



SWIR Lens
Sensor size: 25,6mm
Focal length: 50mm
Wavelength range: 800-1800nm



Ultra Zoom Lens
Sensor size: 1/2" (8mm)
Focal Length: 10-330mm



Large FOV and Low
Magnification Double
Telecentric Lens
Sensor Size: 1"
Magnification: 0.255X
Working distance: 211mm

Grand Unified Optics (Beijing)Co., Ltd.

+86-10-62112301 sales@gu-optics.com

www.ga-optics.com

Machine Vision Lens Products Catalog

IMAGING OPTICS

WWW.GA-OPTICS.COM
Grand Unified Optics (Beijing)Co., Ltd.

Lens Design & Development



Lens Design/Develop/Manufacture

Capability

Grand Unified Optics (Beijing)Co., Ltd engaged in the design and development of imaging optics and provided the imaging solution to customers. We hope we can provide the professional, quick, high cost performance service to all of you based on our professional technical ability so that the imaging optics can be used to different field widely.

The machine vision can be applied to more field based on the development of artificial intelligence technology and the policy of industry 4.0 was pushed in China. Such as the testing of semiconductor chips, medical testing equipment, unmanned technology, biophoton imaging etc.

Grand Unified Optics set up the professional R&D team, technical support team and sales & marketing team in order to provide high quality service to customers and push out new product & new imaging solution to customers based on the feedback from marketing.



Customization

Optical System Analysis

Analyzed the parameters of optical system and provided the overall design scheme based on the customers' requirements.

Optical system design

Completed the optical system design, tolerance analysis etc. based on the optical system parameters' requirements

Optical-mechanical structure design

Completed the optical-mechanical structure design, mechanical simulation analysis, optical-mechanical thermal integrated analysis etc. based on the optical system designed requirements.

Custom optical system

Completed the manufacture, assembly, test of the optical system based on the result of optical design.

Mass customization service of optical system

Provided the unique, exclusive, mass customization of optical system for customers and can sign the only supply agreement with customers as well.

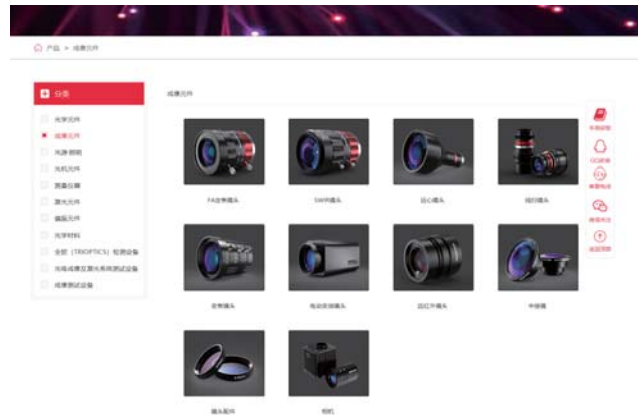
Assessment service of optical system

Conducted the professional analysis and gave feasible evaluation and modified suggestion for customers' design.

Sales

www.gu-optics.com

Searched by product name or stock No.



Visual Imaging Manual
Request by e-mail or by phone



DIRECTORY



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Fixed Focal Length Lens

2/3" 5M Series		
600007 (8mm,2/3")		05
600008 (12mm,2/3")		06
600009 (16mm,2/3")		07
600010 (25mm,2/3")		08
600011 (35mm,2/3")		09
600012 (50mm,2/3")		10
600013 (75mm,2/3")		11
GA 1/1.8" 6M Series		
600038 (12mm,1/1.8")		12
600039 (16mm,1/1.8")		13
600040 (25mm,1/1.8")		14
600041 (35mm,1/1.8")		15
600042 (8mm,1/1.8")		16
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600022 (12mm,1")		19
600023 (16mm,1")		20
600024 (25mm,1")		21
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600026 (50mm,1")		23
600033 (75mm,1")		24
GA 4/3" 10M Series		
600016 (12mm,4/3")		25
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600019 (35mm,4/3")		28
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600001 (16mm,2/3")		33
600002 (25mm,2/3")		34
600003 (35mm,2/3")		35
600004 (50mm,2/3")		33
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1" 5M Series		
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600028 (16mm,1")		40
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610010/610011 (1/1.8",0.036X)	50
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610014/610015 (2/3",0.114X)	51
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Motorized Zoom Lens	
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Fixed Focal Length Lens



2/3" 5M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600007	8	1.6	2/3"	C	5MP	0.1m ~ ∞	M40.5x0.5	66.8° × 55.8° × 43.3°	-0.73%@y=5.5mm	05
600008	12	1.6	2/3"	C	5MP	0.1m ~ ∞	M37.5x0.5	48.6° × 39.8° × 30.4°	-0.35%@y=5.5mm	06
600009	16	1.6	2/3"	C	5MP	0.2m ~ ∞	M37.5x0.5	38.0° × 30.8° × 23.4°	0.07%@y=5.5mm	07
600010	25	1.4	2/3"	C	5MP	0.2m ~ ∞	M37.5 × 0.5	24.8° × 20.0° × 15.0°	-0.19%@y=5.5mm	08
600011	35	1.4	2/3"	C	5MP	0.3m ~ ∞	M37.5 × 0.5	17.9° × 14.3° × 10.8°	-0.06%@y=5.5mm	09
600012	50	1.8	2/3"	C	5MP	0.4m ~ ∞	M37.5x0.5	12.6° × 10.1° × 7.6°	0.03%@y=5.5mm	10
600013	75	2.0	2/3"	C	5MP	0.9m ~ ∞	M40.5x0.5	8.4° × 6.7° × 5.0°	0.02%@y=5.5mm	11

GA 1/1.8" 6M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600038	12	1.8	1/1.8"	C	6MP	0.1m ~ ∞	M27.5X0.5	41.56° × 33.52° × 25.29°	-2.39%@y=4.5mm	12
600039	16	1.8	1/1.8"	C	6MP	0.15m ~ ∞	M27.5X0.5	31.30° × 25.21° × 19.00°	-0.73%@y=4.5mm	13
600040	25	1.8	1/1.8"	C	6MP	0.3m ~ ∞	M27.5X0.5	20.42° × 16.4° × 12.33°	-0.11%@y=4.5mm	14
600041	35	2.0	1/1.8"	C	6MP	0.3m ~ ∞	M27.5X0.5	14.73° × 11.79° × 8.84°	-0.52%@y=4.5mm	15
600042	8	1.8	1/1.8"	C	6MP	0.05m ~ ∞	M27.5X0.5	61.57° × 50.10° × 38.06°	-5.61%@y=4.5mm	16
600043	50	2.8	1/1.8"	C	6MP	0.3m ~ ∞	M27.5X0.5	10.31° × 8.26° × 6.18°	-0.055%@y=4.5mm	17

GA 1" 8M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600021	8	1.8	1"	C	8MP	0.3m ~ ∞	/	90.06° × 77.16° × 61.30°	-4.12%@y=8.0mm	18
600022	12	2.0	1"	C	8MP	0.1m ~ ∞	M35.5x0.5	69.63° × 60.71° × 44.33°	-4.10%@y=8.0mm	19
600023	16	2.0	1"	C	8MP	0.1m ~ ∞	M34x0.5	53.7° × 43.9° × 33.4°	-2.22%@y=8.0mm	20
600024	25	1.8	1"	C	8MP	0.15m ~ ∞	M30.5x0.5	36.0° × 29.0° × 21.9°	-1.53%@y=8.0mm	21
600025	35	1.8	1"	C	8MP	0.2m ~ ∞	M30.5x0.5	25.7° × 20.7° × 15.6°	0.33%@y=8.0mm	22
600026	50	2.0	1"	C	8MP	0.25m ~ ∞	M37x0.5	18.18° × 14.60° × 10.96°	-0.011%@y=8.0mm	23
600033	75	2.8	1"	C	8MP	0.5m ~ ∞	M39 × 0.5	12.2° × 9.8° × 7.3°	0.75%@y=8.0mm	24

GA 4/3" 10M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600016	12	2.0	4/3"	C	10MP	0.15m ~ ∞	M77.0X0.75	89.0° × 75.5° × 61.1°	-2.40%@y=11.5mm	25
600017	16	2.0	4/3"	C	10MP	0.1m ~ ∞	M58.0 × 0.75	72.9° × 60.9° × 47.3°	-2.81%@y=11.5mm	26
600018	25	2.0	4/3"	C	10MP	0.15m ~ ∞	M46.0X0.75	49.7° × 40.6° × 31.0°	-0.66%@y=11.5mm	27
600019	35	2.0	4/3"	C	10MP	0.2m ~ ∞	M40.5X0.5	36.6° × 29.6° × 22.4°	-0.56%@y=11.5mm	28
600020	50	2.0	4/3"	C	10MP	0.3m ~ ∞	M40.5X0.5	26.9° × 20.9° × 15.7°	-0.14%@y=11.5mm	29
600035	85	2.0	4/3"	C	10MP	1.2m ~ ∞	M77.0 × 0.75	15.41° × 12.09° × 9.28°	0.04%@y=11.5mm	30
600037	8.5	2.8	4/3"	C	10MP	0.5m ~ ∞	/	107.4° × 94.9° × 77.9°	-4.54%@y=11.5mm	31

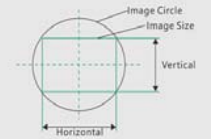
2/3" 2M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600000	12	1.4	2/3"	C	2MP	0.15m ~ ∞	M30.5 × 0.5	49.0° × 40.0° × 30.3°	-1.8%@y=5.5mm	32
600001	16	1.4	2/3"	C	2MP	0.3m ~ ∞	M30.5 × 0.5	37.6° × 30.4° × 22.9°	-1.00%@y=5.5mm	33
600002	25	1.4	2/3"	C	2MP	0.25m ~ ∞	M30.5 × 0.5	24.7° × 19.9° × 15.0°	0.27%@y=5.5mm	34
600003	35	1.4	2/3"	C	2MP	0.3m ~ ∞	M30.5 × 0.5	17.7° × 14.2° × 10.7°	-0.33%@y=5.5mm	35
600004	50	1.8	2/3"	C	2MP	0.5m ~ ∞	M30.5 × 0.5	12.5° × 9.1° × 7.5°	-0.22%@y=5.5mm	36
600005	75	2.8	2/3"	C	2MP	1.1m ~ ∞	M30.5 × 0.5	8.4° × 6.7° × 5.0°	0.36%@y=5.5mm	37
600036	8	1.4	2/3"	C	2MP	0.1m ~ ∞	M34 × 0.5	68.63° × 56.97° × 43.98°	-2.81%@y=5.5mm	38

1" 5M Series										
Stock No.	Focal Length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance(Min)	Filter Thread(mm)	FOV	Distortion	Page
600027	12	1.6	1"	C	5MP	1m ~ ∞	M52 × 0.75	68.84° × 57.12° × 44.08°	-2.88%@y=8.0mm	39
600028	16	1.6	1"	C	5MP	1m ~ ∞	M37.5x0.5	54.38° × 44.20° × 33.54°	-3.73%@y=8.0mm	40
600029	20	1.6	1"	C	5MP	1m ~ ∞	M39x0.5	44.74° × 36.08° × 27.24°	-2.87%@y=8.0mm	41
600030	25	1.6	1"	C	5MP	1m ~ ∞	M39x0.5	36.12° × 29.04° × 21.86°	-2.06%@y=8.0mm	42
600031	35	1.4	1"	C	5MP	0.4m ~ ∞	M39x0.5	25.68° × 20.72° × 15.62°	0.26%@y=8.0mm	43

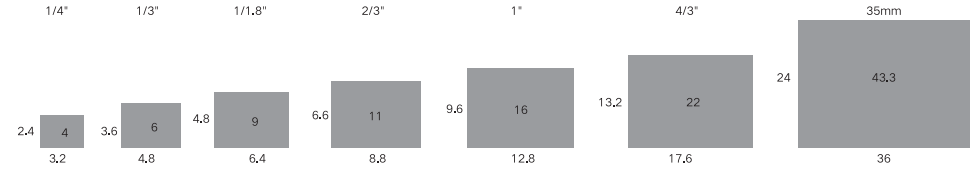
Lens Specification

Sensor Size			
Image Sensor	Image Circle	Horizontal	Vertical
1/4"	∅4.0mm	3.2mm	2.4mm
1/3"	∅6.0mm	4.8mm	3.6mm
1/1.8"	∅9.0mm	7.1mm	5.3mm
2/3"	∅11.0mm	8.8mm	6.6mm
1"	∅16.0mm	12.8mm	9.6mm
4/3"	∅22.0mm	17.6mm	13.2mm
35mm	∅43.3mm	36mm	24mm

Area diagram



Size proportion of photoreceptor



GA SWIR									
Stock No.	Focal Length (mm)	F/#	Max. sensor size	Mount	Working Distance	Working wavelength (nm)	FOV	Distortion	Page
680000	50	F2.15	25.6mm	C	275mm~∞	800-1800	28.9°	< 1.0%	45
680001	25	F2.1	25.6mm	C	200mm~∞	800-1800	54.52°	< 2.4%	46
680003	25	F1.4	1"	C	300mm~∞	700-1700	36.66° × 29.35° × 22.04°	-3.09%@y=8mm	47
680004	35	F1.4	1"	C	300mm~∞	700-1700	26.54° × 21.23° × 15.92°	-1.94%@y=8mm	48



