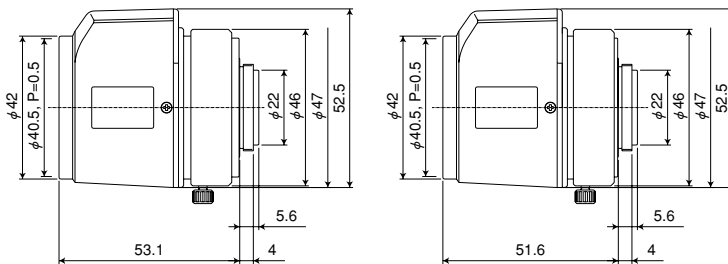
Unit: mm



	TS209E-ASP (C70204)	TS407E-ASP (C70405)	TS807E-ASP (C70803)
Format Size	1/3	1/3	1/3
Focal Length	2.8mm	4mm	8mm
Max. Aperture Ratio	1 : 0.95	1 : 0.75	1 : 0.75
Iris Range	F0.95 180	F0.75 180	F0.75 180
Horizontal	1/4	48.39	25.07
Angle of View	1/3	62.55	33.31
(Degrees)	1/2		
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	7.51mm	7.51mm	7.98mm
Filter size		40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	140g	145g	135g
Remarks	DC Iris	DC Iris	DC Iris

## 1/1.8 Format Mega-Pixel Auto-Iris

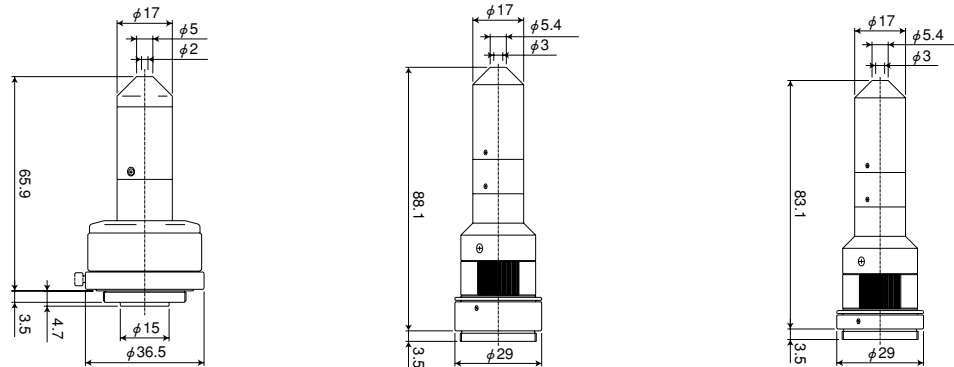
Unit: mm



	H612E-M (C60632)	H912E-M (C60900)
Format Size	1/1.8	1/1.8
Focal Length	6mm	9mm
Max. Aperture Ratio	1 : 1.2	1 : 1.2
Iris Range	F1.2 200	F1.2 200
Horizontal	1/3	29.65
Angle of View	1/2	39.38
(Degrees)	1/1.8	43.90
Min. Object Distance	0.12m	0.2m
Back Focal Length	12.13mm	12.22mm
Filter size	40.5mm P=0.5mm	40.5mm P=0.5mm
Mount (Flange back)	C (17.526mm)	C (17.526mm)
Weight	170g	160g
Remarks	Video & DC Iris Up to 3M pixels cameras	Video & DC Iris Up to 3M pixels cameras

## 1/3, 1/2 Format Manual Iris Pinhole

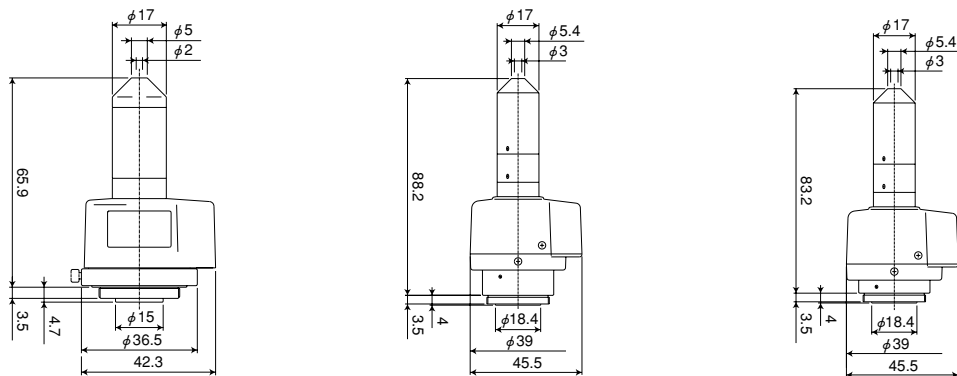
Unit: mm



	TS420P (C70404)	HS620P (C60613)	H620P (C60612)
Format Size	1/3	1/2	1/2
Focal Length	4mm	6.2mm	6.2mm
Max. Aperture Ratio	1 : 2.0	1 : 2.0	1 : 2.0
Iris Range	F2.0 Close	F2.0 Close	F2.0 Close
Horizontal 1/4	51.24	32.44	32.44
Angle of View 1/3 (Degrees)	68.47	42.82	42.82
Angle of View 1/2 (Degrees)		56.12	56.12
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	8.55mm	14.23mm	14.23mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	C (17.526mm)
Weight	74g	67g	63g
Remarks	Straight pinhole	Straight pinhole	Straight pinhole

## 1/3, 1/2 Format Auto-Iris Pinhole

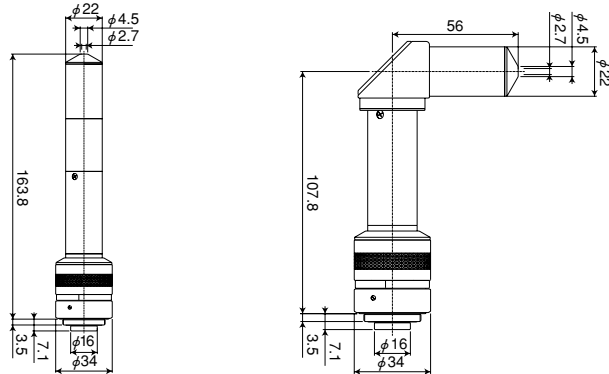
Unit: mm



	TS420PE (C70403)	HS620PE (C60627)	H620PE (C60626)
Format Size	1/3	1/2	1/2
Focal Length	4mm	6.2mm	6.2mm
Max. Aperture Ratio	1 : 2.0	1 : 2.0	1 : 2.0
Iris Range	F2.0 64	F2.0 300	F2.0 300
Horizontal 1/4	51.24	32.44	32.44
Angle of View 1/3 (Degrees)	68.47	42.82	42.82
Angle of View 1/2 (Degrees)		56.12	56.12
Min. Object Distance	0.3m	0.3m	0.3m
Back Focal Length	8.55mm	14.23mm	14.23mm
Filter size			
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	C (17.526mm)
Weight	79g	105g	100g
Remarks	DC Iris Straight pinhole	Video & DC Iris Straight pinhole	Video & DC Iris Straight pinhole

## 2/3 Format Manual Iris Pinhole

Unit: mm

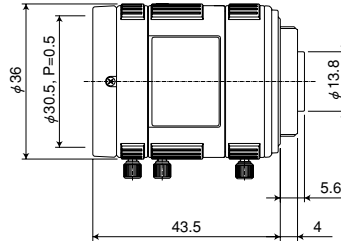


	C934P (C30900)	C934PL (C30901)	
Format Size	2/3	2/3	
Focal Length	9mm	9mm	
Max. Aperture Ratio	1 : 3.4	1 : 3.4	
Iris Range	F3.4 22	F3.4 22	
Horizontal 1/4	22.30	22.30	
Angle of View 1/3 (Degrees)	29.60	29.60	
1/2	39.11	39.11	
Min. Object Distance	0.3m	0.3m	
Back Focal Length	11.8mm	11.8mm	
Filter size			
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	175g	210g	
Remarks	Streight Pinhole	Right Angle Pinhole	

## 1/4 Format Manual Iris Vari-Focal

Unit: mm

Coming Soon

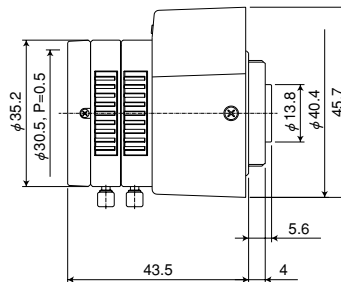


	QS2V2212	QS2V2812 (C40207)	
Format Size	1/4	1/4	
Focal Length	2.2 4.5mm	2.8 5.8mm	
Max. Aperture Ratio	1 : 1.2	1 : 1.2	
Iris Range	F1.2 Close	F1.2 Close	
Horizontal Angle of View (Degrees)	1/4 94.48 51.88 1/3 1/2	76.22 36.40	
Min. Object Distance		0.3m	
Back Focal Length		Min. 7.50mm	
Filter size		30.5mm P=0.5mm	
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	
Weight		45g	
Remarks			

## 1/4 Format Auto-Iris Vari-Focal

Unit: mm

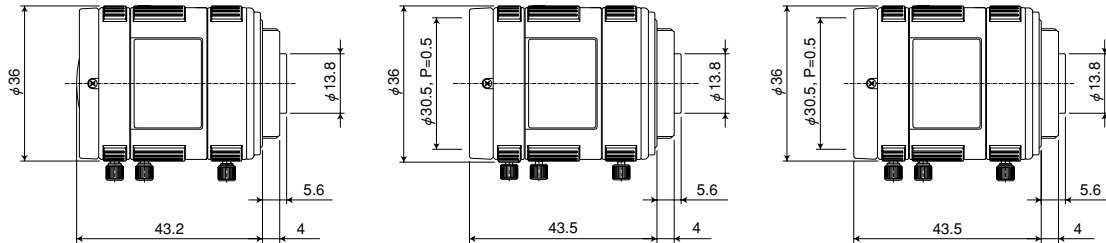
Coming Soon



	QS2V2212E	QS2V2812E (C40205)	
Format Size	1/4	1/4	
Focal Length	2.2 4.5mm	2.8 5.8mm	
Max. Aperture Ratio	1 : 1.2	1 : 1.2	
Iris Range	F1.2 200	F1.2 200	
Horizontal Angle of View (Degrees)	1/4 94.48 51.88 1/3 1/2	76.22 36.40	
Min. Object Distance		0.3m	
Back Focal Length		Min. 7.50mm	
Filter size		30.5mm P=0.5mm	
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	
Weight		57g	
Remarks		Video & DC Iris	

## 1/3 Format Manual Iris Vari-Focal

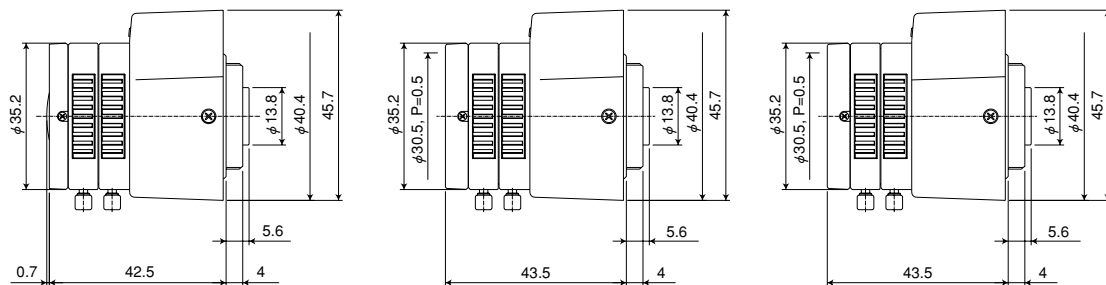
Unit: mm



	TS2V214 (C70213)	TS2V314B (C70313)	TS2V616 (C70612)
Format Size	1/3	1/3	1/3
Focal Length	2.8 6mm	3.5 8mm	6 12mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.6
Iris Range	F1.4 Close	F1.4 Close	F1.6 Close
Horizontal	1/4 72.46 35.15	58.74 26.55	34.92 17.21
Angle of View	1/3 96.94 46.76	79.83 35.44	47.22 22.97
(Degrees)	1/2		
Min. Object Distance	0.3m	0.35m	1.0m
Back Focal Length	Min. 7.54mm	Min. 7.65mm	Min. 7.79mm
Filter size		30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	47g	43g	43g
Remarks		Day & Night optics	

