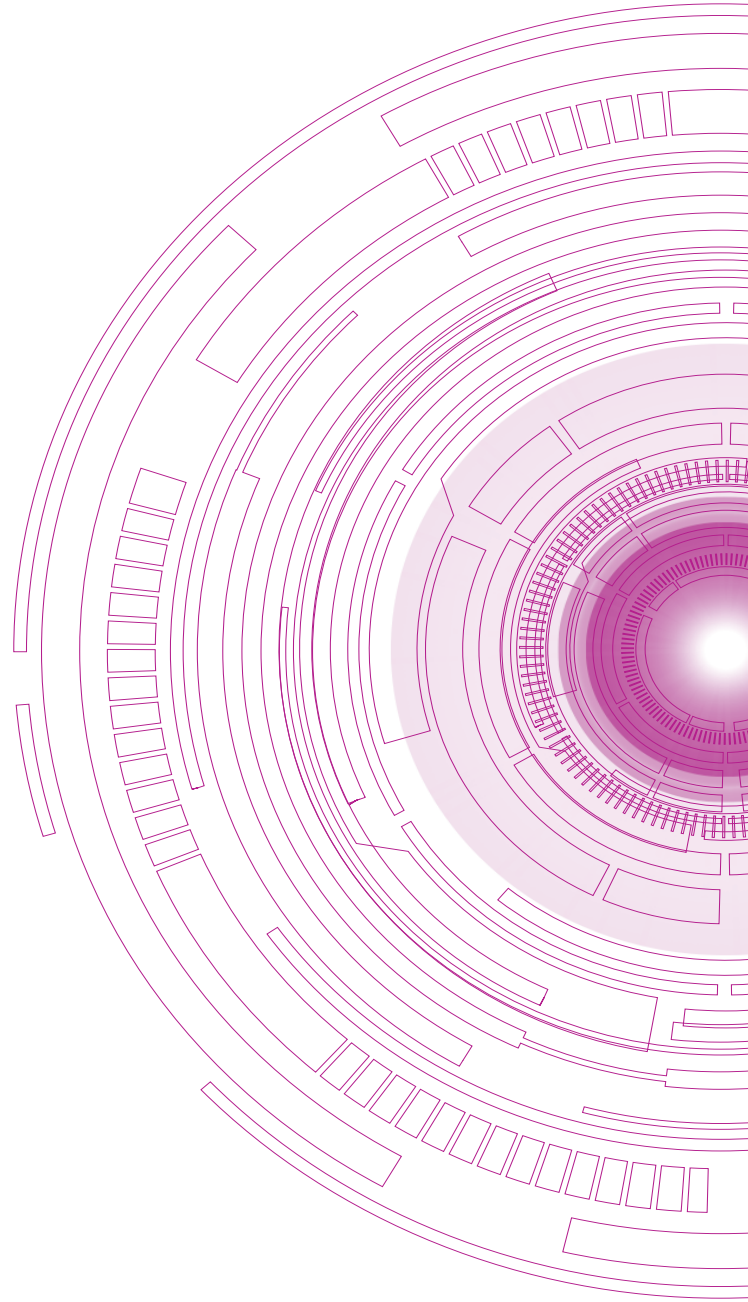


Industrial Imaging Lens

PRODUCT GUIDE





Brand Story

As a Pioneer of Optics, Computar has set the standard. We excel by uniting our comprehensive production abilities, knowledge, interdisciplinary perspectives, and diverse specialties. We do this by discovering our evolving global society's constant and unexplored demands.

Our corporate origins date back one hundred years, with the last forty in optics. We have developed a sustained ability to understand imaging applications and to engineer unique and innovative products. This ingenuity is the backbone of Computar's growth.

Computar has set the pace for developing intelligent, value-added, high-performance industrial lenses with a solid foundation based on Japanese engineering. We have established enduring business partnerships and customer relationships in optics globally.

Computar's pioneering innovations result from the advancement of optics in analog and digital, security, and machine vision. Our hands-on knowledge, multiple collaborations, insight, and creativity make us who we are today.

Our optical science expertise in the advanced fields of 5G, IoT, and robotics enables us to respond to our customers' evolving demands globally. In addition, we actively promote technical liaisons beyond the borders of individual industries to deliver innovations based on a core of optical knowledge.

LensConnect Series

- New motorized lenses, enable power supply & control through USB (Available for I2C ver.)
- Floating focus design achieves ultra-high resolution from near to far
- Stepper motors realizes precise focus control and high repeatability
- Easy-to-install by free control software
- 1" 20MP, Suitable for large format sensor (IMX183)



MPT Series

- Dedicated design for 1.2"~1.4" new large format sensors (IMX530/IMX540/IMX492)
- Floating design achieves ultra-high resolution from near to far
- World's smallest size for large format megapixel sensors for industrial use
- Highly versatile C mount
- Wide range of lineup, 12mm/16mm/25mm/35mm/50mm



ViSWIR Series

- Dedicated design for next generation Visible+SWIR image sensor (IMX990/IMX991)
- Hyper Apochromat design, Fully corrected focus-shift between 400-1700nm
- Floating-focus mechanism realizes axial chromatic aberration and chromatic aberration of magnification at all WD and wavelength
- High transmittance at whole wavelength of 400nm-1700nm by adopting hyper wideband AR coat
- Minimize light scattering and clear images by adopting NIR absorbing coat



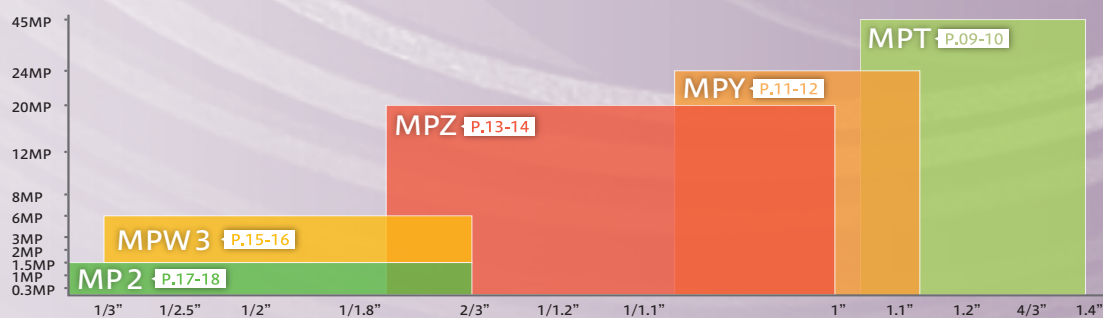
MPYIR Series

- Suitable for 1.1" 12MP sensor, Same size as conventional products
- Usable lineup for ANPR, 25mm/35mm/50mm
- Manual iris and P-iris available for each model
- No focus shift between visible light to NIR
- High spectral transmittance between visible light to NIR



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13-14	1" 20MP MEGAPIXEL FIXED FOCAL LENS (MPZ Series)
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NEW Lens  **connect**

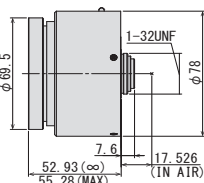
RF Series

1" 20 MEGA PIXEL FIXED FOCAL REMOTE CONTROL LENS

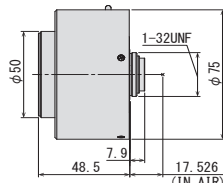
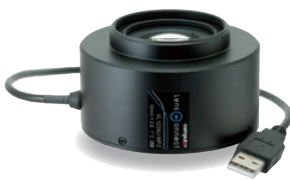


Model No.	Format	Focal Length	F No.	Working Distance	Weight
VL0826U-MPZ	1"	8mm	F2.6	0.1m-Inf.	334g
VL1226U-MPZ		12mm	F2.6	0.1m-Inf.	273g
VL1624U-MPZ		16mm	F2.4	0.1m-Inf.	280g
VL2520U-MPZ		25mm	F2.0	0.15m-Inf.	257g
VL3522U-MPZ		35mm	F2.2	0.2m-Inf.	313g
VL5024U-MPZ		50mm	F2.4	0.2m-Inf.	326g
VL7531U-MPZ		75mm	F3.1	0.25m-Inf.	415g

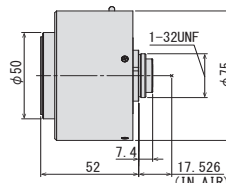
VL0826U-MPZ



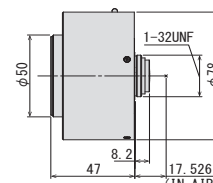
VL1226U-MPZ



VL1624U-MPZ



VL2520U-MPZ



Focal Length		8mm						12mm						16mm						25mm					
Max. Aperture Ratio		1:2.6						1:2.6						1:2.4						1:2.0					
Max. Image Format		12.8mm × 9.6mm(ϕ 16mm)						12.8mm × 9.6mm(ϕ 16mm)						12.8mm × 9.6mm(ϕ 16mm)						12.8mm × 9.6mm(ϕ 16mm)					
Operation Range	Iris	F2.6 - F16.0						F2.6 - F16.0						F2.4 - F16.0						F2.0 - F16.0					
	Focus	0.1m - Inf.						0.1m - Inf.						0.1m - Inf.						0.15m - Inf.					
Control	Iris	Motorized						Motorized						Motorized						Motorized					
	Focus	Motorized						Motorized						Motorized						Motorized					
Angle of View	D	1"	88.8°	2/3"	68.6°	1/1.8"	58.2°	1"	67.4°	2/3"	49.8°	1/1.8"	41.5°	1"	53.2°	2/3"	38.1°	1/1.8"	31.6°	1"	35.5°	2/3"	24.9°	1/1.8"	20.5°
	H		76.9°		57.1°		47.8°		56.7°		40.7°		33.7°		43.8°		30.9°		25.5°		28.8°		20.0°		16.4°
	V		61.5°		44.2°		36.6°		44.1°		31.0°		25.5°		33.6°		23.4°		19.2°		21.8°		15.1°		12.4°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

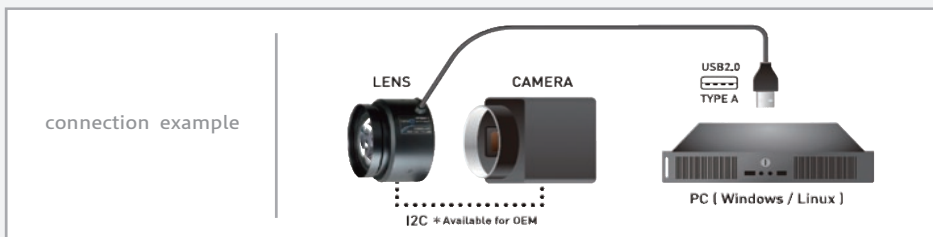
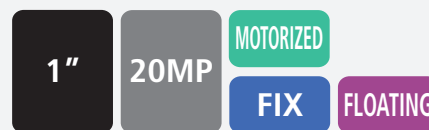
Optical Distortion	1"	-0.8%	2/3"	-2.1%	1/1.8"	-1.9%	1"	0.0%	2/3"	-1.1%	1/1.8"	-1.0%	1"	0.0%	2/3"	-0.4%	1/1.8"	-0.4%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%
Back Focal Length	10.6mm (In Air)						10.6mm (In Air)						10.7mm (In Air)						9.1mm (In Air)					
Flange Back Length	17.526mm (In Air)						17.526mm (In Air)						17.526mm (In Air)						17.526mm (In Air)					
Mount	C-Mount						C-Mount						C-Mount						C-Mount					
Filter Size	M82 P=0.75mm (With ZM0810)*						M46 P=0.75mm						M43 P=0.75mm						M46 P=0.75mm					
Weight	334g						273g						280g						257g					

Control Interface	USB2.0						USB2.0						USB2.0						USB2.0					
Power mode	Bus powerd (500mA)						Bus powerd (500mA)						Bus powerd (500mA)						Bus powerd (500mA)					
Connector	USB TypeA						USB TypeA						USB TypeA						USB TypeA					

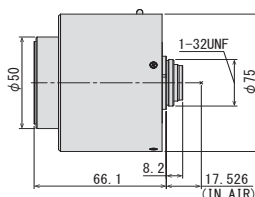
*When using filters, lens requires VM0810 (sold separately).

1" 20 MEGA PIXEL FIXED FOCAL REMOTE CONTROL LENS

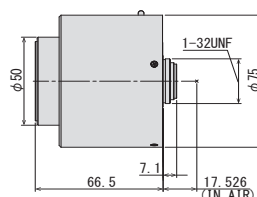
- Motorized FA lens that can be operated easily with a single USB cable
- Focus and Iris can be controlled via USB
- Ultra-high resolution lens, suitable for 1" 20 megapixel sensor
- Much lower distortion design for all models is beneficial for a variety of machine vision applications
- Has the newest optical design, which has a much higher relative illuminance compared to conventional models, despite having a large format 1" sensor (Ø16mm)



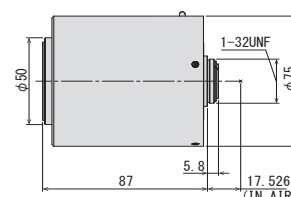
VL3522U-MPZ



VL5024U-MPZ



VL7531U-MPZ



Focal Length		35mm						50mm						75mm					
Max. Aperture Ratio		1:2.2						1:2.4						1:3.1					
Max. Image Format		12.8mm × 9.6mm(ϕ 16mm)						12.8mm × 9.6mm(ϕ 16mm)						12.8mm × 9.6mm(ϕ 16mm)					
Operation Range	Iris	F2.2 - F16.0						F2.4 - F16.0						F3.1 - F16.0					
	Focus	0.2m - Inf.						0.2m - Inf.						0.25m - Inf.					
Control	Iris	Motorized						Motorized						Motorized					
	Focus	Motorized						Motorized						Motorized					
Angle of View	D	1"	25.8°	2/3"	17.9°	1/1.8"	14.7°	1"	18.2°	2/3"	12.6°	1/1.8"	10.3°	1"	12.2°	2/3"	8.4°	1/1.8"	6.9°
	H		20.8°		14.4°		11.8°		14.6°		10.1°		8.3°		9.8°		6.7°		5.5°
	V		15.7°		10.8°		8.9°		11.0°		7.6°		6.2°		7.3°		5.0°		4.1°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

Optical Distortion	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%
Back Focal Length	9.7mm (In Air)						11.1mm (In Air)						12.0mm (In Air)					
Flange Back Length	17.526mm (In Air)						17.526mm (In Air)						17.526mm (In Air)					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M43 P=0.75mm						M43 P=0.75mm						M43 P=0.75mm					
Weight	313g						326g						415g					

Control Interface	USB2.0						USB2.0						USB2.0					
Power mode	Bus powerd (500mA)						Bus power (500mA)						Bus powerd (500mA)					
Connector	USB TypeA						USB TypeA						USB TypeA					

1/1.1" 12 MEGAPIXEL FIXED FOCAL REMOTE CONTROL LENS

NEW Lens  **connect**

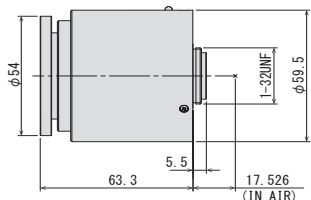
BH Series

1/1.1" 12 MEGAPIXEL FIXED FOCAL REMOTE CONTROL LENS

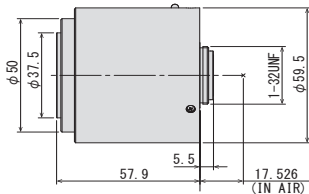


Model No.	Format	Focal Length	F No.	Working Distance	Weight
DL0828UC-MPY	1/1.1"	8mm	F2.8	0.1m-Inf.	178g
DL1224UC-MPY		12mm	F2.4	0.1m-Inf.	163g
DL1623UC-MPY		16mm	F2.3	0.11m-Inf.	173g
DL2523UC-MPY		25mm	F2.3	0.12m-Inf.	166g
DL3525UC-MPY		35mm	F2.5	0.16m-Inf.	160g
DL5028UC-MPY		50mm	F2.8	0.2m-Inf.	173g

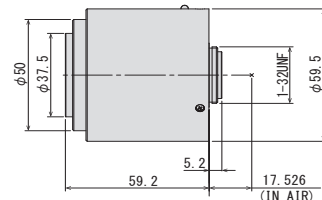
DL0828UC-MPY



DL1224UC-MPY



DL1623UC-MPY



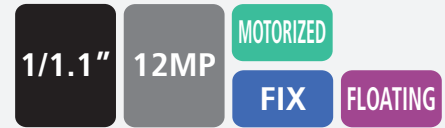
Focal Length		8mm						12mm						16mm					
Max. Image Format		φ 14.4mm						φ 14.4mm						φ 14.4mm					
Operation Range	Iris	F2.8 - F16.0						F2.4 - F16.0						F2.3 - F16.0					
	Focus	0.1m - Inf.						0.1m - Inf.						0.11m - Inf.					
Control	Iris	Motorized						Motorized						Motorized					
	Focus	Motorized						Motorized						Motorized					
Angle of View	D		80.4°		68.3°		58.1°		60.2°		49.7°		41.5°		47.0°		38.2°		31.6°
	H	1/1.1"	69.4°	2/3"	57.0°	1/1.8"	47.8°	1/1.1"	50.5°	2/3"	40.6°	1/1.8"	33.6°	1/1.1"	38.9°	2/3"	31.0°	1/1.8"	25.5°
	V		53.8°		44.1°		36.6°		38.1°		31.0°		25.5°		29.0°		23.4°		19.2°
Operating Temperature		-20°C ~ +60°C						-20°C ~ +60°C						-20°C ~ +60°C					

Optical Distortion	1/1.1"	0.0%	2/3"	-1.6%	1/1.8"	-1.7%	1/1.1"	-0.1%	2/3"	-1.0%	1/1.8"	-1.0%	1/1.1"	0.0%	2/3"	-0.7%	1/1.8"	-0.7%
Back Focal Length	13.0mm (In Air)						14.6mm (In Air)						14.3mm (In Air)					
Flange Back Length	17.526mm (In Air)						17.526mm (In Air)						17.526mm (In Air)					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M52 P=0.75mm						M35.5 P=0.5mm						M35.5 P=0.5mm					
Weight	178g						163g						173g					

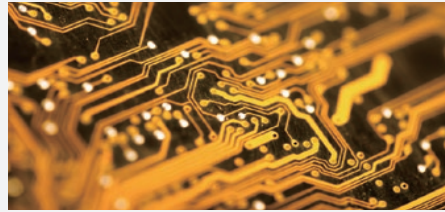
Control Interface	USB2.0						USB2.0						USB2.0					
Power mode	Bus powerd (500mA)						Bus powerd (500mA)						Bus powerd (500mA)					
Connector	USB TypeA						USB TypeA						USB TypeA					

1/1.1" 12 MEGAPIXEL FIXED FOCAL REMOTE CONTROL LENS

- Motorized FA lens that can be operated easily with a single USB cable
- Focus can be controlled via USB
- Fast speed focus control
- Ultra-high-resolution lens, suitable for 1/1.1" 12 megapixel sensor
- All models are designed for minimum distortion, which benefits various machine vision applications



Remote adjustment in out-of-reach places

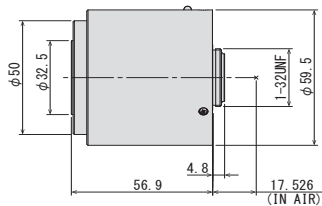


Make precise adjustments to lenses after installation

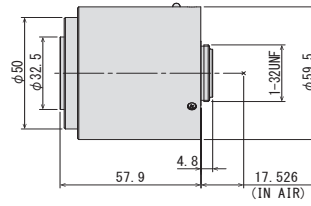


Easily change the focus point for workpieces at different heights

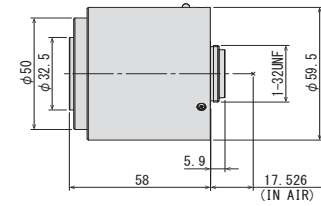
DL2523UC-MPY



DL3525UC-MPY



DL5028UC-MPY



Focal Length		25mm						35mm						50mm					
Max. Image Format		φ 14.4mm						φ 14.4mm						φ 14.4mm					
Operation Range	Iris	F2.3 - F16.0						F2.5 - F16.0						F2.8 - F16.0					
	Focus	0.12m - Inf.						0.16m - Inf.						0.2m - Inf.					
Control	Iris	Motorized						Motorized						Motorized					
	Focus	Motorized						Motorized						Motorized					
Angle of View	D		31.0°		24.8°		20.4°		22.5°		17.9°		14.7°		16.3°		12.9°		10.6°
	H	1/1.1"	25.3°	2/3"	20.0°	1/1.8"	16.4°	1/1.1"	18.2°	2/3"	14.3°	1/1.8"	11.7°	1/1.1"	13.2°	2/3"	10.4°	1/1.8"	8.5°
	V		18.7°		15.1°		12.3°		13.4°		10.8°		8.8°		9.7°		7.8°		6.4°
Operating Temperature		-20°C ~ +60°C						-20°C ~ +60°C						-20°C ~ +60°C					

Optical Distortion	1/1.1"	0.1%	2/3"	-0.1%	1/1.8"	-0.1%	1/1.1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1/1.1"	0.0%	2/3"	0.0%	1/1.8"	0.0%
Back Focal Length	14.3mm (In Air)						14.3mm (In Air)						14.2mm (In Air)					
Flange Back Length	17.526mm (In Air)						17.526mm (In Air)						17.526mm (In Air)					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M30.5 P=0.5mm						M30.5 P=0.5mm						M30.5 P=0.5mm					
Weight	166g						160g						173g					

Control Interface	USB2.0						USB2.0						USB2.0					
Power mode	Bus powerd (500mA)						Bus powerd (500mA)						Bus powerd (500mA)					
Connector	USB TypeA						USB TypeA						USB TypeA					

HIGH-RESOLUTION VARI-FOCAL REMOTE CONTROL LENS

NEW Lens  **connect**

BH Series

HIGH-RESOLUTION VARI-FOCAL REMOTE CONTROL LENS

- Motorized lens that can be operated easily with a single USB cable
- Focus can be controlled via USB
- Fast speed focus control
- Ultra-high-resolution lens, suitable for 1.1" • 1/1.8"

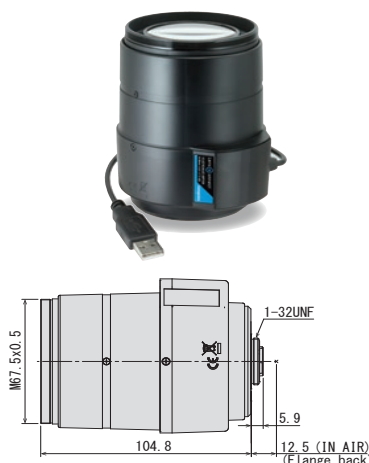
Model No.	Format	Focal Length	F No.	Resolution	Working Distance	Weight
EL3Z0416UCS-MPWIR	1/1.8"	4-10mm	F1.6	5MP	0.2m-Inf.	161g
EL6Z0915UCS-MPWIR	1/1.8"	9-50mm	F1.5	5MP	3m-Inf.	299g
VL6Z1626UC-MPYIR	1.1"	16-96mm	F2.6	12MP	3m-Inf.	330g

1.1" **MOTORIZED**
1/1.8" **VARI** **IR**

EL3Z0416UCS-MPWIR



EL6Z0915UCS-MPWIR



VL6Z1626UC-MPYIR



Focal Length		4.0mm - 10mm						9mm - 50mm						16mm - 96mm														
Max. Image Format		7.1mm × 5.4mm (φ 8.9mm)						7.1mm × 5.4mm (φ 8.9mm)						14.2mm × 10.4mm (φ 17.6mm)														
F-Number	Wide	F1.6 - F16C						F1.5 - F16C						F2.6 - F16C														
	Tele	F2.7 - F16C						F1.6 - F16C						F2.7 - F16C														
Control	Iris	Motorized						Motorized						Motorized														
	Focus	Motorized						Motorized						Motorized														
	Zoom	Motorized						Motorized						Motorized														
Angle of View	D	1/1.8"	138.1°~52.9°		1/3"	86.5°~35.5°		1/2"	120.3°~47.5°		1/1.8"	52.5°~10.2°		1/3"	35.9°~7.0°		1/2"	47.4°~9.2°		1.1"	58.9°~10.4°		1"	54.1°~9.5°		2/3"	37.8°~6.7°	
	H		104.8°~42.2°			68.1°~28.4°			92.9°~37.9°			42.3°~8.2°			28.8°~5.7°			38.2°~7.5°			48.1°~8.5°			30.3°~5.4°				
	V		76.3°~31.6°			50.5°~21.3°			68.1°~28.4°			32.4°~6.3°			21.7°~4.3°			28.8°~5.7°			35.6°~6.3°			25.7°~4.5°			22.8°~4.0°	
Min. Objective Distance		0.2m from front of lens						3m from front of lens						3m from front of lens														
Operating Temperature		-20°C - +60°C						-20°C - +60°C						-20°C - +60°C														

Back Focal Length	Wide	8.5mm (In Air)	9.2mm (In Air)	13.9mm (In Air)
	tele	8.5mm (In Air)	9.2mm (In Air)	13.9mm (In Air)
Flange Back Length	12.5mm (In Air)		12.5mm (In Air)	17.526mm (In Air)
Mount	CS-Mount		CS-Mount	C-Mount
Filter Size	M55 P=0.75mm (With VM0418)*		M67 P=0.75mm (With VM0918)*	M67 P=0.75mm
Tripod Screw			1/4-20UNC	1/4-20UNC
Weight	161g		299g	330g

Control Interface	USB2.0					USB2.0					USB2.0																			
Power mode	Bus powerd (500mA)					Bus powerd (500mA)					Bus powerd (500mA)																			
Connector	USB TypeA					USB TypeA					USB TypeA																			

*Adapting for between 6mm and 10mm.