Telecentric Lens

Image Plane(Max): 9mm				GA Large FOV Double Telecentric Lens															
				Max. sensor size		Optical Parameters					Mechanical Parameters								
				1/1.8"															
				7.2 × 5.4 × 9															
Stock No.	FOV (mm)	Magnification (x)	Working Distance (mm)	H	V	D	F/#	Distortion (%)	Telecentricity (deg.)	DOV (mm)	MTF	Illumination Port(mm)	Lens Mount	Weight (g)	Length (mm)	Diameter (mm)	Note	Page	
610006	65	0.138	211	52.17	39.13	65.22	4.7	<0.05%	<0.06°	±9.87	>30%@199lp/mm	None	C-Mount	756	147.9	87.4		49	
610007	65	0.138	211	52.17	39.13	65.22	4.7	<0.05%	<0.06°	±9.87	>30%@199lp/mm	Ø8mm	C-Mount	In-line Illumination	/	147.8	88.4	Custom Product	49
610008	100	0.09	282	80.00	60.00	100.00	4.7	<0.06%	<0.05°	±23.21	>30%@199lp/mm	None	C-Mount	2262	223.5	125		49	
610009	100	0.09	282	80.00	60.00	100.00	4.7	<0.06%	<0.05°	±23.21	>30%@199lp/mm	Ø8mm	C-Mount	In-line Illumination	/	223.5	125	Custom Product	49
610039	150	0.06	324	120.00	90.00	150.00	4.7	<0.05%	<0.03°	±52.22	>30%@199lp/mm	None	C-Mount	5482	293.15	176.5		50	
610044	150	0.06	324	120.00	90.00	150.00	4.7	<0.05%	<0.03°	±52.22	>30%@199lp/mm	Ø8mm	C-Mount	In-line Illumination	/	293.15	176.5	Custom Product	50
610010	250	0.036	431	200.00	150.00	250.00	4.7	<0.04%	<0.02°	±145.06	>30%@199lp/mm	None	C-Mount	/	508.3	280		50	
610011	250	0.036	431	200.00	150.00	250.00	4.7	<0.04%	<0.02°	±145.06	>30%@199lp/mm	Ø8mm	C-Mount	In-line Illumination	/	508.3	280	Custom Product	50

Image Plane(Max): 11mm				GA Large FOV Double Telecentric Lens															
				Max. sensor size		Optical Parameters					Mechanical Parameters								
				2/3"															
				8.8 × 6.6 × 11															
Stock No.	FOV (mm)	Magnification (x)	Working Distance (mm)	H	V	D	F/#	Distortion (%)	Telecentricity (deg.)	DOV (mm)	MTF	Illumination Port(mm)	Lens Mount	Weight (g)	Length (mm)	Diameter (mm)	Note	Page	
610012	65	0.176	211	50.00	37.50	62.50	5.3	<0.03%	<0.06°	±6.85	>30%@179lp/mm	None	C-Mount	776	160.8	87.4		51	
610013	65	0.176	211	50.00	37.50	62.50	5.3	<0.03%	<0.06°	±6.85	>30%@179lp/mm	Ø8mm	C-Mount	In-line Illumination	/	160.8	88.4	Custom Product	51
610014	100	0.114	282	77.19	57.89	96.49	5.3	<0.05%	<0.05°	±16.32	>30%@179lp/mm	None	C-Mount	2288	236.5	125		51	
610015	100	0.114	282	77.19	57.89	96.49	5.3	<0.05%	<0.05°	±16.32	>30%@179lp/mm	Ø8mm	C-Mount	In-line Illumination	/	236.5	125	Custom Product	51
610040	150	0.076	324	115.79	86.84	144.74	5.3	<0.03%	<0.03°	±36.71	>30%@179lp/mm	None	C-Mount	5508	306.06	176.5		52	
610045	150	0.076	324	115.79	86.84	144.74	5.3	<0.03%	<0.03°	±36.71	>30%@179lp/mm	Ø8mm	C-Mount	In-line Illumination	5508	306.06	176.5	Custom Product	52
610016	250	0.0456	431	192.98	144.74	241.23	5.3	<0.02%	<0.02°	±101.96	>30%@170lp/mm	None	C-Mount	/	521.3	280		52	
610017	250	0.046	431	192.98	144.74	241.23	5.3	<0.02%	<0.02°	±101.96	>30%@170lp/mm	Ø8mm	C-Mount	In-line Illumination	/	521.3	280	Custom Product	52

Image Plane(Max): 16mm				GA Large FOV Double Telecentric Lens															
				Max. sensor size		Optical Parameters					Mechanical Parameters								
				1"															
				12.8 × 9.6 × 16															
Stock No.	FOV (mm)	Magnification (x)	Working Distance (mm)	H	V	D	F/#	Distortion (%)	Telecentricity (deg.)	DOV (mm)	MTF	Illumination Port(mm)	Lens Mount	Weight (g)	Length (mm)	Diameter (mm)	Note	Page	
610018	65	0.255	211	50.20	37.65	62.75	6.4	<0.03%	<0.06°	±3.94	>30%@139lp/mm	None	C-Mount	817	181.9	87.4		53	
610019	65	0.255	211	50.20	37.65	62.75	6.4	<0.03%	<0.06°	±3.94	>30%@139lp/mm	Ø8mm	C-Mount	In-line Illumination	/	181.9	88.4	Custom Product	53
610020	100	0.166	282	77.11	57.83	96.39	6.4	<0.05%	<0.05°	±9.29	>30%@139lp/mm	None	C-Mount	2314	257.5	125		53	
610021	100	0.166	282	77.11	57.83	96.39	6.4	<0.05%	<0.05°	±9.29	>30%@139lp/mm	Ø8mm	C-Mount	In-line Illumination	/	257.5	125	Custom Product	53
610041	150	0.11	324	116.36	87.27	145.45	6.4	<0.03%	<0.03°	±21.16	>30%@140lp/mm	None	C-Mount	5534	327.09	176.5		54	
610046	150	0.11	324	116.36	87.27	145.45	6.4	<0.03%	<0.03°	±21.16	>30%@140lp/mm	Ø8mm	C-Mount	In-line Illumination	5534	327.09	176.5	Custom Product	54
610022	250	0.066	431	192.77	144.58	240.96	6.4	<0.02%	<0.02°	±58.07	>30%@140lp/mm	None	C-Mount	/	542.3	280		54	
610023	250	0.066	431	192.77	144.58	240.96	6.4	<0.02%	<0.02°	±58.07	>30%@140lp/mm	Ø8mm	C-Mount	In-line Illumination	/	542.3	280	Custom Product	54

Image Plane(Max): 24mm				GA Large FOV Double Telecentric Lens															
				Max. sensor size		Optical Parameters					Mechanical Parameters								
				4/3"															
				18.8 × 13.5 × 22.5															
Stock No.	FOV (mm)	Magnification (x)	Working Distance (mm)	H	V	D	F/#	Distortion (%)	Telecentricity (deg.)	DOV (mm)	MTF	Illumination Port(mm)	Lens Mount	Weight (g)	Length (mm)	Diameter (mm)	Note	Page	
610024	65	0.369	211	50.95	36.59	62.72	8	<0.04%	<0.1°	±2.35	>30%@109lp/mm	None	F-Mount	957	183.9	87.4		55	
610025	65	0.369	211	50.95	36.59	62.72	8	<0.04%	<0.1°	±2.35	>30%@109lp/mm	Ø8mm	F-Mount	In-line Illumination	/	183.9	88.4	Custom Product	55
610026	100	0.24	282	78.33	56.25	96.44	8	<0.05%	<0.05°	±5.56	>30%@100lp/mm	None	F-Mount	2471	259.55	125		55	
610027	100	0.24	282	78.33	56.25	96.44	8	<0.05%	<0.05°	±5.56	>30%@100lp/mm	Ø8mm	F-Mount	In-line Illumination	/	259.55	125	Custom Product	55
610042	150	0.16	324	117.50	84.38	144.66	8	<0.04%	<0.03°	±12.5	>30%@110lp/mm	None	F-Mount	5691	329.11	176.5		56	
610047	150	0.16	324	117.50	84.38	144.66	8	<0.04%	<0.03°	±12.5	>30%@110lp/mm	Ø8mm	F-Mount	In-line Illumination	5691	329.11	176.5	Custom Product	56
610028	250	0.096	431	195.83	140.63	241.09	8	<0.02%	<0.02°	±34.72	>30%@110lp/mm	None	F-Mount	/	545.3	280		56	
610029	250	0.096	431	195.83	140.63	241.09	8	<0.02%	<0.02°	±34.72	>30%@110lp/mm	Ø8mm	F-Mount	In-line Illumination	/	545.3	280	Custom Product	56

Image Plane(Max): 11mm				Compact High Magnification Double Telecentric Lens															
				Max. sensor size		Optical Parameters					Mechanical Parameters								
				2/3"															
				8.8 × 6.6 × 11															
Stock No.	FOV (mm)	Magnification (x)	Working Distance (mm)	H	V	D	F/#	Distortion (%)	Telecentricity (deg.)	DOV (mm)	MTF	Illumination Port(mm)	Lens Mount	Weight (g)	Length (mm)	Diameter (mm)	Note	Page	
610030	22	0.5	130	17.6	13.2	22	12	<0.03%	<0.03°	±1.92	>30%@70lp/mm	Ø8mm	C-Mount	In-line Illumination	181	121.35	33	Custom Product	57
610031	22	0.5	130	17.6	13.2	22	12	<0.03%	<0.03°	±1.92	>30%@70lp/mm	None	C-Mount	/	172	117.42	33		57
610032	11	1	130	8.8	6.6	11	12	<0.03%	<0.03°	±0.48	>30%@75lp/mm	Ø8mm	C-Mount	In-line Illumination	202	134.85	33	Custom Product	58
610033	11	1	130	8.8	6.6	11	12	<0.03%	<0.03°	±0.48	>30%@75lp/mm	None	C-Mount	/	195	130.9	33		58
610034	5.5	2	130	4.4	3.3	5.5	16	<0.05%	<0.04°	±0.16	>30%@55lp/mm	Ø8mm	C-Mount	In-line Illumination	223	155.79	33	Custom Product	59
610035	5.5	2	130	4.4	3.3	5.5	16	<0.05%	<0.04°	±0.16	>30%@55lp/mm	None	C-Mount	/	213	150.8	33		59
610036	3.14	3.5	130	2.5	1.8	3.1	24	<0.05%	<0.06°	±0.08	>30%@40lp/mm	Ø8mm	C-Mount	In-line Illumination	278	183.8	33	Custom Product	60
610037	3.14	3.5	130	2.5	1.8	3.1	24	<0.05%	<0.06°	±0.08	>30%@40lp/mm	None	C-Mount	/	268	167.9	33		60

Manual Zoom Lens											
Stock No.	Focal length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance	Filter Thread	FOV	Distortion	Page	
640000	12-36	2.8-C	2/3"	C	2MP	W: 0.15m ~ ∞ T: 0.45m ~ ∞	M35.5 × 0.5	W: 50.8° × 41.3° × 31.2° T: 17.0° × 13.8° × 10.4°	W: -3.43%@y=5.5mm T: 2.3%@y=5.5mm	61	
640001	12-36	2.8-16C	2/3"	C	5MP	W: 0.15m ~ ∞ T: 0.45m ~ ∞	M40.5 × 0.5	W: 50.8° × 41.2° × 31.2° T: 17.2° × 13.8° × 10.5°	W: -3.4%@y=5.5mm T: 1.4%@y=5.5mm	63	

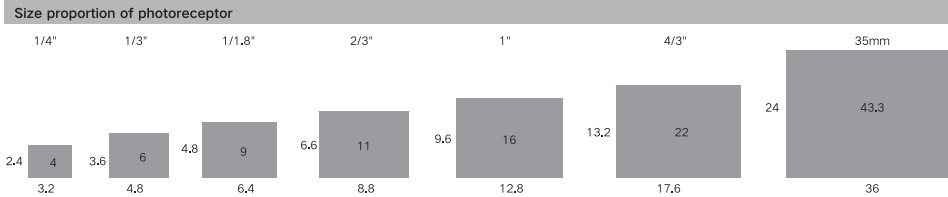


Motorized Zoom Lens

Motorized Zoom Lens											
Stock No.	Focal length(mm)	F/#	Max. sensor size	Mount	Resolution	Working Distance	Filter Thread	FOV	Distortion	Page	
640004	10-330	1.5-360C	1/2"	C	2MP	W: 2.8m ~ ∞ T: 2.8m ~ ∞	M100 × 1	W: 43.2° × 34.8° × 26.2° T: 1.36° × 1.10° × 0.82°	W: -3.33%@y=4.0mm T: 2.2%@y=4.0mm	65	
640006	12.5-750.0	3.5-360C	1/1.8"	C	3MP	W: 5m ~ ∞ T: 5m ~ ∞	M114 × 0.75	W: 38.80° × 33.82° × 19.02° T: 0.71° × 0.62° × 0.35°	W: -1.64%@y=4.5mm T: 1.36%@y=4.5mm	67	