## 1/3 Format Auto-Iris Vari-Focal

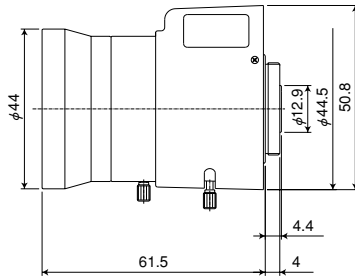
Unit: mm



	TS2V214AE (C70220)	TS2V314BE (C70312)	TS2V616AE (C70622)
Format Size	1/3	1/3	1/3
Focal Length	2.8 6mm	3.5 8mm	6 12mm
Max. Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.6
Iris Range	F1.4 300	F1.4 300	F1.6 300
Horizontal	1/4 72.26 35.35	58.74 26.55	34.98 17.23
Angle of View	1/3 96.70 47.04	79.83 35.44	47.37 23.01
(Degrees)	1/2		
Min. Object Distance	0.3m	0.35m	1.0m
Back Focal Length	Min. 7.54mm	Min. 7.65mm	Min. 7.79mm
Filter size		30.5mm P=0.5mm	30.5mm P=0.5mm
Mount (Flange back)	CS (12.5mm)	CS (12.5mm)	CS (12.5mm)
Weight	59g	59g	53g
Remarks	Video Iris DC-Iris: TS2V214AED Day & Night optics	Video Iris DC-Iris: TS2V314BED Day & Night optics	Video Iris DC-Iris: TS2V616AED Day & Night optics

## 1/3 Format Auto-Iris Vari-Focal

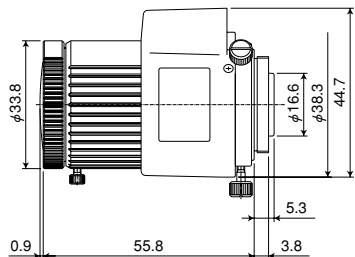
Unit: mm



		TS10V518E (C70508)		
Format Size		1/3		
Focal Length		5 50mm		
Max. Aperture Ratio		1 : 1.8		
Iris Range		F1.8 360		
Horizontal	1/4	37.80	4.14	
Angle of View	1/3	50.00	5.52	
(Degrees)	1/2			
Min. Object Distance		0.6m		
Back Focal Length		Min. 7.6mm		
Filter size				
Mount (Flange back)		CS (12.5mm)		
Weight		140g		
Remarks		DC Iris		

## 1/3 Format Auto-Iris Fish-Eye Vari-Focal

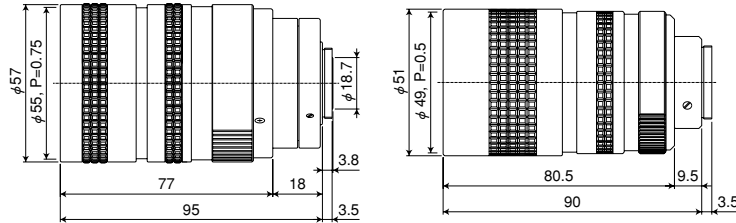
Unit: mm



		TS2V114E (C70100)		
Format Size		1/3		
Focal Length		1.6 3.4mm		
Max. Aperture Ratio		1 : 1.4		
Iris Range		F1.4 64		
Horizontal	1/4	180	64.89	
Angle of View	1/3	180	89.55	
(Degrees)	1/2			
Min. Object Distance		0.5m		
Back Focal Length		8.07mm		
Filter size				
Mount (Flange back)		CS (12.5mm)		
Weight		140g		
Remarks		DC Iris Fish-Eye lens		

## 1/2, 2/3 Format Manual Zoom

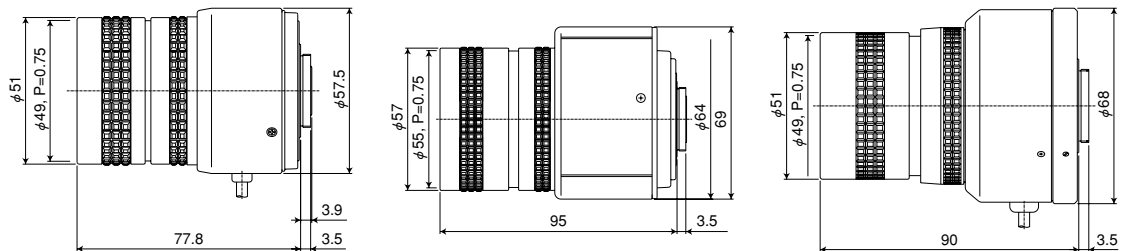
Unit: mm



	H6Z810 (C60812)	C6Z1218 (C31204)	
Format Size	1/2	2/3	
Focal Length	8 48mm	12.5 75mm	
Max. Aperture Ratio	1 : 1.0 1.2	1 : 1.8	
Iris Range	F1.0 22	F1.8 22	
Horizontal	1/4 24.92 4.42	16.08 2.75	
Angle of View	1/3 32.99 5.86	21.40 3.66	
(Degrees)	1/2 43.26 7.73	28.44 4.87	
Min. Object Distance	1.2m	1.0m	
Back Focal Length	13.65mm	18.41mm	
Filter size	55mm P=0.75mm	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	C (17.526mm)	
Weight	430g	320g	
Remarks	Lock Screws Extra	Lock Screws Extra Click-stop Iris	

## 1/3, 1/2, 2/3 Format Manual Zoom (Auto-Iris)

Unit: mm

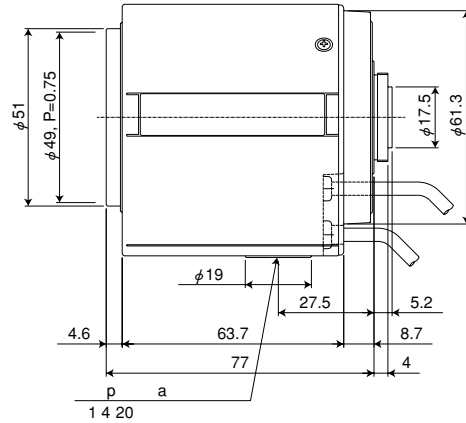
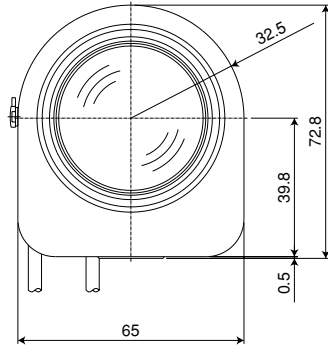


	TS6ZE (C70605)	H6ZBE (C60811)	C6ZE (C31219)
Format Size	1/3	1/2	2/3
Focal Length	6.3 38mm	8 48mm	12.5 75mm
Max. Aperture Ratio	1 : 1.2	1 : 1.0 1.2	1 : 1.8
Iris Range	F1.2 512	F1.0 720	F1.8 720
Horizontal	1/4 31.26 5.59	24.92 4.42	16.06 2.75
Angle of View	1/3 41.12 7.43	32.98 5.86	21.38 3.66
(Degrees)	1/2	43.24 7.73	28.41 4.87
Min. Object Distance	1.8m	1.2m	1.0m
Back Focal Length	9.23mm	13.65mm	18.41mm
Filter size	49mm P=0.75mm	55mm P=0.75mm	49mm P=0.75mm
Mount (Flange back)	CS (12.5mm)	C (17.526mm)	C (17.526mm)
Weight	320g	465g	385g
Remarks	Video & DC Iris Lock Screws Extra	Video & DC Iris Lock Screws Extra	Video & DC Iris Lock Screws Extra



## 1/4 Format 6x Motorized Zoom

Unit: mm



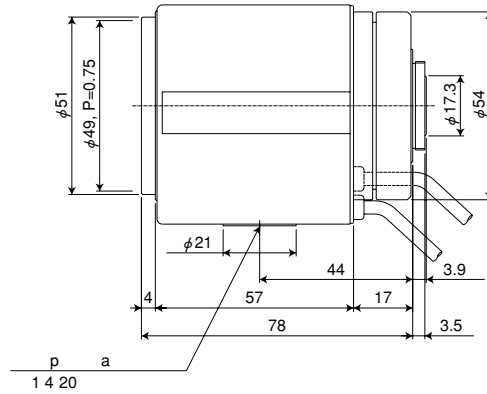
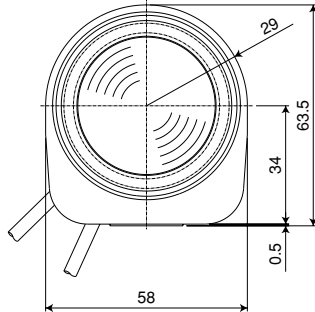
### Basic Specification

Format Size	1/4
Focal Length	4.6 28mm
Max. Aperture Ratio	1 : 1.0
Iris Range	F1.0 250
Horizontal Angle of View (Degrees)	1/4 41.64 7.50
	1/3
	1/2
Min. Object Distance	1.5m
Back Focal Length	7.89mm
Filter size	49mm P=0.75mm
Mount (Flange back)	CS (12.5mm)

	QS6ZME (C40400)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 4.0 sec	
Weight	430g	
Remarks		

## 1/3 Format 6x Motorized Zoom

Unit: mm



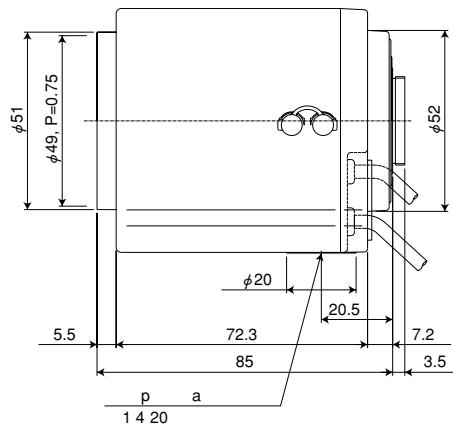
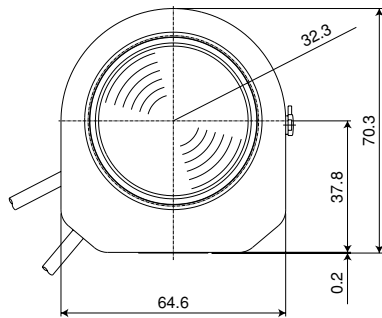
### Basic Specification

Format Size	1/3	
Focal Length	6.3	38mm
Max. Aperture Ratio	1 : 1.2	
Iris Range	F1.2	360
Horizontal Angle of View (Degrees)	1/4	31.26 5.59
Vertical Angle of View (Degrees)	1/3	41.12 7.43
Min. Object Distance	1.8m	
Back Focal Length	9.23mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS6ZME (C70600)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 5.0 sec	
Weight	410g	
Remarks		

## 1/3 Format 10x Motorized Zoom

Unit: mm



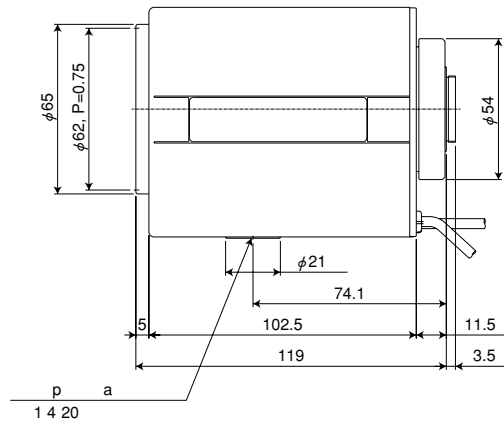
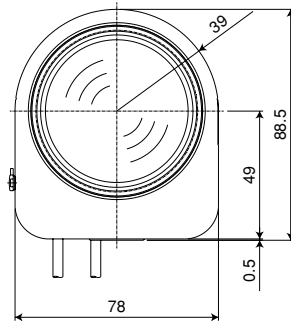
### Basic Specification