*When using filters, lens requires VM0418 (sold separately).

*When using filters, lens requires VM0918(sold separately).

Lens onnect[®] SERIES

Motorized FA lens that can be operated **easily**
with a single **USB** cable

- Focus, Iris, and Zoom can be controlled via USB
- Easy operation in areas where manual adjustment is not possible
- The stepping motor makes precise control possible
- Plug-and-play for easy deployment

BH series



RF series

NEW

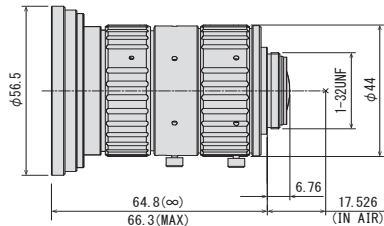
MPT Series

1.4" 45 MEGAPIXEL FIXED FOCAL LENS

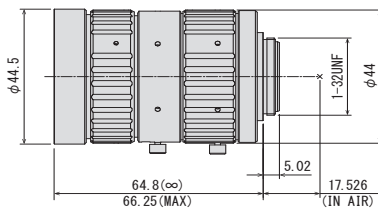


Model No.	Format	Focal Length	F No.	Working Distance	Distortion	Weight
F1228-MPT	1.4"	12mm	F2.8	0.15m - Inf.	0.13%(y=11.55)	205g
F1628-MPT		16mm	F2.8	0.15m - Inf.	0.06%(y=11.55)	187g
F2524-MPT		25mm	F2.4	0.15m - Inf.	0.06%(y=11.55)	152g
F3526-MPT		35mm	F2.6	0.15m - Inf.	0.01%(y=11.55)	122g
F5026-MPT		50mm	F2.6	0.25m - Inf.	-0.03%(y=11.55)	151g

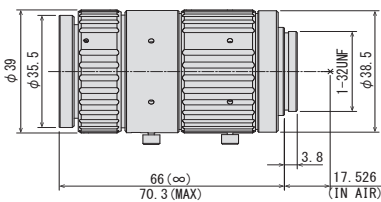
F1228-MPT



F1628-MPT



F2524-MPT



Focal Length		12mm						16mm						25mm					
Max. Aperture Ratio		1:2.8						1:2.8						1:2.4					
Image Circle Diameter		19.08mm × 13.03mm (ϕ 23.1mm)						19.08mm × 13.03mm (ϕ 23.1mm)						19.08mm × 13.03mm (ϕ 23.1mm)					
Operation Range	Iris	F2.8 - F16.0						F2.8 - F16.0						F2.4 - F16.0					
	Focus	0.15m - Inf.						0.15m - Inf.						0.15m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D	1.4"	86.1°	1.2"	76.6°	1.1"	71.6°	1.4"	70.1°	1.2"	61.0°	1.1"	56.5°	1.4"	49.6°	1.2"	42.4°	1.1"	39.0°
	H		76.0°		61.9°		60.4°		60.4°		48.1°		46.9°		41.9°		32.7°		31.8°
	V		56.2°		54.8°		46.1°		43.4°		42.2°		35.2°		29.3°		28.5°		23.6°
Operating Temperature		-10°C ~ +50°C						-10°C ~ +50°C						-10°C ~ +50°C					

Optical Distortion	1.4"	0.13	1.2"	-0.98	1.1"	-1.23	1.4"	0.06	1.2"	-0.43	1.1"	-0.54	1.4"	0.06	1.2"	-0.34	1.1"	-0.39
Back Focal Length	10.8mm						12.7mm						18.1mm					
Flange Back Length	17.526mm						17.526mm						17.526mm					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M72 P=0.75mm*						M52 P=0.75mm*						M34 P=0.5mm					
Dimensions	φ56.5mm × 64.8mm						φ44.5mm × 64.8mm						φ39mm × 66mm					
	φ75mm × 66.1mm (with TM-1243)						φ54mm × 66.4mm (with TM-1643)											
Weight	205g						187g						152g					

*When using filters, lens requires TM-1243(for 12mm)/TM-1643(for 16mm) (sold separately.) For more detail, please refer to P.34.

- Ultra-high-resolution lens, suitable for 1.4" 45-megapixel sensor
- Enlarged image circle up to Ø23.1mm (1.4" sensor)
- The most compact, lightweight lens design on the machine vision market
- The newest optical design achieves much higher relative illuminance compared to conventional models despite a large format 1.4" sensor (Ø23.1mm)
- The floating design achieves an ultra-high-resolution from near focus to infinity
- Vibration resistance up to 5G

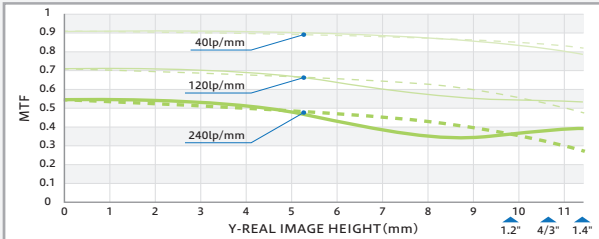
1.4"

45MP

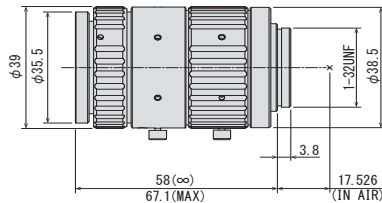
MANUAL

FIX

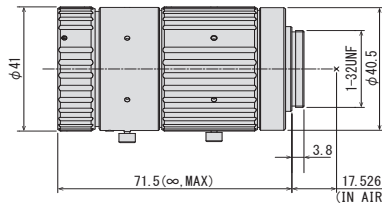
FLOATING



F3526-MPT



F5026-MPT



Focal Length		35mm						50mm					
Max. Aperture Ratio		1:2.6						1:2.6					
Image Circle Diameter		19.08mm × 13.03mm (φ 23.1mm)						19.08mm × 13.03mm (φ 23.1mm)					
Operation Range	Iris	F2.6 - F16.0						F2.6 - F16.0					
	Focus	0.15m - Inf.						0.25m - Inf.					
Control	Iris	Manual						Manual					
	Focus	Manual						Manual					
Angle of View	D	1.4"	36.6°	1.2"	30.9°	1.1"	28.3°	1.4"	26.1°	1.2"	21.9°	1.1"	20.0°
	H		30.6°		23.6°		23.0°		21.7°		16.7°		16.2°
	V		21.1°		20.5°		16.9°		14.9°		14.4°		11.9°
Operating Temperature		-10℃ ~ +50℃						-10℃ ~ +50℃					

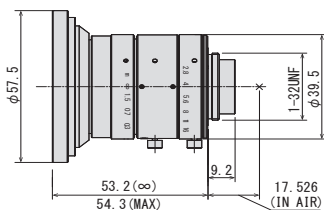
Optical Distortion	1.4"	0.01	1.2"	-0.05	1.1"	-0.06	1.4"	-0.02	1.2"	-0.03	1.1"	-0.03
Back Focal Length	23.1mm						14.2mm					
Flange Back Length	17.526mm						17.526mm					
Mount	C-Mount						C-Mount					
Filter Size	M34 P=0.5mm						M30.5 P=0.5mm					
Dimensions	φ39mm × 58mm						φ41mm × 71.5mm					
Weight	122g						151g					

MPY Series

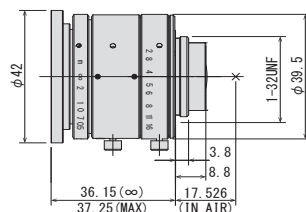
1.1" 24 MEGAPIXEL FIXED FOCAL LENS

Model No.	Format	Focal Length	F No.	Working Distance	Weight
V0828-MPY2	1.1"	8mm	F2.8-F16	0.2m-Inf.	157g
V1228-MPY2		12mm		0.3m-Inf.	97g
V1628-MPY2		16mm		0.3m-Inf.	89g
V2528-MPY		25mm		0.3m-Inf.	78g
V3528-MPY		35mm		0.3m-Inf.	103g
V5028-MPY		50mm		0.5m-Inf.	107g

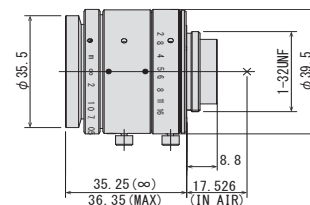
V0828-MPY2



V1228-MPY2



V1628-MPY2



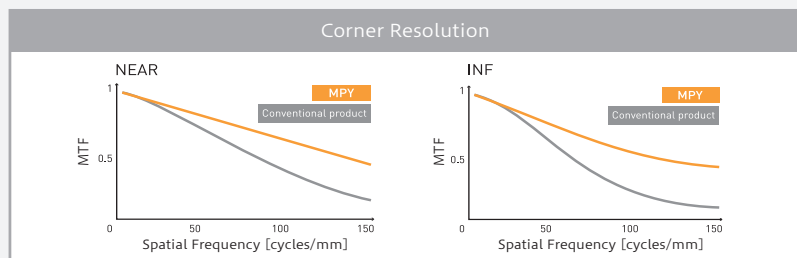
Focal Length		8mm						12mm						16mm					
Max. Aperture Ratio		1:2.8						1:2.8						1:2.8					
Max. Image Format		14.2mm × 10.4mm (ϕ 17.6mm)						14.2mm × 10.4mm (ϕ 17.6mm)						14.2mm × 10.4mm (ϕ 17.6mm)					
Operation Range	Iris	F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0					
	Focus	0.2m - Inf.						0.3m - Inf.						0.3m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D	1.1"	93.9°	1"	89.3°	2/3"	69.0°	1.1"	71.1°	1"	66.4°	2/3"	48.6°	1.1"	57.9°	1"	53.4°	2/3"	38.2°
	H		83.0°		77.3°		57.3°		60.5°		55.5°		39.6°		48.2°		43.9°		30.9°
	V		66.0°		61.7°		44.2°		46.2°		42.9°		30.1°		36.2°		33.6°		23.4°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

Optical Distortion	1.1"	-0.6%	1"	-1.7%	2/3"	-2.8%	1.1"	-0.5%	1"	-1.0%	2/3"	-1.4%	1.1"	-0.5%	1"	-0.6%	2/3"	-0.6%
Back Focal Length	8.6mm						8.4mm						9.4mm					
Flange Back Length	17.526mm						17.526mm						17.526mm					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M72 P=0.75mm (with VM0811)*						M40.5 P=0.5mm						M34.0 P=0.5mm					
	M67 P=0.75mm (with VM0810)*																	
Dimensions	ϕ75mm × 54mm						ϕ42.0mm × 36.1mm						ϕ39.5mm × 35.2mm					
Weight	157g						97g						89g					

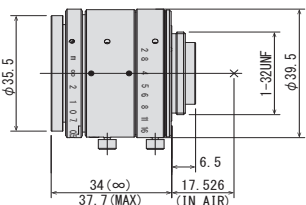
*There is no filter mount on the top of the lens.
When using filters, lens requires VM0811 or VM0810 (sold separately).
For more detail, please refer to P.34.

1.1" 24 MEGA PIXEL FIXED FOCAL LENS

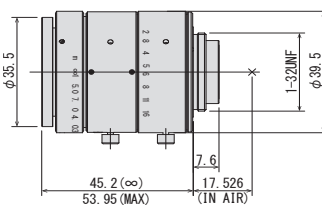
- Ultra-high-resolution lens, suitable for 1.1" 24 megapixel sensor
- Enlarged image circle up to $\phi 17.6\text{mm}$ (1.1" sensor)
- The most compact, lightweight lens design on the machine vision market
- The floating design achieves an ultra-high-resolution from near focus to infinity
- Vibration resistance up to 5G



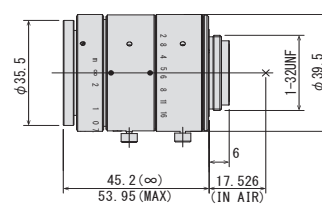
V2528-MPY



V3528-MPY



V5028-MPY



Focal Length		25mm						35mm						50mm					
Max. Aperture Ratio		1:2.8						1:2.8						1:2.8					
Max. Image Format		14.2mm × 10.4mm (φ 17.6mm)						14.2mm × 10.4mm (φ 17.6mm)						14.2mm × 10.4mm (φ 17.6mm)					
Operation Range	Iris	F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0					
	Focus	0.3m - Inf.						0.3m - Inf.						0.5m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D	1.1"	38.7°	1"	35.4°	2/3"	24.8°	1.1"	28.2°	1"	25.8°	2/3"	17.9°	1.1"	20.0°	1"	18.2°	2/3"	12.6°
	H		31.7°		28.7°		20.0°		22.9°		20.7°		14.3°		16.2°		14.6°		10.1°
	V		23.5°		21.7°		15.0°		16.9°		15.6°		10.8°		11.9°		11.0°		7.6°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50z					
Optical Distortion	1.1"	0.3%	1"	0.2%	2/3"	0.1%	1.1"	-0.1%	1"	0.0%	2/3"	0.0%	1.1"	0.1%	1"	0.1%	2/3"	0.1%	
Back Focal Length	11.3mm						11.9mm						11.9mm						
Flange Back Length	17.526mm						17.526mm						17.526mm						
Mount	C-Mount						C-Mount						C-Mount						
Filter Size	M34.0 P=0.5mm						M34.0 P=0.5mm						M34.0 P=0.5mm						
Dimensions	φ39.5mm × 34mm						φ39.5mm × 45.2mm						φ 39.5mm × 45.1mm						
Weight	78g						103g						107g						

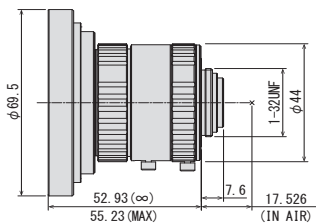


MPZ Series

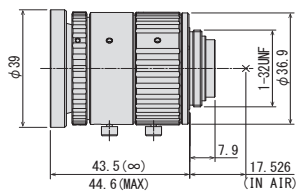
1" 20 MEGAPIXEL FIXED FOCAL LENS

Model No.	Format	Focal Length	F No.	Working Distance	Weight
V0826-MPZ	1"	8mm	F2.6-F16	0.1m-Inf.	203g
V1226-MPZ		12mm	F2.6-F16	0.1m-Inf.	98g
V1624-MPZ		16mm	F2.4-F16	0.1m-Inf.	108g
V2520-MPZ		25mm	F2.0-F16	0.15m-Inf.	73g
V3522-MPZ		35mm	F2.2-F16	0.2m-Inf.	118g
V5024-MPZ		50mm	F2.4-F16	0.2m-Inf.	138g
V7531-MPZ		75mm	F3.1-F16	0.25m-Inf.	176g

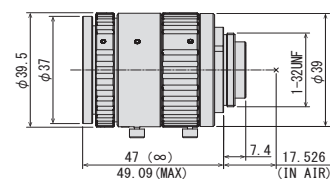
V0826-MPZ



V1226-MPZ



V1624-MPZ



Focal Length		8mm						12mm						16mm					
Max. Aperture Ratio		1:2.6						1:2.6						1:2.4					
Max. Image Format		12.8mm × 9.6mm (ϕ 16mm)						12.8mm × 9.6mm (ϕ 16mm)						12.8mm × 9.6mm (ϕ 16mm)					
Operation Range	Iris	F2.6 - F16.0						F2.6 - F16.0						F2.4 - F16.0					
	Focus	0.1m - Inf.						0.1m - Inf.						0.1m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D	1"	88.8°	2/3"	68.6°	1/1.8"	58.2°	1"	67.4°	2/3"	49.8°	1/1.8"	41.5°	1"	53.2°	2/3"	38.1°	1/1.8"	31.6°
	H		76.9°		57.1°		47.8°		56.7°		40.7°		33.7°		43.8°		30.9°		25.5°
	V		61.5°		44.2°		36.6°		44.1°		31.0°		25.5°		33.6°		23.4°		19.2°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

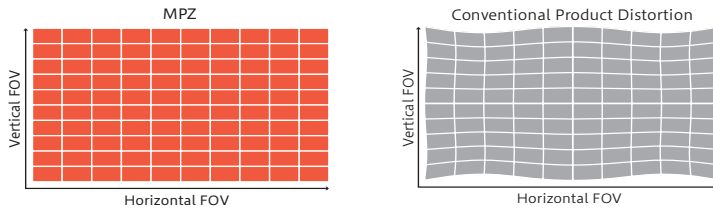
Optical Distortion	1"	-0.8%	2/3"	-2.1%	1/1.8"	-1.9%	1"	0.0%	2/3"	-1.1%	1/1.8"	-1.0%	1"	0.0%	2/3"	-0.4%	1/1.8"	-0.4%
Back Focal Length	10.6mm						10.6mm						10.7mm					
Flange Back Length	17.526mm						17.526mm						17.526mm					
Mount	C-Mount						C-Mount						C-Mount					
Filter Size	M82 P=0.5mm*						M37.5 P=0.5mm						M35.5 P=0.5mm					
Dimensions	ϕ 69.5mm × 52.93mm						ϕ 39mm × 43.5mm						ϕ 39.5mm × 47mm					
	ϕ 85.0mm × 53.83mm (with ZM0810)																	
Weight	203g						98g						108g					

*There is no filter mount on the top of the lens.
When using filters, lens requires ZM0810 (sold separately).
For more detail, please refer to P.34.

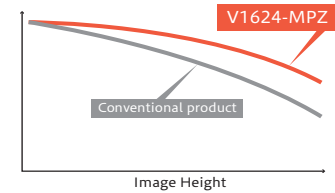
- Ultra-high resolution lens, which is suitable for 1" 20 megapixel sensor
- Much lower distortion design for all models is beneficial for a variety of machine vision applications
- Has the newest optical design, which has a much higher relative illuminance compared to conventional models, despite having a large format 1" sensor
- Vibration resistance up to 5G



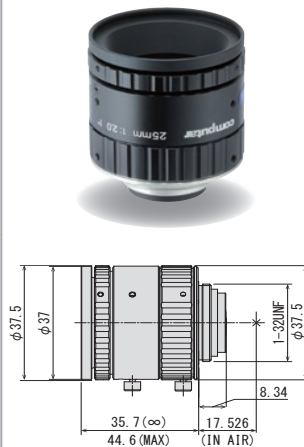
Distortion Comparison



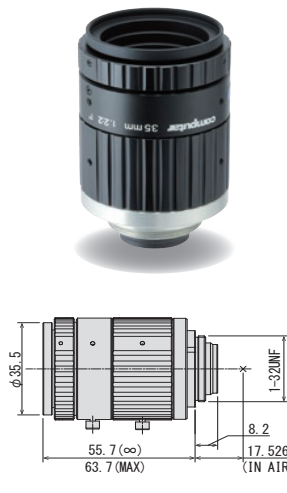
V1624-MPZ Relative Illumination



V2520-MPZ



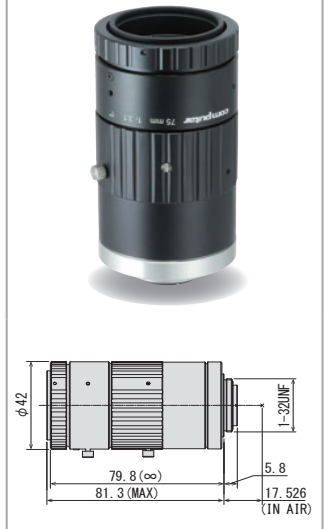
V3522-MPZ



V5024-MPZ



V7531-MPZ



Focal Length		25mm						35mm						50mm						75mm					
Max. Aperture Ratio		1:2.0						1:2.2						1:2.4						1:3.1					
Max. Image Format		12.8mm × 9.6mm (ϕ 16mm)						12.8mm × 9.6mm (ϕ 16mm)						12.8mm × 9.6mm (ϕ 16mm)						12.8mm × 9.6mm (ϕ 16mm)					
Operation Range	Iris	F2.0 - F16.0						F2.2 - F16.0						F2.4 - F16.0						F3.1 - F16.0					
	Focus	0.15m - Inf.						0.2m - Inf.						0.2m - Inf.						0.25m - Inf.					
Control	Iris	Manual						Manual						Manual						Manual					
	Focus	Manual						Manual						Manual						Manual					
Angle of View	D		35.5°		24.9°		20.5°		25.8°		17.9°		14.7°		18.2°		12.6°		10.3°		12.2°		8.4°		6.9°
	H	1"	28.8°	2/3"	20.0°	1/1.8"	16.4°	1"	20.8°	2/3"	14.4°	1/1.8"	11.8°	1"	14.6°	2/3"	10.1°	1/1.8"	8.3°	1"	9.8°	2/3"	6.7°	1/1.8"	5.5°
	V		21.8°		15.1°		12.4°		15.7°		10.8°		8.9°		11.0°		7.6°		6.2°		7.3°		5.0°		4.1°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

Optical Distortion	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%	1"	0.0%	2/3"	0.0%	1/1.8"	0.0%
Back Focal Length	9.1mm						9.7mm						11.1mm						12.0mm					
Flange Back Length	17.526mm						17.526mm						17.526mm						17.526mm					
Mount	C-Mount						C-Mount						C-Mount						C-Mount					
Filter Size	M35.5 P=0.5mm						M34 P=0.5mm						M30.5 P=0.5mm						M30.5 P=0.5mm					
Dimensions	ϕ 37.5mm × 35.5mm						ϕ 39.5mm × 55.7mm						ϕ 69.5mm × 52.93mm						ϕ 42.0mm × 79.8mm					
Weight	73g						118g						138g						176g					



MPW3 Series

2/3" 6 MEGA PIXEL FIXED FOCAL LENS

Model No.	Format	Focal Length	F No.	Working Distance	Weight
M0528-MPW3	2/3"	5mm	F2.8-F16	0.1m-Inf.	163g
M0828-MPW3		8mm		0.1m-Inf.	58g
M1228-MPW3		12mm		0.1m-Inf.	60g
M1628-MPW3		16mm		0.25m-Inf.	37g
M2528-MPW3		25mm		0.2m-Inf.	42g
M3528-MPW3		35mm		0.25m-Inf.	48g
M5028-MPW3		50mm		0.3m-Inf.	65g
M7528-MPW3		75mm		0.4m-Inf.	102g