Lens Specification

Sensor Size				Area diagram
Image Sensor	Image Circle	Horizontal	Vertical	
1/4"	∅4.0mm	3.2mm	2.4mm	
1/3"	∅6.0mm	4.8mm	3.6mm	
1/1.8"	∅9.0mm	7.1mm	5.3mm	
2/3"	∅11.0mm	8.8mm	6.6mm	
1"	∅16.0mm	12.8mm	9.6mm	
4/3"	∅22.0mm	17.6mm	13.2mm	
35mm	∅43.3mm	36mm	24mm	



Stock No.	EFL(mm)	Sensor	F/#	FOV (HxV)	wavelength (μm)	Transmittance	Focus Distance (m)	Page
680200	13	384×288 17μm	1.0	28.8° × 21.6°	8-12	> 88%	0.5-∞	69
680201	19	384×288 17μm	1.0	19.68° × 14.78°	8-12	> 88%	0.5-∞	69
680202	50	640×512 17μm	1.0	12.42° × 9.95°	8-12	> 88%	3-∞	70
680203	35	640×512 17μm	1.0	17.67° × 14.18°	8-12	> 88%	5-∞	70
680204	3.7	256×192 12μm	1.1	45.6° × 34.4°	8-12	> 88%	0.1-∞	71
680205	3.5	256×192 12μm	1.0	49.1° × 36.7°	8-12	> 88%	0.1-∞	71
680206	7	256×192 12μm	1.0	24.8° × 18.7°	8-12	> 88%	0.2-∞	72
680207	36-180	640×512 17μm	1.2	3.5° × 2.8° 17.4° × 13.9°	8-12	/	2-∞	72



Stock No.	Focal Length	F/#	Max. sensor size	Magnification	Working wavelength	Mount	Page
620000	60mm	4-22	60mm	0.2x-0.75x	400-700nm	F-mount	73
620001	60mm	4-22	60mm	0.2x-0.75x	400-700nm	M58×0.75	75
620002	60mm	4-22	60mm	0.2x-0.75x	400-700nm	M72×0.75	77
620006	60mm	4-22	60mm	0.2x-0.75x	400-700nm	M42×1.0	79
620003	60mm	4-22	60mm	0.04x-0.2x	400-700nm	F-mount	81
620004	60mm	4-22	60mm	0.04x-0.2x	400-700nm	M58×0.75	83
620005	60mm	4-22	60mm	0.04x-0.2x	400-700nm	M72×0.75	85
620007	60mm	4-22	60mm	0.04x-0.2x	400-700nm	M42×1.0	87
620008	35mm	4-1.6	28mm	0.0x-0.5x	400-700nm	M42×1.0	89



Stock No.	Standard Angle	D-Stop	-0,01/-0,04 Located Outside Diameter (mm)	Outer Diameter (Max) (mm)	Distortion(Max)	Apply to	Page
630000	70 °	24	72	89	0.50%	5M Module	91
630001	70 °	17.5	72	89	0.15%	13M Module	91
630002	88 °	20	72	80	0.20%	21M Module	91
630003	90 °	20	72	89	0.50%	21M Module	92
630004	90 °	21	72	89	0.20%	21M Module	92
630005	88 °	17.5	72	89	0.20%	21M Module	92
630006	108 °	19	105	122	0.48%	21M Module	93
630007	120 °	6	72	87	0.56%	21M Module	93
630008	130 °	17	133	161	24.60%	21M Module	93
630009	88 °	20.67	80	89	0.23%	-	94
630010	88 °	20.72	80	85	0.36%	-	94
630011	90 °	19.46	110	130	0.17%	-	94

Custom Service

We can provide quick custom service for imaging lens 95



Stock No	Diameter(mm)	CWL(nm)	Stock No	Diameter(mm)	CWL(nm)	Stock No	Diameter(mm)	CWL(nm)
670000	30,5	880	670009	30,5	590	670018	30,5	518
670001	37,5	880	670010	37,5	590	670019	37,5	518
670002	40,5	880	670011	40,5	590	670020	40,5	518
670003	30,5	634	670012	30,5	524	670021	30,5	470
670004	37,5	634	670013	37,5	524	670022	37,5	470
670005	40,5	634	670014	40,5	524	670023	40,5	470
670006	30,5	660	670015	30,5	548	670024	30,5	330
670007	37,5	660	670016	37,5	548	670025	37,5	330
670008	40,5	660	670017	40,5	548	670026	40,5	330

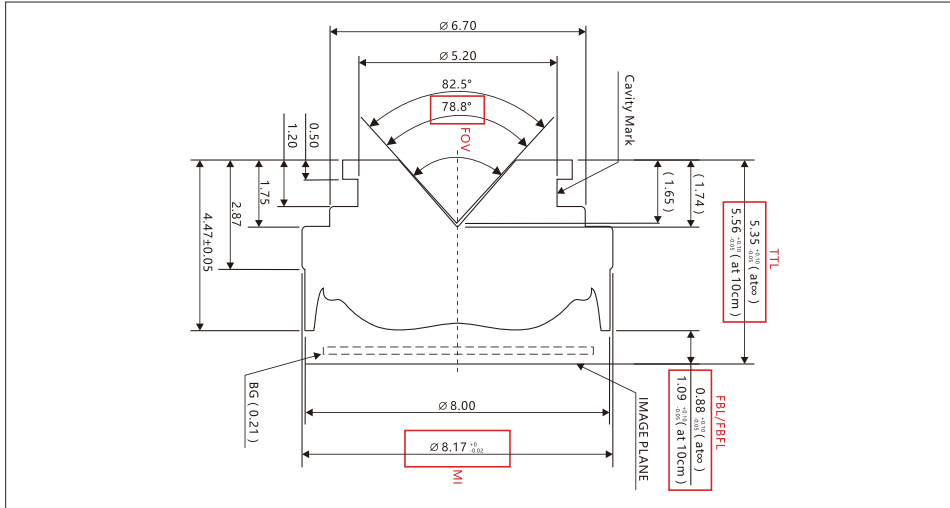
Number	Filter	CWL(nm)	FWHM(nm)	Transmission(%)	Blocking Range(nm)/ (左OD≥3.0 右OD≥4.0)	
1	NUV	330	95	74	400-650	200-250
2	BLUE	470	85	95	200-400	550-1200
3	CYAN	518	95	89	600-1000	200-450
4	GREEN	524	92	94	200-450	600-1000
5	UV/IR CUT-OFF	548	290	95	200-370	750-1100
6	ORANGE	590	79	89	700-1050	200-500
7	LIGHT RED	634	70	93	200-550	700-1050
8	DARK RED	660	66	94	200-550	720-1120
9	UV/VIS CUT-OFF	880	135	96	200-750	1000-1200
Page					96	



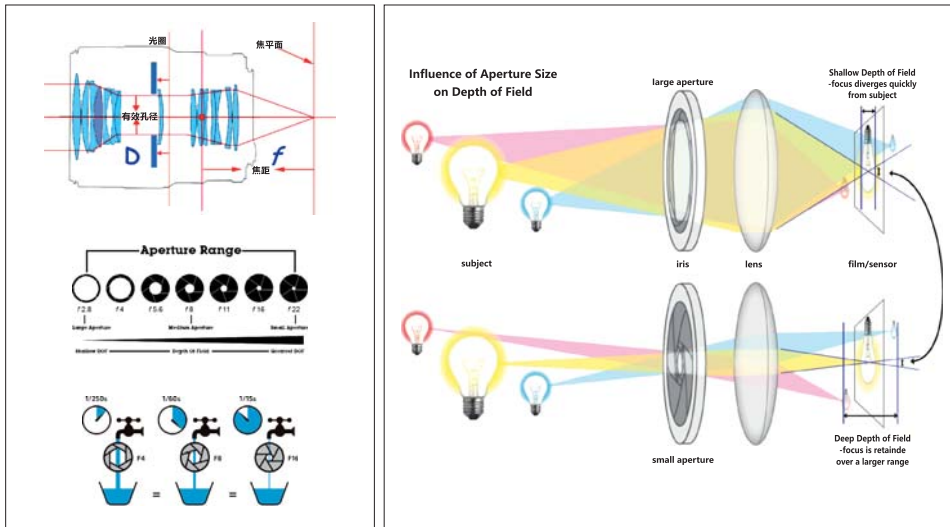
Stock No.	Working Wavelength (nm)	Resolution	Pixel Size (μ m)	Sensor Size (mm)	Frame Rate (Hz)	Size (mm)	Mount	Page
680100	400 ~ 1700	640X512	15	9.6X7.68	50 / 100	65X58X64.5	C	97
680101	900 ~ 1700	640X512	15	9.6X7.68	50 / 100	65X58X64.5	C	97
680102	900 ~ 1700	320X256	30	9.6X7.68	50 / 100	65X58X64.5	C	97
680103	400 ~ 1700	640X512	15	9.6X7.68	50 / 100	67X70X60	C	98
680104	900 ~ 1700	640X512	15	9.6X7.68	50 / 100	67X70X60	C	98
680105	900 ~ 1700	320X256	30	9.6X7.68	50 / 100	67X70X60	C	98
680106	400 ~ 1700	640X512	15	9.6X7.68	50 / 100	67X70X60	C	99
680107	900 ~ 1700	640X512	15	9.6X7.68	50 / 100	67X70X60	C	99

LENS SPECIFICATION

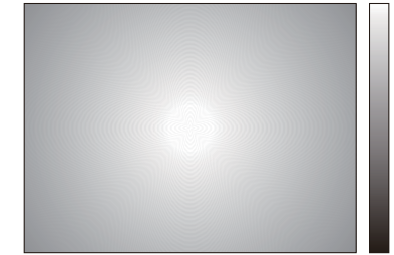
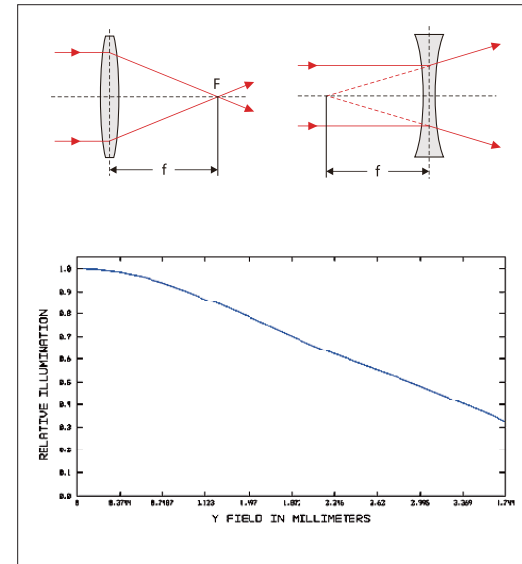
Technical Term	Term Description
Total Track Length	The distance from the front end to the image plane of the lens
Flange Back Focal Length	The distance from the reference surface to the image plane
Field Of View	The maximum angle of view that a lens can shoot
Mechanical Interface	The mechanism interface with the camera module e.g: M6xP0.25、 ϕ 8.17



F/No (The amount of light go through the lens) $F/No.=f/D$



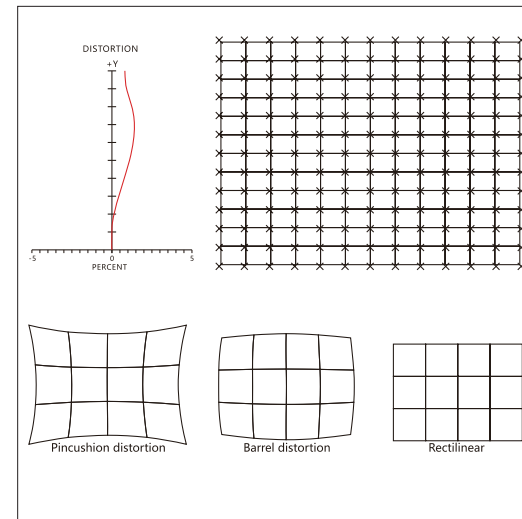
LENS SPECIFICATION



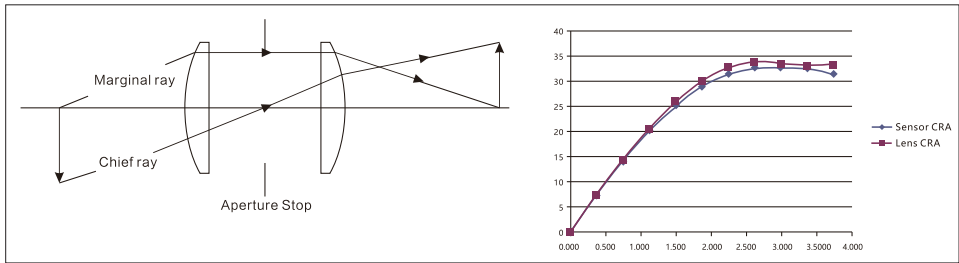
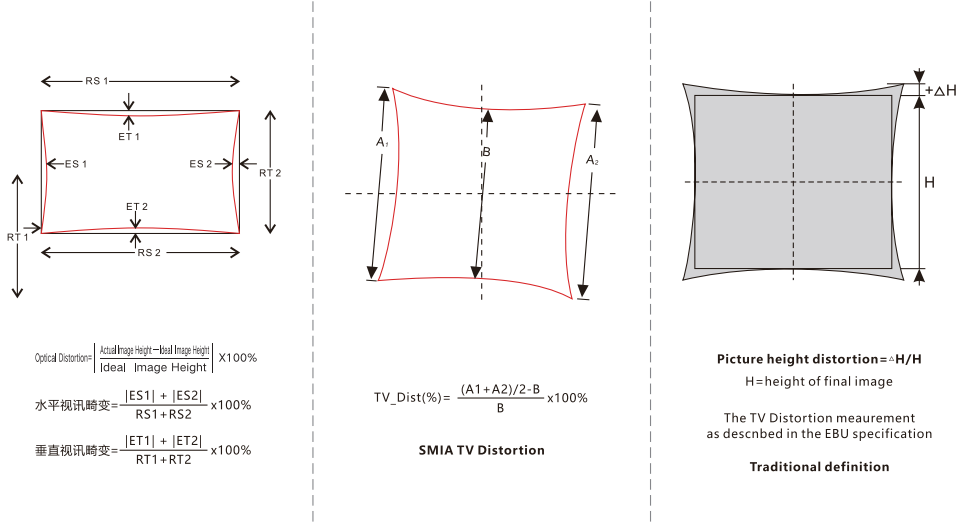
Effective Focal Length
The distance from the lens center to focal point