Format Size	1/3	
Focal Length	5.8	58mm
Max. Aperture Ratio	1 : 1.2 1.7	
Iris Range	F1.2	360
Horizontal Angle of View (Degrees)	1/4	33.77 3.62
Vertical Angle of View (Degrees)	1/3	44.07 4.78
Min. Object Distance	1.8m	
Back Focal Length	8.99mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS10ZME (C70500)	TS10ZME-P (C70501)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec
Zoom	Motorized Approx. 6.5 sec	Motorized with Pre-Set Approx. 6.5 sec
Weight	380g	430g
Remarks		Manual Override (only Video Iris) TS10ZME-F (C70506)

## 1/3 Format 15x Motorized Zoom

Unit: mm



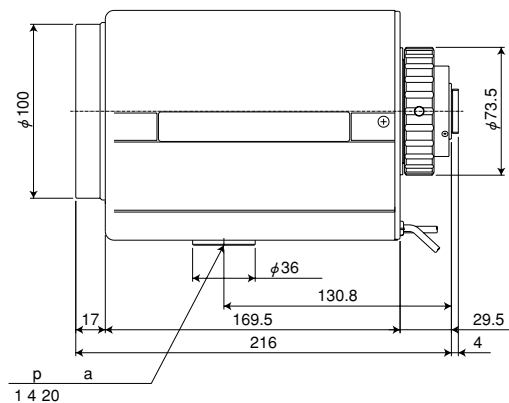
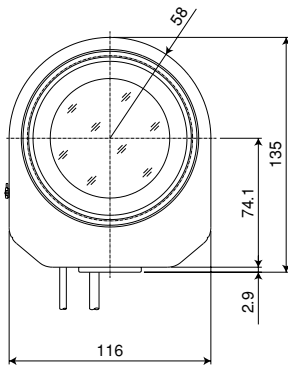
### Basic Specification

Format Size	1/3	
Focal Length	6.0 90mm	
Max. Aperture Ratio	1 : 1.2 1.8	
Iris Range	F1.2 430	
Horizontal	1/4	32.96 2.33
Angle of View	1/3	43.48 3.08
(Degrees)	1/2	
Min. Object Distance	1.5m	
Back Focal Length	10.7mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	TS15ZAME (C70624)	TS15ZAME-P (C70627)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	760g	770g
Remarks		Manual Override (only Video Iris) TS15ZAME-F (C70625)

## 1/3 Format 20x Motorized Zoom

Unit: mm



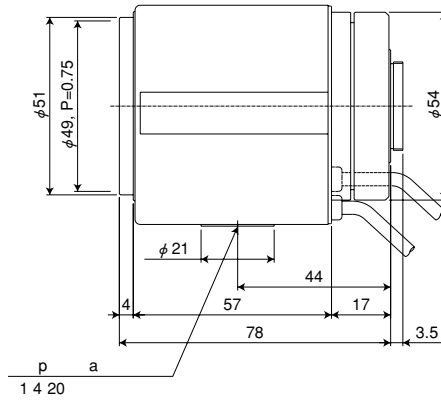
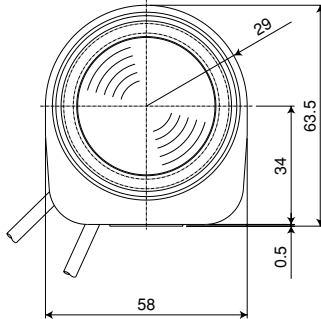
### Basic Specification

Format Size	1/3	
Focal Length	9 180mm	
Max. Aperture Ratio	1 : 1.2 2.1	
Iris Range	F1.2 510	
Horizontal	1/4	22.61 1.15
Angle of View	1/3	30.28 1.53
(Degrees)	1/2	
Min. Object Distance	2.2m	
Back Focal Length	14.25mm	
Filter size	95mm P=1.0mm	
Mount (Flange back)	CS (12.5mm)	

	TS20ZME (C70900)	TS20ZME-P (C70903)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Zoom	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Weight	2590g	2620g
Remarks		Manual Override TS20ZME-F (C70901)

## 1/2 Format 6x Motorized Zoom

Unit: mm



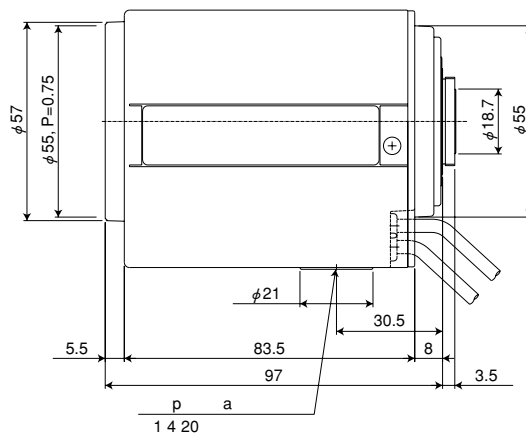
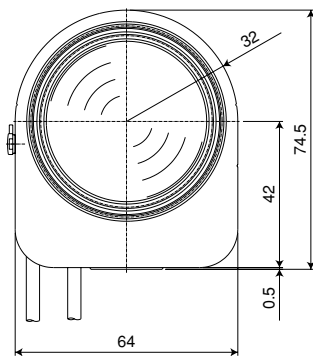
### Basic Specification

Format Size	1/2	
Focal Length	8.0 48mm	
Max. Aperture Ratio	1 : 1.4	
Iris Range	F1.4 360	
Horizontal Angle of View (Degrees)	1/4	24.81 4.39
	1/3	32.78 5.82
	1/2	42.88 7.69
Min. Object Distance	1.8m	
Back Focal Length	11.6mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	HS6ZME (C60806)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.0 sec (Video Iris)	
Focus	Motorized Approx. 5.0 sec	
Zoom	Motorized Approx. 5.0 sec	
Weight	400g	
Remarks		

## 1/2 Format 6x Motorized Zoom

Unit: mm



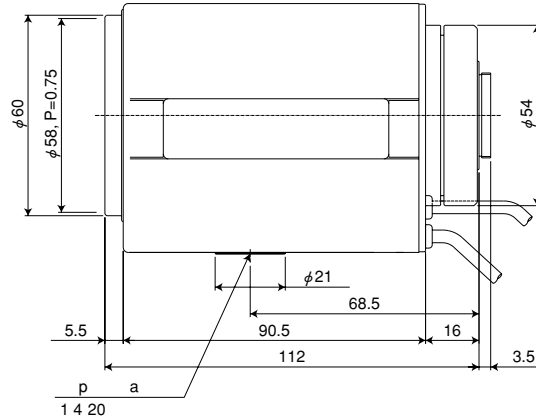
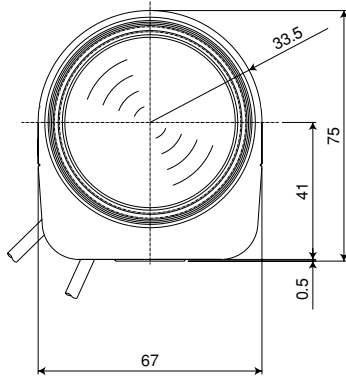
### Basic Specification

Format Size	1/2	
Focal Length	8 48mm	
Max. Aperture Ratio	1 : 1.0 1.2	
Iris Range	F1.0 720	
Horizontal Angle of View (Degrees)	1/4	24.92 4.42
	1/3	32.98 5.86
	1/2	43.24 7.73
Min. Object Distance	1.2m	
Back Focal Length	13.65mm	
Filter size	55mm P=0.75mm	
Mount (Flange back)	C (17.256mm)	

	H6ZBME (C60809)	H6ZBME-P (C60810)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	530g	540g
Remarks		Manual Override (only Video Iris) H6ZBME-F (C60813)

## 1/2 Format 10x Motorized Zoom

Unit: mm



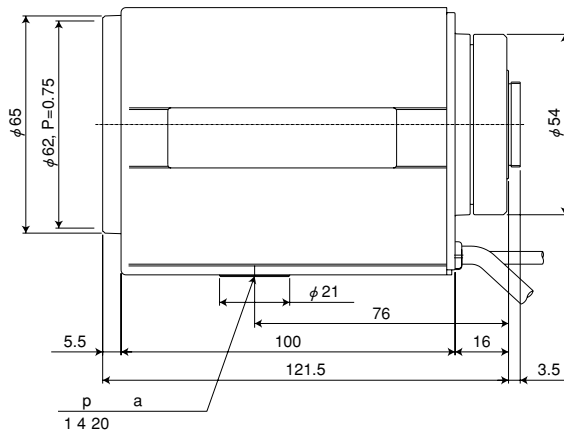
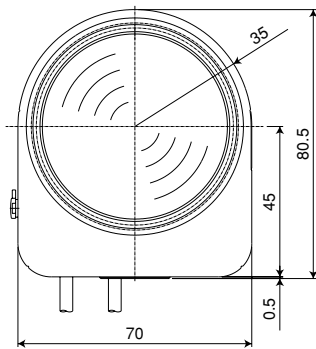
### Basic Specification

Format Size	1/2	
Focal Length	7.5 75mm	
Max. Aperture Ratio	1 : 1.4 1.5	
Iris Range	F1.4 360	
Horizontal Angle of View (Degrees)	1/4	26.15 2.83
	1/3	34.52 3.75
	1/2	45.05 4.95
Min. Object Distance	1.8m	
Back Focal Length	10.75mm	
Filter size	58.0mm P=0.75mm	
Mount (Flange back)	CS (12.5mm)	

	HS10ZME (C60700)	
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	
Focus	Motorized Approx. 6.5 sec *	
Zoom	Motorized Approx. 5.5 sec **	
Weight	580g	
Remarks	* 6.0 sec for Type 2 ** 5.0 sec for Type 2	

## 1/2 Format 10x Motorized Zoom

Unit: mm



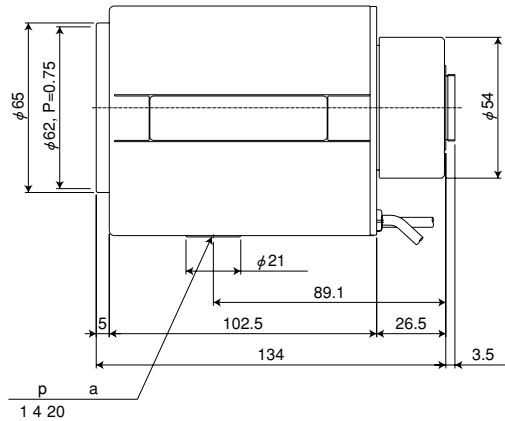
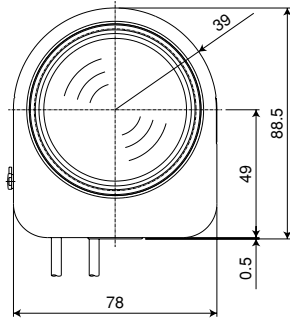
### Basic Specification

Format Size	1/2	
Focal Length	7.5 75mm	
Max. Aperture Ratio	1 : 1.2 1.5	
Iris Range	F1.2 512	
Horizontal Angle of View (Degrees)	1/4	26.45 2.84
	1/3	34.94 3.77
	1/2	45.63 4.99
Min. Object Distance	1.8m	
Back Focal Length	14.52mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	H10ZME (C60701)	H10ZME-P (C60702)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 5.5 sec *	Motorized with Pre-Set Approx. 5.5 sec *
Zoom	Motorized Approx. 5.5 sec *	Motorized with Pre-Set Approx. 5.5 sec *
Weight	715g	740g
Remarks	* 6.0 sec for Type 1&3	Manual Override (only Video Iris) H10ZME-F (C60704) * 6.0 sec for Type 1&3