M0528-MPW3



M0828-MPW3



M1228-MPW3

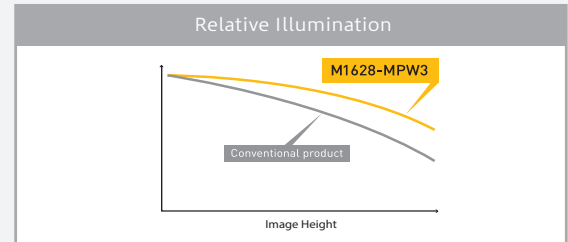
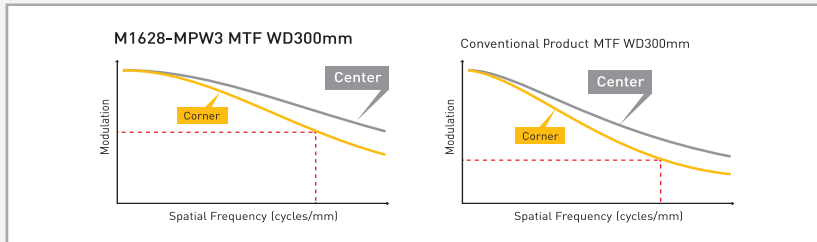


M1628-MPW3

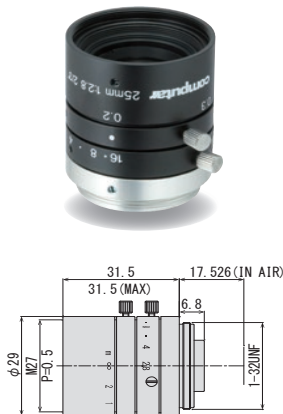


Focal Length		5mm						8mm						12mm						16mm					
Max. Aperture Ratio		1:2.8						1:2.8						1:2.8						1:2.8					
Max. Image Format		8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)					
Operation Range	Iris	F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0					
	Focus	0.1m - Inf.						0.1m - Inf.						0.1m - Inf.						0.25m - Inf.					
Control	Iris	Manual						Manual						Manual						Manual					
	Focus	Manual						Manual						Manual						Manual					
Angle of View	D		94.6°		83.8°		71.4°		68.5°		57.7°		47.2°		49.3°		40.8°		33.0°		37.8°		31.4°		25.0°
	H	2/3"	83.2°	1/1.8"	71.6°	1/2.5"	59.8°	2/3"	57.0°	1/1.8"	47.3°	1/2.5"	38.5°	2/3"	40.3°	1/1.8"	33.1°	1/2.5"	26.7°	2/3"	30.7°	1/1.8"	25.3°	1/2.5"	20.2°
	V		67.5°		58.3°		46.6°		44.2°		37.5°		29.4°		30.8°		26.0°		20.3°		23.3°		19.2°		15.3°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					
Optical Distortion		2/3"	0.03%	1/1.8"	-2.14%	1/2.5"	-2.72%	2/3"	-1.80%	1/1.8"	-1.68%	1/2.5"	-1.28%	2/3"	-0.10%	1/1.8"	0.04%	1/2.5"	0.00%	2/3"	0.47%	1/1.8"	0.15%	1/2.5"	0.03%
Back Focal Length		9.2mm						10.1mm						9.2mm						10.3mm					
Flange Back Length		17.526mm						17.526mm						17.526mm						17.526mm					
Mount		C-Mount						C-Mount						C-Mount						C-Mount					
Filter Size		M72 P=0.75mm						M30.5 P=0.5mm						M27 P=0.5mm						M27 P=0.5mm					
Dimensions		φ 75mm × 54mm						φ 32mm × 35.5mm						φ 29mm × 43.5mm						φ 29mm × 29mm					
Weight		163g						58g						60g						37g					

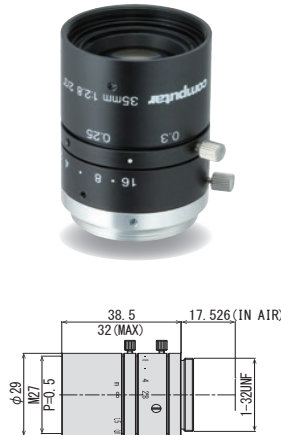
- Suitable for 2/3" 6 megapixel
- A variety of focal lengths from 5mm to 75mm
- Maintains high performance at long WD
- Has an ultra-compact Ø29 diameter with a nearly-identical mechanical length
- Vibration resistance up to 5G



M2528-MPW3



M3528-MPW3



M5028-MPW3



M7528-MPW3



Focal Length		25mm						35mm						50mm						75mm					
Max. Aperture Ratio		1:2.8						1:2.8						1:2.8						1:2.8					
Max. Image Format		8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)						8.8mm × 6.6mm (φ 11mm)					
Operation Range	Iris	F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0						F2.8 - F16.0					
	Focus	0.2m - Inf.						0.25m - Inf.						0.3m - Inf.						0.4m - Inf.					
Control	Iris	Manual						Manual						Manual						Manual					
	Focus	Manual						Manual						Manual						Manual					
Angle of View	D		24.6°		20.3°		16.1°		17.9°		14.4°		9.8°		12.5°		10.2°		8.1°		8.4°		6.9°		5.4°
	H	2/3"	19.9°	1/1.8"	16.3°	1/2.5"	13.0°	2/3"	14.3°	1/1.8"	11.7°	1/2.5"	7.8°	2/3"	10.0°	1/1.8"	8.2°	1/2.5"	6.5°	2/3"	6.7°	1/1.8"	5.5°	1/2.5"	4.3°
	V		15.0°		12.3°		9.8°		10.8°		8.7°		5.9°		7.5°		6.2°		4.9°		5.0°		4.1°		3.3°
Operating Temperature		-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C						-10° C ~ +50° C					

Optical Distortion	2/3"	0.77%	1/1.8"	0.49%	1/2.5"	0.29%	2/3"	0.06%	1/1.8"	0.04%	1/2.5"	0.03%	2/3"	0.00%	1/1.8"	0.00%	1/2.5"	0.00%	2/3"	0.33%	1/1.8"	0.21%	1/2.5"	0.12%
Back Focal Length	11.5mm						18.0mm						26.3mm						14.6mm					
Flange Back Length	17.526mm						17.526mm						17.526mm						17.526mm					
Mount	C-Mount						C-Mount						C-Mount						C-Mount					
Filter Size	M27 P=0.5mm						M27 P=0.5mm						M27 P=0.5mm						M34 P=0.5mm					
Dimensions	φ 29mm × 31.5mm						φ 29mm × 38.5mm						φ 29mm × 56mm						φ 36mm × 75mm					
Weight	42g						48g						65g						102g					

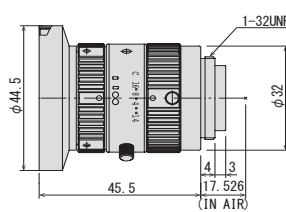


MP2 Series

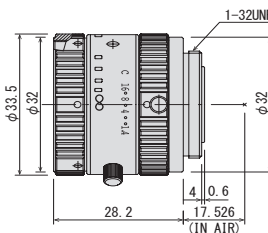
2/3" 1.5 MEGA PIXEL FIXED FOCAL LENS

Model No.	Format	Focal Length	F No.	Working Distance	Weight
H0514-MP2	2/3"	5mm	F1.4 - F16C	0.1m - 0.9m	102g
M0814-MP2		8mm	F1.4 - F16C	0.1m - Inf.	63g
M1214-MP2		12mm	F1.4 - F16C	0.15m - Inf.	62g
M1614-MP2		16mm	F1.4 - F16C	0.3m - Inf.	60g
M2514-MP2		25mm	F1.4 - F16C	0.3m - Inf.	71g
M3514-MP		35mm	F1.4 - F16C	0.3m - Inf.	87g
M5018-MP2		50mm	F1.8 - F16C	0.5m - Inf.	85g
M7528-MP		75mm	F2.8 - F16C	0.3m - Inf.	113g

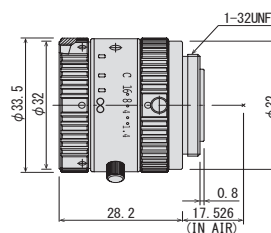
H0514-MP2



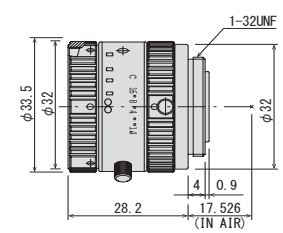
M0814-MP2



M1214-MP2



M1614-MP2



Focal Length		5mm				8mm				12mm				16mm			
Max. Aperture Ratio		1:1.4				1:1.4				1:1.4				1:1.4			
Max. Image Format		6.4mm × 4.8mm (ϕ 8mm)				8.8mm × 6.6mm (ϕ 11mm)				8.8mm × 6.6mm (ϕ 11mm)				8.8mm × 6.6mm (ϕ 11mm)			
Operation Range	Iris	F1.4 - F16C				F1.4 - F16C				F1.4 - F16C				F1.4 - F16C			
	Focus	0.1m - 0.9m				0.1m - Inf.				0.15m - Inf.				0.3m - Inf.			
Control	Iris	Manual				Manual				Manual				Manual			
	Focus	Manual				Manual				Manual				Manual			
Angle of View	D	1/2"	76.7°	1/3"	62.3°	2/3"	67.1°	1/2"	51.9°	2/3"	49.2°	1/2"	37.0°	2/3"	38.0°	1/2"	28.2°
	H		65.5°		51.4°		56.3°		42.5°		40.4°		30.0°		30.8°		22.7°
	V		51.4°		39.5°		43.7°		32.4°		30.8°		22.7°		23.4°		17.1°
Operating Temperature		-10° C ~ +50° C				-10° C ~ +50° C				-10° C ~ +50° C				-10° C ~ +50° C			

Optical Distortion	1/2"	-0.48%	1/3"	-2.26%	2/3"	-0.1%	1/2"	-1.1%	2/3"	-0.1%	1/2"	-0.35%	2/3"	-0.1%	1/2"	-0.3%
Back Focal Length	10.8mm (WD=900mm)				13.1mm (Inf)				13.1mm (Inf)				13.1mm (Inf)			
Flange Back Length	17.526mm				17.526mm				17.526mm				17.526mm			
Mount	C-Mount				C-Mount				C-Mount				C-Mount			
Filter Size	M43 P=0.75mm				M30.5 P=0.5mm				M30.5 P=0.5mm				M30.5 P=0.5mm			
Dimensions	φ 44.5mm × 45.5mm				φ 33.5mm × 28.2mm				φ 33.5mm × 28.2mm				φ 33.5mm × 28.2mm			
Weight	102g				63g				62g				60g			

2/3" 1.5 MEGA PIXEL FIXED FOCAL LENS

- Eight focal lengths in series: 5mm, 8mm, 12mm, 16mm, 25mm, 35mm, 50mm, and 75mm
- Compatible with 2/3" format sensor (H0514-MP2 : 1/2")
- Low distortion (less than 1.0%)
- Locking set screws for focus and iris
- Compact design - diameter 33.5mm (H0514-MP2 : 44.5mm)

1/2"

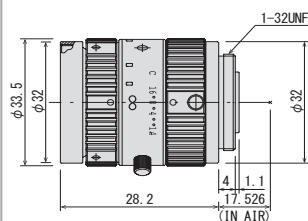
1.5MP

MANUAL

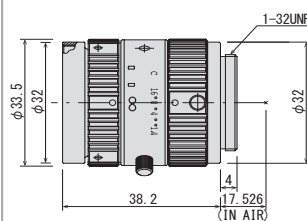
2/3"

FIX

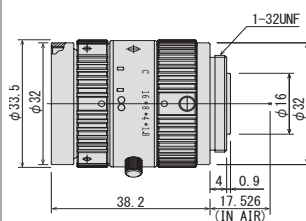
M2514-MP2



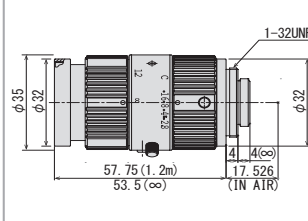
M3514-MP



M5018-MP2



M7528-MP



Focal Length		25mm				35mm				50mm				75mm			
Max. Aperture Ratio		1:1.4				1:1.4				1:1.8				1:2.8			
Max. Image Format		8.8mm × 6.6mm (ϕ 11mm)				8.8mm × 6.6mm (ϕ 11mm)				8.8mm × 6.6mm (ϕ 11mm)				8.8mm × 6.6mm (ϕ 11mm)			
Operation Range	Iris	F1.4 - F16C				F1.4 - F16C				F1.8 - F16C				F2.8 - F16C			
	Focus	0.3m - Inf.				0.3m - Inf.				0.5m - Inf.				0.3m - Inf. (※)			
Control	Iris	Manual				Manual				Manual				Manual			
	Focus	Manual				Manual				Manual				Manual			
Angle of View	D	2/3"	24.9°	1/2"	18.2°	2/3"	17.3°	1/2"	12.6°	2/3"	13.1°	1/2"	9.5°	2/3"	8.5°	1/2"	6.2°
	H		20.0°		14.6°		13.9°		10.1°		10.5°		7.6°		6.8°		5.0°
	V		15.1°		11.0°		10.4°		7.6°		7.9°		5.7°		5.1°		3.7°
Operating Temperature		-10°C ~ +50° C				-10°C ~ +50° C				-10°C ~ +50° C				-10°C ~ +50° C			

Optical Distortion	2/3"	-0.3%	1/2"	-0.1%	2/3"	-0.8%	1/2"	-0.4%	2/3"	-0.3%	1/2"	-0.2%	2/3"	-0.4%	1/2"	-0.2%
Back Focal Length	13.1mm (Inf)				17.1mm (WD=400mm)				13.1mm (Inf)				21.5mm (WD=400mm)			
Flange Back Length	17.526mm				17.526mm				17.526mm				17.526mm			
Mount	C-Mount				C-Mount				C-Mount				C-Mount			
Filter Size	M30.5 P=0.5mm				M30.5 P=0.5mm				M30.5 P=0.5mm				M30.5 P=0.5mm			
Dimensions	φ33.5mm × 36.0mm				φ 33.5mm × 38.2mm				φ 33.5mm × 38.2mm				φ 35mm × 57.75mm			
Weight	71g				87g				85g				113g			

*Factory setting is 0.3-1.2m. Focus can be adjusted to infinity by removing "Focus Limit Screw".

VISIBLE + SWIR IMAGE SENSOR FIXED FOCAL LENS



NEW

ViSiR HYPER APO

VISIBLE + SWIR IMAGE SENSOR FIXED FOCAL LENS

- Dedicated design for next generation Visible+SWIR InGaAs image sensor (IMX990/IMX991)
- Hyper-Apochromat design with fully correct focus shift between 400-1700nm
- Floating-focus mechanism realizes axial chromatic aberration and chromatic aberration of magnification at all WD and wavelengths
- High transmittance at entire wavelength of 400nm-1700nm by adopting hyper wideband AR coat
- The NIR-absorbent coating prevents light scattering and provides clear image quality

Model No.	Format	Focal Length	F-No.	Working Distance	Distortion	Weight
M0818-APVSW	2/3"	8mm	F1.8	0.1m - Inf.	0.4% (y=5.5)	163g
M1218-APVSW		12mm		0.1m - Inf.	0.0% (y=5.5)	133g
M1618-APVSW		16mm		0.1m - Inf.	0.0% (y=5.5)	136g
M2518-APVSW		25mm		0.1m - Inf.	0.0% (y=5.5)	140g

2/3"

5MP

Visible+SWIR

MANUAL

FLOATING

Apochromat

FIX

M0818-APVSW



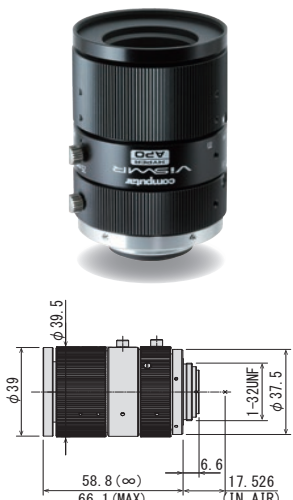
M1218-APVSW



M1618-APVSW



M2518-APVSW



Focal Length	8mm							12mm							16mm							25mm							
Max. Aperture Ratio	1:1.8							1:1.8							1:1.8							1:1.8							
Max. Image Format	8.8mm × 6.6mm (φ 11mm)							8.8mm × 6.6mm (φ 11mm)							8.8mm × 6.6mm (φ 11mm)							8.8mm × 6.6mm (φ 11mm)							
Wavelength Range	400nm - 1700nm							400nm - 1700nm							400nm - 1700nm							400nm - 1700nm							
Operation Range	Iris	F1.8 - F16.0							F1.8 - F16.0							F1.8 - F16.0							F1.8 - F16.0						
	Focus	0.1m - Inf.							0.1m - Inf.							0.1m - Inf.							0.1m - Inf.						
Control	Iris	Manual							Manual							Manual							Manual						
	Focus	Manual							Manual							Manual							Manual						
Angle of View	D	IMX990	53.2°	IMX991	28.1°	2/3"	67.3°	IMX990	37.9°	IMX991	19.5°	2/3"	49.3°	IMX990	28.8°	IMX991	14.6°	2/3"	37.9°	IMX990	18.6°	IMX991	9.4°	2/3"	24.8°				
	H	6.40mm × 42.7°	3.20mm × 22.1°	56.4°	6.40mm × 30.0°		3.20mm × 15.2°	40.4°	6.40mm × 22.7°	3.20mm × 11.4°	30.9°		6.40mm × 14.6°	3.20mm × 7.3°	20.0°														
	V	5.12mm	34.7°	2.56mm	17.7°		43.9°	5.12mm	24.2°	2.56mm	12.2°		30.9°	5.12mm	18.2°	2.56mm	9.2°		23.4°	5.12mm	11.7°	2.56mm	5.9°		15.1°				
Operating Temperature	-10° C ~ +50° C							-10° C ~ +50° C							-10° C ~ +50° C							-10° C ~ +50° C							
Optical Distortion	2/3"	0.4%	1/2"	-0.4%	2/3"	0.0%	1/2"	-0.3%	2/3"	0.0%	1/2"	-0.3%	2/3"	0.0%	1/2"	-0.1%													
Back Focal Length	11.5mm							12.5mm							14.2mm							11.9mm							
Flange Back Length	17.526mm							17.526mm							17.526mm							17.526mm							
Mount	C-Mount							C-Mount							C-Mount							C-Mount							
Filter Size	M46 P=0.75mm							M37.5 P=0.5mm							M37.5 P=0.5mm							M37.5 P=0.5mm							
Dimensions	φ49mm×54.7mm							φ39.5mm×52.0mm							φ39.5mm×52.0mm							φ39.5mm×59.2mm							
Weight	163g							133g							136g							140g							



Hyper Apo series

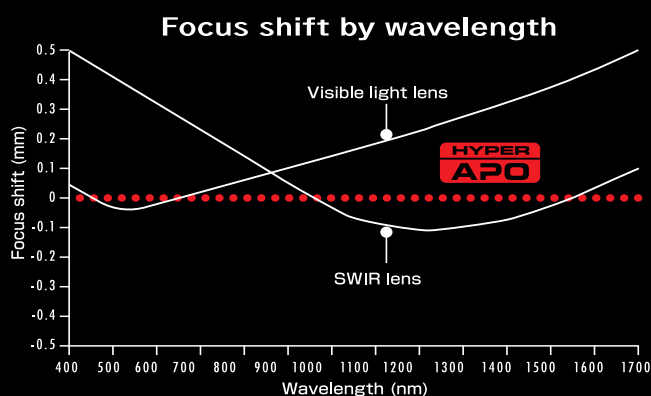
ViSWIR

**HYPER
APO**



Compatible with the latest InGaAs sensor cameras

- The latest lens fully compatible with Sony Semiconductor Solutions / IMX990 and IMX991
- Full correction of chromatic aberration from visible light (400 nm) to near-infrared (1700 nm)
- Supports Hyperspectral and multispectral imaging
- ViSWIR light absorbent coating prevents light scattering and provides clear image quality



Ultra-high resolution images from visible light (400 nm) to near-infrared (1700 nm) that are always in-focus.

**Lite series
ViSWIR
Lite**

- ▶ High transmittance from visible light (400 nm) to near-infrared (1700 nm)
- ▶ Attractive Pricing for customers using single band wavelength
- ▶ ViSWIR light absorbent coating provides excellent picture quality and clarity

Focal length line-up

- 5mm/8mm
- 12mm/16mm
- 25mm/35mm
- 50mm

VISIBLE + SWIR IMAGE SENSOR FIXED FOCAL LENS

NEW

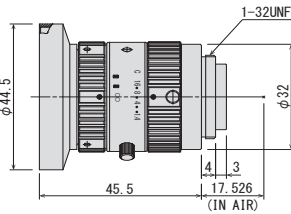
ViSWIR Lite

VISIBLE + SWIR IMAGE SENSOR FIXED FOCAL LENS

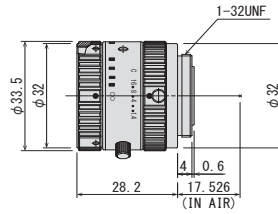


Model No.	Format	Focal Length	F-No.	Working Distance	Distortion	Weight
H0514-VSW	1/2"	5mm	F1.4	0.1m - Inf.	-0.48%(y=4.0)	102g
M0814-VSW	2/3"	8mm		0.1m - Inf.	-0.1%(y=5.5)	62g
M1214-VSW		12mm		0.15m - Inf.	-0.1%(y=5.5)	61g
M1614-VSW		16mm		0.3m - Inf.	-0.1%(y=5.5)	60g
M2514-VSW		25mm		0.3m - Inf.	-0.3%(y=5.5)	71g
M3514-VSW		35mm		0.3m - Inf.	-0.8%(y=5.5)	87g
M5018-VSW		50mm	F1.8	0.5m - Inf.	-0.3%(y=5.5)	85g

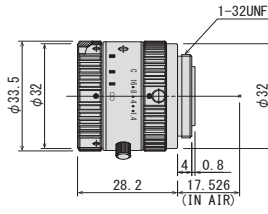
H0514-VSW



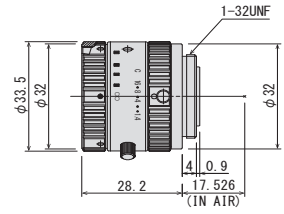
M0814-VSW



M1214-VSW



M1614-VSW



Focal Length		5mm						8mm						12mm						16mm					
Max. Aperture Ratio		1:1.4						1:1.4						1:1.4						1:1.4					
Max. Image Format		6.40mm × 5.12mm (ϕ 8.20mm)						8.8mm × 6.6mm (ϕ 11mm)						8.8mm × 6.6mm (ϕ 11mm)						8.8mm × 6.6mm (ϕ 11mm)					
Wavelength Range		400nm - 1700nm						400nm - 1700nm						400nm - 1700nm						400nm - 1700nm					
Operation Range	Iris	F1.4 - 16C						F1.4 - F16C						F1.4 - F16C						F1.4 - F16C					
	Focus	0.1m - 0.9m						0.1m - Inf.						0.15m - Inf.						0.3m - Inf.					
Control	Iris	Manual						Manual						Manual						Manual					
	Focus	Manual						Manual						Manual						Manual					
Angle of View	D	IMX990	77.8°	IMX991	44.6°	1/2"	76.7°	IMX990	53.0°	IMX991	27.9°	2/3"	67.1°	IMX990	37.8°	IMX991	19.4°	2/3"	49.2°	IMX990	28.8°	IMX991	14.6°	2/3"	38.0°
	H	6.40mm ×	65.5°	3.20mm ×	35.3°		65.5°	6.40mm ×	42.5°	3.20mm ×	21.9°		56.3°	6.40mm ×	30.0°	3.20mm ×	15.2°		40.4°	6.40mm ×	22.7°	3.20mm ×	11.4°		30.8°
	V	5.12mm	54.5°	2.56mm	28.5°		51.4°	5.12mm	34.5°	2.56mm	17.6°		43.7°	5.12mm	24.1°	2.56mm	12.2°		30.8°	5.12mm	18.2°	2.56mm	9.2°		23.4°
Operating Temperature		-10°C ~ +50° C						-10°C ~ +50° C						-10°C ~ +50° C						-10° C ~ +50° C					