Relative Illumination
Illumination: The level of brightness of an object or illuminated by a light source
Relative Illumination: The ration of central illumination and peripheral illumination

Distortion
Optical Distortion
TV Distortion

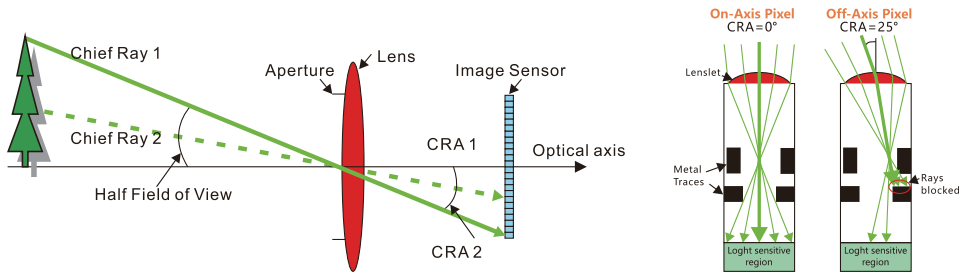


LENS SPECIFICATION



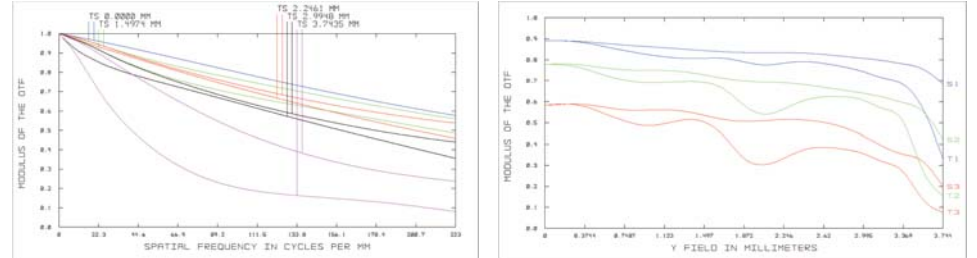
Chief Ray Angle
 Chief ray :
 The ray that off-axis object emits and passes through the A.S central point

Marginal ray:
 The ray that off-axis object emits and passes through A.S edge

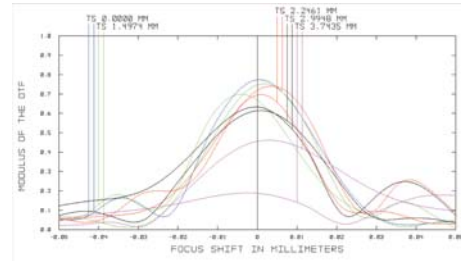


LENS SPECIFICATION

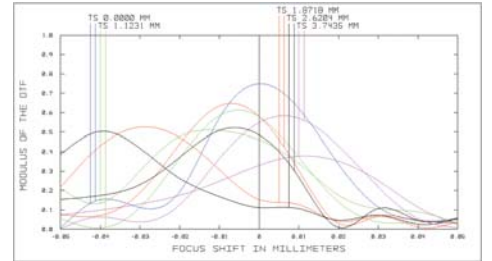
Modulation Transfer Function



@Infinity



@10cm



Fixed Focal Length Lenses

FIXED FOCAL LENGTH LENSES

GAOPTICS® HAVE 6 SERIES FIXED FOCAL LENGTH LENSES WHICH COVER 1/1.8"、2/3"、1"、4/3" SENSOR SIZE, THEY ARE DESIGNED WITH STANDARD C MOUNT AND DIFFERENT FOCAL LENGTH. GAOPTICS® FIXED FOCAL LENGTH LENSES CAN MEET MOST REQUIREMENTS OF FACTORY AUTOMATION.



2/3" 5M Series

600007	(8mm,2/3")	05
600008	(12mm,2/3")	06
600009	(16mm,2/3")	07
600010	(25mm,2/3")	08
600011	(35mm,2/3")	09
600012	(50mm,2/3")	10
600013	(75mm,2/3")	11

GA 1/1.8" 6M Series

600038	(12mm,1/1.8")	12
600039	(16mm,1/1.8")	13
600040	(25mm,1/1.8")	14
600041	(35mm,1/1.8")	15
600042	(8mm,1/1.8")	16
600043	(50mm,1/1.8")	17

GA 1" 8M Series

600021	(8mm,1")	18
600022	(12mm,1")	19
600023	(16mm,1")	20
600024	(25mm,1")	21
600025	(35mm,1")	22
600026	(50mm,1")	23
600033	(75mm,1")	24

GA 4/3" 10M Series

600016	(12mm,4/3")	25
600017	(16mm,4/3")	26
600018	(25mm,4/3")	27
600019	(35mm,4/3")	28
600020	(50mm,4/3")	29
600035	(85mm,4/3")	30
600037	(85mm,4/3")	31

2/3" 2M Series

600000	(12mm,2/3")	32
600001	(16mm,2/3")	33
600002	(25mm,2/3")	34
600003	(35mm,2/3")	35
600004	(50mm,2/3")	33
600005	(75mm,2/3")	34
600036	(8mm,2/3")	38

1" 5M Series

600027	(12mm,1")	39
600028	(16mm,1")	40
600029	(20mm,1")	41
600030	(25mm,1")	42
600031	(35mm,1")	43

2/3" 5M Series 60007

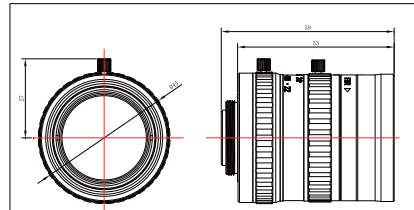
2/3" 5MP C M-Iris



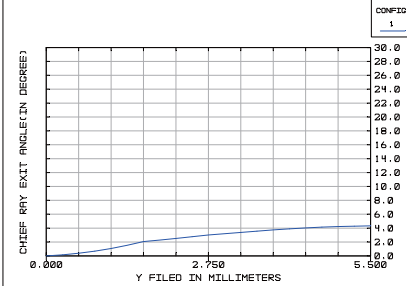
5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	8mm
3	Mount	C-Mount
4	F/#	F1.6-F22
5	Working Distance	0.1m - ∞
6	FOV(Diagonal x H xV)	2/3" 66.8° × 55.8° × 43.3°
		1/2" 51.4° × 42.1° × 32.1°
		1/3" 39.6° × 32.1° × 24.3°
7	Object Size (at the minimum focus distance)	2/3" 159.0 × 126.0 × 93.6mm
		1/2" 114.1 × 90.7 × 67.6mm
		1/3" 84.8 × 67.6 × 50.5mm
8	BFL(in air)	12.44mm
9	Operation	Focus Aperture
		Manual M-Iris
10	Distortion	2/3" -0.73%@y=5.5mm
		1/2" -1.00%@y=4.0mm
		1/3" -0.77%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W x L)	49.5 × 58.7mm
13	Weight	170g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	17.61mm
16	Diameter of entrance pupil	5.25mm
17	Distance of exit pupil	-141.59mm
18	Diameter of exit pupil	88.60mm
19	Total optical length	67.29mm
20	Magnification	-0.0719

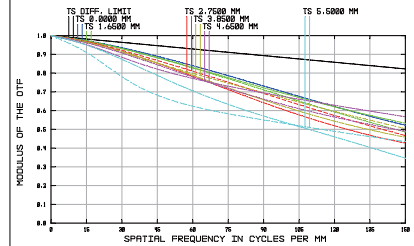
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.07185	1.0191	1.0661
150mm	-0.05029	2.3921	2.5522
200mm	-0.03869	6.3657	6.9842
250mm	-0.03144	12.9813	16.0255
300mm	-0.02648	26.2665	14.5533
350mm	-0.02287	17.9241	21.9720
400mm	-0.02013	23.2414	29.2971
500mm	-0.01623	35.2035	50.5580
750mm	-0.01094	70.7951	81.7762
1000mm	-0.00825	160.0044	160.9750



CRA



MTF



2/3" 5M Series 60008

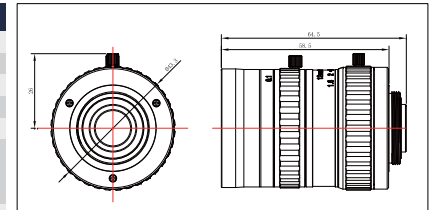
2/3" 5MP C M-Iris



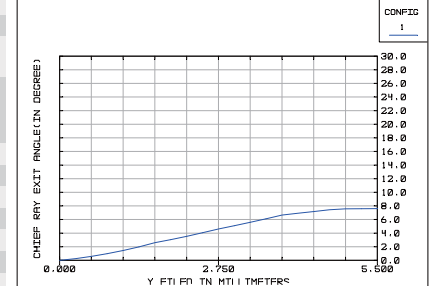
5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F1.6-F22
5	Working Distance	0.1m - ∞
6	FOV(Diagonal x H xV)	2/3" 48.6° × 39.8° × 30.4°
		1/2" 36.4° × 29.5° × 22.3°
		1/3" 27.7° × 22.3° × 16.8°
7	Object Size (at the minimum focus distance)	2/3" 104.0 × 82.9 × 61.9mm
		1/2" 75.2 × 60.6 × 44.9mm
		1/3" 56.2 × 44.9 × 33.6mm
8	BFL(in air)	12.42mm
9	Operation	Focus Aperture
		Manual M-Iris
10	Distortion	2/3" -0.35%@y=5.5mm
		1/2" -0.53%@y=4.0mm
		1/3" -0.38%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W x L)	47.7 × 64.5mm
13	Weight	178g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	23.49mm
16	Diameter of entrance pupil	7.5mm
17	Distance of exit pupil	-71.71mm
18	Diameter of exit pupil	44.04mm
19	Total optical length	74.77mm
20	Magnification	-0.107

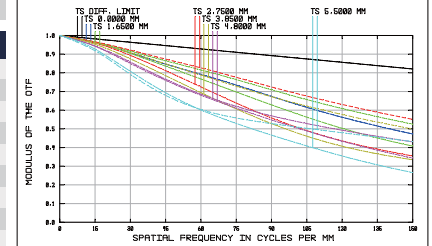
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.10733	0.5371	0.8481
150mm	-0.07435	1.6522	1.6891
200mm	-0.05692	2.9261	3.0142
250mm	-0.04613	4.5552	4.7271
300mm	-0.03879	6.5351	6.8331
350mm	-0.03347	8.8636	9.3364
400mm	-0.02943	11.5351	12.2420
450mm	-0.02626	14.5462	15.5514
500mm	-0.02371	17.8944	19.2730
550mm	-0.02161	21.5741	23.4112



CRA



MTF



2/3" 5M Series 60009

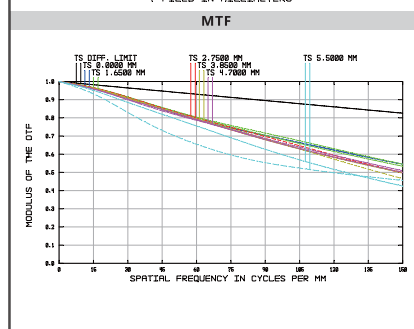
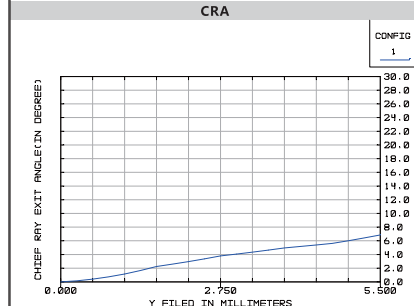
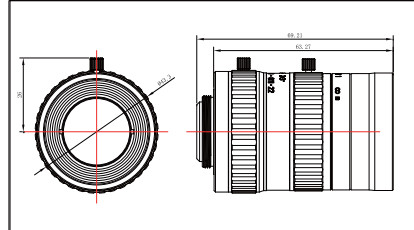
2/3" 5MP C M-Iris