## 1/2 Format 15x Motorized Zoom

Unit: mm



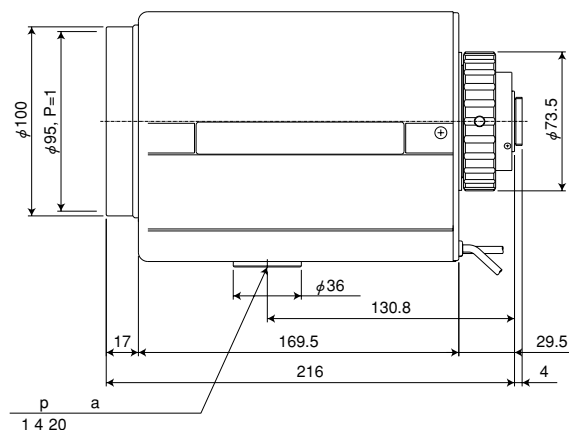
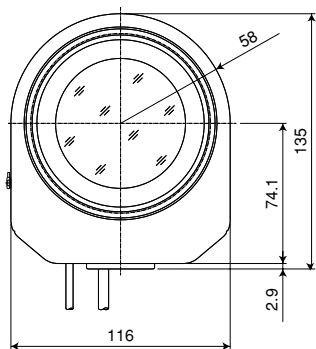
### Basic Specification

Format Size	1/2	
Focal Length	8 120mm	
Max. Aperture Ratio	1 : 1.6 2.4	
Iris Range	F1.6 1000	
Horizontal	1/4	24.76 1.76
Angle of View	1/3	32.85 2.34
(Degrees)	1/2	43.37 3.09
Min. Object Distance	1.5m	
Back Focal Length	14.05mm	
Filter size	62mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	H15ZAME (C60826)	H15ZAME-P (C60829)
Iris	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)	Auto-Iris (Video & DC Iris) Approx. 1.5 sec (Video Iris)
Focus	Motorized Approx. 8.0 sec	Motorized with Pre-Set Approx. 8.0 sec *
Zoom	Motorized Approx. 6.0 sec	Motorized with Pre-Set Approx. 6.0 sec
Weight	800g	810g
Remarks		Manual Overrided (only Video Iris) H15ZAME-F (C60827) * 6.0 sec for Type 1&3

## 1/2 Format 20x Motorized Zoom

Unit: mm



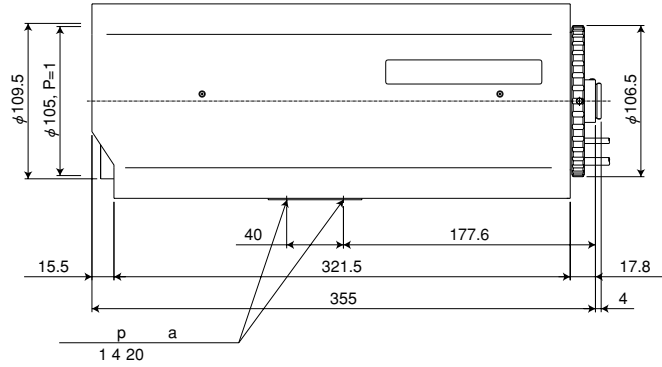
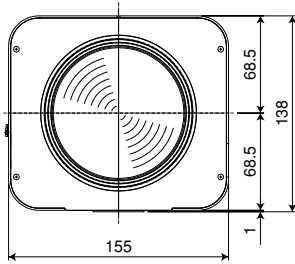
### Basic Specification

Format Size	1/2	
Focal Length	12 240mm	
Max. Aperture Ratio	1 : 1.6 2.8	
Iris Range	F1.6 720	
Horizontal	1/4	17.17 0.88
Angle of View	1/3	22.95 1.17
(Degrees)	1/2	30.78 1.56
Min. Object Distance	2.8m	
Back Focal Length	19.82mm	
Filter size	95mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

	H20ZME (C61221)	H20ZME-P (C61224)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Zoom	Motorized Approx. 10 sec	Motorized with Pre-Set Approx. 10 sec
Weight	2590g	2620g
Remarks		Manual Override H20ZME-F (C61222)

## 1/2 Format 55x (110x) Motorized Zoom

Unit: mm



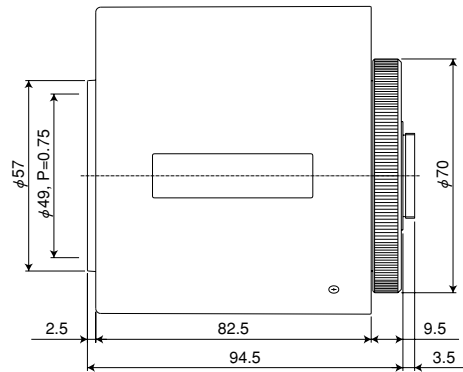
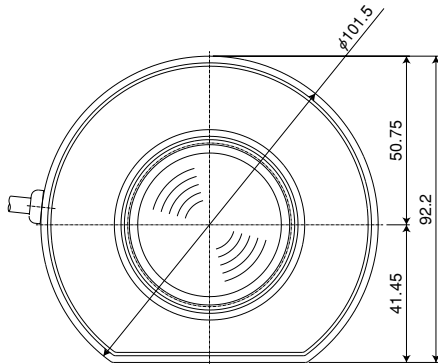
### Basic Specification

Format Size	1/2	
Focal Length	12 660mm (24 1320mm)	
Max. Aperture Ratio	1 : 4.0 14.4	
Iris Range	F4.0 360	
Horizontal Angle of View (Degrees)	1/4	17.17 0.31 (8.53 0.16)
Vertical Angle of View (Degrees)	1/3	23.18 0.42 (11.40 0.21)
	1/2	31.65 0.56 (15.27 0.28)
Min. Object Distance	5m	
Back Focal Length	8.99mm	
Filter size	105mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

H55ZME-F (C61233)		
Iris	Auto-Iris with Manual Override Approx. 1.5 sec (Video Iris)	
Focus	Motorized with Pre-Set Approx. 4.5 sec	
Zoom	Motorized with Pre-Set Approx. 4.5 sec	
Extender	Motorized Approx. 1.5 sec	
Weight	5400g	
Remarks	Built-In 2x Extender	

## 2/3 Format 6x Motorized Zoom (Motorized Iris)

Unit: mm



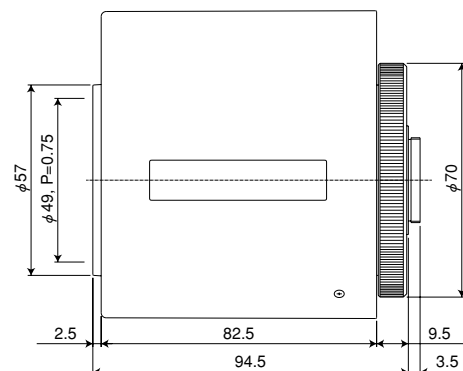
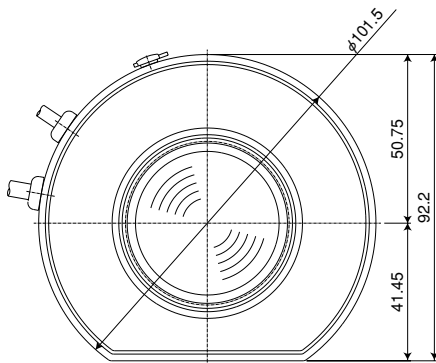
### Basic Specification

Format Size	2/3	
Focal Length	12.5	75mm
Max. Aperture Ratio	1 : 1.8	
Iris Range	F1.8	Close
Horizontal Angle of View (Degrees)	1/4	16.06 2.75
Vertical Angle of View (Degrees)	1/3	21.40 3.66
	1/2	28.44 4.87
Min. Object Distance	1m	
Back Focal Length	18.41mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C6Z1218M3 (C31211)	
Iris	Motorized Approx. 4.0 sec	
Focus	Motorized Approx. 5.0 sec *	
Zoom	Motorized Approx. 5.0 sec *	
Weight	820g	
Remarks	* 5.5 sec for Type 1 & 3	

## 2/3 Format 6x Motorized Zoom

Unit: mm



### Basic Specification

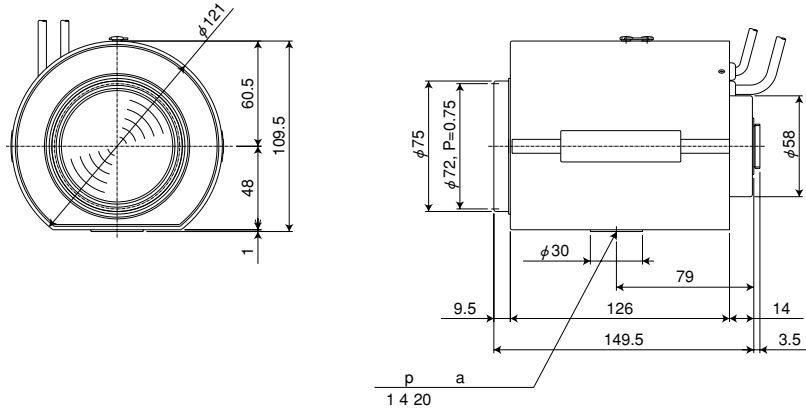
Format Size	2/3	
Focal Length	12.5	75mm
Max. Aperture Ratio	1 : 1.8	
Iris Range	F1.8	720
Horizontal Angle of View (Degrees)	1/4	16.06 2.75
Vertical Angle of View (Degrees)	1/3	21.38 3.66
	1/2	28.41 4.87
Min. Object Distance	1m	
Back Focal Length	18.41mm	
Filter size	49mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C6ZAME (C31220)	C6ZME-P (C31221)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 5.0 sec *	Motorized with Pre-Set Approx. 5.0 sec *
Zoom	Motorized Approx. 5.0 sec *	Motorized with Pre-Set Approx. 5.0 sec *
Weight	620g	655g
Remarks	* 5.5 sec for Type 1 & 3	



## 2/3 Format 10x Motorized Zoom

Unit: mm



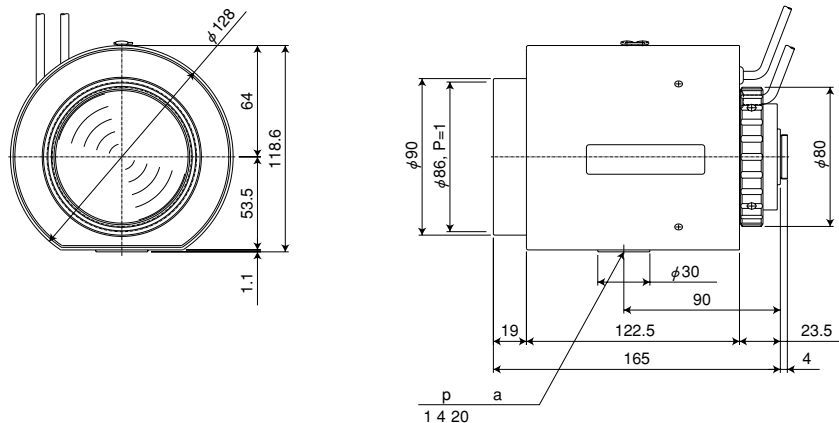
### Basic Specification

Format Size	2/3	
Focal Length	10.5	105mm
Max. Aperture Ratio	1 : 1.4 1.6	
Iris Range	F1.4 1000	
Horizontal Angle of View (Degrees)	1/4	18.97 2.02
Vertical Angle of View (Degrees)	1/3	25.24 2.68
Horizontal Angle of View (Degrees)	1/2	33.49 3.56
Min. Object Distance	1m	
Back Focal Length	18.49mm	
Filter size	72mm P=0.75mm	
Mount (Flange back)	C (17.526mm)	