Optical Distortion	1/2"	-0.48%	1/3"	-2.26%	2/3"	-0.1%	1/2"	-1.1%	2/3"	-0.1%	1/2"	-0.35%	2/3"	-0.1%	1/2"	-0.3%
Back Focal Length	10.8mm				13.1mm				13.1mm				13.1mm			
Flange Back Length	17.526mm				17.526mm				17.526mm				17.526mm			
Mount	C-Mount				C-Mount				C-Mount				C-Mount			
Filter Size	M43 P=0.75mm				M30.5 P=0.5mm				M30.5 P=0.5mm				M30.5 P=0.5mm			
Dimensions	φ44.5mm × 45.5mm				φ33.5mm × 28.2mm				φ33.5mm × 28.2mm				φ33.5mm × 28.2mm			
Weight	102g				62g				61g				60g			

VISIBLE + SWIR IMAGE SENSOR FIXED FOCAL LENS

- High transmittance at entire wavelength of 400nm-1700nm by adopting hyper wideband AR coat
- Outstanding cost-performance for single-wavelength lighting and narrow-band imaging
- Series includes 5mm, 8mm, 12mm, 16mm, 25mm, 35mm, and 50mm focal lengths
- The NIR-absorbent coating prevents light scattering and provides clear image quality
- Compact design

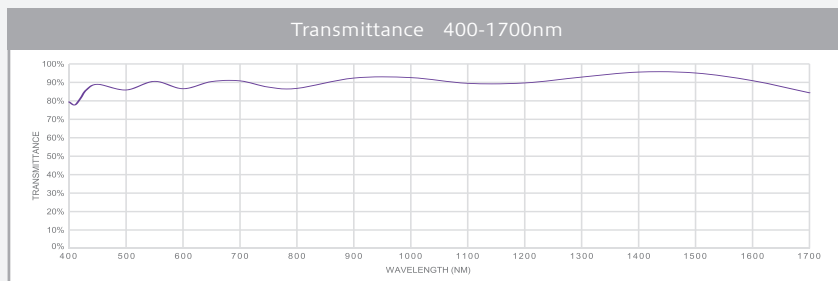
1/2"

Visible
+SWIR

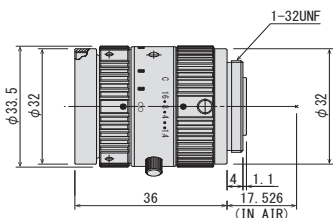
MANUAL

2/3"

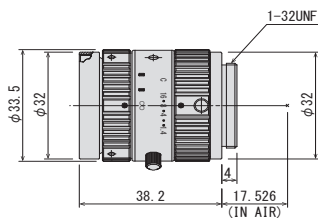
FIX



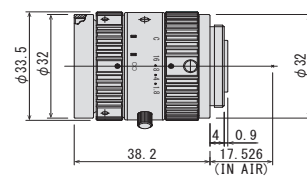
M2514-VSW



M3514-VSW



M5018-VSW



Focal Length		25mm							35mm							50mm						
Max. Aperture Ratio		1:1.4							1:1.4							1:1.8						
Max. Image Format		8.8mm × 6.6mm (ϕ 11mm)							8.8mm × 6.6mm (ϕ 11mm)							8.8mm × 6.6mm (ϕ 11mm)						
Wavelength Range		400nm - 1700nm							400nm - 1700nm							400nm - 1700nm						
Operation Range	Iris	F1.4 - F16C							F1.4 - F16C							F1.8 - F16C						
	Focus	0.3m - Inf.							0.3m - Inf.							0.5m - Inf.						
Control	Iris	Manual							Manual							Manual						
	Focus	Manual							Manual							Manual						
Angle of View	D	IMX990	18.6°	IMX991	9.4°	2/3"	24.9°	IMX990	13.7°	IMX991	6.9°	2/3"	17.3°	IMX990	9.8°	IMX991	4.9°	2/3"	13.1°			
	H	6.40mm x 5.12mm	14.6°	3.20mm x 2.56mm	7.3°		20.0°	6.40mm x 5.12mm	10.7°	3.20mm x 2.56mm	5.4°		13.9°	6.40mm x 5.12mm	7.6°	3.20mm x 2.56mm	3.8°		10.5°			
	V		11.7°		5.9°			15.1°		8.6°			4.3°		10.4°		6.1°			3.1°		7.9°
Operating Temperature		-10° C ~ +50° C							-10° C ~ +50° C							-10° C ~ +50° C						

Optical Distortion	2/3"	-0.3%	1/2"	-0.1%	2/3"	-0.8%	1/2"	-0.39%	2/3"	-0.3%	1/2"	-0.2%
Back Focal Length	13.1mm				17.1mm				13.1mm			
Flange Back Length	17.526mm				17.526mm				17.526mm			
Mount	C-Mount				C-Mount				C-Mount			
Filter Size	M30.5 P=0.5mm				M30.5 P=0.5mm				M30.5 P=0.5mm			
Dimensions	ϕ33.5mm × 36mm				ϕ33.5mm × 38.2mm				ϕ33.5mm × 38.2mm			
Weight	71g				87g				85g			



MACRO ZOOM LENS

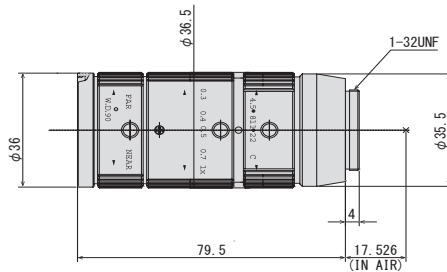
- 1/2" and 2/3" format models are ideal for a variety of inspection applications
- Optimal performance at variable working distances
- Highly versatile 3.3x magnification type suitable for megapixel applications
- Compact design

1/2" 2/3" 1MP 3MP MANUAL ZOOM MACRO

MLM-3XMP

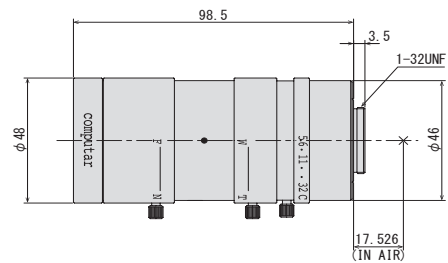
2/3"

1MP



MLH-10X

1/2"



OpticalMagnification						0.084x - 0.84x					
Max. Magnification		0.3x - 1.0x				0.084mm - 0.84mm					
Max. Aperture Ratio		1:4.5				1:5.6					
Max. Image Format		8.8mm × 6.6mm (ϕ 11mm)				6.4mm × 4.8mm (ϕ 8mm)					
Operation Range	Iris	F4.5 - F22C				F5.6 - F32C					
	Focus	90mm				150mm - 450mm					
Control	Iris	Manual				Manual					
	Focus	Manual				Manual					
	Zoom	Manual				Manual					
Angle of View	D	2/3"	14.88° - 2.84°	1/2"	10.70° - 2.72°	1/2"	21.6° - 4.5°	1/3"	17.0° - 3.3°	1/4"	13.0° - 2.5°
	H		11.80° - 2.78°		8.48° - 2.18°		18.0° - 3.6°		13.8° - 2.7°		10.6° - 2.0°
	V		8.74° - 2.24°		6.38° - 1.64°		13.8° - 2.7°		10.6° - 2.0°		8.0° - 1.5°
Operating Temperature		-10° C ~ +50° C				-10° C ~ +50° C					
Optical Distortion		2/3"	+0.12% at 0.3x +1.78% at 1.0x	1/2"	+0.12% at 0.3x +0.77% at 1.0x	1/2"	+0.9% at 0.084x +1.6% at 0.84x				
Back Focal Length		20.4mm				23.29mm					
Flange Back Length		17.526mm				17.526mm					
Mount		C-Mount				C-Mount					
Filter Size		M34 P=0.5mm				M46 P=0.75mm					
Dimensions		ϕ36.5mm × 79.5mm				ϕ48mm × 98.5mm					
Weight		150g				260g					

TELECENTRIC MACRO LENS



- WD140mm~Infinity. Suitable for use as a telephoto lens and macro lens [TEC-M55]
- Compact design, compatible with 5MP sensors [TEC-M55MPW]
- 1.1" format 5MP, 7.1X magnification (0.5X-0.07X) [TEC-V7X]

1.1"

2/3"

5MP

MANUAL

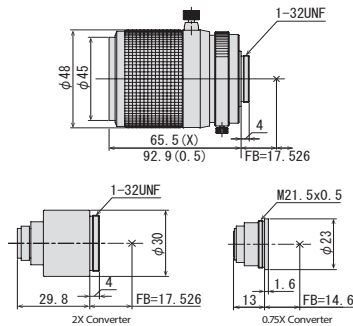
MACRO

ZOOM

TELECE

TEC-M55

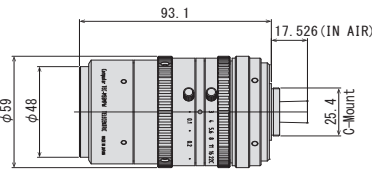
2/3"



TEC-M55MPW

2/3"

5MP

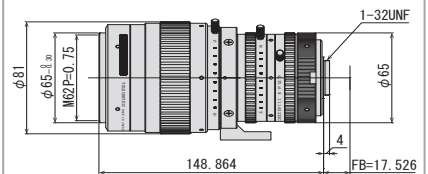


TEC-V7X

1.1"

5MP

ZOOM



Focal Length	55mm	55mm (at 0.057x) 51mm (at 0.5x)	
Magnification	0.5x - Inf. (Max 1.0x at 140mm with 2X Converter)	0.057x - 0.5x	0.07x - 0.5x
Max. Aperture Ratio	1:2.8	1:3.0	1:4.3
Max. Image Format	8.8mm × 6.6mm (φ 11mm)	8.8mm × 6.6mm (φ 11mm)	12.3mm × 12.3mm (φ 17.4mm)
Operation Range	Iris F2.8 - F32C Focus 140mm - Inf.	F3.0 - F22C 139mm - 1000mm	F4.3 - F32 182mm - 577.2mm
Control	Iris Manual Focus Manual Zoom	Manual Manual	Manual Manual Manual
Operating Temperature	-20° C ~ 50° C	-10° C ~ 50° C	-10° C ~ 50° C

Optical Distortion	2/3"	+0.2% at 0.2x +0.6% at 0.5x	1/2"	+0.1% at 0.2x +0.3% at 0.5x	2/3"	+0.52% at 0.057x +0.6% at 0.5x	Tele	1.1"	1.0% -1.7%	1"	0.84% -1.45%	2/3"	0.39% -0.7%
Back Focal Length	29.8mm				17.0mm		Tele		39.53mm				
Flange Back Length	17.526mm				17.526mm		Wide		49.78mm				
Mount	C-Mount				C-Mount								
Filter Size	M43 P=0.75mm				M46.0 P=0.75mm								
Dimensions	φ53.0mm × 92.9mm (Max. at 0.5x)				φ 59.0mm × 93.1mm								
Weight	320g				470g								



TEC-V Series

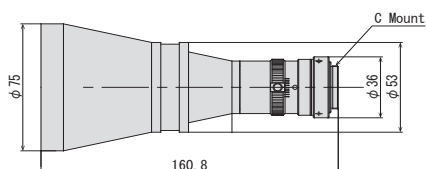
1.1" 1" MEGAPIXEL TELECENTRIC LENS

- 1.1" format 12MP (3.45μm) [TEC-V0345165MPY-WI]
- 1" format 5MP
- Versatile lineup designed for WD65mm and 110mm [TEC-V05/10]

1.1" 12MP
1" 5MP TELECEN

1.1" 12 MEGAPIXEL TELECENTRIC LENS

TEC-V0345165MPY-WI



Model (with coaxial type)	TEC-V0345165MPY-WI
Format	14.2mm × 10.4mm (φ 17.6mm)
Magnification	0.345x
Working Distance	165.2mm
Resolving Power *1	9.7μm
Depth of Field *2	6.63mm
NA	0.035
Effective F-number	5.0
TV Distortion	-0.024%

Mount	C-mount
Filter Size	M72 P=0.75mm
Weight	380g

1" 5 MEGAPIXEL TELECENTRIC LENS

WD-65mm		WD-110mm	
TEC-V0565MPW	TEC-V1065MPW	TEC-V05110MPW	TEC-V10110MPW

Model (with coaxial type)	TEC-V0565MPW	TEC-V1065MPW	TEC-V05110MPW	TEC-V10110MPW
Format	12.8mm × 9.6mm (φ 16.0mm)	12.8mm × 9.6mm (φ 16.0mm)	12.8mm × 9.6mm (φ 16.0mm)	12.8mm × 9.6mm (φ 16.0mm)
Magnification	0.5x	1.0x	0.5x	1.0x
Working Distance	65.2mm	65.2mm	110.2mm	110.2mm
Resolving Power *1	12μm	6μm	12μm	6μm
Depth of Field *2	2.88mm	0.72mm	2.88mm	0.72mm
NA	0.027	0.055	0.027	0.055
Effective F-number	9.0	9.0	9.0	9.0
TV Distortion	-0.014%	-0.023%	0.012%	0.015%
Mount	C-Mount	C-Mount	C-Mount	C-Mount
Weight	189g	158g	197g	159g

*1 : Theoretical resolution calculated with a wavelength of 550nm *2 : Value calculated with a permissible circle of confusion of 40μm

*Variable Iris type available (TEC-V05110MPW WI/TEC-V10110MPW WI).



TEC-M Series

2/3" 2 MEGAPIXEL TELECENTRIC LENS

- Suitable for 2/3" 2MP sensor, WD65mm WD110mm

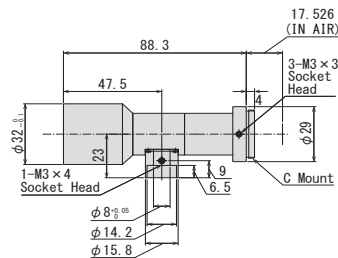
2/3"

2MP

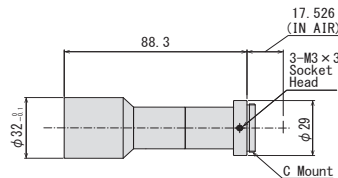
TELECEN

WD-65mm

TEC-M0565MPC / TEC-M0565MP

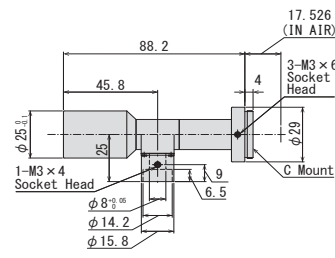


TEC-M0565MPC

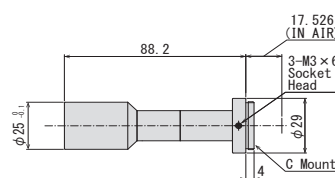


TEC-M0565MP

TEC-M0865MPC / TEC-M0865MP

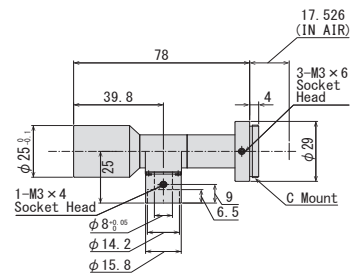


TEC-M0865MPC

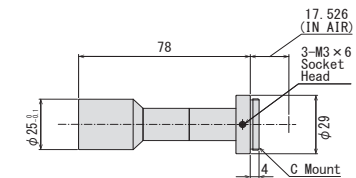


TEC-M0865MP

TEC-M1065MPC / TEC-M1065MP



TEC-M1065MPC



TEC-M1065MP

Model (with coaxial type)	TEC-M0565MPC	TEC-M0865MPC	TEC-M1065MPC
Model (straight type)	TEC-M0565MP	TEC-M0865MP	TEC-M1065MP
Format	8.8mm × 6.6mm (φ 11.0mm)	8.8mm × 6.6mm (φ 11.0mm)	8.8mm × 6.6mm (φ 11.0mm)
Magnification	0.5x	0.8x	1.0x
Working Distance	65.5mm	66mm	65.5mm
Resolving Power *1	12μm	8μm	6.7μm
Depth of Field *2	2.87mm	1.18mm	0.79mm
NA	0.028	0.042	0.05
Effective F-number	9.0	9.4	9.8
TV Distortion	-0.012%	0.008%	-0.022%

Mount	C-Mount	C-Mount	C-Mount
Weight (with coaxial type)	80g	62g	54g
Weight (straight type)	77g	57g	49g

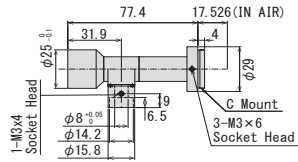
*1 : Theoretical resolution calculated with a wavelength of 550nm *2 : Value calculated with a permissible circle of confusion of 40μm

2/3" 2 MEGAPIXEL TELECENTRIC LENS

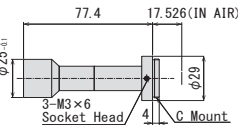
- Suitable for 2/3" 2MP sensor, WD65mm WD110mm

WD-65mm

TEC-M2065MPC / TEC-M2065MP

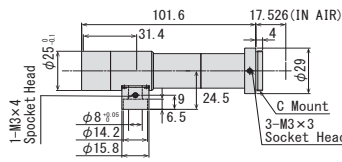


TEC-M2065MPC

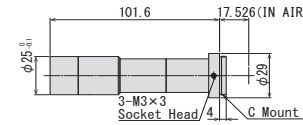


TEC-M2065MP

TEC-M4065MPC / TEC-M4065MP

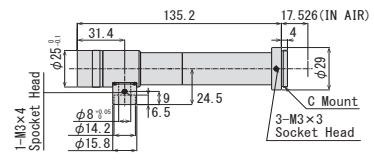


TEC-M4065MPC

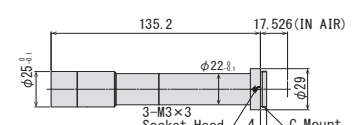


TEC-M4065MP

TEC-M6065MPC / TEC-M6065MP



TEC-M6065MPC

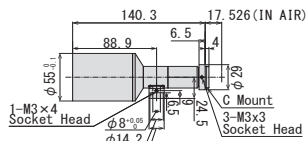


TEC-M6065MP

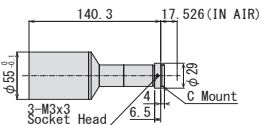
Model (with coaxial type)	TEC-M2065MPC	TEC-M4065MPC	TEC-M6065MPC
Model (straight type)	TEC-M2065MP	TEC-M4065MP	TEC-M6065MP
Format	8.8mm × 6.6m (φ 11.0mm)	2/3" φ 12.8mm	2/3" φ 12.8mm
Magnification	2.0x	4.0x	6.0x
Working Distance	65.4mm	65.3mm	64.0mm
Resolving Power *1	4.4μm	2.9μm	2.9μm
Depth of Field *2	0.26mm	0.08mm	0.06mm
NA	0.076	0.118	0.118
Effective F-number	12.8	16.9	25.5
TV Distortion	0.020%	-0.003%	-0.026%
Mount	C-Mount	C-Mount	C-Mount
Weight (with coaxial type)	55g	85g	100g
Weight (straight type)	49g	83g	98g

WD-110mm

TEC-M03110MPC / TEC-M03110MP

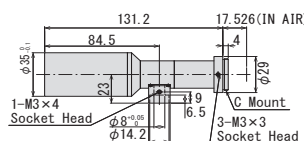


TEC-M03110MPC

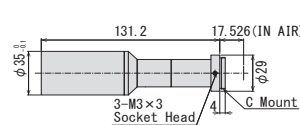


TEC-M03110MP

TEC-M05110MPC / TEC-M05110MP

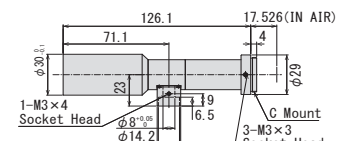


TEC-M05110MPC

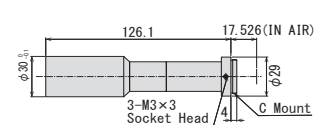


TEC-M05110MP

TEC-M08110MPC / TEC-M08110MP



TEC-M08110MPC



TEC-M08110MP

Model (with coaxial type)	TEC-M03110MPC	TEC-M05110MPC	TEC-M08110MPC
Model (straight type)	TEC-M03110MP	TEC-M05110MP	TEC-M08110MP
Format	8.8mm × 6.6m (φ 11.0mm)	8.8mm × 6.6m (φ 11.0mm)	8.8mm × 6.6m (φ 11.0mm)
Magnification	0.3x	0.5x	0.8x
Working Distance	111mm	111.8mm	111mm
Resolving Power *1	14.5μm	12.7μm	8.8μm
Depth of Field *2	5.75mm	3.03mm	1.31mm
NA	0.023	0.026	0.038
Effective F-number	6.5	9.4	10.2
TV Distortion	0.026%	-0.009%	-0.027%
Mount	C-Mount	C-Mount	C-Mount
Weight (with coaxial type)	166g	131g	106g
Weight (straight type)	160g	128g	103g

*1 : Theoretical resolution calculated with a wavelength of 550nm *2 : Value calculated with a permissible circle of confusion of 40μm

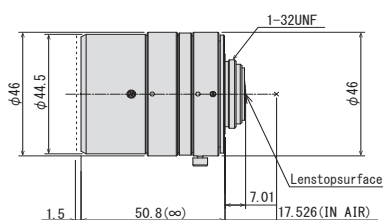
MPYIR Series

1.1" IR CORRECTIVE 12 MEGAPIXEL LENS for ITS

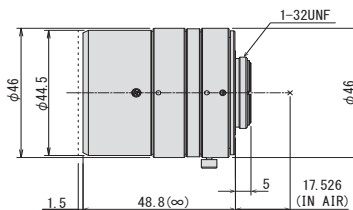


Model No.	Format	Focal Length	F No.	IRIS	Working Distance	Weight
V2518FIC-MPYIR	1.1"	25mm	F1.8 - F16C	Manual	1m - Inf.	158g
V3518FIC-MPYIR		35mm			2m - Inf.	153g
V5020FIC-MPYIR		50mm			F2.0 - F16C	3m - Inf.
VG2518KC-MPYIR		25mm	F1.8 - F16C	P-IRIS	1m - Inf.	127g
VG3518KC-MPYIR		35mm			2m - Inf.	123g
VG5020KC-MPYIR		50mm			F2.0 - F16C	3m - Inf.