5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F1.6-F22
5	Working Distance	0.2m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 38.0° × 30.8° × 23.4°
		1/2" 28.1° × 22.7° × 17.1°
		1/3" 21.3° × 17.1° × 12.9°
7	Object Size (at the minimum focus distance)	2/3" 145.6 × 116.5 × 87.3mm
		1/2" 105.9 × 84.6 × 63.5mm
		1/3" 79.4 × 63.5 × 47.6mm
8	BFL(in air)	12.36mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" 0.07%@y=5.5mm
		1/2" -0.06%@y=4.0mm
		1/3" -0.06%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W X L)	47.7 × 69.2mm
13	Weight	181g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	20.76mm
16	Diameter of entrance pupil	9.98mm
17	Distance of exit pupil	-138.99mm
18	Diameter of exit pupil	86.80mm
19	Total optical length	74.92mm
20	Magnification	-0.0757

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
200mm	-0.07572	1.6921	1.7212
250mm	-0.06118	2.6382	2.6953
300mm	-0.05131	3.7911	4.3891
350mm	-0.04421	5.1493	5.3051
400mm	-0.03882	6.0122	6.9450
450mm	-0.03462	8.4772	8.8082
500mm	-0.03123	10.4431	10.8982
550mm	-0.02845	12.6141	13.2163
600mm	-0.02612	14.9755	15.7624
650mm	-0.02415	17.5391	18.5391



2/3" 5M Series 60010

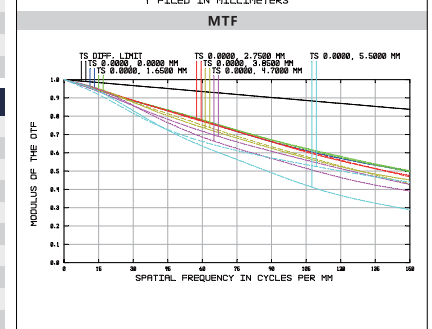
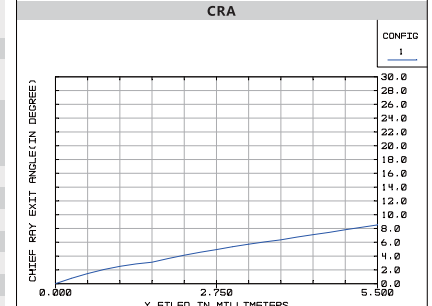
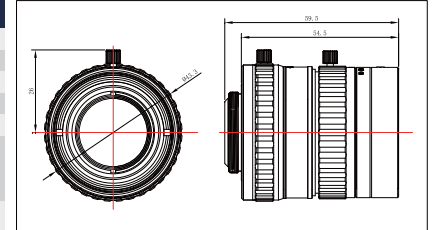
2/3" 5MP C M-Iris



5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F1.4-F22
5	Working Distance	0.2m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 24.8° × 20.0° × 15.0°
		1/2" 18.2° × 14.6° × 10.9°
		1/3" 13.7° × 10.9° × 8.2°
7	Object Size (at the minimum focus distance)	2/3" 86.1 × 69.0 × 51.7mm
		1/2" 62.7 × 50.2 × 37.6mm
		1/3" 47.0 × 37.6 × 28.2mm
8	BFL(in air)	12.78mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" -0.19%@y=5.5mm
		1/2" -0.17%@y=4.0mm
		1/3" -0.12%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W X L)	47.5 × 59.7mm
13	Weight	148g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	38.08mm
16	Diameter of entrance pupil	17.89mm
17	Distance of exit pupil	-18.64mm
18	Diameter of exit pupil	13.30mm
19	Total optical length	55.54mm
20	Magnification	-0.1265

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
200mm	-0.12646	0.4536	0.4557
250mm	-0.10079	1.2084	1.2124
300mm	-0.08381	2.0195	2.0265
350mm	-0.07176	2.8869	3.1979
400mm	-0.06275	3.8104	3.8269
450mm	-0.05574	4.2901	4.3135
500mm	-0.05015	4.8255	4.8578
550mm	-0.04559	5.4171	5.4621
750mm	-0.03342	9.0642	9.1203
1000mm	-0.02505	24.7671	24.8381



Fixed Focal Lens

Fixed Focal Lens



2/3" 5M Series 600011

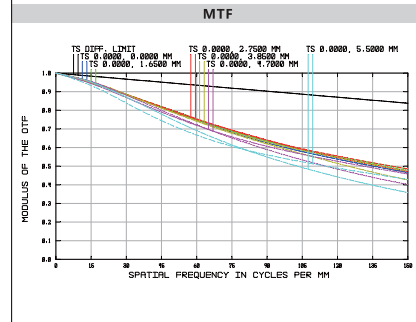
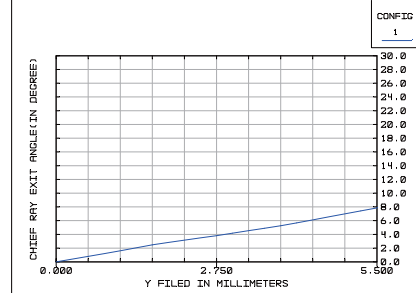
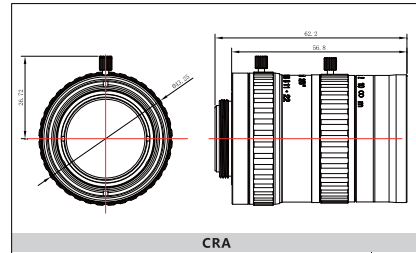
2/3" 5MP C M-Iris



5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F1.4-F22
5	Working Distance	0.3m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 17.9° × 14.3° × 10.8°
		1/2" 13.0° × 10.5° × 7.8°
		1/3" 9.8° × 7.8° × 5.9°
7	Object Size (at the minimum focus distance)	2/3" 90.1 × 72.1 × 54.1mm
		1/2" 65.6 × 52.5 × 39.4mm
		1/3" 49.2 × 39.4 × 29.5mm
8	BFL(in air)	12.82mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" -0.06%@y=5.5mm
		1/2" -0.07%@y=4.0mm
		1/3" -0.05%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W X L)	48.3 × 62.2mm
13	Weight	156g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	32.28mm
16	Diameter of entrance pupil	23.50mm
17	Distance of exit pupil	-40.40mm
18	Diameter of exit pupil	27.12mm
19	Total optical length	62.72mm
20	Magnification	-0.1220

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.12197	0.5237	0.5255
350mm	-0.10377	0.7125	0.7155
400mm	-0.09028	0.9304	0.9348
450mm	-0.07992	1.1772	1.1834
500mm	-0.07169	1.4529	1.4614
550mm	-0.06502	1.7575	1.7688
600mm	-0.05948	2.0910	2.1056
650mm	-0.05481	2.4533	2.4719
700mm	-0.05082	2.8444	2.8677
750mm	-0.04737	3.2643	3.2930



2/3" 5M Series 600012

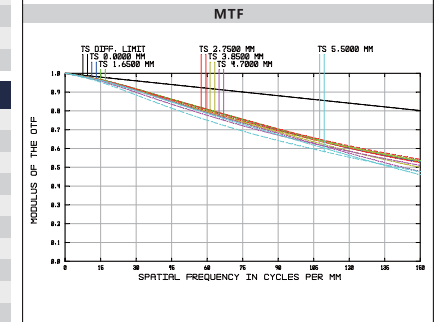
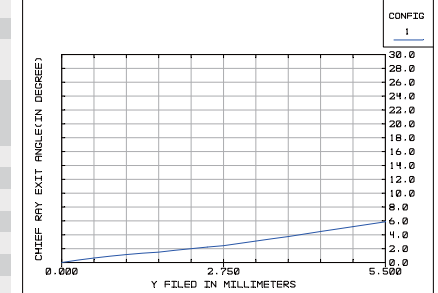
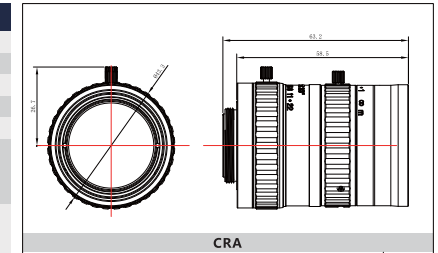
2/3" 5MP C M-Iris



5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	50mm
3	Mount	C-Mount
4	F/#	F1.8-F22
5	Working Distance	0.4m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 12.6° × 10.1° × 7.6°
		1/2" 9.1° × 7.3° × 5.5°
		1/3" 6.9° × 5.5° × 4.1°
7	Object Size (at the minimum focus distance)	2/3" 83.8 × 66.9 × 50.2mm
		1/2" 60.9 × 48.7 × 36.7mm
		1/3" 45.7 × 36.5 × 27.4mm
8	BFL(in air)	13.63mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" 0.03%@y=5.5mm
		1/2" 0.02%@y=4.0mm
		1/3" 0.01%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W X L)	48.3 × 62.5mm
13	Weight	173g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	46.00mm
16	Diameter of entrance pupil	27.91mm
17	Distance of exit pupil	-43.20mm
18	Diameter of exit pupil	24.12mm
19	Total optical length	65.53mm
20	Magnification	-0.1315

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
400mm	-0.13152	0.5839	0.6856
450mm	-0.11620	1.2389	1.2413
500mm	-0.10409	1.4121	1.4154
600mm	-0.08620	1.7129	1.7187
750mm	-0.06846	2.0503	2.0615
1000mm	-0.05099	3.6416	3.6683
1500mm	-0.03376	8.1787	8.2689
2000mm	-0.02523	14.5148	14.7274
3000mm	-0.01677	32.5376	33.2595
5000mm	-0.01003	89.7337	93.0741



2/3" 5M Series 600013

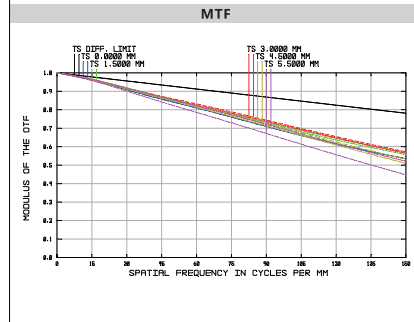
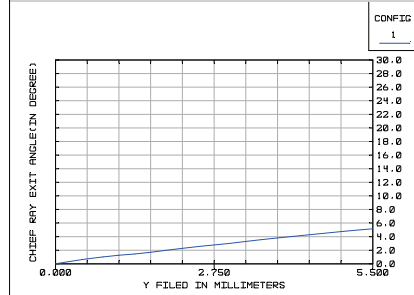
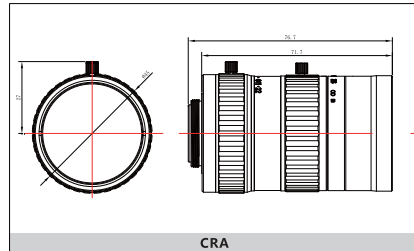
2/3" 5MP C M-Iris



5MP Series Industrial Imaging Lens
Large Aperture Design
Excellent Optical Performance

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	75mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.9m - ∞
6	FOV(Diagonal X H X V)	2/3" 8.4° × 6.7° × 5.0°
		1/2" 6.1° × 4.9° × 3.7°
		1/3" 4.6° × 3.7° × 2.7°
7	Object Size (at the minimum focus distance)	2/3" 123.2 × 98.5 × 73.9mm
		1/2" 89.6 × 71.7 × 53.8mm
		1/3" 67.2 × 53.8 × 40.3mm
8	BFL(in air)	13.76mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" 0.02%@y=5.5mm
		1/2" 0.04%@y=4.0mm
		1/3" 0.03%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W X L)	49.5 × 76.7mm
13	Weight	223g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	98.72mm
16	Diameter of entrance pupil	37.50mm
17	Distance of exit pupil	-37.94mm
18	Diameter of exit pupil	18.97mm
19	Total optical length	85.73mm
20	Magnification	-0.0893

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
900mm	-0.08930	1.4664	1.4712
950mm	-0.08427	1.6337	1.6394
1000mm	-0.07978	1.8101	1.8166
1050mm	-0.07574	1.9954	2.0030
1100mm	-0.07210	2.1898	2.1985
1150mm	-0.06879	2.3931	2.4031
1200mm	-0.06577	2.6055	2.6169
1250mm	-0.06300	2.8269	2.8398
1300mm	-0.06046	3.0573	3.0718
1350mm	-0.05811	3.2967	3.3129