	C10ZAME (C31002)	C10ZAME-P (C31003)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 5.5 sec	Motorized with Pre-Set Approx. 5.5 sec
Zoom	Motorized Approx. 5.5 sec	Motorized with Pre-Set Approx. 5.5 sec
Weight	1380g	1420g
Remarks		Manual Override C10ZAME-F (C31005)

## 2/3 Format 14x Motorized Zoom

Unit: mm



### Basic Specification

Format Size	2/3	
Focal Length	10	140mm
Max. Aperture Ratio	1 : 1.9	
Iris Range	F1.9 720	
Horizontal Angle of View (Degrees)	1/4	19.89 1.52
Vertical Angle of View (Degrees)	1/3	26.41 2.02
Horizontal Angle of View (Degrees)	1/2	34.96 2.68
Min. Object Distance	2.8m	
Back Focal Length	20.35mm	
Filter size	86mm P=1.0mm	
Mount (Flange back)	C (17.526mm)	

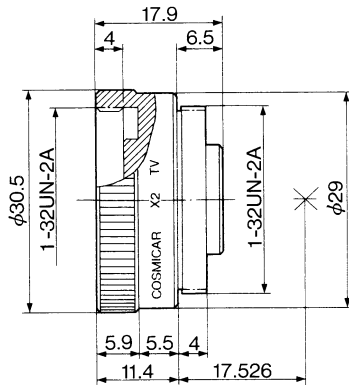
	C14ZME (C31009)	C14ZME-P (C31010)
Iris	Auto-Iris (Video Iris) Approx. 1.5 sec	Auto-Iris (Video Iris) Approx. 1.5 sec
Focus	Motorized Approx. 9.0 sec	Motorized with Pre-Set Approx. 9.0 sec
Zoom	Motorized Approx. 9.5 sec	Motorized with Pre-Set Approx. 9.5 sec
Weight	2000g	2040g
Remarks		Manual Override C14ZME-F (C31012)

## Extender

Unit: mm

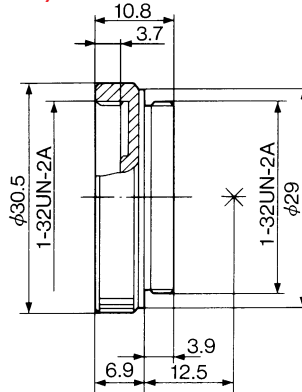
2x Extender for C-Mount

**2-EX (C80001)**



2x Extender for CS-Mount

**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 lenses	CS mount lenses

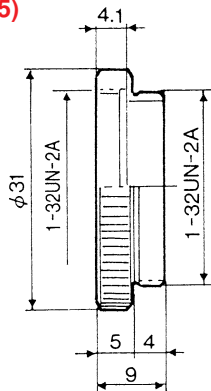
### Note

- 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

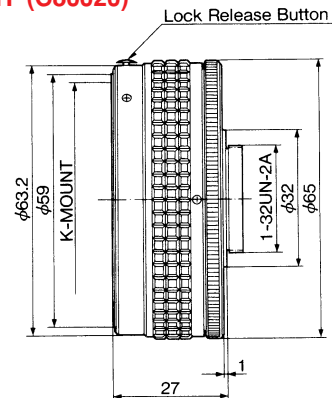
C-CS Mount Adapter (5mm Ring)

**C-CS-A (C80035)**



PENTAX Bayonet Mount for 35mm Photo Lens

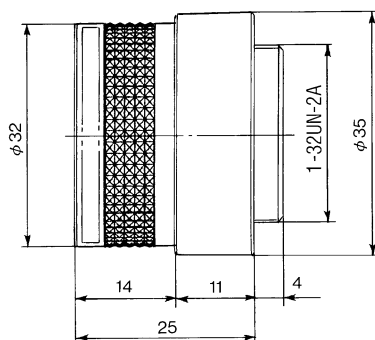
**KC-MOUNT (C80020)**



## Dummy Lens

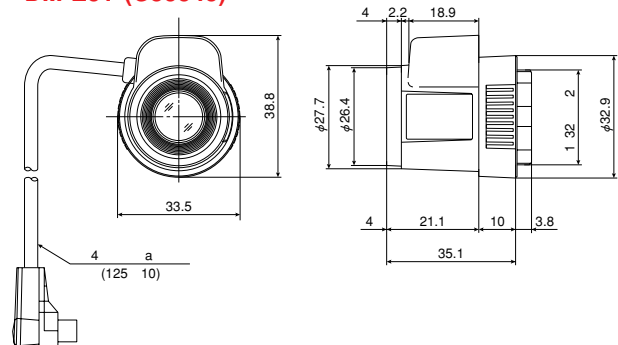
Monofocal type

**DM-163 (C80039)**



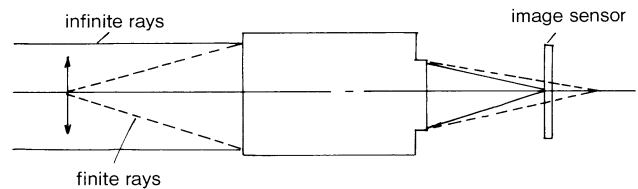
Vari-Focal type

**DM-E01 (C80040)**



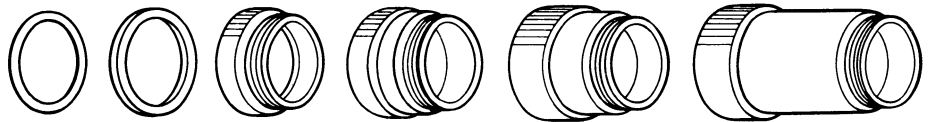
## Extension Tube Set (Macro Ring)

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 seen 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.



### EX-C6 (C90100)

LENGTH    0.5mm    1.0mm    5mm    10mm    20mm    40mm

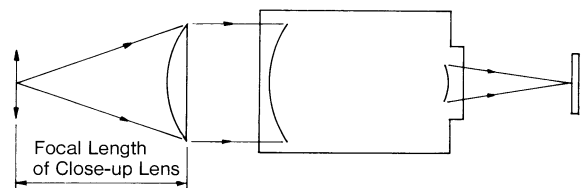


### ■ Specifications

Maximum Diameter		φ 31mm					
Length	Model No.	1	2	3	4	5	6
	: mm	0.5	1	5	10	20	40

## 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. 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.

### ■ Specifications

Model No.	1	2	3
Close-Up No.	No.1	No.2	No.3
Dioptrie	1	2	3
Focusing Range (Infinity)	1000mm	500mm	333mm

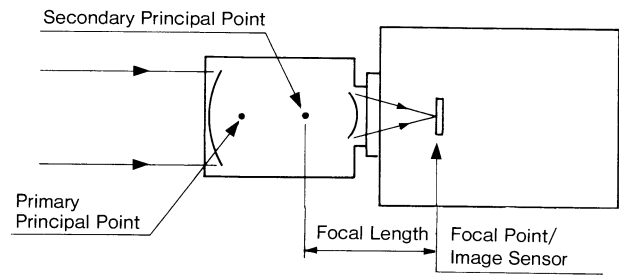
### ■ Note

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.

CCTV is widely accepted as an important and valuable tool in many areas. Manual iris lenses for constant, stable lighting conditions and auto iris lenses for variable lighting conditions. Select the best suited lens for optimum performance in each application.

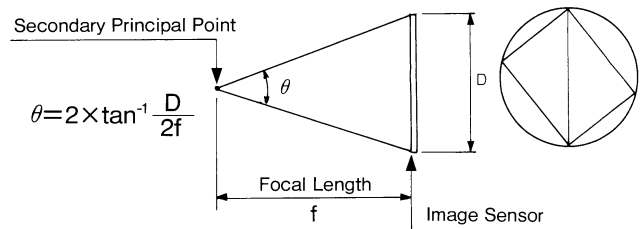
## Focal Length

Rays from infinitely distant 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

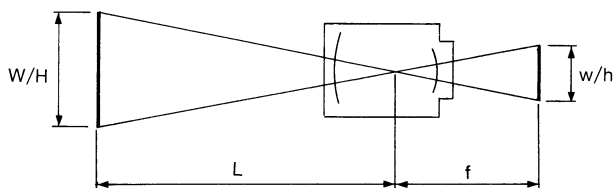
The F number is the index for the amount of light that passes through a lens. The smaller the number, the greater the amount of light. The F number is a ratio between focal length and effective aperture as follows.

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

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

$$H = 4.5\text{m} = 4,500\text{mm} \quad L = 10\text{m} = 10,000\text{mm}$$

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

## Depth of Field

When an object is focused, it is typically observed that 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.

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

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

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

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

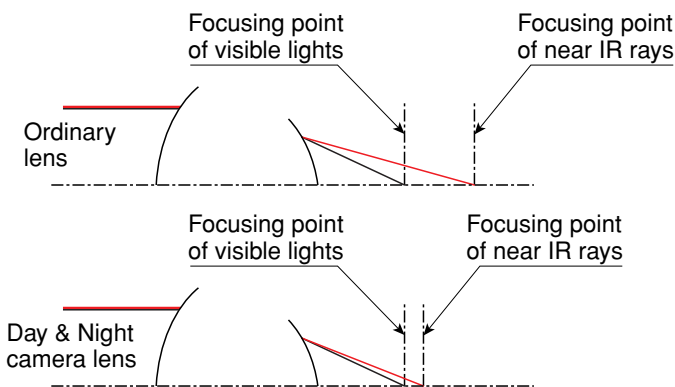
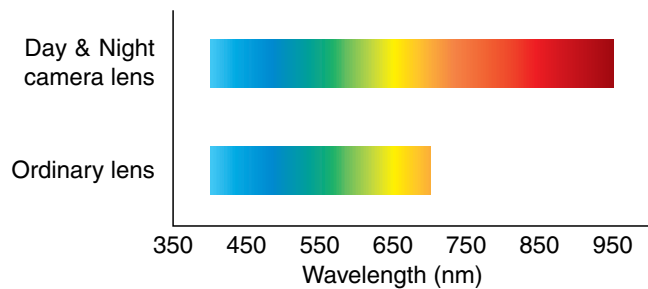
Depth of field increases when:  
focal length is shorter  
F-number is larger (F/1.4 F/5.6)  
Object distance is longer

## Day & Night Lens

Ordinary lenses are designed and chromatic aberration corrected in visible lights wave-lengths range from 400nm to 700nm.

The Day & Night camera lenses are designed to make all light rays from visible to near IR rays directed to the CCD in the camera at the same focusing point.

Chromatic aberration correction range



Meaning Day & Night camera lenses do not require the focus to be readjusted even when the lighting conditions have changed from daytime sun light to night-time, under near IR illuminators conditions.

## Connection For Auto-Iris

Wiring Diagram	Model
<p>Driving Coil White ⊕ Open</p> <p>Damping Coil Red ⊕ Open</p> <p>4-Core Cable</p> <p>White Green Red Blue</p> <p>M G Iris</p> <p>Lens Body</p>	DC Iris Monofocal and Varifocal Lenses
<p>Driving Coil White ⊕ Open</p> <p>Damping Coil Red ⊕ Open</p> <p>Shield</p> <p>4-Core Cable</p> <p>White Green Red Blue</p> <p>M G Iris</p> <p>Lens Body</p>	DC Iris (with shield) Zoom Lenses
<p>Supply Voltage Red</p> <p>Video Signal White</p> <p>Ground Black</p> <p>Shield</p> <p>4-Core Shield Cable</p> <p>Red White Black Blue</p> <p>EE AMP</p> <p>M G Iris</p> <p>Lens Body</p>	Video Iris CS-Mount Monofocal Lenses CS-Mount Zoom Lenses (Except TS6ZE) H620PE
<p>Supply Voltage Red</p> <p>Video Signal White</p> <p>LEVEL Remote Green</p> <p>Ground Black</p> <p>Shield</p> <p>4-Core Shield Cable</p> <p>Red White Green Black</p> <p>EE AMP</p> <p>M G Iris</p> <p>Lens Body</p>	Video Iris (with LEVEL Remote) C-Mount Monofocal Lenses (Except H620PE) C-Mount Zoom Lenses TS6ZE
<p>Input Voltage Red</p> <p>Video Signal White</p> <p>Manual Remote Brown</p> <p>Ground Black</p> <p>Shield</p> <p>4-Core Shield Cable</p> <p>Red White Brown Black</p> <p>EE AMP</p> <p>M G Iris</p> <p>Hall Sensor</p> <p>Lens Body</p>	Manual Override Lenses

Colour of leads is subject to change.