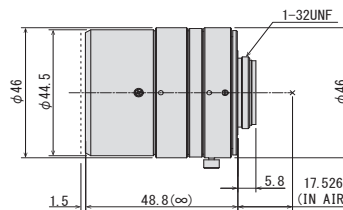
V2518FIC-MPYIR



V3518FIC-MPYIR



V5020FIC-MPYIR



Focal Length		25mm						35mm						50mm					
Max. Aperture Ratio		1:1.8						1:1.8						1:2.0					
Max. Image Format		14.2mm × 10.4mm (ϕ 17.6mm)						14.2mm × 10.4mm (ϕ 17.6mm)						14.2mm × 10.4mm (ϕ 17.6mm)					
Operation Range	Iris	F1.8 - F16C						F1.8 - F16C						F2.0 - F16C					
	Focus	1m - Inf.						2m - Inf.						3m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D		38.8°		35.6°		24.9°		27.4°		25.1°		17.4°		19.4°		17.7°		12.2°
	H	1.1"	31.8°	1"	28.8°	2/3"	20.0°	1.1"	22.3°	1"	20.2°	2/3"	14.0°	1.1"	15.7°	1"	14.2°	2/3"	9.8°
	V		23.6°		21.8°		15.1°		16.5°		15.2°		10.5°		11.6°		10.7°		7.4°
Operating Temperature		-10°C ~ +50°C						-10°C ~ +50°C						-10°C ~ +50°C					

Back Focal Length	10.6mm	14.2mm	14.2mm
Flange Back Length	17.526mm	17.526mm	17.526mm
Mount	C-Mount	C-Mount	C-Mount
Filter Size	M40.5 P=0.5mm	M40.5 P=0.5mm	M40.5 P=0.5mm
Dimensions	φ46mm × 50.8mm	φ46mm × 48.8mm	φ46mm × 48.8mm
Weight	158g	153g	151g

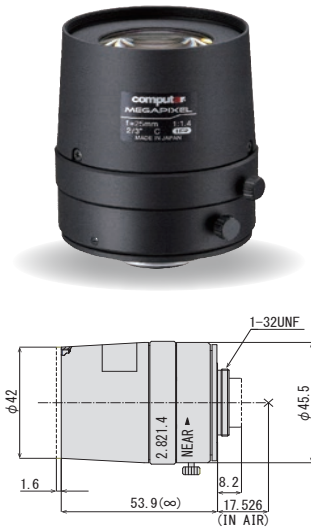
MPIR Series

2/3" IR CORRECTIVE 5 MEGAPIXEL LENS for ITS

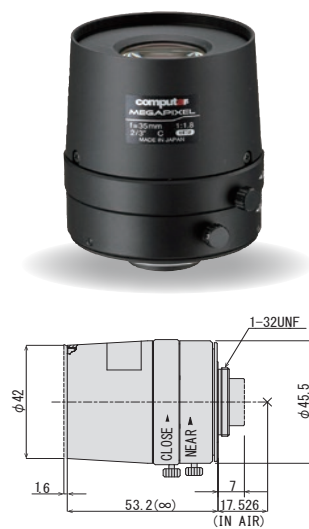


Model No.	Format	Focal Length	F No.	Working Distance	Weight
M2514FIC-MPIR	2/3"	25mm	F1.4 - F16C	1m - Inf.	154g
M3518FIC-MPIR		35mm	F1.8 - F16C	1m - Inf.	149g
M5020FIC-MPIR		50mm	F2.0 - F16C	2m - Inf.	155g
MG2514KC-MPIR		25mm	F1.4 - F16C	1m - Inf.	128g
MG3518KC-MPIR		35mm	F1.8 - F16C	1m - Inf.	123g
MG5020KC-MPIR		50mm	F2.0 - F16C	2m - Inf.	129g

M2514FIC-MPIR



M3518FIC-MPIR



M5020FIC-MPIR

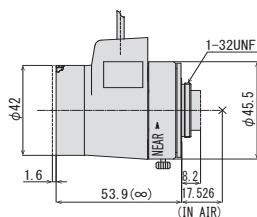


Focal Length		25mm						35mm						50mm					
Max. Aperture Ratio		1:1.4						1:1.8						1:2.0					
Max. Image Format		11.3mm × 6.0mm (φ 12.8mm)						11.3mm × 6.0mm (φ 12.8mm)						11.3mm × 6.0mm (φ 12.8mm)					
Operation Range	Iris	F1.4 - F16C						F1.8 - F16C						F2.0 - F16C					
	Focus	1m - Inf.						1m - Inf.						2m - Inf.					
Control	Iris	Manual						Manual						Manual					
	Focus	Manual						Manual						Manual					
Angle of View	D		24.9°		18.2°		13.7°		17.4°		12.7°		9.5°		12.2°		8.9°		6.7°
	H	2/3"	20.0°	1/2"	14.6°		11.0°	2/3"	13.9°	1/2"	10.2°		7.6°	2/3"	9.8°	1/2"	7.1°	1/3"	5.3°
	V		15.1°		11.0°		8.2°		10.5°		7.6°		5.7°		7.3°		5.3°		4.0°
CMV2000 11.264 × 5.984 (φ 12.75)	D	28.6°						20.0°						14.1°					
	H	25.4°						17.8°						12.5°					
	V	13.7°						9.5°						6.7°					
Operating Temperature		-10°C ~ +50°C						-10°C ~ +50°C						-10°C ~ +50°C					
Back Focal Length		10.8mm						14.3mm						14.8mm					
Flange Back Length		17.526mm						17.526mm						17.526mm					
Mount		C-Mount						C-Mount						C-Mount					
Filter Size		M40.5 P=0.5mm						M40.5 P=0.5mm						M40.5 P=0.5mm					
Dimensions		φ46.5mm × 53.9mm						φ46.5mm × 53.2mm						φ46.5mm × 53.9mm					
Weight		154g						149g						155g					

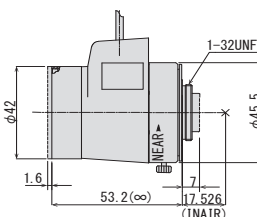
- Suitable for 2/3" 5MP sensors
- Compact design
- Usable lineup for ANPR, 25mm, 35mm, and 50mm
- Each model available in manual iris and P-iris
- Minimizes focus shift between visible light to NIR
- High spectral transmittance between visible light to NIR



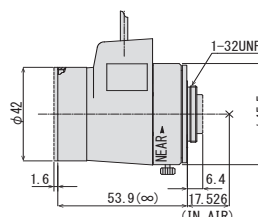
MG2514KC-MPIR



MG3518KC-MPIR



MG5020KC-MPIR



Focal Length	25mm							35mm							50mm							
Max. Aperture Ratio	1:1.4							1:1.8							1:2.0							
Max. Image Format	11.3mm × 6.0mm (ϕ 12.8mm)							11.3mm × 6.0mm (ϕ 12.8mm)							11.3mm × 6.0mm (ϕ 12.8mm)							
Operation Range	Iris	F1.4 - F16C							F1.8 - F16C							F2.0 - F16C						
	Focus	1m - Inf.							1m - Inf.							2m - Inf.						
Control	Iris	Stepping Motor							Stepping Motor							Stepping Motor						
	Focus	Manual							Manual							Manual						
Angle of View	D		24.9°		18.2°		13.7°		17.4°		12.7°		9.5°		12.2°		8.9°		6.7°			
	H	2/3"	20.0°	1/2"	14.6°	1/3"	11.0°	2/3"	13.9°	1/2"	10.2°	1/3"	7.6°	2/3"	9.8°	1/2"	7.1°	1/3"	5.3°			
	V		15.1°		11.0°		8.2°		10.5°		7.6°		5.7°		7.3°		5.3°		4.0°			
CMV2000 11.264 × 5.984 (ϕ 12.75)	D	28.6°							20.0°							14.1°						
	H	25.4°							17.8°							12.5°						
	V	13.7°							9.5°							6.7°						
Operating Temperature	-10°C ~ +50°C							-10°C ~ +50°C							-10°C ~ +50°C							
Back Focal Length	10.8mm							14.3mm							14.8mm							
Flange Back Length	17.526mm							17.526mm							17.526mm							
Mount	C-Mount							C-Mount							C-Mount							
Filter Size	M40.5 P=0.5mm							M40.5 P=0.5mm							M40.5 P=0.5mm							
Dimensions	ϕ42mm × 58.6mm × 53.9mm							ϕ42mm × 56.8mm × 53.2mm							ϕ42mm × 56.8mm × 53.9mm							
Weight	128g							123g							129g							

1 MEGAPIXEL BOARD LENS

1/2" 1MP FIX BOARD



H0320KP

H0624KP

3 MEGAPIXEL ULTRA-LOW DISTORTION BOARD LENS

1/1.8" 3MP FIX BOARD



E1220KV

E2520KV

Model Name		H0320KP		H0624KP		H0924KP		H1620KP		H2520KP		E1220KV		E1620KV		E2520KV	
Format		1/2"		1/2"		1/2"		1/2"		1/2"		1/1.8"		1/1.8"		1/1.8"	
Mount		M12															
Pitch		0.5															
Focal Length		3mm		6mm		9mm		16mm		25mm		12.0mm		16.0mm		25.0mm	
Aperture		F2.0		F2.4		F2.4		F2.0		F2.0		F2.0		F2.0		F2.0	
Optical Distortion		-37.5%		-9.0%		-1.6%		0.4%		1.0%		0.04%		-0.07%		0.02%	
Angle of view at Inf.	D		125.3°		72.5°		48.6°		27.9°		18.0°		39.5°		30.0°		19.5°
	H	1/2"	104.3°	1/2"	59.1°	1/2"	39.6°	1/2"	22.6°	1/2"	14.5°	1/1.8"	32.1°	1/1.8"	24.3°	1/1.8"	15.7°
	V		80.5°		45.0°		30.1°		17.0°		10.9°		24.4°		18.4°		11.9°
	D		98.6°		55.6°		37.3°		21.2°		13.6°		36.8°		27.9°		18.1°
	H	1/3"	80.5°	1/3"	45.0°	1/3"	30.1°	1/3"	17.0°	1/3"	10.9°	1/2"	29.8°	1/2"	22.6°	1/2"	14.6°
	V		61.3°		34.0°		22.7°		12.8°		8.2°		22.6°		17.0°		11.0°
	D		75.8°		42.3°		28.3°		16.0°		10.3°		28.1°		21.2°		13.7°
	H	1/4"	61.3°	1/4"	34.0°	1/4"	22.7°	1/4"	12.8°	1/4"	8.2°	1/3"	22.6°	1/3"	17.0°	1/3"	11.0°
	V		46.3°		25.6°		17.1°		9.6°		6.2°		17.1°		12.8°		8.2°

*Please contact us for lead-time as it is a made-to-order product.

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4K FISHEYE BOARD LENS

1/1.7" 4K IR FIX FISHEYE



E1628KRY

E1222KRY

5 MEGAPIXEL FISHEYE BOARD LENS

1/2.5" 5MP IR FIX FISHEYE



L1028KRW

L1028KDRW

Model Name		E1628KRY		E1222KRY		E1628KF3RY*		E1222KF3RY*		E2328KRY		L1028KRW		L1028KDRW							
Format		1/1.7"		1/1.7"		1/1.7"		1/1.7"		1/1.8"		1/2.5"		1/2.5"							
Mount		M12																			
Pitch		0.5																			
Focal Length		1.6mm		1.2mm		1.6mm		1.2mm		2.3mm		1.05mm		1.05mm							
Aperture		F2.8		F2.2		F2.8		F2.2		F2.8		F2.8		F2.8							
Angle of view at Inf.	D	1/1.7"	190.0°	1/1.7"	185.0°	1/1.7"	190.0°	1/1.7"	185.0°	1/1.8"	—	1/2.5"	180.0°	1/2.5"	180.0°						
	H										190.0°										
	V										108.6°										
	D	1/3"	190.0°	1/3"	185.0°	1/3"	185.0°	—	1/3"	180.0°	1/3"	180.0°									
	H												168.2°	171.5°	168.2°	171.5°	159.0°				
	V												125.5°	139.5°	125.5°	139.5°	119.5°	163.2°			
	D	1/4"	157.3°	1/4"	164.2°	1/4"	157.3°	1/4"	164.2°	1/3"	149.2°	1/4"	180.0°	1/4"	180.0°						
	H															125.5°	139.5°	125.5°	139.5°	119.5°	163.2°
	V															94.2°	110.3°	94.2°	110.3°	89.6°	130.2°
IRCF						○		○						○							

*Please note E1628KF3RY and E1222KF3RY are produced to order.

*Please contact us for lead-time as it is a made-to-order product.

*Please contact us for lead-time as it is a made-to-order product.

EX1.5C**EX2C****VM100**

Description	1.5X Extender for C-mount	2X Extender for C-mount	Extension Tube Kit 40, 20, 10, 5, 1, 0.5mm
Application	Attached between lens and camera - Makes focal length 1.5X	Attached between lens and camera - Makes focal length 2X	Attached between lens and camera - Reduces minimum focusing distance

VM400**M55-0.75X****M55-2.0X**

Description	5mm Adapter Ring	Rear converter 0.75X (Designed for TEC-M55)	Rear converter 2.0X (Designed for TEC-M55)
Application	Attached between lens and camera - Adapts C-mount lens to CS-mount camera	Makes focal length 0.75X	Makes focal length 2.0X

VM0811**VM0810****ZM0810**

Description	Filter holder for V0828-MPY2 (M72 P=0.75)	Filter holder for V0828-MPY2 (M67 P=0.75)	Filter holder for V0826-MPZ (M82 P=0.75)
Application	Attached between filter and lens for 1.1" sensor camera	Attached between filter and lens for 1" sensor camera	Attached between filter and lens for 1" sensor camera

VM0918**TM1243****TM1643**

Description	Filter holder for EG6Z0915 series (M67 P=0.75)	Filter holder for F1228-MPT (M72 P=0.75)	Filter holder for F1628-MPT (M52 P=0.75)
Application	Attached between filter and lens	Attached between filter and lens for 1.4" sensor camera	Attached between filter and lens for 1.4" sensor camera



4K/5MP Varifocal Lens

- Ultra-high-resolution 5MP and 8MP (4K) models
- High performance from center to the edge, ideal for multi-ROI
- Day/Night design, minimizing focus shift at NIR
- Various focal lengths from wide 2.8mm to telephoto 50mm
- F0.9 high-speed model available (EG3Z0409)
- F1.5 flat F-stop from wide to telephoto (EG6Z0915)

Model Name	Format	Mount	Focal Length	F No.	Type	M.O.D	Front Filter Thread	Dimensions (mm)			Weight
								φ	H	D	
E3Z3915CS-MPWIR	1/1.8"	CS	3.9mm - 10mm	F1.5 - F16C	Manual	0.8m	-	43	-	59	69g
EG3Z3915FCS-MPWIR	1/1.8"	CS	3.9mm - 10mm	F1.5 - F360C	DC	0.8m	-	40	49	59	72g
EG3Z3915KCS-MPWIR	1/1.8"	CS	3.9mm - 10mm	F1.5 - F16C	P-iris	0.8m	-	40	49	59	71g
EG3Z3915TCS-MPWIR	1/1.8"	CS	3.9mm - 10mm	F1.5 - F16C	i-CS	0.8m	-	54	67	59	109g
EG3Z0409FCS-MPWIR	1/1.8"	CS	4mm - 10mm	F0.9 - F360C	DC	0.1m	-	63	73	77	384g
EG3Z0409KCS-MPWIR	1/1.8"	CS	4mm - 10mm	F0.9 - F16C	P-iris	0.1m	-	63	73	77	388g
EG6Z0915FCS-MPWIR	1/1.8"	CS	9mm - 50mm	F1.5 - F360C	DC	3.0m	-	68	83	104	279g
EG6Z0915KCS-MPWIR	1/1.8"	CS	9mm - 50mm	F1.5 - F20C	P-iris	3.0m	-	68	83	104	278g
EG6Z0915TCS-MPWIR	1/1.8"	CS	9mm - 50mm	F1.5 - F16C	i-CS	3.0m	-	77	84	104	291g
A3Z2812CS-MPWIR	1/2.7"	CS	2.8mm - 8.5mm	F1.2 - F16C	Manual	0.5m	-	43	-	59	64g
AG3Z2812FCS-MPWIR	1/2.7"	CS	2.8mm - 8.5mm	F1.2 - F360C	DC	0.5m	-	40	49	59	67g
AG3Z2812KCS-MPWIR	1/2.7"	CS	2.8mm - 8.5mm	F1.2 - F16C	P-iris	0.5m	-	40	49	59	66g



3MP Varifocal Lens

- 1/2.7" 3MP
- Compact design
- Various focal lengths, from wide to telephoto
- Each model available in manual iris, DC iris, and P-iris

Model Name	Format	Mount	Focal Length	F No.	Type	M.O.D	Front Filter Thread	Dimensions (mm)			Weight
								φ	H	D	
A4Z2812CS-MPIR	1/2.7"	CS	2.8mm - 10mm	F1.2 - F16C	Manual	0.5m	-	43.6	-	59	63g
AG4Z2812FCS-MPIR	1/2.7"	CS	2.8mm - 10mm	F1.2 - F360C	DC	0.5m	-	40	49	59	66g
AG4Z2812KCS-MPIR	1/2.7"	CS	2.8mm - 10mm	F1.2 - F16C	P-iris	0.5m	-	40	49	59	65g
A6Z8516CS-MP	1/2.7"	CS	8.5mm - 50mm	F1.6 - F16C	Manual	1.0m	M40.5 P=0.5mm	49	-	58	77g
AG6Z8516FCS-MP	1/2.7"	CS	8.5mm - 50mm	F1.6 - F360C	DC	1.0m	M40.5 P=0.5mm	46	60	58	80g
AG6Z8516KCS-MP	1/2.7"	CS	8.5mm - 50mm	F1.6 - F16C	P-iris	1.0m	M40.5 P=0.5mm	46	60	58	78g
A4Z1214CS-MPIR	1/2.7"	CS	12.5mm - 50mm	F1.4 - F16C	Manual	1.0m	M40.5 P=0.5mm	49	-	58	80g
AG4Z1214FCS-MPIR	1/2.7"	CS	12.5mm - 50mm	F1.4 - F360C	DC	1.0m	M40.5 P=0.5mm	46	59.3	58	83g
AG4Z1214KCS-MPIR	1/2.7"	CS	12.5mm - 50mm	F1.4 - F16C	P-iris	1.0m	M40.5 P=0.5mm	40	49	59	81g



HD Zoom Lens

- 2/3", 1/1.8", and 1/2" available for full HD megapixel sensors
- Various zoom ratios from 17x to 66x, covering focal lengths between 8.8-1550mm
- Preset function and filter thread available
- Suitable for surveillance applications
- ※ Please contact us for a lead time as it is a made-to-order product

Model Name	Format	Mount	Focal Length	F No.	Type	M.O.D	Front Filter Thread	Dimensions (mm)			Weight
								φ	H	D	
H35Z1015PDC-MP	1/2"	C	10mm - 350mm	F1.5 - F1000	DC/Preset	2.5m	M86 P=1.0mm	97	109	238	1830g
H62Z1235PDC-MP2	1/2"	C	12.5mm - 775mm	F3.5 - Close	DC/Preset	5.0m	M109 P=1.0mm	150	135	367	5200g
H62Z1235PDC-MPIR	1/2"	C	12.5mm - 775mm	F3.5 - Close	DC/Preset	5.0m	M109 P=1.0mm	150	135	367	5800g
H62Z1235PDC-MPIR-EX	1/2"	C	25mm - 1500mm	F3.5 - Close	DC/Preset	5.0m	M109 P=1.0mm	150	135	367	6000g
E17Z8816PDC-MP	1/1.8"	C	8.8mm - 150mm	F1.6 - F500	DC/Preset	4.0m	M72 P=0.75mm	85	85.8	158	1160g
E24Z1018DC-MP	1/1.8"	C	10mm - 240mm	F1.8 - F500C	DC	4.0m	M77 P=1.0mm	101	102	198	2060g
E24Z1018PDC-MPIR	1/1.8"	C	10mm - 240mm	F1.8 - F500C	DC/Preset	4.0m	M77 P=1.0mm	101	102	204	2140g
E66Z1635PDC-MP	1/1.8"	C	16.7mm - 1000mm	F3.5 - Close	DC/Preset	5.0m	M109 P=1.0mm	150	135	367	5300g
E66Z1635PDC-MPIR	1/1.8"	C	16.7mm - 1000mm	F3.5 - Close	DC/Preset	5.0m	M109 P=1.0mm	150	135	367	5800g
M24Z1527MP-MP	2/3"	C	15mm - 360mm	F2.7 - F22C	3 Motor/Preset	5.0m	M77 P=1.0mm	101	102.4	221	2240g
M24Z1527PDC-MP	2/3"	C	15mm - 360mm	F2.7 - F500C	DC/Preset	5.0m	M77 P=1.0mm	101	102.4	221	2180g
M24Z2138PDC-MP	2/3"	C	21mm - 500mm	F3.8 - F500C	DC/Preset	5.0m	M77 P=1.0mm	101	102.4	237	2240g



Direct Mount Varifocal Lens

- Resolution up to 8MP supported
- Various image format options available from 1/3" to 1/1.2"
- Newly released compact varifocal lens for IMX485 (NSF2.3Z5915BHRW)
- Newly released compact varifocal lens for IMX415 (TSF2.9Z2813BHRW)
- ※ Please contact us for a lead time as it is a made-to-order product.

1. Calculation of Working Distance (WD)

Distance from lens to object (WD) is calculated by putting the size of a camera's imaging device, focal length, and an object size into the following formula.

<Formula>

$$WD = H1 + y \times f / y'$$

[Ex]

When 2/3" camera with M2514-MP2 films an object whose vertical size is 120 mm.

f : 25 mm

H1 : 23.8mm

y : 120mm

y' : 6.6mm

Distance from lens to object=

$$WD = 23.8 + 120 \times 25 / 6.6 = 478.35\text{mm}$$

2. Calculation of Focal Length

When choosing size of a camera's imaging device, the object size and WD are fixed, focal length can be calculated by the following formula. You can select appropriate lens from the focal length.

<Formula>

$$f = y' \times WD / y$$

f = focal length of lens

WD = distance from lens to object

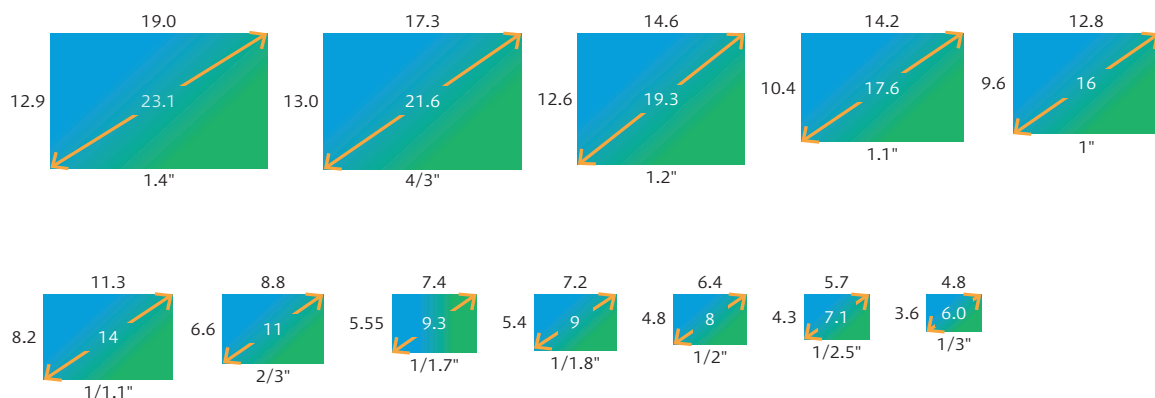
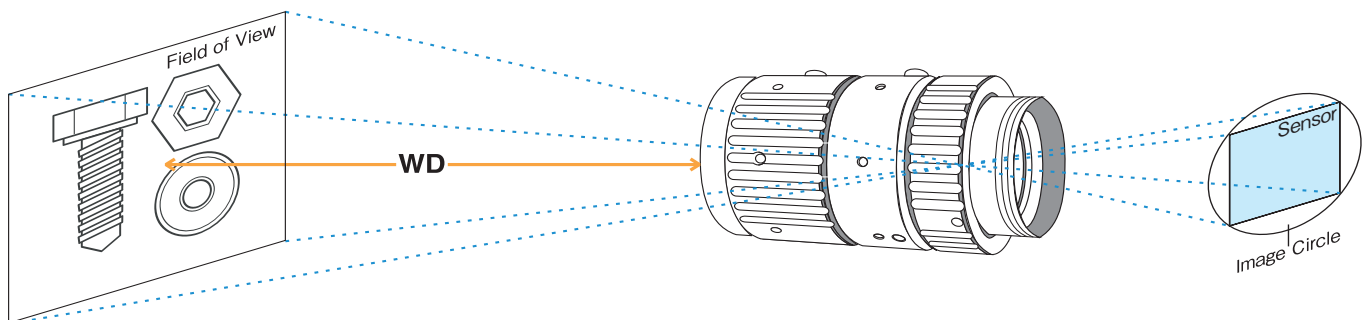
H1 : first principal point

y : vertical size of object

y' : vertical size of camera's imaging device

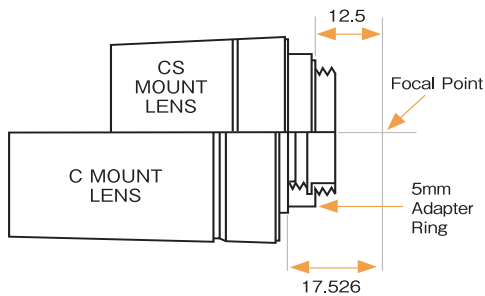
CAMERA FORMAT

The size of the camera's imaging device also affects the angle of view, with the smaller devices creating narrower angles of view when used on the same lens. The format of the lens, however, is irrelevant to the angle of view; it merely needs to project an image that will cover the device, e.g., the same format as the camera or larger. This also means that 1/3" cameras can utilize the entire range of lenses from 1/3" to 2/3", with a 1/3" 8mm lens giving the same angle as a 2/3" 8mm lens. The latter combination also provides increased resolution and picture quality as only the center of the lens is being utilized, where the optics can be ground more accurately.