GA 1/1.8" 6M Series 600038

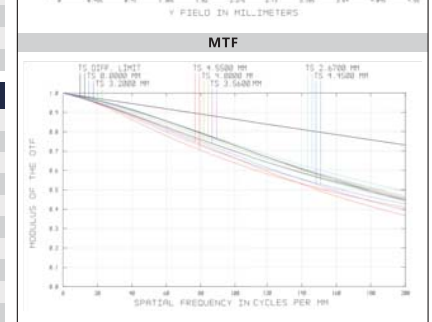
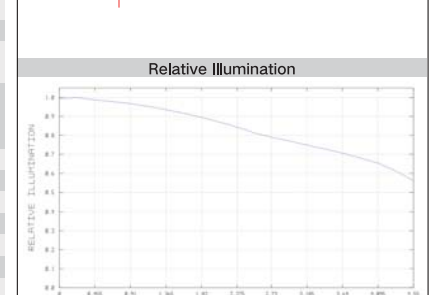
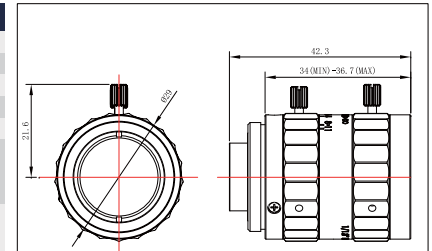
1/1.8" 6MP C M-Iris



Max. sensor Size 1/1.8"
Matching 2.2μm and 2.4μm small pixels
Compact design

No	Item	Specifications
1	Max. sensor size	1/1.8"(9.0mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F1.8-F11
5	Working Distance	0.1m - ∞
6	FOV(Diagonal X H X V)	1/1.8" 41.56° × 33.52° × 25.29°
		1/2.3" 36.61° × 29.47° × 22.20°
		1/2.5" 33.52° × 27.25° × 20.51°
7	Object Size (at the minimum focus distance)	1/1.8" 86.82 × 69.46 × 52.092mm
		1/2.3" 75.49 × 60.39 × 45.29mm
		1/2.5" 69.43 × 55.54 × 41.66mm
8	BFL(in air)	10.033mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1/1.8" -2.39%@y=4.5mm
		1/2.3" -1.85%@y=3.9mm
		1/2.5" -1.59%@y=3.6mm
11	Filter thread	M27.5 × 0.5mm
12	Lens Size(W X L)	36.6 × 42.3mm
13	Weight	51.1g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	22.299mm
16	Diameter of entrance pupil	6.675mm
17	Distance of exit pupil	-35.586mm
18	Diameter of exit pupil	19.780mm
19	Total optical length	54.533mm
20	Magnification	-0.10607

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.10607	0.448	0.452
150mm	-0.07358	1.0057	1.0194
200mm	-0.05633	1.7939	1.8163
250mm	-0.04563	2.7812	2.8445
300mm	-0.03834	3.966	4.1054
350mm	-0.03307	5.427	5.6007
400mm	-0.02906	7.0727	7.3319
450mm	-0.02593	8.9316	9.3008
500mm	-0.0234	11.0024	11.5089
550mm	-0.02132	13.2837	13.9579



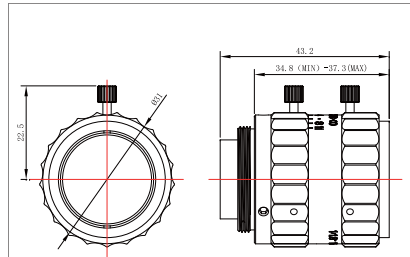
GA 1/1.8" 6M Series 600039

1/1.8" 6MP C M-Iris

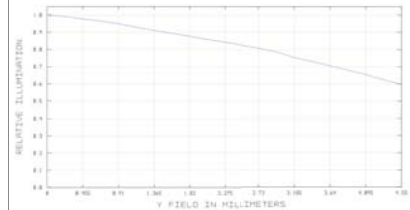


Max. sensor Size 1/1.8"
Matching 2.2 μm and 2.4 μm small pixels
Compact design

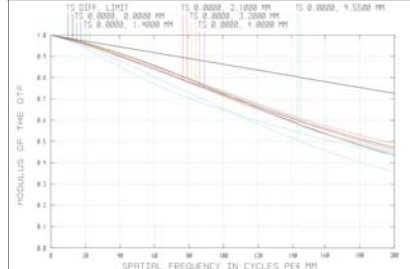
No	Item	Specifications
1	Max. sensor size	1/1.8"(9.0mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F1.8-F22
5	Working Distance	0.15m-∞
6	FOV(Diagonal X H X V)	1/1.8" 31.30° × 25.21° × 19.00°
		1/2.3" 27.55° × 22.15° × 16.68°
		1/2.5" 25.21° × 20.47° × 15.4°
7	Object Size (at the minimum focus distance)	1/1.8" 122.71 × 98.17 × 73.63mm
		1/2.3" 107.18 × 85.74 × 64.30mm
		1/2.5" 98.78 × 79.02 × 59.26mm
8	BFL(in air)	9.707mm
9	Operation	Focus Manual
		Aperture M-Iris
		1/1.8" -0.73%@y=4.5mm
10	Distortion	1/2.3" -0.57%@y=3.9mm
		1/2.5" -0.49%@y=3.6mm
		1/2.5" -0.49%@y=3.6mm
11	Filter thread	M27.5 × 0.5mm
12	Lens Size(W X L)	38.2x43.2mm
13	Weight	/
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	30.249mm
16	Diameter of entrance pupil	8.891mm
17	Distance of exit pupil	-32.3831mm
18	Diameter of exit pupil	17.99361mm
19	Total optical length	54.204mm
20	Magnification	-0.09563



Relative Illumination



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.09563	0.5674	0.5717
200mm	-0.07363	1.0074	1.0176
250mm	-0.05986	1.5721	1.5921
300mm	-0.05043	2.2609	2.2955
350mm	-0.04356	3.0735	3.1285
400mm	-0.03834	4.0094	4.0914
450mm	-0.03424	5.068	5.1848
500mm	-0.03093	6.249	6.4092
550mm	-0.0282	7.5519	7.7651
750mm	-0.02085	13.9731	14.5138

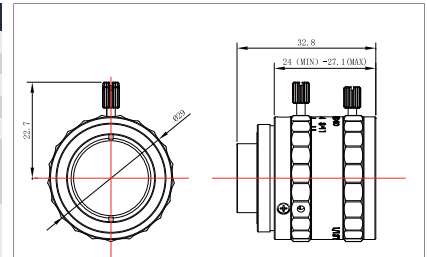
GA 1/1.8" 6M Series 600040

1/1.8" 6MP C M-Iris

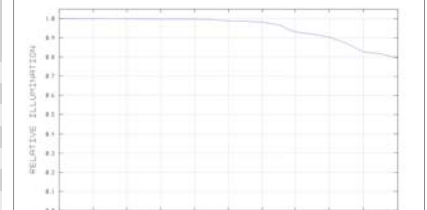


Max. sensor Size 1/1.8"
Matching 2.2 μm and 2.4 μm small pixels
Compact design

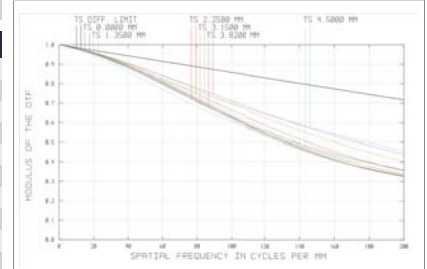
No	Item	Specifications
1	Max. sensor size	1/1.8"(9.0mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F1.8-F11
5	Working Distance	0.3m-∞
6	FOV(Diagonal X H X V)	1/1.8" 20.42° × 16.4° × 12.33°
		1/2.3" 17.74° × 14.23° × 10.69°
		1/2.5" 16.39° × 13.14° × 9.87°
7	Object Size (at the minimum focus distance)	1/1.8" 110.93 × 88.52 × 66.26mm
		1/2.3" 95.97 × 76.63 × 57.39mm
		1/2.5" 88.52 × 70.70 × 52.96mm
8	BFL(in air)	9.723mm
9	Operation	Focus Manual
		Aperture M-Iris
		1/1.8" -0.11%@y=4.5mm
10	Distortion	1/2.3" -0.09%@y=3.9mm
		1/2.5" -0.08%@y=3.6mm
		1/2.5" -0.08%@y=3.6mm
11	Filter thread	M27.5 × 0.5mm
12	Lens Size(W X L)	37.7 × 32.8mm
13	Weight	38.9g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	18.215mm
16	Diameter of entrance pupil	13.587mm
17	Distance of exit pupil	-50.154mm
18	Diameter of exit pupil	27.106mm
19	Total optical length	40.00mm
20	Magnification	-0.08176



Relative Illumination



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.08176	0.9302	0.9360
350mm	-0.07027	1.2655	1.2747
400mm	-0.06161	1.6520	1.6658
450mm	-0.05485	2.0898	2.1094
500mm	-0.04943	2.5786	2.6055
550mm	-0.04498	3.1185	3.1543
600mm	-0.04127	3.7094	3.7558
650mm	-0.03812	4.3512	4.4102
700mm	-0.03542	5.0437	5.1175
750mm	-0.03308	5.7870	5.8777



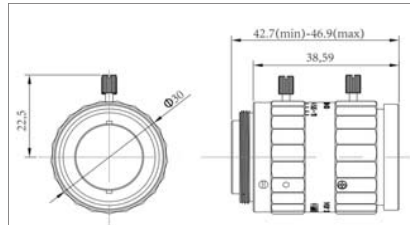
GA 1/1.8" 6M Series 600041

1/1.8" 6MP C M-Iris

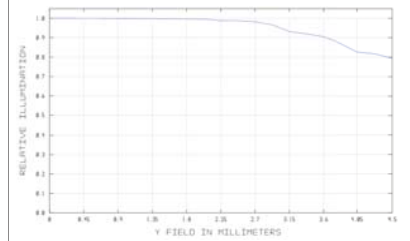


Max. sensor Size 1/1.8"
Matching 2.2μm and 2.4μm small pixels
Compact design

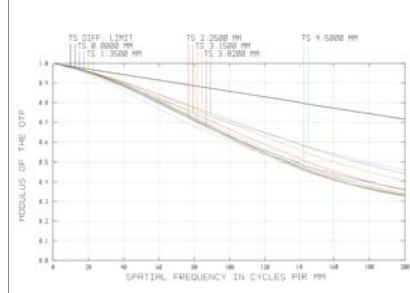
No	Item	Specifications
1	Max. sensor size	1/1.8"(9mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F2.0
5	Working Distance	0.3-∞
6	FOV(Diagonal X H X V)	1/1.8" 14.73° × 11.79° × 8.84°
		1/2.3" 12.75° × 10.2° × 7.65°
7	Object Size (at the minimum focus distance)	1/1.8" 79.01 × 63.21 × 47.41mm
		1/2.3" 68.08 × 54.47 × 40.85mm
8	BFL(in air)	1/2.5" 62.81 × 50.25 × 37.36mm
		12.2mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	1/1.8" -0.52%@y=4.5mm
		1/2.3" -0.47%@y=3.9mm
		1/2.5" -0.33%@y=3.59mm
11	Filter thread	M27.5 × 0.5mm
12	Lens Size(W X L)	38X46.9mm
13	Weight	/
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	32.497
16	Diameter of entrance pupil	18.7
17	Distance of exit pupil	-57.05
18	Diameter of exit pupil	28.38
19	Total optical length	49.82mm
20	Magnification	-0.112



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.112	0.528	0.53
350mm	-0.098	0.7185	0.7215
400mm	-0.085	0.9382	0.9426
450mm	-0.077	1.1871	1.1934
500mm	-0.068	1.4651	1.4737
550mm	-0.062	1.74	1.751
600mm	-0.057	2.07	2.084
650mm	-0.053	4.429	2.447
750mm	-0.046	3.232	3.26
1000mm	-0.034	5.737	5.804

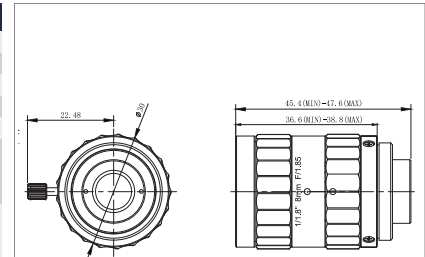
GA 1/1.8" 6M Series 600042

1/1.8" 6MP C M-Iris

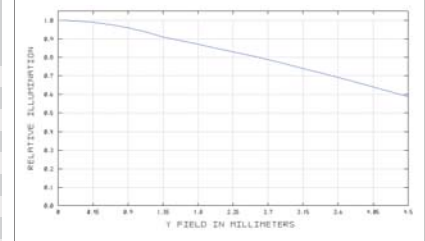


Max. sensor Size 1/1.8"
Matching 2.2μm and 2.4μm small pixels
Compact design

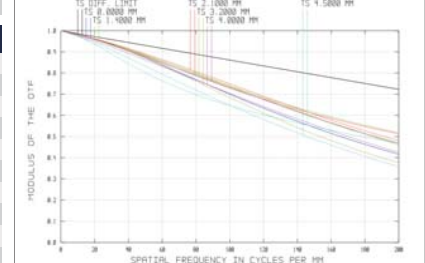
No	Item	Specifications
1	Max. sensor size	1/1.8"(9mm)
2	Focal Length	8mm
3	Mount	C-Mount
4	F/#	F1.8-F11
5	Working Distance	0.05m-∞
6	FOV(Diagonal X H X V)	1/1.8" 61.57° × 50.10° × 38.06°
		1/2.3" 54.00° × 43.74° × 33.12°
7	Object Size (at the minimum focus distance)	1/1.8" 76.92 × 61.53 × 46.15mm
		1/2.3" 65.49 × 52.39 × 39.29mm
8	BFL(in air)	1/2.5" 59.97 × 47.98 × 35.98mm
		10.062mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	1/1.8" -5.61%@y=4.5mm
		1/2.3" -4.37%@y=3.9mm
		1/2.5" -3.76%@y=3.6mm
11	Filter thread	M27 × 0.5mm
12	Lens Size(W X L)	37.3x45.7mm
13	Weight	/
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	15.052mm
16	Diameter of entrance pupil	4.450mm
17	Distance of exit pupil	-27.054mm
18	Diameter of exit pupil	15.046mm
19	Total optical length	50.69mm
20	Magnification	-0.12775