## Wiring Diagram for Motorized Zoom Lens

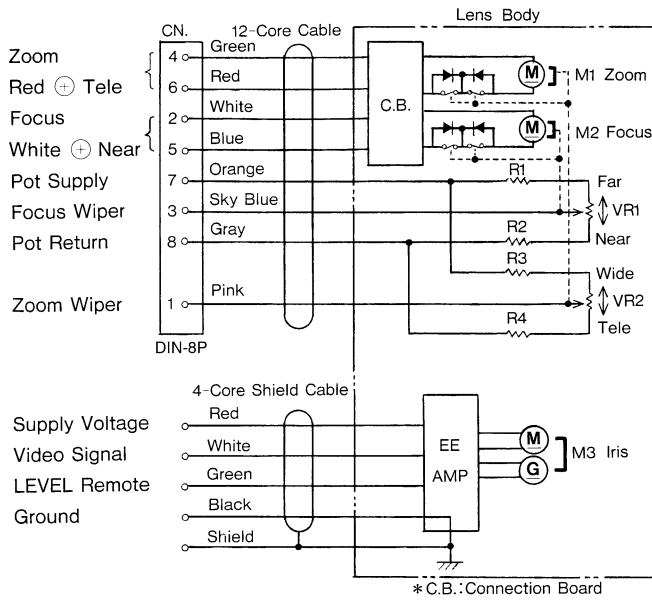
Auto-Iris & Motorized Zoom Lenses	3M Zoom Lenses
<p>TYPE 1 (DC6V) TYPE 5 (DC12V)</p> <p>ZOOM Red ⊕ TELE</p> <p>FOCUS White ⊕ NEAR</p> <p>1 Red 2 Green 3 Blue 4 White 5 Yellow 6 Black</p> <p>DIN-5P</p> <p>Lens Body</p>	<p>ZOOM Red ⊕ TELE</p> <p>FOCUS White ⊕ NEAR</p> <p>IRIS Yellow ⊕ OPEN</p> <p>1 Green 2 Red 3 White 4 Blue 5 Brown 6 Yellow 7 8</p> <p>DIN-8P</p> <p>LENS BODY</p> <p>N.F.U.</p> <p>M1 M2 M3</p>
<p>TYPE 2 (DC 12V)</p> <p>COMMON</p> <p>FOCUS ⊕ NEAR</p> <p>ZOOM ⊕ TELE</p> <p>1 White 2 Blue 3 Green 4 Yellow/Black</p> <p>DIN-4P</p> <p>Lens Body</p>	<p>COMMON</p> <p>FOCUS ⊕ TELE</p> <p>ZOOM ⊕ NEAR</p> <p>IRIS ⊕ OPEN</p> <p>1 White 2 Green 3 Blue 4 Brown 5</p> <p>DIN-5P</p> <p>LENS BODY</p> <p>N.F.U.</p> <p>M1 M2 M3</p>
<p>TYPE 3 (DC 6V)</p> <p>COMMON</p> <p>FOCUS ⊕ FAR</p> <p>ZOOM ⊕ WIDE</p> <p>1 White 2 Blue 3 Green 4 Yellow/Black</p> <p>DIN-4P</p> <p>Lens Body</p>	<p>COMMON</p> <p>ZOOM ⊕ WIDE</p> <p>FOCUS ⊕ FAR (∞)</p> <p>IRIS ⊕ CLOSE</p> <p>1 White 2 Green 3 Blue 4 Brown</p> <p>DIN-4P</p> <p>LENS BODY</p> <p>N.F.U.</p> <p>M1 M2 M3</p>

Yellow and Black lead wires are for Remote Control ALC, and they are not connected to the connector, as shown in diagram.  
Please note some lenses have no function of ALC Remote.  
NFU : Noise Filter Unit.

## Wiring Diagram for P type zoom lenses

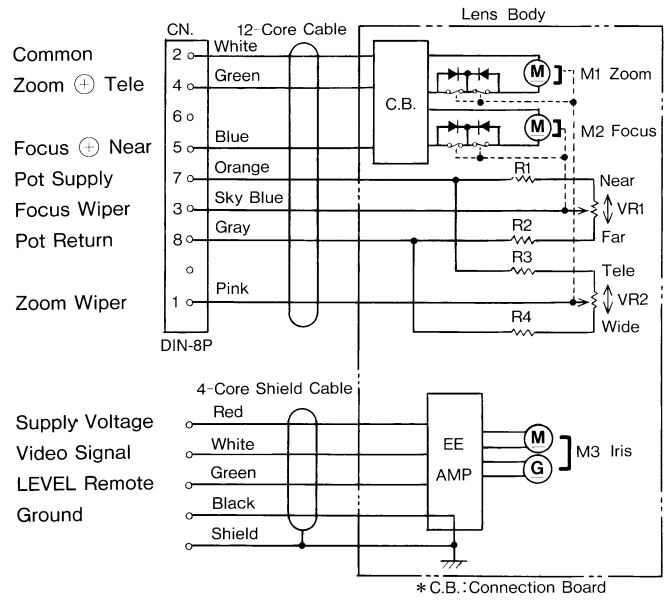
Motorized Zoom and Focus with Pre-set, Auto-Iris

TYPE 1 (DC6V) / TYPE 5 (DC12V)



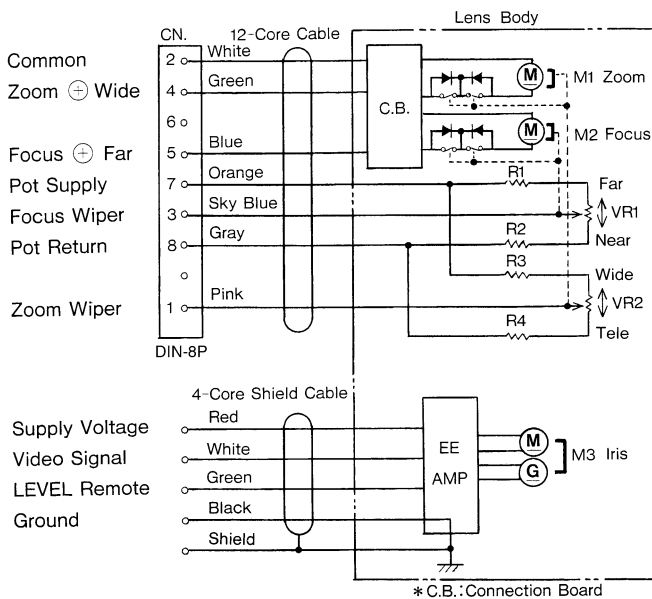
R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

TYPE 2 (DC 12V)



R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

TYPE 3 (DC 6V)



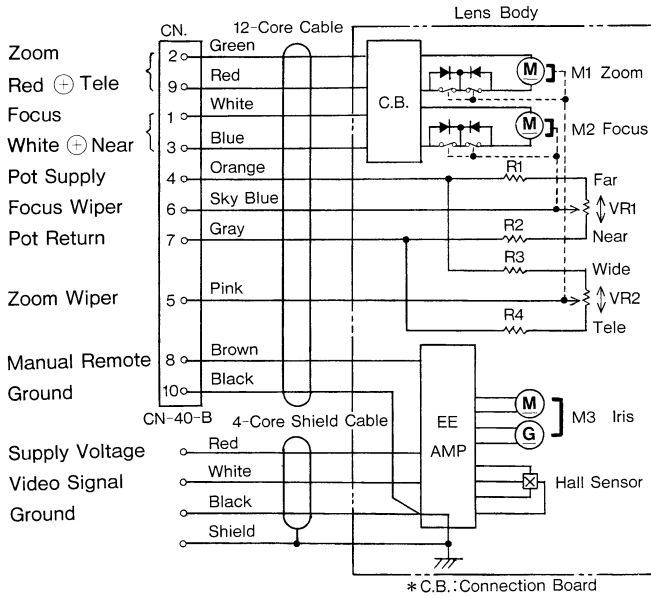
R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

Kindly note some lenses have different diagram. Please contact us to clarify it.

## Wiring Diagram for F type zoom lenses

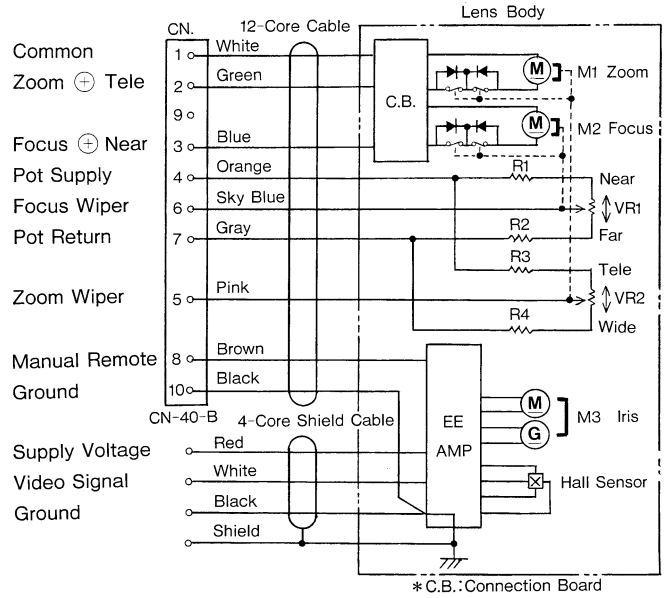
Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override

TYPE 1 (DC6V) / TYPE 5 (DC12V)



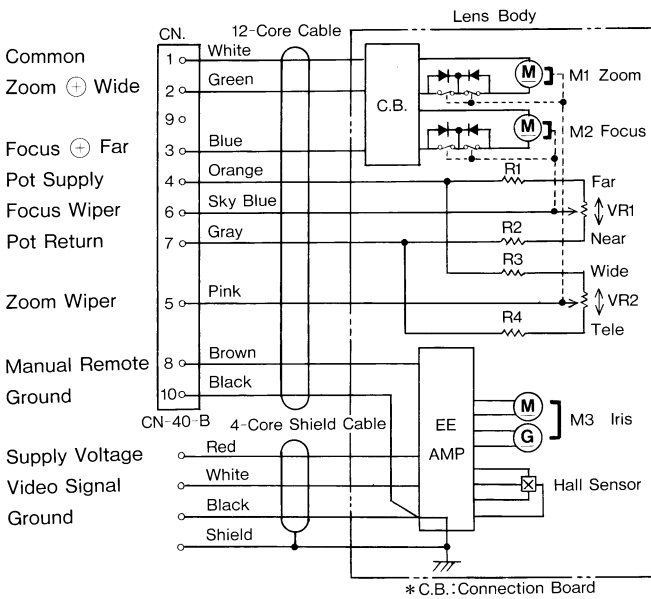
R1,R2,R3,R4	1KΩ	1%	0.1W
VR1,VR2	5KΩ	15%	0.2W

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

Kindly note some lenses have different diagram. Please contact us to clarify it.