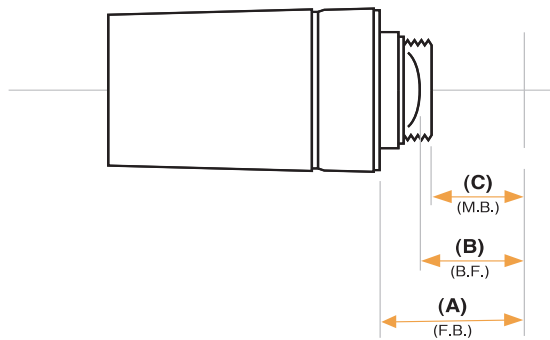
C OR CS MOUNT

Modern cameras and lenses are generally CS mount. With CS mount cameras, both types of lenses can be used, but the C mount lens requires a 5mm ring (VM400) to be fitted between the camera and lens to achieve a focused image. With C mount cameras, it is impossible to use CS mount lenses as it is not physically possible to get the lens close enough to the sensor to achieve a focused image.



	C mount lens	CS mount lens
C mount camera	○	×
CS mount camera	needs 5mm ring	○

FLANGE BACK, BACK FOCAL LENGTH, AND MECHANICAL BACK FOCAL LENGTH



(A) Flange Back

Distance between the lens flange and focal plane

(B) Back Focal Length

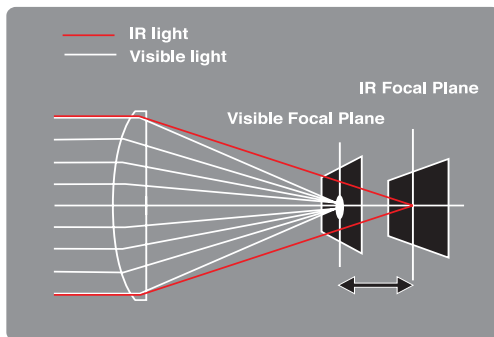
Distance between the surface of the rear lens element and focal plane

(C) Mechanical Back Focal Length

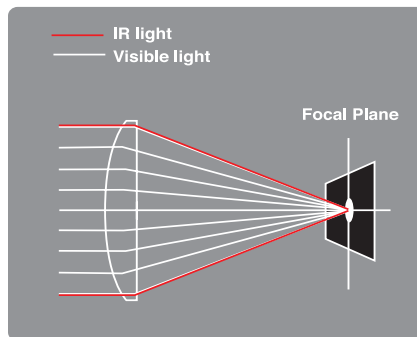
Distance between the surface of the lens frame and focal plane

MECHANISM AND ADVANTAGEOUS EFFECT OF IR LENS

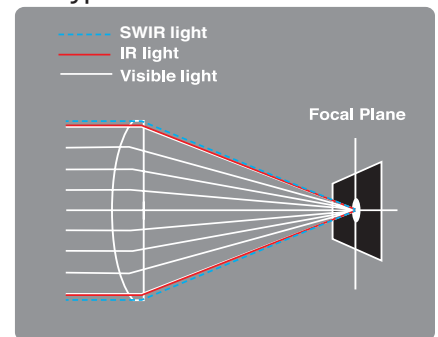
■ NON IR LENS



■ IR LENS



■ Hyper-APO LENS



Day/Night cameras typically operate in the near-infrared/infrared zones at night, making the image "out of focus" and unsuitable if used with a conventional lens. Computar has developed IR Lenses that utilize a unique optical glass material that minimizes light dispersion. As a result, refocusing is not required when used with infrared lighting. The lens is manufactured with a special ED glass (extra dispersion) which does not widely disperse light of different wavelengths and has a "special coating." This combination allows the lens to deliver perfect focus under normal and IR illumination by transmitting more light to the infrared region.

FIELD OF VIEW

LensConnect BH Series

DL0828UC-MPY (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.008	-	1399.5	1023.8	1097.3	818.7	894.6	667.5
900	0.009	-	1261.0	922.4	988.5	737.5	805.9	601.3
800	0.010	-	1122.5	820.9	879.9	656.4	717.3	535.2
700	0.012	-	984.1	719.5	771.2	575.3	628.6	469.0
600	0.014	-	845.6	618.1	662.5	494.1	540.0	402.9
500	0.016	-	707.1	516.7	553.8	413.0	451.3	336.7
450	0.018	-	637.9	466.0	499.5	372.4	407.0	303.6
400	0.020	-	568.6	415.2	445.1	331.9	362.7	270.5
350	0.023	-	499.3	364.5	390.8	291.3	318.4	237.4
300	0.027	-	430.1	313.8	336.4	250.7	274.0	204.4
250	0.032	-	360.8	263.0	282.0	210.1	229.7	171.3
200	0.040	-	291.4	212.3	227.6	169.5	185.3	138.2
190	0.042	-	277.5	202.1	216.8	161.4	176.5	131.5
180	0.044	-	263.6	192.0	205.9	153.3	167.6	124.9
170	0.046	-	249.8	181.8	195.0	145.2	158.7	118.3
160	0.049	-	235.9	171.6	184.1	137.1	149.8	111.7
150	0.052	-	222.0	161.5	173.2	128.9	140.9	105.0
140	0.055	-	208.1	151.3	162.3	120.8	132.1	98.4
130	0.059	-	194.2	141.1	151.4	112.7	123.2	91.8
120	0.064	-	180.3	131.0	140.5	104.5	114.3	85.2
110	0.070	-	166.3	120.8	129.6	96.4	105.4	78.5
100	0.076	-	152.4	110.6	118.7	88.2	96.5	71.9

DL1224UC-MPY (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.012	-	950.2	695.0	744.6	556.6	607.8	454.5
900	0.013	-	855.6	625.8	670.4	501.1	547.2	409.2
800	0.015	-	761.2	556.6	596.3	445.7	486.7	363.9
700	0.017	-	666.7	487.4	522.2	390.3	426.2	318.7
600	0.020	-	572.2	418.2	448.1	334.9	365.7	273.4
500	0.024	-	477.7	349.0	374.0	279.4	305.2	228.1
450	0.026	-	430.4	314.4	336.9	251.7	274.9	205.5
400	0.030	-	383.1	279.8	299.8	224.0	244.6	182.8
350	0.034	-	335.8	245.2	262.7	196.2	214.3	160.2
300	0.040	-	288.5	210.5	225.6	168.5	184.0	137.5
250	0.047	-	241.2	175.9	188.5	140.7	153.7	114.9
200	0.059	-	193.8	141.2	151.4	113.0	123.4	92.2
190	0.062	-	184.3	134.3	143.9	107.4	117.3	87.6
180	0.065	-	174.8	127.3	136.5	101.8	111.2	83.1
170	0.069	-	165.3	120.4	129.0	96.3	105.2	78.6
160	0.073	-	155.8	113.4	121.6	90.7	99.1	74.0
150	0.078	-	146.3	106.4	114.1	85.1	93.0	69.5
140	0.084	-	136.8	99.5	106.7	79.5	86.9	64.9
130	0.090	-	127.2	92.5	99.2	74.0	80.8	60.3
120	0.098	-	117.7	85.5	91.7	68.4	74.7	55.8
110	0.106	-	108.1	78.5	84.2	62.8	68.6	51.2
100	0.117	-	98.5	71.5	76.7	57.1	62.4	46.6

DL1623UC-MPY (f=16mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.016	-	712.8	521.6	558.7	418.0	456.3	341.5
900	0.018	-	642.0	469.8	503.2	376.5	411.0	307.6
800	0.020	-	571.3	418.0	447.8	335.0	365.7	273.7
700	0.023	-	500.6	366.3	392.3	293.5	320.5	239.8
600	0.026	-	429.9	314.5	336.9	252.0	275.1	205.9
500	0.032	-	359.1	262.7	281.4	210.5	229.8	172.0
450	0.035	-	323.7	236.8	253.6	189.7	207.1	155.0
400	0.039	-	288.3	210.9	225.9	169.0	184.5	138.0
350	0.045	-	252.9	184.9	198.1	148.2	161.8	121.0
300	0.052	-	217.4	158.9	170.3	127.3	139.0	104.0
250	0.062	-	181.8	132.9	142.4	106.5	116.3	87.0
200	0.078	-	146.2	106.8	114.4	85.6	93.4	69.9
190	0.082	-	139.0	101.6	108.8	81.4	88.8	66.5
180	0.086	-	131.8	96.3	103.2	77.2	84.3	63.0
170	0.091	-	124.7	91.1	97.6	73.0	79.7	59.6
160	0.097	-	117.5	85.8	91.9	68.7	75.1	56.2
150	0.103	-	110.2	80.5	86.3	64.5	70.4	52.7
140	0.110	-	103.0	75.2	80.6	60.3	65.8	49.2
130	0.118	-	95.7	69.9	74.9	56.0	61.2	45.8
120	0.128	-	88.4	64.6	69.2	51.7	56.5	42.3
110	0.140	-	81.0	59.2	63.4	47.4	51.8	38.8
100	0.154	-	73.6	53.8	57.6	43.1	47.0	35.2

DL2523UC-MPY (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.025	-	454.9	333.3	356.8	267.5	291.8	218.8
900	0.027	-	409.9	300.3	321.5	241.0	263.0	197.2
800	0.031	-	364.9	267.3	286.2	214.6	234.1	175.5
700	0.035	-	319.9	234.4	250.9	188.1	205.2	153.9
600	0.041	-	274.9	201.4	215.6	161.6	176.4	132.2
500	0.049	-	229.9	168.4	180.3	135.2	147.5	110.5
450	0.054	-	207.3	151.9	162.6	121.9	133.0	99.7
400	0.061	-	184.8	135.3	144.9	108.6	118.5	88.9
350	0.069	-	162.2	118.8	127.2	95.3	104.0	78.0
300	0.081	-	139.5	102.2	109.4	82.0	89.5	67.1
250	0.096	-	116.8	85.6	91.6	68.7	74.9	56.2
200	0.120	-	94.0	68.9	73.7	55.3	60.3	45.2
190	0.126	-	89.4	65.5	70.1	52.6	57.4	43.0
180	0.133	-	84.8	62.1	66.5	49.9	54.4	40.8
170	0.140	-	80.2	58.8	62.9	47.2	51.5	38.6
160	0.149	-	75.6	55.4	59.3	44.5	48.5	36.4
150	0.158	-	71.0	52.0	55.7	41.7	45.5	34.1
140	0.170	-	66.3	48.6	52.0	39.0	42.5	31.9
130	0.182	-	61.6	45.1	48.3	36.2	39.5	29.6
120	0.198	-	56.9	41.7	44.6	33.5	36.5	27.4
110	0.216	-	52.1	38.2	40.9	30.6	33.4	25.1
100	0.238	-	47.2	34.6	37.1	27.8	30.3	22.7

DL3525UC-MPY (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.034	-	332.1	243.0	260.2	195.0	212.8	159.5
900	0.038	-	299.9	219.4	234.9	176.0	192.1	144.0
800	0.042	-	267.6	195.7	209.6	157.1	171.4	128.5
700	0.048	-	235.3	172.1	184.3	138.1	150.6	112.9
600	0.056	-	202.9	148.3	158.9	119.0	129.9	97.3
500	0.066	-	170.4	124.5	133.4	99.9	109.0	81.7
450	0.073	-	154.1	112.6	120.6	90.3	98.6	73.8
400	0.082	-	137.7	100.6	107.7	80.7	88.1	66.0
350	0.093	-	121.2	88.5	94.8	71.0	77.5	58.1
300	0.108	-	104.6	76.4	81.8	61.3	66.9	50.1
250	0.129	-	87.8	64.1	68.7	51.4	56.1	42.0
200	0.160	-	70.8	51.7	55.3	41.4	45.2	33.9
190	0.168	-	67.3	49.1	52.6	39.4	43.0	32.2
180	0.177	-	63.8	46.6	49.9	37.3	40.7	30.5
170	0.188	-	60.3	44.0	47.1	35.3	38.5	28.8
160	0.200	-	56.7	41.4	44.3	33.2	36.2	27.1
150	0.213	-	53.1	38.8	41.5	31.1	33.9	25.4

DL5028UC-MPY (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1/1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.046	-	246.7	180.5	193.3	144.9	158.1	118.5
900	0.050	-	223.3	163.4	175.0	131.1	143.1	107.3
800	0.056	-	199.9	146.2	156.6	117.4	128.1	96.0
700	0.064	-	176.4	129.0	138.2	103.5	113.0	84.7
600	0.074	-	152.8	111.7	119.6	89.6	97.8	73.3
500	0.087	-	129.0	94.3	101.0	75.7	82.6	61.9
450	0.096	-	117.0	85.6	91.6	68.6	74.9	56.1
400	0.107	-	105.0	76.7	82.2	61.6	67.2	50.4
350	0.122	-	92.8	67.9	72.7	54.4	59.4	44.5
300	0.140	-	80.5	58.9	63.0	47.2	51.5	38.6
250	0.166	-	68.0	49.7	53.2	39.9	43.5	32.6
200	0.205	-	55.2	40.3	43.2	32.3	35.3	26.5

F1228-MPT (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			14"		12"		1"	
			H	V	H	V	H	V
1000	0.012	-	1582.7	1081.4	1213.1	1047.7	1178.8	858.7
900	0.014	-	1426.7	974.6	1093.4	944.3	1062.4	773.9
800	0.015	-	1270.8	867.9	973.7	840.9	946.1	689.1
700	0.017	-	1114.8	761.1	854.0	737.4	829.8	604.3
600	0.020	-	958.8	654.4	734.3	634.0	713.4	519.5
500	0.024	-	802.9	547.6	614.6	530.6	597.1	434.7
450	0.027	-	724.9	494.3	554.7	478.9	538.9	392.3
400	0.030	-	646.9	440.9	494.8	427.1	480.8	349.9
350	0.034	-	568.9	387.5	435.0	375.4	422.6	307.5
300	0.040	-	490.9	334.1	375.1	323.7	364.4	265.1
250	0.047	-	412.8	280.7	315.2	272.0	306.2	222.7
200	0.058	-	334.8	227.3	255.3	220.2	248.0	180.3
150	0.076	-	256.7	173.9	195.4	168.5	189.8	137.8
100	0.110	-	178.7	120.7	135.7	116.9	131.8	95.6

F1628-MPT (f=16mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			14"		12"		1"	
			H	V	H	V	H	V
1000	0.016	-	1183.6	808.5	906.4	783.5	880.9	643.1
900	0.018	-	1067.2	729.0	817.2	706.4	794.2	579.8
800	0.020	-	950.9	649.4	728.1	629.3	707.5	516.5
700	0.023	-	834.5	569.8	638.9	552.2	620.9	453.2
600	0.027	-	718.1	490.3	549.7	475.1	534.2	389.9
500	0.032	-	601.8	410.7	460.5	398.0	447.5	326.7
450	0.035	-	543.6	371.0	416.0	359.5	404.2	295.0
400	0.040	-	485.4	331.2	371.4	320.9	360.9	263.4
350	0.045	-	427.2	291.4	326.8	282.4	317.5	231.7
300	0.052	-	369.0	251.6	282.2	243.8	274.2	200.1
250	0.062	-	310.8	211.8	237.6	205.3	230.9	168.4
200	0.076	-	252.6	172.1	193.0	166.7	187.5	136.8
150	0.099	-	194.4	132.3	148.4	128.2	144.2	105.1
100	0.142	-	136.1	92.5	103.8	89.6	100.9	73.5

F2524-MPT (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			14"		12"		1"	
			H	V	H	V	H	V
1000	0.025	-	771.4	526.8	590.5	510.6	573.9	419.3
900	0.028	-	694.9	474.5	531.9	459.9	516.9	377.7
800	0.031	-	618.3	422.2	473.3	409.2	460.0	336.1
700	0.035	-	541.7	369.9	414.7	358.5	403.0	294.4
600	0.041	-	465.1	317.6	356.0	307.9	346.0	252.8
500	0.049	-	388.5	265.3	297.4	257.2	289.1	211.2
450	0.055	-	350.2	239.2	268.1	231.8	260.6	190.4
400	0.061	-	312.0	213.1	238.8	206.5	232.1	169.6
350	0.070	-	273.7	186.9	209.5	181.1	203.6	148.8
300	0.081	-	235.4	160.8	180.2	155.8	175.1	128.0
250	0.097	-	197.1	134.6	150.9	130.5	146.6	107.2
200	0.121	-	158.8	108.5	121.6	105.1	118.1	86.3
150	0.159	-	120.5	82.3	92.3	79.8	89.7	65.5
100	0.234	-	82.0	56.0	62.8	54.3	61.0	44.6

F3526-MPT (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			14"		12"		1"	
			H	V	H	V	H	V
1000	0.035	-	540.3	369.0	413.5	357.6	401.8	293.9
900	0.039	-	485.7	331.7	371.7	321.5	361.3	264.2
800	0.044	-	431.1	294.5	330.0	285.4	320.7	234.5
700	0.051	-	376.6	257.2	288.2	249.3	280.1	204.9
600	0.059	-	322.0	219.9	246.5	213.2	239.5	175.2
500	0.071	-	267.5	182.7	204.7	177.1	199.0	145.5
450	0.080	-	240.2	164.1	183.8	159.0	178.7	130.7
400	0.090	-	212.9	145.4	163.0	141.0	158.4	115.8
350	0.103	-	185.6	126.8	142.1	122.9	138.1	101.0
300	0.121	-	158.3	108.2	121.2	104.9	117.8	86.2
250	0.146	-	131.1	89.5	100.3	86.8	97.5	71.3
200	0.184	-	103.8	70.9	79.5	68.7	77.2	56.5
150	0.249	-	76.5	52.3	58.6	50.7	56.9	41.7
100	0.387	2.6	49.3	33.7	37.7	32.7	36.7	26.9

F5026-MPT (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			14"		12"		1"	
			H	V	H	V	H	V
1000	0.052	-	369.2	252.1	282.5	244.4	274.6	200.8
900	0.058	-	331.0	226.0	253.3	219.1	246.2	180.1
800	0.065	-	292.8	200.0	224.1	193.8	217.8	159.3
700	0.075	-	254.6	173.9	194.9	168.6	189.4	138.5
600	0.088	-	216.4	147.8	165.6	143.3	161.0	117.8
500	0.107	-	178.3	121.8	136.4	118.0	132.6	97.0
450	0.120	-	159.2	108.7	121.8	105.4	118.4	86.6
400	0.136	-	140.1	95.7	107.2	92.7	104.2	76.2
350	0.158	-	121.0	82.6	92.6	80.1	90.0	65.8
300	0.187	-	101.9	69.6	78.0	67.5	75.8	55.5
250	0.230	-	82.8	56.6	63.4	54.8	61.6	45.1
200	0.299	0.05	63.7	43.5	48.8	42.2	47.4	34.7
150	0.427	0.1	44.6	30.5	34.2	29.6	33.2	24.3
100	0.748	0.5	25.5	17.4	19.5	16.9	19.0	13.9

V0828-MPY2 (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			11"		1"		2/3"	
			H	V	H	V	H	V
1000	0.008	-	1790.8	1310.2	1617.6	1206.7	1103.1	820.5
900	0.009	-	1614.2	1180.9	1458.0	1087.5	994.2	739.5
800	0.010	-	1437.5	1051.4	1298.3	968.3	885.2	658.4
700	0.012	-	1260.1	921.4	1137.9	848.5	775.7	576.9
600	0.014	-	1083.5	792.0	978.3	729.3	666.7	495.9
500	0.016	-	906.4	662.2	818.2	609.8	557.4	414.6
450	0.018	-	817.8	597.3	738.1	550.0	502.8	373.9
400	0.020	-	729.5	532.6	658.3	490.4	448.3	333.3
350	0.023	-	641.0	467.7	578.3	430.7	393.6	292.7
300	0.027	-	552.1	402.6	497.9	370.6	338.8	251.9
250	0.032	-	463.7	337.9	418.0	311.0	284.3	211.3
200	0.039	-	375.6	273.3	338.4	251.6	229.9	170.9
150	0.051	0.2	287.1	208.5	258.4	191.9	175.3	130.3
100	0.075	0.2	198.5	143.7	178.4	132.2	120.8	89.7

V1228-MPY2 (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			11"		1"		2/3"	
			H	V	H	V	H	V
1000	0.012	-	1167.9	854.2	1053.4	787.5	720.9	538.6
900	0.014	-	1051.2	768.8	948.2	708.8	648.9	484.8
800	0.015	-	934.6	683.4	842.9	630.1	576.8	430.9
700	0.018	-	818.0	598.1	737.7	551.5	504.8	377.1
600	0.021	-	701.5	512.9	632.7	472.9	432.9	323.4
500	0.025	-	584.7	427.5	527.3	394.2	360.8	269.6
450	0.027	-	526.5	384.9	474.8	354.9	324.9	242.7
400	0.031	-	468.2	342.3	422.2	315.6	288.9	215.8
350	0.035	-	409.9	299.7	369.6	276.3	252.9	189.0
300	0.041	-	351.6	257.0	317.0	237.0	216.9	162.1
250	0.048	0.5	303.1	221.0	273.0	203.7	186.4	139.2
200	0.060	0.5	242.7	177.0	218.6	163.1	149.3	111.5
150	0.079	0.5	182.5	133.1	164.3	122.6	112.2	83.8
100	0.115	1.0	126.3	91.9	113.6	84.7	77.5	57.8

V1628-MPY2 (f=16mm)

Working Distance	Optical Magnification	Extension Ring	Field of View (mm)					
			11"		1"		2/3"	
(mm)		(mm)	H	V	H	V	H	V
1000	0.016	-	890.1	651.4	802.4	601.0	550.7	412.4
900	0.018	-	800.7	586.0	721.8	540.7	495.4	371.0
800	0.020	-	711.5	520.8	641.5	480.5	440.3	329.8
700	0.023	-	622.2	455.4	560.9	420.2	385.0	288.4
600	0.027	-	532.7	390.0	480.3	359.9	329.7	247.0
500	0.032	-	443.4	324.6	399.8	299.6	274.5	205.6
450	0.036	-	398.7	291.9	359.5	269.4	246.9	184.9
400	0.040	-	353.9	259.2	319.2	239.2	219.2	164.4
350	0.046	-	309.3	226.5	278.9	209.1	191.6	143.5
300	0.054	-	264.6	193.8	238.6	178.9	163.9	122.8
250	0.063	1.0	227.8	166.3	205.1	153.3	140.5	105.1
200	0.079	1.0	181.4	132.5	163.4	122.2	111.9	83.8
150	0.106	1.0	135.1	98.8	121.7	91.1	83.5	62.5
100	0.156	2.0	92.1	67.2	82.9	61.9	56.7	42.5