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
50mm	-0.12775	0.2518	0.2544
100mm	-0.07107	1.0023	1.0228
150mm	-0.04922	2.244	2.3132
200mm	-0.03765	3.9696	4.1337
250mm	-0.03048	6.1719	6.4925
300mm	-0.02561	8.8438	9.3979
350mm	-0.02208	11.9786	12.8588
400mm	-0.0194	15.5694	16.8838
450mm	-0.0173	19.6096	21.4819
500mm	-0.01562	24.0928	26.0622



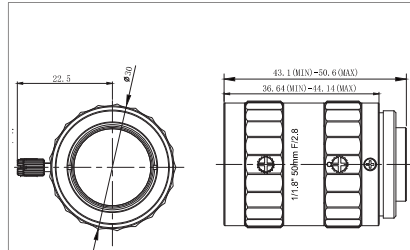
GA 1/1.8" 6M Series 600043

1/1.8" 6MP C M-Iris

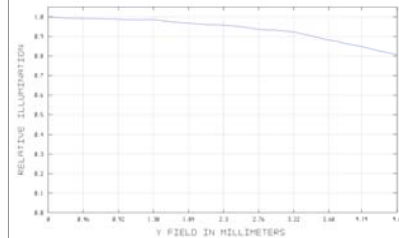


Max. sensor Size 1/1.8"
Matching 2.2 μm and 2.4 μm small pixels
Compact design

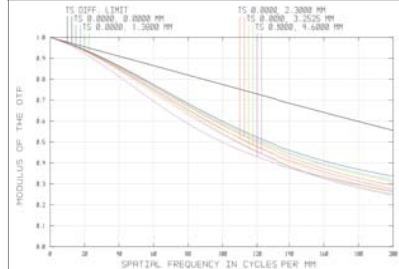
No	Item	Specifications
1	Max. sensor size	1/1.8"(9mm)
2	Focal Length	50mm
3	Mount	C-Mount
4	F/#	F2.8
5	Working Distance	0.3~∞m
6	FOV(Diagonal X H X V)	1/1.8" 10.31° × 8.26° × 6.18°
		1/2.3" 8.92° × 7.12° × 5.36°
		1/2.5" 8.16° × 5.72° × 4.92°
7	Object Size (at the minimum focus distance)	1/1.8" 44.75 × 35.80 × 26.85mm
		1/2.3" 38.79 × 31.03 × 23.25mm
		1/2.5" 35.70 × 28.56 × 21.42mm
8	BFL(In air)	11.938mm
9	Operation	Manual
	Aperture	M-Iris
10	Distortion	1/1.8" -0.055%@y=4.5mm
		1/2.3" -0.030%@y=3.9mm
		1/2.5" -0.020%@y=3.59mm
11	Filter thread	M27 × 0.5mm
12	Lens Size(W X L)	52.4 × 70.7mm
13	Weight	/
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	20.856mm
16	Diameter of entrance pupil	17.856mm
17	Distance of exit pupil	-54.092mm
18	Diameter of exit pupil	19.532mm
19	Total optical length	52.00mm
20	Magnification	-0.2010mm



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.20100	0.3623	0.3633
350mm	-0.16737	0.4932	0.4946
400mm	-0.14337	0.644	0.6461
450mm	-0.12539	0.815	0.8179
500mm	-0.11142	1.0059	1.0100
550mm	-0.10025	1.2169	1.2223
600mm	-0.09111	1.4481	1.45504
650mm	-0.0835	1.69906	1.70799
750mm	-0.07155	2.2611	2.2748
1000mm	-0.0527	4.0158	4.0483

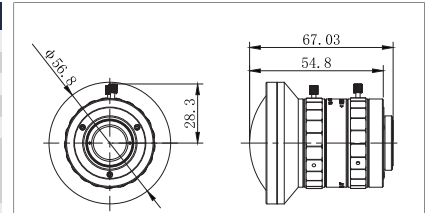
GA 1" 8M Series 600021

1" 8MP C M-Iris

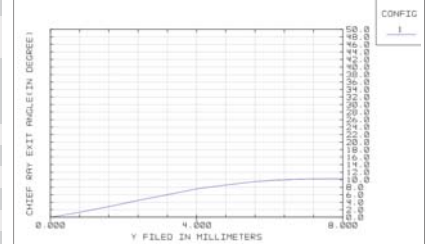


Max. sensor Size 1"
Compact design
High resolution

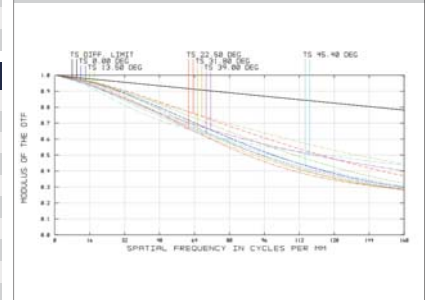
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	8mm
3	Mount	C-Mount
4	F/#	F1.8-F11C
5	Working Distance	0.3m~∞
6	FOV(Diagona X H X V)	1" 90.06° × 77.16° × 61.30°
		1/2" 52.26° × 42.58° × 32.40°
		1/3" 40.08° × 32.40° × 24.48°
7	Object Size (at the minimum focus distance)	1" 665.02 × 523.52 × 385.92mm
		1/2" 318.64 × 252.68 × 188.08mm
		1/3" 236.42 × 188.08 × 140.42mm
8	BFL(In air)	12.7mm
9	Operation	Manual
	Aperture	M-Iris
10	Distortion	1" -4.12%@y=8.0mm
		1/2" -2.14%@y=4.0mm
		1/3" -1.34%@y=3.0mm
11	Filter thread	/
12	Lens Size(W X L)	56.8 × 67.03mm
13	Weight	76.6g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	22.92mm
16	Diameter of entrance pupil	4.51mm
17	Distance of exit pupil	-36.72mm
18	Diameter of exit pupil	20.49mm
19	Total optical length	80.26mm
20	Magnification	-0.02581



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.02581	11.8397	12.8543
350mm	-0.02235	16.0099	17.6220
400mm	-0.01971	20.7751	23.1832
450mm	-0.01763	26.1239	29.5554
500mm	-0.01595	32.0450	36.7564
550mm	-0.01456	38.5275	44.8046
600mm	-0.01339	45.5608	53.7190
650mm	-0.01240	53.1344	63.5192
700mm	-0.01154	61.2382	74.2251
750mm	-0.01079	69.8624	85.8577



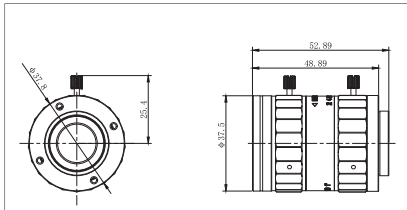
GA 1" 8M Series 60022

1" 8MP C M-Iris

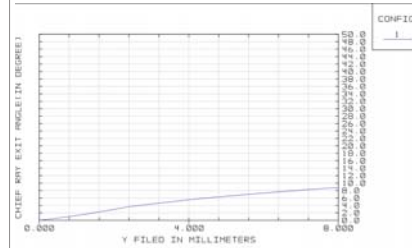


Max.sensor Size 1"
Compact design
High resolution

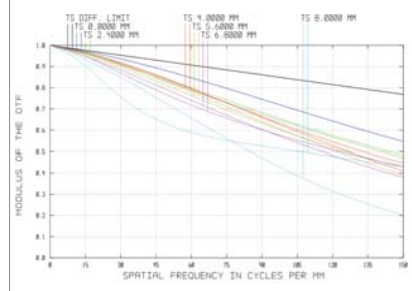
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.1m-∞
6	FOV(Diagonal X H X V)	1" 69.63° × 60.71° × 44.33°
		1/2" 37.32° × 30.11° × 22.74°
		1/3" 28.28° × 22.74° × 17.12°
7	Object Size (at the minimum focus distance)	1" 155.01 × 130.05 × 90.30mm
		1/2" 74.93 × 59.76 × 44.73mm
		1/3" 55.99 × 44.73 × 33.51mm
8	BFL(in air)	15.07mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" -4.10%@y=8.0mm
		1/2" -1.27%@y=4.0mm
		1/3" -0.74%@y=3.0mm
11	Filter thread	M35.5 × 0.5mm
12	Lens Size(W X L)	44.2 × 52.9mm
13	Weight	/
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	14.08mm
16	Diameter of entrance pupil	5.85mm
17	Distance of exit pupil	-50.64mm
18	Diameter of exit pupil	24.71mm
19	Total optical length	65.34mm
20	Magnification	-0.1079



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.10793	0.7034	0.7134
150mm	-0.07439	1.5770	1.6109
200mm	-0.05677	2.7938	2.8740
250mm	-0.04590	4.3501	4.5069
300mm	-0.03853	6.2424	6.5134
350mm	-0.03320	8.4672	8.8977
400mm	-0.02916	11.0211	11.6638
450mm	-0.02600	13.9007	14.8160
500mm	-0.02346	17.1026	18.3585
550mm	-0.02137	20.6236	22.2957

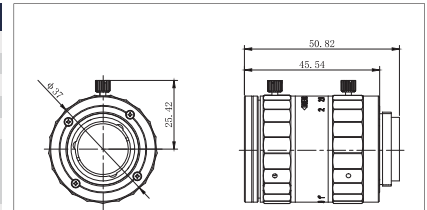
GA 1" 8M Series 60023

1" 8MP C M-Iris

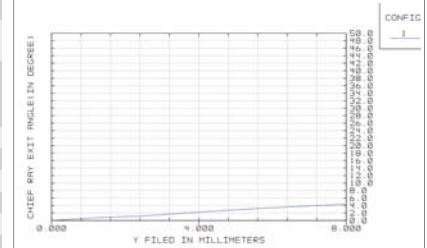


Max.sensor Size 1"
Compact design
High resolution

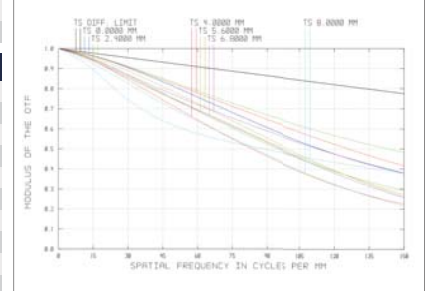
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.1m-∞
6	FOV(Diagonal X H X V)	1" 53.7° × 43.9° × 33.4°
		1/2" 28.0° × 22.5° × 17.0°
		1/3" 21.1° × 17.0° × 12.7°
7	Object Size (at the minimum focus distance)	1" 112.45 × 89.08 × 66.23mm
		1/2" 54.99 × 43.86 × 32.82mm
		1/3" 41.09 × 33.22 × 24.58mm
8	BFL(in air)	11.19mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" -2.22%@y=8.0mm
		1/2" -0.72%@y=4.0mm
		1/3" -0.42%@y=3.0mm
11	Filter thread	M34 × 0.5mm
12	Lens Size(W X L)	43.92 × 50.8mm
13	Weight	151g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	11.21mm
16	Diameter of entrance pupil	8.08mm
17	Distance of exit pupil	-83.37mm
18	Diameter of exit pupil	41.70mm
19	Total optical length	59.78mm
20	Magnification	-0.1468



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.14682	0.3969	0.4000
150mm	-0.10070	0.8912	0.9019
200mm	-0.07669	1.5812	1.6066
250mm	-0.06194	2.4657	2.5153
300mm	-0.05196	3.5436	3.6293
350mm	-0.04475	4.8137	4.9499
400mm	-0.03930	6.2750	6.4782
450mm	-0.03503	7.9262	8.2157
500mm	-0.03161	9.7664	10.1634
550mm	-0.02879	11.7943	12.3228