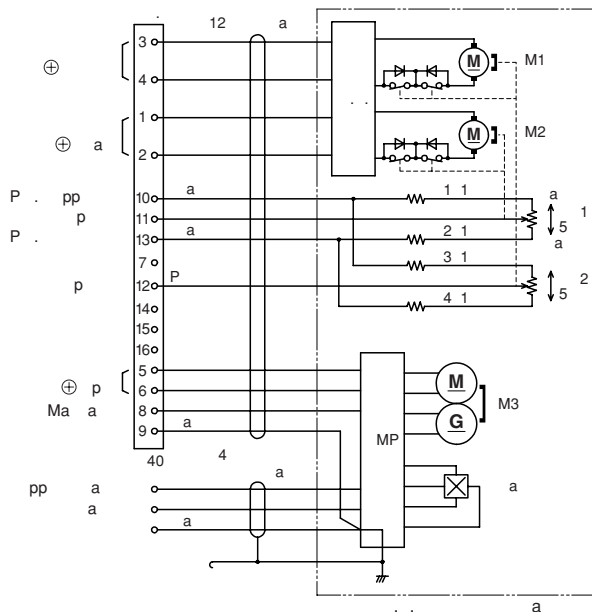


## Wiring Diagram for F type zoom lenses (with D/A converter)

Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override

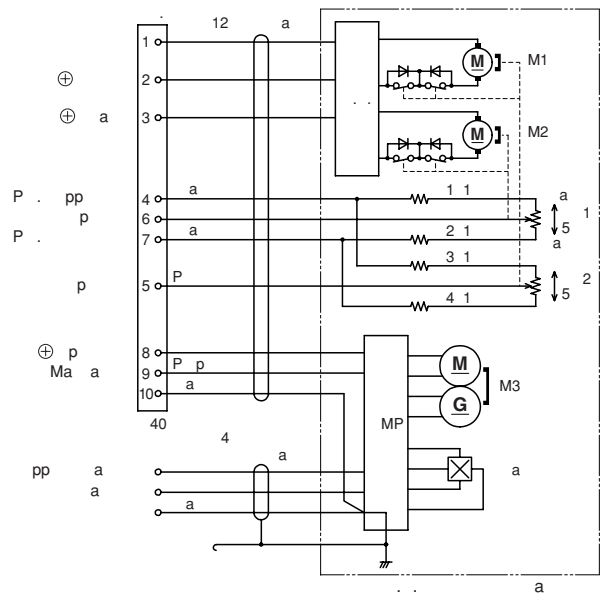
\*D/A converter is option for F type zoom lenses.

TYPE 1 (DC6V) / TYPE 5 (DC12V)



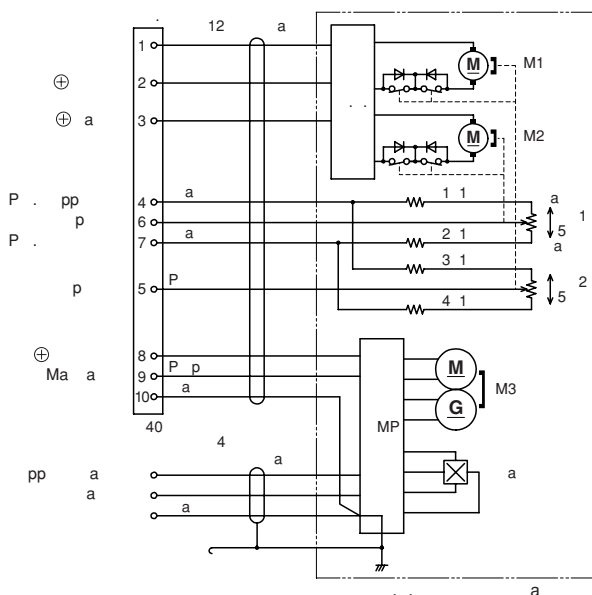
R1,R2,R3,R4	1KΩ	1%	0.1W
VR1,VR2	5KΩ	15%	0.2W

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

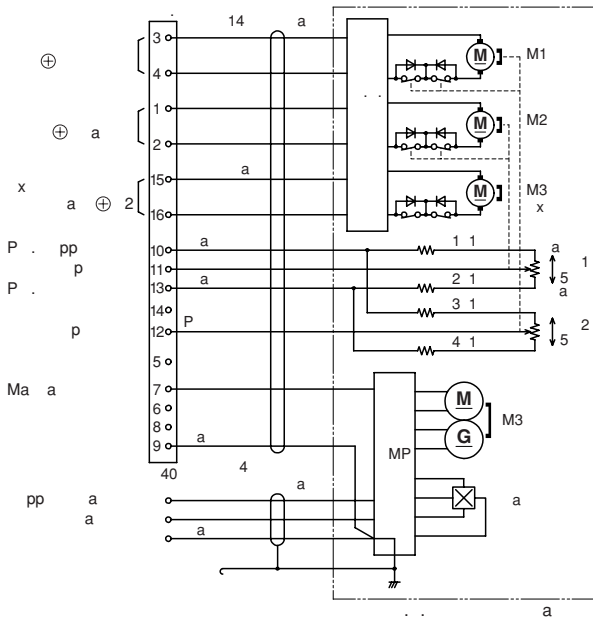
Kindly note some lenses have different diagram. Please contact us to clarify it.

## Wiring Diagram for H55ZME-F (Built-In 2x Extender)

Motorized Zoom and Focus with Pre-set, Auto-Iris with Manual Override  
Built-In Motorized 2x Extender

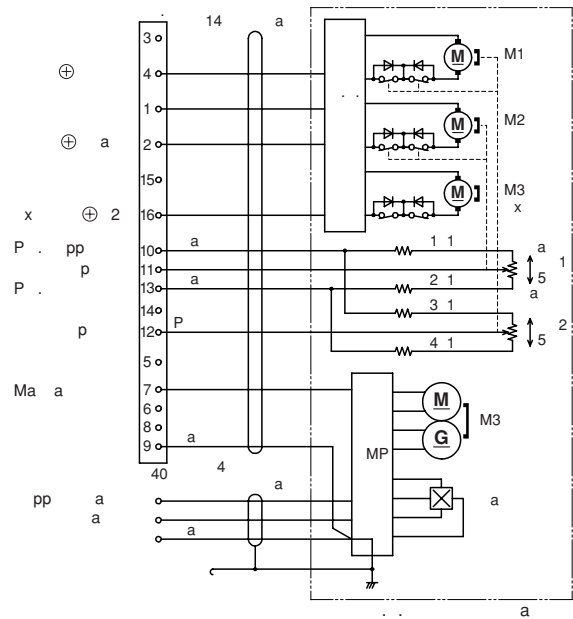
### Without D/A Converter type

TYPE 5 (DC12V)



R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

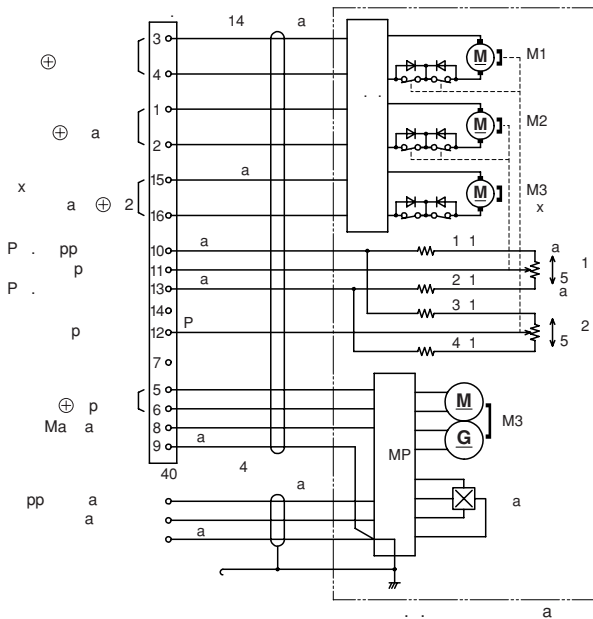
TYPE 2 (DC 12V)



R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

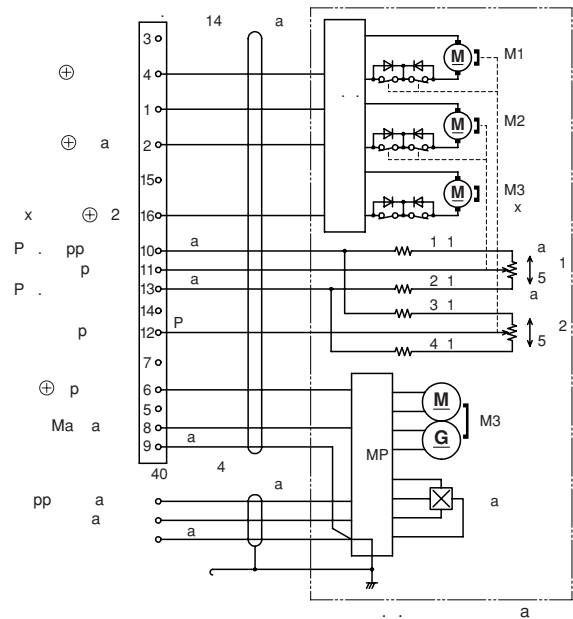
### With D/A Converter type

TYPE 5 (DC12V)



R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

TYPE 2 (DC 12V)

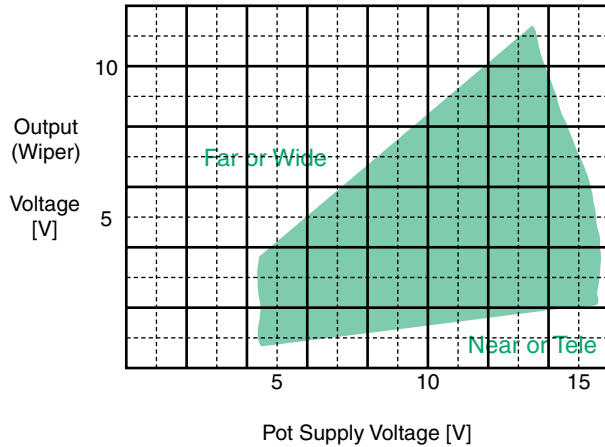


R1,R2,R3,R4	1K $\Omega$	1%	0.1W
VR1,VR2	5K $\Omega$	15%	0.2W

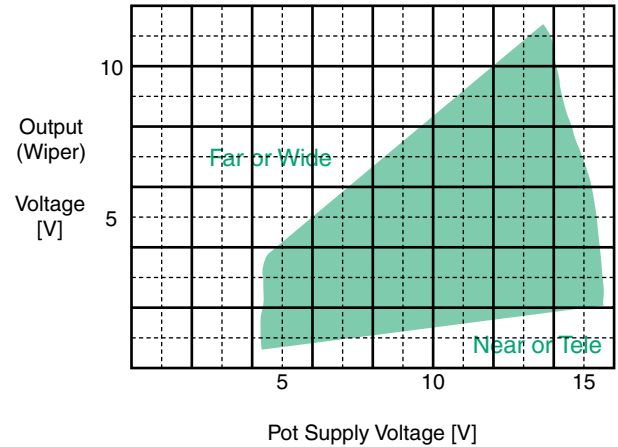
Kindly note some lenses have different diagram. Please contact us to clarify it.

## Pot (Pre-Set) Supply Output range Characteristics

TYPE 1 & 3

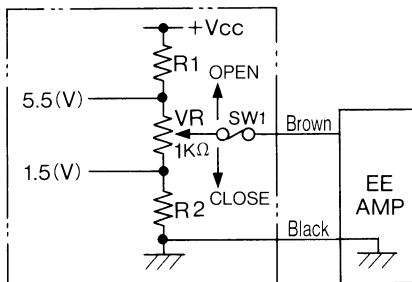


TYPE 2 & 5



## Manual Override (without D/A Converter)

Manual Override and ALC can be controlled remotely as per the following schematic diagrams.



Manual Override

SW1(Switch)	IRIS MODE
Open or Ground	Auto
Close	Manual Remote

Vcc represents supply voltage from a lens controller.