FIELD OF VIEW



V3528-MPY (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.036	-	393.4	288.2	354.6	266.0	243.9	182.9
900	0.040	-	352.7	258.4	317.9	238.5	218.6	164.0
800	0.046	-	312.1	228.6	281.3	211.0	193.5	145.1
700	0.052	-	271.6	198.9	244.8	183.6	168.3	126.3
600	0.061	-	231.0	169.2	208.2	156.2	143.2	107.4
500	0.075	-	190.4	139.5	171.6	128.8	118.0	88.6
450	0.083	-	170.1	124.6	153.4	115.1	105.5	79.1
400	0.095	-	149.8	109.8	135.1	101.3	92.9	69.7
350	0.110	-	129.5	94.9	116.8	87.6	80.3	60.3
300	0.130	-	109.3	80.1	98.5	73.9	67.8	50.8
250	0.157	1.5	90.4	66.2	81.5	61.1	56.0	42.0
200	0.201	3.0	70.9	51.9	63.9	47.9	43.9	32.9
150	0.277	6.0	51.6	37.7	46.5	34.8	31.9	23.9
100	0.435	15.0	32.9	24.0	29.6	22.2	20.3	15.2

V5028-MPY (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.055	-	257.9	188.9	232.5	174.4	159.8	119.9
900	0.062	-	229.5	168.1	206.9	155.1	142.2	106.7
800	0.071	-	201.1	147.2	181.2	135.9	124.6	93.4
700	0.082	-	172.7	126.4	155.6	116.7	107.0	80.2
600	0.099	-	144.2	105.6	130.0	97.5	89.4	67.0
500	0.123	-	115.9	84.8	104.4	78.3	71.8	53.8
450	0.138	1.0	103.1	75.4	92.9	69.6	63.8	47.9
400	0.158	2.0	89.9	65.8	81.0	60.7	55.7	41.7
350	0.181	5.0	78.5	57.4	70.7	53.0	48.6	36.4
300	0.222	6.0	64.2	47.0	57.8	43.3	39.7	29.8
250	0.276	10.0	51.7	37.8	46.6	34.9	32.0	24.0
200	0.373	15.0	38.2	27.9	34.4	25.8	23.6	17.7
150	0.583	25.0	24.5	17.9	22.1	16.5	15.1	11.3
100	1.255	61.5	11.3	8.3	10.2	7.7	7.0	5.3

VL0826U-MPZ/V0826-MPZ (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.009	-	1619.6	1211.4	1108.2	825.6	902.4	672.9
900	0.009	-	1460.8	1092.4	999.3	744.4	813.6	606.7
800	0.011	-	1302.0	973.4	890.4	663.2	724.9	540.5
700	0.012	-	1143.3	854.4	781.5	582.0	636.2	474.3
600	0.014	-	984.5	735.4	672.6	500.8	547.5	408.2
500	0.016	-	825.7	616.3	563.7	419.6	458.7	342.0
450	0.018	-	746.3	556.8	509.2	379.0	414.4	308.9
400	0.020	-	666.9	497.3	454.7	338.4	370.0	275.8
350	0.023	-	587.5	437.8	400.3	297.8	325.6	242.7
300	0.027	-	508.0	378.3	345.8	257.2	281.2	209.6
250	0.031	-	428.6	318.7	291.3	216.6	236.9	176.5
200	0.039	-	349.1	259.2	236.8	176.0	192.5	143.4
150	0.050	-	269.6	199.6	182.3	135.4	148.1	110.3
100	0.071	-	189.9	140.0	127.8	94.8	103.7	77.2

VL1226U-MPZ/V1226-MPZ (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.012	-	1093.8	819.7	750.6	561.0	612.6	458.2
900	0.014	-	986.0	738.8	676.5	505.7	552.2	413.0
800	0.015	-	878.1	658.0	602.5	450.3	491.7	367.7
700	0.017	-	770.3	577.1	528.5	395.0	431.3	322.5
600	0.020	-	662.5	496.3	454.4	339.6	370.8	277.3
500	0.024	-	554.6	415.4	380.4	284.3	310.4	232.1
450	0.026	-	500.7	375.0	343.3	256.6	280.2	209.5
400	0.029	-	446.8	334.6	306.3	228.9	250.0	186.9
350	0.033	-	392.9	294.1	269.3	201.2	219.7	164.3
300	0.039	-	338.9	253.7	232.3	173.5	189.5	141.7
250	0.046	-	285.0	213.3	195.3	145.9	159.3	119.1
200	0.057	-	231.1	172.9	158.2	118.2	129.1	96.5
150	0.074	-	177.2	132.4	121.2	90.5	98.9	73.9
100	0.106	-	123.2	92.0	84.2	62.8	68.6	51.3

VL1624U-MPZ/V1624-MPZ (f=16mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.016	-	811.4	608.4	557.5	417.6	455.7	341.5
900	0.018	-	761.1	548.1	502.3	376.6	410.6	307.7
800	0.020	-	650.8	487.9	447.1	334.9	365.5	273.8
700	0.023	-	570.5	427.7	391.9	293.6	320.4	240.0
600	0.027	-	490.2	367.4	336.7	252.2	275.2	206.2
500	0.032	-	409.8	307.2	281.5	210.9	230.1	172.4
450	0.035	-	369.7	277.1	253.9	190.2	207.6	155.5
400	0.039	-	329.5	247.0	226.3	169.5	185.0	138.6
350	0.045	-	289.4	216.9	198.7	148.8	162.4	121.7
300	0.052	-	249.2	186.8	171.1	128.2	139.9	104.8
250	0.062	-	209.1	156.6	143.5	107.5	117.3	87.9
200	0.077	-	168.9	126.5	115.9	86.8	94.8	71.0
150	0.101	-	128.7	96.4	88.3	66.2	72.2	54.1
100	0.146	-	88.6	66.3	60.7	45.5	49.6	37.2

VL2520U-MPZ/V2520-MPZ (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.026	-	502.6	376.9	345.4	259.0	282.6	211.9
900	0.028	-	451.3	338.4	310.1	232.6	253.7	190.3
800	0.032	-	400.1	300.0	274.9	206.2	224.9	168.7
700	0.037	-	348.9	261.5	239.7	179.7	196.1	147.1
600	0.043	-	297.7	223.1	204.5	153.3	167.3	125.5
500	0.052	-	246.4	184.7	169.3	126.9	138.5	103.8
450	0.058	-	220.8	165.5	151.7	113.7	124.1	93.0
400	0.066	-	195.2	146.3	134.1	100.5	109.7	82.2
350	0.076	-	169.6	127.1	116.5	87.3	95.3	71.4
300	0.089	-	143.9	107.8	98.8	74.1	80.8	60.6
250	0.109	-	118.3	88.6	81.2	60.9	66.4	49.8
200	0.139	-	92.7	69.4	63.6	47.7	52.0	39.0
150	0.192	-	67.0	50.2	46.0	34.5	37.6	28.2
100	0.312	5.0	41.4	31.0	28.4	21.3	23.2	17.4

VL3522U-MPZ/V3522-MPZ (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.035	-	362.4	271.8	249.1	186.8	203.8	152.9
900	0.039	-	325.8	244.3	224.0	168.0	183.2	137.4
800	0.044	-	289.3	216.9	198.8	149.1	162.7	122.0
700	0.051	-	252.7	189.5	173.7	130.3	142.1	106.6
600	0.059	-	216.1	162.1	148.5	111.4	121.5	91.1
500	0.071	-	179.5	134.6	123.4	92.5	101.0	75.7
450	0.080	-	161.2	120.9	110.8	83.1	90.7	68.0
400	0.090	-	142.9	107.2	98.2	73.7	80.4	60.3
350	0.103	-	124.7	93.5	85.7	64.3	80.1	52.6
300	0.121	-	106.4	79.7	73.1	54.8	59.8	44.9
250	0.146	-	88.1	66.0	60.5	45.4	49.5	37.1
200	0.184	-	69.9	52.4	48.0	36.0	39.3	29.5
150	0.249	2.5	51.7	38.7	35.5	26.6	29.0	21.8
100	0.385	7.0	33.5	25.1	23.0	17.2	18.8	14.1

VL5024U-MPZ/V5024-MPZ (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1"		2/3"		1/18"	
			H	V	H	V	H	V
1000	0.053	-	245.9	184.4	169.0	126.8	138.3	103.8
900	0.059	-	220.3	165.2	151.4	113.6	123.9	93.0
800	0.066	-	194.7	146.0	133.8	100.4	109.5	82.1
700	0.076	-	169.2	126.9	116.3	87.2	95.1	71.4
600	0.090	-	143.5	107.6	98.6	74.0	80.7	60.5
500	0.109	-	118.0	88.5	81.1	60.8	66.4	49.8
450	0.122	-	105.1	78.8	72.2	54.2	59.1	44.3
400	0.139	-	92.3	69.2	63.4	47.6	51.9	38.9
350	0.162	-	79.5	59.6	54.6	41.0	44.7	33.5
300	0.193	-	66.7	50.0	45.8	34.4	37.5	28.1
250	0.239	-	53.8	40.4	37.0	27.8	30.3	22.7
200	0.313	-	41.0	30.8	28.2	21.2	23.1	17.3
150	0.455	8.5	28.2	21.2	19.4	14.6	15.9	11.9
100	0.835	30.0	15.4	11.6	10.6	8.0	8.7	6.5

M0528-MPW3 (f=5mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.005	-	1811.6	1361.5	1487.1	1108.3	1171.7	876.9
900	0.006	-	1634.3	1228.1	1341.4	999.6	1056.8	790.8
800	0.006	-	1457.0	1094.6	1195.7	890.9	941.9	704.8
700	0.007	-	1279.8	961.2	1050.0	782.2	827.0	618.8
600	0.008	-	1102.5	827.7	904.2	673.5	712.1	532.8
500	0.010	-	925.2	694.2	758.5	564.8	597.2	446.7
450	0.011	-	836.6	627.5	685.7	510.5	539.7	403.7
400	0.012	-	747.9	560.8	612.8	456.1	482.3	360.7
350	0.014	-	659.3	494.0	539.9	401.8	424.8	317.7
300	0.016	-	570.6	427.3	467.1	347.4	367.4	274.7
250	0.019	-	482.0	360.6	394.2	293.1	309.9	231.7
200	0.023	-	393.3	293.8	321.3	238.7	252.5	188.7
150	0.030	-	304.7	227.1	248.5	184.4	195.0	145.7
100	0.043	-	216.0	160.4	175.6	130.0	137.6	102.6

M0828-MPW3 (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.008	-	1099.4	820.0	896.0	668.7	706.4	530.9
900	0.009	-	990.8	739.0	807.5	602.6	636.6	478.4
800	0.010	-	882.2	657.9	719.0	536.5	566.8	425.9
700	0.012	-	773.7	576.9	630.4	470.4	497.0	373.5
600	0.014	-	665.1	495.9	541.9	404.3	427.1	321.0
500	0.016	-	556.5	414.9	453.4	338.2	357.3	268.5
450	0.018	-	502.3	374.4	409.2	305.2	322.4	242.3
400	0.020	-	448.0	333.9	364.9	272.2	287.6	216.1
350	0.023	-	393.7	293.3	320.6	239.1	252.6	189.8
300	0.027	-	339.4	252.8	276.3	206.0	217.7	163.5
250	0.032	-	285.1	212.3	232.1	173.0	182.8	137.3
200	0.039	-	230.8	171.8	187.8	139.9	147.9	111.1
150	0.051	-	176.5	131.3	143.5	106.9	113.0	84.8
100	0.074	-	122.2	90.7	99.3	73.9	78.1	58.6

M1228-MPW3 (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.012	-	743.1	557.3	607.9	455.9	481.3	363.0
900	0.013	-	669.7	502.3	547.9	410.9	433.7	327.1
800	0.015	-	596.4	447.2	487.9	365.9	386.2	291.3
700	0.017	-	523.1	392.2	427.9	320.8	338.7	255.4
600	0.020	-	449.8	337.2	367.9	275.8	291.1	219.6
500	0.023	-	376.4	282.1	307.8	230.8	243.6	183.7
450	0.026	-	339.8	254.6	277.8	208.3	219.8	165.8
400	0.029	-	303.1	227.1	247.8	185.7	196.1	147.8
350	0.033	-	266.4	199.6	217.8	163.2	172.3	129.9
300	0.038	-	229.7	172.1	187.8	140.7	148.6	112.0
250	0.046	-	193.1	144.6	157.8	118.2	124.8	94.1
200	0.057	-	156.4	117.1	127.8	95.7	101.0	76.1
150	0.074	-	119.7	89.5	97.7	73.2	77.3	58.2
100	0.107	-	83.0	62.0	67.7	50.6	53.5	40.3

M1628-MPW3 (f=16mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.016	-	552.5	414.6	452.3	339.2	358.1	270.1
900	0.018	-	497.6	373.4	407.3	305.5	322.5	243.2
800	0.020	-	442.7	332.1	362.3	271.7	286.8	216.4
700	0.023	-	387.7	290.9	317.4	238.0	251.2	189.5
600	0.026	-	332.8	249.7	272.4	204.3	215.6	162.6
500	0.032	-	277.9	208.5	227.4	170.5	180.0	135.8
450	0.035	-	250.5	187.8	204.9	153.6	162.2	122.3
400	0.040	-	223.0	167.2	182.5	136.8	144.4	108.9
350	0.045	-	195.5	146.6	160.0	119.9	126.6	95.4
300	0.052	-	168.1	126.0	137.5	103.0	108.8	82.0
250	0.063	-	140.6	105.4	115.0	86.2	91.0	68.6
200	0.078	0.3	113.2	84.8	92.5	69.3	73.2	55.1
150	0.103	0.6	85.7	64.1	70.0	52.4	55.3	41.7
100	0.153	1.5	58.2	43.5	47.5	35.5	37.5	28.3

M2528-MPW3 (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.025	-	351.1	263.7	287.6	215.9	227.8	171.9
900	0.028	-	316.1	237.3	258.8	194.3	205.1	154.8
800	0.031	-	281.0	211.0	230.1	172.7	182.3	137.6
700	0.036	-	246.0	184.7	201.4	151.2	159.5	120.4
600	0.042	-	210.9	158.3	172.7	129.6	136.8	103.2
500	0.050	-	175.9	132.0	144.0	108.0	114.0	86.0
450	0.056	-	158.4	118.8	129.6	97.2	102.6	77.4
400	0.062	-	140.8	105.7	115.3	86.5	91.3	68.9
350	0.071	-	123.3	92.5	100.9	75.7	79.9	60.3
300	0.083	-	105.8	79.3	86.5	64.9	68.5	51.7
250	0.100	-	88.2	66.1	72.2	54.1	57.1	43.1
200	0.125	-	70.7	53.0	57.8	43.3	45.7	34.5
150	0.166	1.0	53.1	39.8	43.4	32.5	34.3	25.9
100	0.249	3.0	35.6	26.6	29.0	21.7	22.9	17.3

M3528-MPW3 (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.036	-	247.9	185.9	202.8	152.1	160.5	121.1
900	0.040	-	222.8	167.1	182.3	136.7	144.3	108.8
800	0.045	-	197.6	148.2	161.7	121.2	128.0	96.5
700	0.051	-	172.5	129.3	141.1	105.8	111.7	84.3
600	0.060	-	147.3	110.5	120.5	90.4	95.4	72.0
500	0.072	-	122.2	91.6	100.0	74.9	79.1	59.7
450	0.080	-	109.6	82.2	89.7	67.2	71.0	53.5
400	0.091	-	97.0	72.8	79.4	59.5	62.8	47.4
350	0.104	-	84.5	63.3	69.1	51.8	54.7	41.3
300	0.123	-	71.9	53.9	58.8	44.1	46.5	35.1
250	0.149	-	59.3	44.5	48.5	36.4	38.4	29.0
200	0.189	1.5	46.7	35.0	38.2	28.6	30.2	22.8
150	0.259	4.0	34.1	25.6	27.9	20.9	22.1	16.6
100	0.412	9.5	21.5	16.1	17.6	13.2	13.9	10.5

M5028-MPW3 (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		1/18"		1/25"	
			H	V	H	V	H	V
1000	0.052	-	168.9	126.8	138.3	103.7	109.5	82.6
900	0.058	-	151.4	113.6	123.9	93.0	98.1	74.0
800	0.066	-	133.8	100.4	109.6	82.2	86.8	65.5
700	0.075	-	116.3	87.3	95.2	71.4	75.4	56.9
600	0.089	-	98.8	74.1	80.8	60.6	64.0	48.3
500	0.108	-	81.2	60.9	66.5	49.9	52.6	39.7
450	0.121	-	72.4	54.3	59.3	44.5	46.9	35.4
400	0.138	-	63.7	47.8	52.1	39.1	41.3	31.1
350	0.160	-	54.9	41.2	44.9	33.7	35.6	26.8
300	0.191	-	46.1	34.6	37.7	28.3	29.9	22.5
250	0.236	2.2	37.3	28.0	30.5	22.9	24.2	18.2
200	0.308	6.0	28.5	21.4	23.4	17.5	18.5	14.0
150	0.445	13.0	19.8	14.8	16.2	12.1	12.8	9.7
100	0.802	30.5	11.0	8.2	9.0	6.7	7.1	5.4

M7528-MPW3 (f=75mm)

Working Distance	Optical Magnification	Extension Ring	Field of View (mm)					
			2/3"		1/18"		1/25"	
(mm)		(mm)	H	V	H	V	H	V
1000	0.071	-	123.1	92.3	100.7	75.5	79.7	60.1
900	0.079	-	111.4	83.5	91.1	68.3	72.1	54.4
800	0.088	-	99.7	74.7	81.5	61.1	64.5	48.7
700	0.100	-	87.9	65.9	71.9	53.9	56.9	43.0
600	0.116	-	76.2	57.1	62.4	46.7	49.3	37.2
500	0.137	-	64.5	48.4	52.8	39.6	41.8	31.5
450	0.150	-	58.7	44.0	48.0	36.0	38.0	28.6
400	0.167	-	52.8	39.6	43.2	32.4	34.2	25.8
350	0.188	1.5	46.9	35.2	38.4	28.8	30.4	22.9
300	0.215	3.5	41.1	30.8	33.6	25.2	26.6	20.0
250	0.251	6.0	35.2	26.4	28.8	21.6	22.8	17.2
200	0.301	10.0	29.3	22.0	24.0	18.0	19.0	14.3
150	0.377	16.0	23.5	17.6	19.2	14.4	15.2	11.4
100	0.503	25.0	17.6	13.2	14.4	10.8	11.4	8.6

FIELD OF VIEW

M0814-MP2/M0814-VSW (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.009	-	976.8	731.5	709.1	530.1
800	0.010	-	869.8	651.3	631.4	471.9
700	0.012	-	762.8	571.1	553.6	413.8
600	0.014	-	655.8	490.9	475.8	355.6
500	0.016	-	548.8	410.7	398.1	297.5
450	0.018	-	495.3	370.6	359.2	268.4
400	0.020	-	441.8	330.5	320.3	239.3
350	0.023	-	388.3	290.4	281.4	210.2
300	0.027	-	334.8	250.3	242.6	181.2
250	0.032	-	281.2	210.2	203.7	152.1
200	0.039	-	227.7	170.0	164.8	123.0
150	0.052	-	174.2	129.9	125.9	93.9
100	0.075	-	120.7	89.8	87.0	64.9

M1214-MP2/M1214-VSW (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.013	-	672.7	504.0	488.7	366.0
800	0.015	-	599.1	448.9	435.2	325.9
700	0.017	-	525.6	393.7	381.7	285.8
600	0.020	-	452.1	338.5	328.2	245.7
500	0.023	-	378.5	283.4	274.7	205.7
450	0.026	-	341.7	255.8	248.0	185.6
400	0.029	-	305.0	228.2	221.2	165.6
350	0.033	-	268.2	200.6	194.5	145.6
300	0.038	-	231.4	173.0	167.7	125.5
250	0.046	-	194.7	145.5	141.0	105.5
200	0.056	-	157.9	117.9	114.3	85.4
150	0.074	-	121.1	90.3	87.5	65.4
100	0.106	0.5	84.3	62.7	60.8	45.4

M1614-MP2/M1614-VSW (f=16mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.018	-	503.2	376.8	365.4	273.7
800	0.020	-	448.0	335.5	325.3	243.6
700	0.023	-	392.8	294.1	285.2	213.6
600	0.026	-	337.6	252.8	245.1	183.5
500	0.031	-	282.5	211.4	204.9	153.5
450	0.035	-	254.9	190.7	184.9	138.4
400	0.039	-	227.3	170.0	164.8	123.4
350	0.044	-	199.7	149.4	144.8	108.4
300	0.052	-	172.1	128.7	124.7	93.4
250	0.061	-	144.5	108.0	104.7	78.3
200	0.076	-	116.9	87.3	84.6	63.3
150	0.100	0.5	89.3	66.6	64.6	48.3
100	0.145	1.0	61.7	45.9	44.5	33.2

M2514-MP2/M2514-VSW (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.028	-	317.5	237.7	230.5	172.7
800	0.031	-	282.3	211.3	204.8	153.5
700	0.036	-	247.0	184.9	179.2	134.3
600	0.042	-	211.8	158.4	153.6	115.1
500	0.050	-	176.5	132.0	128.0	95.9
450	0.056	-	158.9	118.8	115.2	86.3
400	0.063	-	141.2	105.6	102.4	76.7
350	0.072	-	123.6	92.4	89.6	67.1
300	0.084	-	106.0	79.2	76.8	57.5
250	0.100	-	88.3	66.0	63.9	47.9
200	0.126	-	70.7	52.7	51.1	38.3
150	0.168	-	53.0	39.5	38.3	28.7
100	0.253	1.5	35.3	26.3	25.5	19.0

M3514-MP/M3514-VSW (f=35mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.037	-	236.2	176.9	171.5	128.6
800	0.042	-	210.3	157.5	152.7	114.5
700	0.048	-	184.3	138.1	133.9	100.3
600	0.056	-	158.4	118.6	115.0	86.2
500	0.067	-	132.5	99.2	96.2	72.1
450	0.074	-	119.6	89.5	86.8	65.0
400	0.083	-	106.6	79.8	77.4	58.0
350	0.094	-	93.7	70.1	67.9	50.9
300	0.110	-	80.7	60.4	58.5	43.8
250	0.131	1	67.7	50.6	49.1	36.8
200	0.162	2	54.7	40.9	39.7	29.7
150	0.213	5	41.8	31.2	30.2	22.6
100	0.310	7	28.7	21.4	20.8	15.5

M5018-MP2/M5018-VSW (f=50mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.055	-	160.8	120.4	116.7	87.5
800	0.062	-	142.4	106.6	103.4	77.5
700	0.071	-	124.0	92.9	90.0	67.5
600	0.084	-	105.6	79.1	76.7	57.5
500	0.101	-	87.3	65.3	63.3	47.5
450	0.113	0.5	78.1	58.4	56.7	42.5
400	0.128	1.5	68.9	51.6	50.0	37.5
350	0.148	2.5	59.7	44.7	43.3	32.5
300	0.175	3.5	50.5	37.8	36.6	27.4
250	0.214	5.5	41.3	30.9	30.0	22.4
200	0.276	8.5	32.1	24.0	23.3	17.4
150	0.387	14.0	22.9	17.1	16.6	12.4
100	0.647	26.5	13.6	10.2	9.9	7.4

ViSWIR Hyper APO Series

M7528-MP (f=75mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.077	-	113.8	85.4	82.8	62.1
800	0.086	-	101.7	76.3	74.0	55.5
700	0.098	-	89.6	67.2	65.2	48.9
600	0.114	-	77.6	58.1	56.4	42.3
500	0.135	-	65.5	49.1	47.6	35.7
450	0.148	-	59.4	44.5	43.2	32.4
400	0.165	-	53.4	40.0	38.8	29.1
350	0.187	-	47.3	35.4	34.4	25.8
300	0.214	-	41.3	30.9	30.0	22.5
250	0.251	5	35.2	26.4	25.6	19.1
200	0.304	7	29.2	21.8	21.2	15.8
150	0.384	13	23.1	17.3	16.8	12.5
100	0.522	23	17.1	12.7	12.3	9.2