## Temperature Range

### 1) Definition

#### 1. Applicable Temperature Range

This is the range in which a lens is specified to operate, as stated in the catalog. Additionally, the lens will not draw more current and operate at a faster speed than the rating indicated in the catalog.

#### 2. Operation Temperature Range

This is the range that a lens operates in at an acceptable speed, drawing slightly more current than the rating that is indicated in the catalog., however, the lens will maintain its quality, performance and reliability characteristics.

### 2) Temperature Range

	Applicable Temperature Range		Operation Temperature Range	
Fixed Focal Auto-Iris	20	50	30	70
QS6Z, TS6Z, HS6Z, C6Z, C14Z	10	50	20	70
Other Zoom Lenses	10	50	30	70

## ANGLES OF VIEW

Model	For 1/4 Format			For 1/3 Format			For 1/2 Format			For 2/3 Format			UNITS: Degrees
	Diagonal 4.5mm	Horizontal 3.6mm	Vertical 2.7mm	Diagonal 6.0mm	Horizontal 4.8mm	Vertical 3.6mm	Diagonal 8.0mm	Horizontal 6.4mm	Vertical 4.8mm	Diagonal 10.991mm	Horizontal 8.8mm	Vertical 6.6mm	
2.2mm F1.0 QS210*	114.06	92.60	70.12										
2.8mm F0.95 TS209E-ASP	91.76	72.69	54.13	125.16	98.24	72.69							
2.8mm F1.2 TS212*	88.60	71.54	54.11	117.79	94.30	71.54							
3mm F1.0 QS310*	77.92	64.24	49.11										
3.7mm F1.6 HS316*	66.68	53.54	40.26	88.09	71.02	53.54	115.26	93.67	71.02				
4mm F0.75 TS407E-ASP	59.17	48.39	36.86	74.61	62.55	48.39							
4mm F1.2 TS412**	60.35	49.18	37.36	76.71	63.89	49.18							
4mm F2.0 TS420P*	64.14	51.24	38.39	86.17	68.47	51.24							
4.2mm F1.6 H416*	60.14	47.87	35.76	81.05	64.27	47.87	110.22	86.77	64.27				
4.8mm F1.8 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	
4.8mm F1.8 C418E	51.27	41.27	31.10	67.46	54.57	41.27	87.77	71.65	54.57	114.78	95.40	73.72	
6mm F1.0 QS610*	43.24	34.83	26.23										
6mm F1.2 H612E-M	41.50	33.26	24.99	55.11	44.23	33.26	72.89	58.70	44.23				
6mm F1.2 H612*	40.93	32.97	24.84	53.68	43.55	32.97	68.89	56.93	43.55				
6mm F1.4 HS614*	41.92	33.86	25.57	54.64	44.55	33.86	69.27	57.81	44.55				
6.2mm F2.0 HS/H620P*	40.26	32.44	24.46	52.86	42.82	32.44	68.66	56.12	42.82				
6.5mm F1.8 B618CX-2	37.29	29.94	22.51	49.35	39.73	29.94	64.91	52.52	39.73	86.66	70.92	54.09	
8mm F0.75 TS807E-ASP	31.27	25.07	18.81	41.17	33.31	25.07							
8mm F1.2 TS812**	31.27	25.05	18.80	41.33	33.33	25.05							
8mm F1.4 C814	31.29	25.15	18.93	41.28	33.31	25.15	53.92	43.88	33.31	70.50	58.67	45.17	
8mm F1.4 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	
8.5mm F1.5 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	
9mm F1.2 H912E-M	27.81	22.28	16.73	36.96	29.65	22.28	48.97	39.38	29.65				
9mm F3.4 C934P*	27.79	22.30	16.77	36.76	29.60	22.30	48.25	39.11	29.60	63.79	52.63	40.28	
12mm F1.2 H1212*	21.18	16.93	12.70	28.28	22.60	16.93	37.83	30.18	22.60				
12mm F1.4 H1214-M	20.54	16.49	12.40	27.17	21.88	16.49	35.69	28.91	21.88				
12mm F1.4 HS1214*	20.68	16.55	12.41	27.58	22.06	16.55	36.78	29.42	22.06				
12.5mm F1.4 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	
12.5mm F1.4 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	
12.5mm F1.8 B1218-2	20.55	16.48	12.38	27.25	21.90	16.48	35.98	29.01	21.90	48.49	39.39	29.89	
16mm F1.4 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	
16mm F1.4 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	
16mm F1.4 C1614E	15.87	12.72	9.55	21.11	16.92	12.72	28.02	22.50	16.92	38.26	30.76	23.19	
25mm F1.4 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	
25mm F1.4 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	
25mm F1.4 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	
25mm F1.8 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	
25mm F2.0 H2520-UVM	10.30	8.24	6.18	13.71	10.98	8.24	18.24	14.62	10.98				
35mm F1.6 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	
50mm F1.4 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	
50mm F1.8 B5018A-3	5.16	4.13	3.10	6.87	5.50	4.13	9.14	7.32	5.50	12.51	10.04	7.55	
50mm F1.8 B5018E	5.16	4.13	3.10	6.87	5.50	4.13	9.14	7.32	5.50	12.51	10.04	7.55	
50mm F2.8 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	
75mm F1.4 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	
75mm F1.8 B7518E	3.44	2.76	2.07	4.59	3.67	2.76	6.12	4.90	3.67	8.40	6.73	5.05	

## ANGLES OF VIEW

Model	For 1/4 Format			For 1/3 Format			For 1/2 Format			For 2/3 Format		
	Diagonal 4.5mm	Horizontal 3.6mm	Vertical 2.7mm	Diagonal 6.0mm	Horizontal 4.8mm	Vertical 3.6mm	Diagonal 8.0mm	Horizontal 6.4mm	Vertical 4.8mm	Diagonal 10.991mm	Horizontal 8.8mm	Vertical 6.6mm
1.6-3.4mm F1.4 TS2V114E	180-83.10	180-64.89	107.98-47.84	180-118.31	180-89.55	180-64.89						
2.2-4.5mm F1.2 QS2V2212*	120.00-65.09	94.48-51.88	69.94-38.80									
2.8-5.8mm F1.2 QS2V2812*	98.48-45.67	76.22-36.40	55.85-27.23									
2.8-6mm F1.4 TS2V214	90.80-43.85	72.46-35.15	54.24-26.40	121.71-58.26	96.94-46.76	72.46-35.15						
2.8-6mm F1.4 TS2V214AE	90.54-44.13	72.26-35.35	54.08-26.54	121.44-58.68	96.70-47.04	72.26-35.35						
3.5-8mm F1.4 TS2V314B	74.45-33.22	58.74-26.55	43.57-19.90	102.34-44.37	79.83-35.44	58.74-26.55						
3.5-8mm F1.4 TS2V314BE	74.45-33.22	58.74-26.55	43.57-19.90	102.35-44.37	79.83-35.44	58.74-26.55						
6-12mm F1.6 TS2V616	44.09-21.53	34.92-17.21	26.01-12.90	60.26-28.76	47.22-22.97	34.92-17.21						
6-12mm F1.6 TS2V616AE	44.21-21.56	34.98-17.23	26.03-12.91	60.62-28.85	47.37-23.01	34.97-17.23						
5-50mm F1.8 TS10V518E	47.25-5.18	37.80-4.14	28.35-3.11	63.00-6.90	50.00-5.52	37.80-4.14						
4.6-28mm F1.0 QS6ZME*	50.83-9.30	41.64-7.50	31.71-5.66									
6.3-38mm F1.2 TS6ZE	38.70-6.97	31.26-5.59	23.60-4.20	50.39-9.23	41.12-7.43	31.26-5.59						
5.8-58mm F1.2 TS10ZME*	41.57-4.49	33.77-3.62	25.61-2.73	53.35-5.88	44.07-4.78	33.77-3.62						
6-90mm F1.2 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						
9-180mm F1.2 TS20ZME*	28.35-1.43	22.61-1.15	16.93-0.87	38.16-1.90	30.28-1.53	22.61-1.15						
8-48mm F1.0 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			
8-48mm F1.0 H6Z8*	30.98-5.50	24.92-4.42	18.76-3.33	40.74-7.27	32.98-5.86	24.92-4.42	52.72-9.51	43.24-7.73	32.98-5.86			
8-48mm F1.4 HS6ZME	30.81-5.46	24.81-4.39	18.70-3.30	40.42-7.23	32.78-5.82	24.81-4.39	52.07-9.48	42.88-7.69	32.78-5.82			
7.5-75mm F1.4 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	55.25-6.18	45.05-4.95	34.52-3.75			
7.5-75mm F1.2 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	54.43-6.09	45.63-4.99	34.94-3.77			
8-120mm F1.6 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			
12-240mm F1.6 H20ZME*	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			
24-660mm F4 H55ZME-F	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			
24-1320mm F8 H55ZME(with 2X)	10.68-0.20	8.53-0.16	6.39-0.12	14.29-0.26	11.40-0.21	8.53-0.16	19.20-0.35	15.27-0.28	11.40-0.21			
12.5-75mm F1.8 C6Z1218	20.07-3.43	16.08-2.75	12.07-2.06	26.69-4.57	21.40-3.66	16.08-2.75	35.39-6.07	28.44-4.87	21.40-3.66	48.08-8.30	38.82-6.67	29.32-5.02
12.5-75mm F1.8 C6ZE	20.05-3.43	16.06-2.75	12.06-2.06	26.66-4.57	21.38-3.66	16.06-2.75	35.35-6.07	28.41-4.87	21.38-3.66	48.03-8.30	38.78-6.67	29.29-5.02
12.5-75mm F1.8 C6Z1218M3	20.07-3.43	16.08-2.75	12.07-2.06	26.69-4.57	21.40-3.66	16.08-2.75	35.39-6.07	28.44-4.87	21.40-3.66	48.08-8.30	38.82-6.67	29.32-5.02
12.5-75mm F1.8 C6ZAME*	20.05-3.43	16.06-2.75	12.06-2.06	26.66-4.57	21.38-3.66	16.06-2.75	35.35-6.07	28.41-4.87	21.38-3.66	48.03-8.30	38.78-6.67	29.29-5.02
10.5-105mm F1.4 C10ZAME*	23.68-2.52	18.97-2.02	14.25-1.51	31.44-3.34	25.24-2.68	18.97-2.02	41.56-4.42	33.49-3.56	25.24-2.68	56.05-5.98	45.52-4.84	34.51-3.67
10-140mm F1.9 C14ZME*	24.79-1.90	19.89-1.52	14.95-1.14	32.84-2.52	26.41-2.02	19.89-1.52	43.35-3.33	34.96-2.68	26.41-2.02	59.12-4.49	47.49-3.64	36.02-2.76

UNIT: Degrees

## For 1 Format

Model	For 1 Format		
	Diagonal 15.875mm	Horizontal 12.7mm	Vertical 9.525mm
6.5mm F1.8 B618CX-2	116.08	97.88	76.21
12.5mm F1.4 B1214D-2	65.08	53.95	41.59
12.5mm F1.4 B1214E	65.22	54.04	41.64
12.5mm F1.8 B1218-2	66.71	55.18	42.42
25mm F1.4 B2514D	36.10	28.95	21.74
25mm F1.4 B2514E	36.08	28.94	21.73
25mm F1.8 B2518	34.79	28.24	21.44
50mm F1.4 B5014A	17.93	14.41	10.85
50mm F1.8 B5018A-3	17.89	14.40	10.85
50mm F1.8 B5018E	17.89	14.40	10.85
75mm F1.4 B7514C	12.30	9.78	7.30
75mm F1.8 B7518E	12.10	9.69	7.28

## For 1/1.8 Format

Model	For 1/1.8 Format		
	Diagonal 8.94mm	Horizontal 7.15mm	Vertical 5.36mm
6mm F1.2 H612E-M	81.00	65.40	49.30
9mm F1.2 H912E-M	54.40	43.90	33.10