M0818-APVSW (f=8mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		IMX990		IMX991	
			H	V	H	V	H	V
1000	0.008	-	1093.9	820.4	795.4	635.4	396.2	316.8
900	0.009	-	986.6	739.8	717.3	573.0	357.3	285.7
800	0.010	-	879.4	659.3	639.2	510.6	318.4	254.5
700	0.012	-	772.1	578.8	561.1	448.2	279.4	223.4
600	0.013	-	664.9	498.2	483.0	385.8	240.5	192.3
500	0.016	-	557.6	417.7	404.9	323.4	201.5	161.1
450	0.018	-	503.9	377.4	365.9	292.1	182.1	145.5
400	0.020	-	450.3	337.1	326.8	260.9	162.6	130.0
350	0.022	-	396.7	296.8	287.8	229.7	143.1	114.4
300	0.026	-	343.0	256.6	248.7	198.5	123.7	98.8
250	0.031	-	289.4	216.3	209.6	167.3	104.2	83.3
200	0.038	-	235.7	176.0	170.6	136.1	84.7	67.7
190	0.040	-	225.0	167.9	162.8	129.8	80.8	64.6
180	0.042	-	214.2	159.9	155.0	123.6	76.9	61.5
170	0.044	-	203.5	151.8	147.1	117.3	73.0	58.4
160	0.046	-	192.7	143.8	139.3	111.1	69.1	55.2
150	0.049	-	182.0	135.7	131.5	104.8	65.2	52.1
140	0.052	-	171.3	127.6	123.7	98.6	61.3	49.0
130	0.056	-	160.5	119.6	115.9	92.3	57.4	45.9
120	0.060	-	149.8	111.5	108.1	86.1	53.5	42.8
110	0.065	-	139.0	103.5	100.2	79.9	49.6	39.7
100	0.070	-	128.1	95.2	92.3	73.5	45.7	36.5

M1218-APVSW (f=12mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		IMX990		IMX991	
			H	V	H	V	H	V
1000	0.012	-	750.4	562.7	545.7	436.3	272.4	217.8
900	0.013	-	677.3	507.8	492.4	393.6	245.7	196.5
800	0.015	-	604.0	452.8	439.0	350.9	219.0	175.2
700	0.017	-	530.8	397.8	385.7	308.2	192.4	153.9
600	0.019	-	457.3	342.6	332.2	265.5	165.7	132.5
500	0.023	-	383.8	287.5	278.7	222.7	139.0	111.1
450	0.026	-	347.0	259.9	252.0	201.3	125.6	100.5
400	0.029	-	310.2	232.3	225.2	179.9	112.3	89.8
350	0.032	-	273.4	204.7	198.4	158.5	98.9	79.1
300	0.038	-	236.5	177.0	171.6	137.1	85.5	68.4
250	0.044	-	199.6	149.4	144.8	115.7	72.2	57.7
200	0.055	-	162.7	121.8	118.0	94.3	58.8	47.0
190	0.057	-	155.3	116.2	112.7	90.0	56.1	44.9
180	0.060	-	148.0	110.7	107.3	85.7	53.5	42.8
170	0.063	-	140.6	105.2	102.0	81.4	50.8	40.6</

M1618-APVSW (f=16mm)

Working Distance (mm)	Optical Magnification	EX(tension) Ring (mm)	Field of View (mm)					
			2/3"		IMX990		IMX991	
			H	V	H	V	H	V
1000	0.016	-	565.1	423.1	410.2	327.7	204.5	163.5
900	0.017	-	509.4	381.3	369.7	295.4	184.3	147.4
800	0.020	-	453.8	339.6	329.3	263.1	164.1	131.2
700	0.022	-	398.7	298.4	289.2	231.1	144.2	115.3
600	0.026	-	343.6	257.1	249.2	199.1	124.2	99.3
500	0.031	-	288.5	215.7	209.1	167.0	104.2	83.3
450	0.034	-	260.9	195.1	189.1	151.0	94.2	75.3
400	0.038	-	233.3	174.4	169.0	135.0	84.2	67.3
350	0.043	-	205.6	153.6	148.9	118.9	74.1	59.3
300	0.050	-	178.4	133.2	129.1	103.1	64.3	51.4
250	0.059	-	151.5	113.0	109.5	87.4	54.5	43.6
200	0.072	-	123.4	92.0	89.2	71.1	44.3	35.4
190	0.076	-	117.9	87.8	85.1	67.9	42.3	33.8
180	0.080	-	112.3	83.7	81.1	64.7	40.3	32.2
170	0.084	-	106.8	79.5	77.1	61.5	38.3	30.6
160	0.089	-	101.2	75.4	73.0	58.3	36.3	29.0
150	0.094	-	95.7	71.2	69.0	55.0	34.3	27.4
140	0.100	-	90.1	67.1	65.0	51.8	32.3	25.8
130	0.106	-	84.6	62.9	61.0	48.6	30.2	24.2
120	0.114	-	79.0	58.8	56.9	45.4	28.2	22.6
110	0.122	-	73.5	54.6	52.9	42.2	26.2	21.0
100	0.133	-	68.0	50.5	48.9	39.0	24.2	19.4

M2518-APVSW (f=25mm)

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			2/3"		IMX990		IMX991	
			H	V	H	V	H	V
1000	0.025	-	355.6	266.6	258.5	206.7	129.1	103.3
900	0.028	-	320.1	240.0	232.7	186.1	116.3	93.0
800	0.031	-	284.8	213.6	207.1	165.6	103.5	82.8
700	0.035	-	249.5	187.0	181.3	145.0	90.6	72.5
600	0.041	-	214.1	160.5	155.7	124.5	77.8	62.2
500	0.049	-	178.9	134.1	130.1	104.0	65.0	52.0
450	0.055	-	161.4	120.9	117.3	93.8	58.6	46.9
400	0.061	-	143.8	107.8	104.5	83.6	52.2	41.8
350	0.070	-	126.3	94.6	91.8	73.4	45.8	36.7
300	0.081	-	108.8	81.5	79.0	63.2	39.5	31.6
250	0.097	-	91.3	68.4	66.3	53.0	33.1	26.5
200	0.120	-	73.8	55.3	53.6	42.8	26.8	21.4
190	0.126	-	70.3	52.7	51.1	40.8	25.5	20.4
180	0.132	-	66.8	50.0	48.5	38.8	24.2	19.4
170	0.140	-	63.3	47.4	46.0	36.7	22.9	18.3
160	0.148	-	59.8	44.8	43.4	34.7	21.7	17.3
150	0.157	-	56.3	42.2	40.9	32.7	20.4	16.3
140	0.168	-	52.9	39.6	38.4	30.6	19.1	15.3
130	0.179	-	49.4	36.9	35.8	28.6	17.9	14.3
120	0.193	-	45.9	34.3	33.3	26.6	16.6	13.3
110	0.209	-	42.4	31.7	30.8	24.6	15.3	12.3
100	0.228	-	39.0	29.1	28.2	22.6	14.1	11.3

MACRO ZOOM LENS / TELECENTRIC MACRO LENS**TEC-V7X**

Working Distance (mm)		Optical Magnification	Field of View (mm)								
			1"			1"			2/3"		
			H	V	D	H	V	D	H	V	D
182	Wide	0.2525	48.74	48.74	69.12	50.32	38.06	63.28	34.88	26.16	43.6
	Middle	0.3643	33.64	33.64	47.33	34.72	26.3	43.6	24.12	18.1	30.11
	Tele	0.5	24.6	24.6	34.75	25.4	19.246	31.88	17.65	13.26	22
200	Wide	0.2258	54.52	54.62	76.94	56.3	42.56	70.84	39	29.24	48.76
	Middle	0.3258	37.62	37.62	52.95	38.83	29.4	48.78	26.96	20.24	33.67
	Tele	0.4451	27.5	27.5	38.68	28.38	21.51	35.64	19.72	14.81	24.62
300	Wide	0.1413	87.48	87.48	124.06	90.34	68.18	114.1	62.46	46.8	78.178
	Middle	0.2037	60.24	60.24	85.34	62.18	47.06	78.18	42.15	32.38	53.898
	Tele	0.2784	44	44	61.94	45.42	34.3	57.46	31.55	23.69	39.38
400	Wide	0.1037	119.47	119.47	169.98	123.4	93.02	156.05	85.2	63.82	106.71
	Middle	0.1495	82.15	82.15	115.97	84.8	64.16	106.72	58.82	44.12	73.48
	Tele	0.2042	59.99	59.99	84.52	61.92	46.89	77.82	43	32.28	53.7
500	Wide	0.082	151.25	151.25	215.44	156.25	117.67	197.8	107.78	80.68	135.04
	Middle	0.1183	103.92	103.92	146.82	107.28	81.12	135	74.37	55.78	92.94
	Tele	0.1617	75.84	75.84	106.89	78.29	59.28	98.4	54.36	40.8	67.88
5775	Wide	0.0708	175.21	175.21	250.66	181.4	136.35	229.82	125.08	93.62	156.76
	Middle	0.102	120.57	120.57	170.44	124.47	94.1	156.74	86.28	64.72	107.84
	Tele	0.1398	87.99	87.99	124.04	90.8	68.75	114.16	63.06	47.32	78.74

TEC-M55MPW

Working Distance (mm)	Optical Magnification	Field of View (mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
1000	0.057	154.4	115.8	112.3	84.2	84.2	63.2
950	0.060	146.7	110.0	106.7	80.0	80.0	60.0
900	0.064	137.5	103.1	100.0	75.0	75.0	56.3
850	0.067	131.3	98.5	95.5	71.6	71.6	53.7
800	0.072	122.2	91.7	88.9	66.7	66.7	50.0
750	0.077	114.3	85.7	83.1	62.3	62.3	46.8
700	0.083	106.0	79.5	77.1	57.8	57.8	43.4
650	0.089	98.9	74.2	71.9	53.9	53.9	40.4
600	0.097	90.7	68.0	66.0	49.5	49.5	37.1
550	0.106	83.0	62.3	60.4	45.3	45.3	34.0
500	0.118	74.6	55.9	54.2	40.7	40.7	30.5
450	0.132	66.7	50.0	48.5	36.4	36.4	27.3
400	0.150	58.7	44.0	42.7	32.0	32.0	24.0
350	0.173	50.9	38.2	37.0	27.7	27.7	20.8
300	0.204	43.1	32.4	31.4	23.5	23.5	17.6
250	0.251	35.1	26.3	25.5	19.1	19.1	14.3
200	0.323	27.2	20.4	19.8	14.9	14.9	11.1
150	0.456	19.3	14.5	14.0	10.5	10.5	7.9
140	0.504	17.5	13.1	12.7	9.5	9.5	7.1

MLH-10X

Working Distance (mm)		Optical Magnification	Field of View (mm)											
			1/2"			Magnification on Monitor	1/3"			Magnification on Monitor	1/4"			Magnification on Monitor
		H	V	D	H		V	D	H		V	D		
150	Wide	0.084	76.2	57.1	95.2	3.73X	57.1	42.9	71.4	4.98X	42.9	32.1	53.6	6.64X
	Middle	0.19	33.5	25.2	42.3	8.47X	25.2	18.9	31.4	11.29X	18.9	14.2	23.6	15.06X
	Tele	0.84	7.6	5.7	9.5	37.34X	5.7	4.3	7.1	49.78X	4.3	3.2	5.4	66.38X
200	Wide	0.06	106.7	80.0	133.3	2.67X	80.0	60.0	100.0	3.56X	60.0	45.0	75.0	4.74X
	Middle	0.13	47.8	36.1	59.4	5.87X	36.1	27.2	44.9	7.83X	27.2	20.4	33.9	10.44X
	Tele	0.60	10.7	8.0	13.3	26.67X	8.0	6.0	10.0	35.56X	6.0	4.5	7.5	47.41X
250	Wide	0.045	142.2	106.7	177.8	2.00X	106.7	80.0	133.3	2.67X	80.0	60.0	100.0	3.56X
	Middle	0.101	62.3	47.1	77.0	4.49X	47.1	35.5	58.5	5.99X	35.5	26.7	44.2	7.98X
	Tele	0.45	14.2	10.7	17.8	20.00X	10.7	8.0	13.3	26.67X	8.0	6.0	10.0	35.56X
300	Wide	0.036	177.8	133.3	222.2	1.60X	133.3	100.0	166.7	2.13X	100.0	75.0	125.0	2.84X
	Middle	0.082	76.8	58.2	94.8	3.63X	58.2	43.8	72.2	4.84X	43.8	33.0	54.6	6.46X
	Tele	0.36	17.8	13.3	22.2	16.00X	13.3	10.0	16.7	21.34X	10.0	7.5	12.5	28.45X
350	Wide	0.03	213.3	160.0	266.7	1.33X	160.0	120.0	200.0	1.78X	120.0	90.0	150.0	2.37X
	Middle	0.069	91.4	69.3	112.7	3.05X	69.3	52.2	85.9	4.07X	52.2	39.3	65.0	5.42X
	Tele	0.30	21.3	16.0	26.7	13.34X	16.0	12.0	20.0	17.78X	12.0	9.0	15.0	23.71X
400	Wide	0.025	256.0	192.0	320.0	1.11X	192.0	144.0	240.0	1.48X	144.0	108.0	180.0	1.98X
	Middle	0.06	106.0	80.3	130.7	2.63X	80.3	60.6	99.7	3.5X	60.6	45.6	75.4	4.67X
	Tele	0.25	25.6	19.2	32.0	11.11X	19.2	14.4	24.0	14.82X	14.4	10.8	18.0	19.76X
450	Wide	0.022	290.9	218.2	363.6	0.98X	218.2	163.6	272.7	1.30X	163.6	122.7	204.5	1.74X
	Middle	0.05	120.7	91.5	148.7	2.31X	91.5	69.0	113.5	3.08X	69.0	51.9	85.9	4.1X
	Tele	0.22	29.1	21.8	36.4	9.78X	21.8	16.4	27.3	13.04X	16.4	12.3	20.5	17.38X

FIELD OF VIEW

TEC-M55

TEC-M55

Working Distance (mm)	Optical Magnification	Field of View (mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.011	796.2	597.8	579.7	435.0	435.0	326.3
4000	0.014	636.1	477.6	463.1	347.5	347.5	260.7
3000	0.018	476.0	357.4	346.6	260.1	260.1	195.1
2000	0.028	315.9	237.2	230.0	172.6	172.6	129.5
1500	0.037	235.9	177.1	177.1	128.9	128.9	96.7
1000	0.056	155.8	117.0	113.4	85.1	85.1	63.9
950	0.059	147.8	111.0	107.6	80.7	80.7	60.6
900	0.063	139.8	105.0	101.8	76.4	76.4	57.3
850	0.067	131.8	99.0	96.0	72.0	72.0	54.0
800	0.071	123.8	92.9	90.1	67.6	67.6	50.7
750	0.076	115.8	86.9	84.3	63.2	63.2	47.4
700	0.081	107.8	80.9	78.5	58.9	58.9	44.2
650	0.088	99.8	74.9	72.6	55.5	55.5	40.9
600	0.096	91.8	68.9	66.8	50.1	50.1	37.6
550	0.105	83.8	62.9	61.0	45.8	45.8	34.3
500	0.116	75.8	56.9	55.2	41.4	41.4	31.0
450	0.130	67.8	50.9	49.3	37.0	37.0	27.8
400	0.147	59.8	44.9	43.5	32.6	32.6	24.5
350	0.170	51.8	38.8	37.7	28.3	28.3	21.2
300	0.201	43.8	32.8	31.8	23.9	23.9	17.9
250	0.246	35.7	26.8	26.0	19.5	19.5	14.6
200	0.317	27.7	20.8	20.2	15.1	15.1	11.4
150	0.446	19.7	14.8	14.3	10.8	10.8	8.1
140	0.486	18.1	13.6	13.2	9.9	9.9	7.4

TEC-M55 with 0.75X Converter

Working Distance (mm)	Optical Magnification	Field of View (mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.008	1066.2	797.6	773.3	579.2	579.2	434.0
4000	0.010	851.9	637.3	617.8	462.7	462.7	346.8
3000	0.014	637.6	476.9	462.4	346.3	346.3	259.5
2000	0.021	423.2	316.6	306.9	229.9	229.9	172.3
1500	0.028	316.1	236.4	229.2	171.7	171.7	128.6
1000	0.423	208.9	156.2	151.5	113.4	113.4	85.0
950	0.045	198.2	148.2	143.7	107.6	107.6	80.6
900	0.047	187.4	140.2	135.9	101.8	101.8	76.3
850	0.050	176.7	132.2	128.1	96.0	96.0	71.9
800	0.053	166.0	124.2	120.4	90.1	90.1	67.5
750	0.057	155.3	116.1	112.6	84.3	84.3	63.2
700	0.061	144.6	108.1	104.8	78.5	78.5	58.8
650	0.066	133.8	100.1	97.0	72.7	72.7	54.5
600	0.072	123.1	92.1	89.3	66.8	66.8	50.1
550	0.079	112.4	84.1	81.5	61.0	61.0	45.7
500	0.087	101.7	76.0	73.7	55.2	55.2	41.4
450	0.097	90.9	68.0	65.9	49.4	49.4	37.0
400	0.110	80.2	60.0	58.2	43.6	43.6	32.6
350	0.127	69.5	52.0	50.4	37.7	37.7	28.3
300	0.151	58.7	43.9	42.6	31.9	31.9	23.9
250	0.184	48.0	35.9	34.8	26.1	26.1	19.5
200	0.238	37.3	27.9	27.0	20.2	20.2	15.2
150	0.334	26.5	19.8	19.2	14.4	14.4	10.8
140	0.363	24.4	18.2	17.7	13.2	13.2	9.9

TEC-M55 with 2X Converter

Working Distance (mm)	Optical Magnification	Field of View (mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.019	453.1	340.3	330.0	247.7	247.7	185.8
4000	0.024	362.0	271.9	263.6	197.9	197.9	148.5
3000	0.032	270.9	203.4	197.3	148.1	148.1	111.1
2000	0.049	179.8	135.0	130.9	98.3	98.3	73.7
1500	0.065	134.3	100.8	97.8	73.4	73.4	55.0
1000	0.098	88.7	66.6	64.6	48.5	48.5	36.4
950	0.104	84.1	63.2	61.3	46.0	46.0	34.5
900	0.110	79.6	59.8	58.0	43.5	43.5	32.6
850	0.116	75.0	56.3	54.6	41.0	41.0	30.8
800	0.124	70.5	52.9	51.3	38.5	38.5	28.9
750	0.133	65.9	49.5	48.0	36.0	36.0	27.0
700	0.142	61.4	46.1	44.7	33.5	33.5	25.2
650	0.154	56.8	42.7	41.4	31.0	31.0	23.3
600	0.167	52.3	39.2	38.1	28.6	28.6	21.4
550	0.183	47.7	35.8	34.7	26.1	26.1	19.6
500	0.203	43.2	32.4	31.4	23.6	23.6	17.7
450	0.227	38.6	29.0	28.1	21.1	21.1	15.8
400	0.257	34.0	25.6	24.8	18.6	18.6	14.0
350	0.297	29.5	22.1	21.5	16.1	16.1	12.1
300	0.352	24.9	18.7	18.2	13.6	13.6	10.2
250	0.431	20.4	15.3	14.8	11.1	11.1	8.4
200	0.558	15.8	11.9	11.5	8.7	8.7	6.5
150	0.789	11.3	8.5	8.2	6.2	6.2	4.6
140	0.861	10.4	7.8	7.6	5.7	5.7	4.3

TEC-V Series / TEC-M Series

TEC-V0345165MPY-WI

Field of View	
1.1"	41.1 × 30.1mm
1"	38.3 × 25.2mm
2/3"	25.5 × 19.1mm
1/1.8"	20.9 × 15.4mm
1/2"	18.6 × 13.9mm

TEC-V0565MPW

Field of View	
1"	25.6 × 19.2mm
2/3"	17.6 × 13.2mm
1/1.8"	14.4 × 10.8mm
1/2"	12.8 × 9.6mm

TEC-V1065MPW

Field of View	
1"	12.8 × 9.6mm
2/3"	8.8 × 6.6mm
1/1.8"	7.2 × 5.4mm
1/2"	6.4 × 4.8mm

TEC-V05110MPW

Field of View	
1"	25.6 × 19.2mm
2/3"	17.6 × 13.2mm
1/1.8"	14.4 × 10.8mm
1/2"	12.8 × 9.6mm

TEC-V10110MPW

Field of View	
1"	12.8 × 9.6mm
2/3"	8.8 × 6.6mm
1/1.8"	7.2 × 5.4mm
1/2"	6.4 × 4.8mm

TEC-M0565MPC / TEC-M0565MP

Field of View	
2/3"	17.6 × 13.2mm
1/1.8"	14.35 × 10.64mm
1/2"	12.8 × 9.6mm
1/3"	9.6 × 7.2mm

TEC-M0865MPC / TEC-M0865MP

Field of View	
2/3"	11 × 8.25mm
1/1.8"	8.97 × 6.65mm
1/2"	8 × 6mm
1/3"	6 × 4.5mm

TEC-M1065MPC / TEC-M1065MP

Field of View	
2/3"	8.8 × 6.6mm
1/1.8"	7.18 × 5.32mm
1/2"	6.4 × 4.8mm
1/3"	4.8 × 3.6mm

TEC-M2065MPC / TEC-M2065MP

Field of View	
2/3"	4.4 × 3.3mm
1/1.8"	3.59 × 2.66mm
1/2"	3.2 × 2.4mm
1/3"	2.4 × 1.8mm

TEC-M4065MPC / TEC-M4065MP

Field of View	
2/3"	2.2 × 1.65mm
1/1.8"	1.79 × 1.33mm
1/2"	1.6 × 1.2mm
1/3"	1.2 × 0.9mm

TEC-M6065MPC / TEC-M6065MP

Field of View	
2/3"	1.47 × 1.1mm
1/1.8"	1.2 × 0.89mm
1/2"	1.07 × 0.8mm
1/3"	0.8 × 0.6mm

TEC-M03110MPC / TEC-M03110MP

Field of View	
2/3"	29.3 × 22mm
1/1.8"	23.9 × 17.7mm
1/2"	21.3 × 16mm
1/3"	16 × 12mm

TEC-M05110MPC / TEC-M05110MP

Field of View	
2/3"	17.6 × 13.2mm
1/1.8"	14.35 × 10.64mm
1/2"	12.8 × 9.6mm
1/3"	9.6 × 7.2mm

TEC-M08110MPC / TEC-M08110MP

Field of View	
2/3"	11 × 8.25mm
1/1.8"	8.97 × 6.65mm
1/2"	8 × 6mm
1/3"	6 × 4.5mm

TEC-M10110MPC / TEC-M10110MP

Field of View	
2/3"	8.8 × 6.6mm
1/1.8"	7.18 × 5.32mm
1/2"	6.4 × 4.8mm
1/3"	4.8 × 3.6mm

TEC-M15110MPC / TEC-M15110MP

Field of View	
2/3"	5.87 × 4.4mm
1/1.8"	4.79 × 3.55mm
1/2"	4.27 × 3.2mm
1/3"	3.2 × 2.4mm

TEC-M20110MPC / TEC-M20110MP

Field of View	
2/3"	4.4 × 3.3mm
1/1.8"	3.59 × 2.66mm
1/2"	3.2 × 2.4mm
1/3"	2.4 × 1.8mm

TEC-M30110MPC / TEC-M30110MP

Field of View	
2/3"	2.93 × 2.2mm
1/1.8"	2.39 × 1.77mm
1/2"	2.13 × 1.6mm
1/3"	1.6 × 1.2mm

TEC-M40110MPC / TEC-M40110MP

Field of View	
2/3"	2.2 × 1.65mm
1/1.8"	1.79 × 1.33mm
1/2"	1.6 × 1.2mm
1/3"	1.2 × 0.9mm

TEC-M60110MPC / TEC-M60110MP

Field of View	
2/3"	1.5 × 1.1mm
1/1.8"	1.2 × 0.9mm
1/2"	1.1 × 0.8mm
1/3"	0.8 × 0.6mm

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