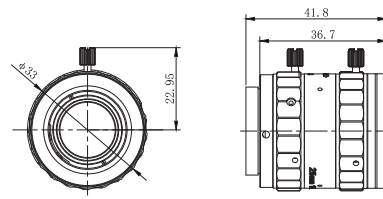
GA 1" 8M Series 60024

1" 8MP C M-Iris

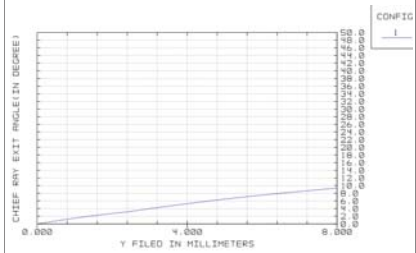


Max. sensor Size 1"
Compact design
High resolution

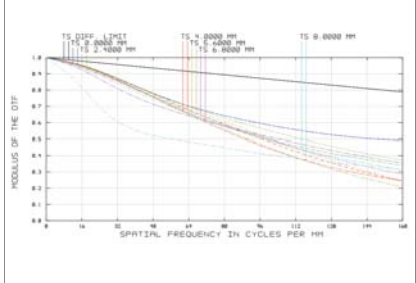
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F1.8-F16C
5	Working Distance	0.15m-∞
6	FOV(Diagonal X H X V)	1" 36.0° × 29.0° × 21.9°
		1/2" 18.3° × 14.6° × 11.0°
		1/3" 13.7° × 11.0° × 8.2°
7	Object Size (at the minimum focus distance)	1" 92.1 × 73.2 × 54.6mm
		1/2" 45.4 × 36.3 × 27.2mm
		1/3" 34.0 × 27.2 × 20.4mm
8	BFL(in air)	12.68mm
9	Operation	Focus Manual Aperture M-Iris
	Distortion	1" -1.53%@y=8.0mm 1/2" -0.38%@y=4.0mm 1/3" -0.22%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	39.25 × 41.8mm
13	Weight	87.02g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	17.80mm
16	Diameter of entrance pupil	13.89mm
17	Distance of exit pupil	-34.97mm
18	Diameter of exit pupil	19.43mm
19	Total optical length	48.94mm
20	Magnification	-0.1769



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.17694	0.3298	0.3312
200mm	-0.13091	0.5858	0.5893
250mm	-0.10351	0.9146	0.9214
300mm	-0.08582	1.3161	1.3278
350mm	-0.07318	1.7901	1.8086
400mm	-0.06394	2.3364	2.3640
450mm	-0.05678	2.9548	2.9941
500mm	-0.05086	3.6452	3.6992
550mm	-0.04624	4.4075	4.4793
600mm	-0.04222	5.2415	5.3347

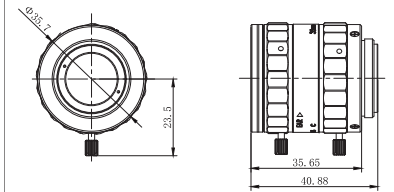
GA 1" 8M Series 60025

1" 8MP C M-Iris

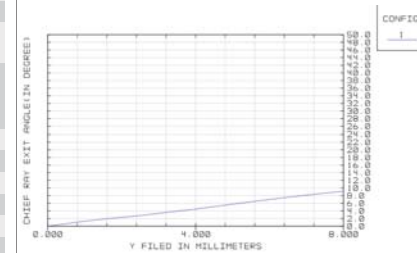


Max. sensor Size 1"
Compact design
High resolution

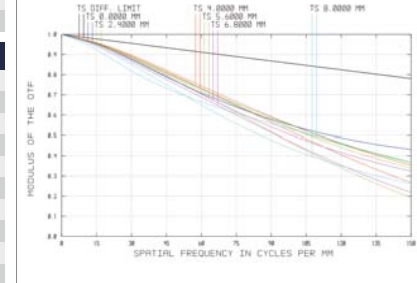
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F2.0-F11C
5	Working Distance	0.2m-∞
6	FOV(Diagonal X H X V)	1" 25.7° × 20.7° × 15.6°
		1/2" 13.1° × 10.5° × 7.9°
		1/3" 9.8° × 7.9° × 5.9°
7	Object Size (at the minimum focus distance)	1" 81.0 × 64.8 × 48.5mm
		1/2" 40.4 × 32.4 × 24.3mm
		1/3" 30.3 × 24.3 × 18.2mm
8	BFL(in air)	12.96mm
9	Operation	Focus Manual Aperture M-Iris
	Distortion	1" 0.33%@y=8.0mm 1/2" 0.08%@y=4.0mm 1/3" 0.05%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	40.88 × 42.4mm
13	Weight	/
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	20.42mm
16	Diameter of entrance pupil	17.46mm
17	Distance of exit pupil	-39.65mm
18	Diameter of exit pupil	19.83mm
19	Total optical length	49.58mm
20	Magnification	-0.1982



CRA



MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
200mm	-0.19823	0.3325	0.3336
250mm	-0.15440	0.5193	0.5215
300mm	-0.12644	0.7475	0.7513
350mm	-0.10706	1.0170	1.0230
400mm	-0.09283	1.3278	1.3367
450mm	-0.08194	1.6798	1.6925
500mm	-0.07333	2.0730	2.0903
550mm	-0.06636	2.5073	2.5304
600mm	-0.06060	2.9826	3.0126
650mm	-0.05576	3.4990	3.5371



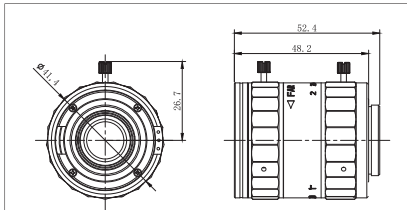
GA 1" 8M Series 600026

1" 8MP C M-Iris

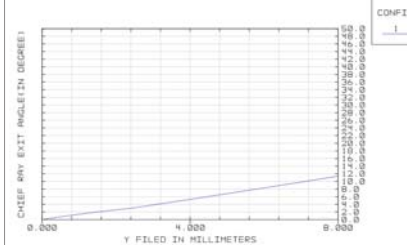


Max. sensor Size 1"
Compact design
High resolution

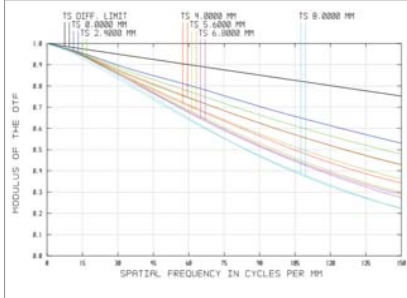
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	50mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.25m-∞
6	FOV(Diagonal X H X V)	1" 18.18° × 14.60° × 10.96°
		1/2" 9.14° × 7.32° × 5.5°
		1/3" 6.86° × 5.5° × 4.12°
7	Object Size (at the minimum focus distance)	1" 72.40 × 57.84 × 43.34mm
		1/2" 36.10 × 28.74 × 21.66mm
		1/3" 27.06 × 21.64 × 16.24mm
8	BFL(in air)	21.35mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" -0.011%@y=8.0mm
		1/2" 0.012%@y=4.0mm
		1/3" 0.008%@y=3.0mm
11	Filter thread	M37 × 0.5
12	Lens Size(W X L)	47.7 × 52.4mm
13	Weight	120.4g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	35.64mm
16	Diameter of entrance pupil	22.22mm
17	Distance of exit pupil	-37.95mm
18	Diameter of exit pupil	16.84mm
19	Total optical length	54.56mm
20	Magnification	-0.2219



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MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
250mm	-0.2219487	0.2908	0.2914
300mm	-0.1812797	0.4186	0.4198
350mm	-0.153268	0.5696	0.5715
400mm	-0.1327858	0.7438	0.7466
450mm	-0.117156	0.9412	0.9451
500mm	-0.1048327	1.1617	1.1671
550mm	-0.09486211	1.4053	1.4125
600mm	-0.08662802	1.6720	1.6814
650mm	-0.07971303	1.9619	1.9738
700mm	-0.07382332	2.2748	2.2896

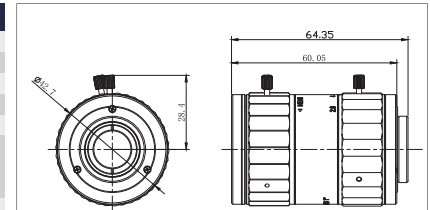
GA 1" 8M Series 600033

1" 8MP C M-Iris

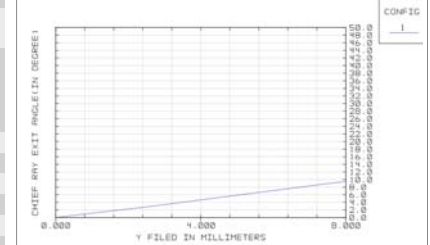


Max. sensor Size 1"
Compact design
High resolution

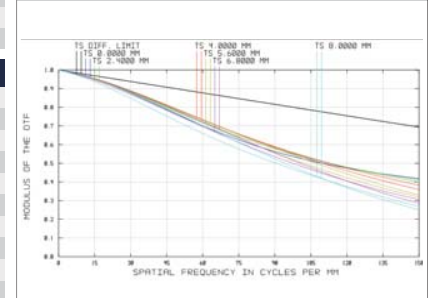
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	75mm
3	Mount	C-Mount
4	F/#	F2.8-F22
5	Working Distance	0.5m-∞
6	FOV(Diagonal X H X V)	1" 12.2° × 9.8° × 7.3°
		1/2" 6.1° × 4.9° × 3.7°
		1/3" 4.6° × 3.7° × 2.8°
7	Object Size (at the minimum focus distance)	1" 89.2 × 71.36 × 53.5mm
		1/2" 44.8 × 35.8 × 26.9mm
		1/3" 33.6 × 26.9 × 20.2mm
8	BFL(in air)	23.15mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" 0.75%@y=8.0mm
		2/3" 0.35%@y=5.5mm
		1/2" 0.18%@y=4.0mm
11	Filter thread	1" 0.11%@y=3.0mm
		2/3" 0.11%@y=3.0mm
		1/3" 0.11%@y=3.0mm
11	Filter thread	M39 × 0.5
12	Lens Size(W X L)	49.75 × 64.35
13	Weight	187g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	33.48mm
16	Diameter of entrance pupil	26.65mm
17	Distance of exit pupil	-48.22mm
18	Diameter of exit pupil	17.42mm
19	Total optical length	76.75mm
20	Magnification	-0.1781



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MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
500mm	-0.17806	0.6339	0.6355
550mm	-0.15908	0.7669	0.7690
600mm	-0.14376	0.9125	0.9153
650mm	-0.13112	1.0708	1.0744
700mm	-0.12054	1.2417	1.2462
750mm	-0.11153	1.4253	1.4307
800mm	-0.10377	1.6215	1.6281
850mm	-0.09703	1.8302	1.8382
900mm	-0.09110	2.0516	2.0610
950mm	-0.08586	2.2856	2.2967



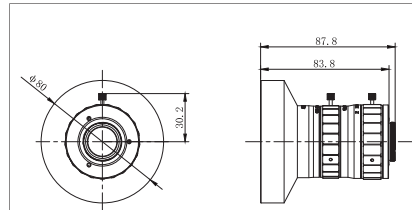
GA 4/3" 10M Series 600016

4/3" 10MP C M-Iris

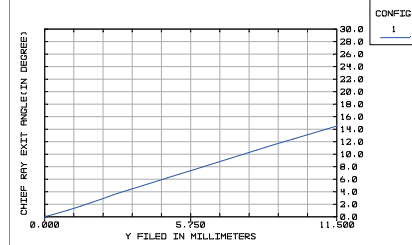


10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

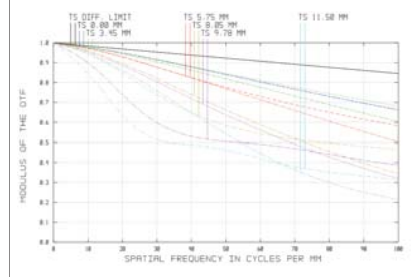
No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.15m ~ ∞
6	FOV(Diagonal X H X V)	4/3" 89.0° × 75.5° × 61.1°
		1" 68.9° × 57.3° × 44.2°
		1/2" 37.3° × 30.1° × 22.7°
		1/3" 28.3° × 22.7° × 17.1°
7	Object Size (at the minimum focus distance)	4/3" 319.0 × 262.6 × 204.3mm
		1" 235.5 × 189.9 × 143.2mm
		1/2" 119.6 × 95.8 × 72.0mm
		1/3" 89.9 × 72.0 × 54.0mm
8	BFL(in air)	18.93mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -2.40%@y=11.5mm
		1" -1.78%@y=8.0mm
		1/2" -1.04%@y=4.0mm
		1/3" -0.62%@y=3.0mm
11	Filter thread	M77.0 × 0.75mm
12	Lens Size(W X L)	80.0 × 87.8mm
13	Weight	447g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	24.00mm
16	Diameter of entrance pupil	6.00mm
17	Distance of exit pupil	-53.51mm
18	Diameter of exit pupil	26.76mm
19	Total optical length	95.34mm
20	Magnification	-0.0692



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MTF



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.06917	2.2798	2.3513
200mm	-0.05367	4.0325	4.2020
250mm	-0.04385	6.2692	6.6002
300mm	-0.03701	8.9826	9.5548
350mm	-0.03210	12.1660	13.0750
400mm	-0.02831	15.8110	17.1690
450mm	-0.02532	19.9130	21.8460
500mm	-0.02290	24.4630	27.1170
550mm	-0.02090	29.4570	32.9900
600mm	-0.01923	34.8860	39.4760

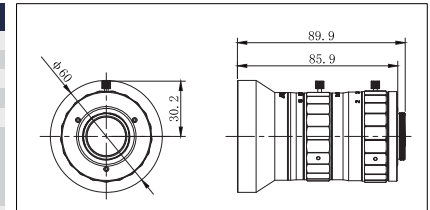
GA 4/3" 10M Series 600017

4/3" 10MP C M-Iris

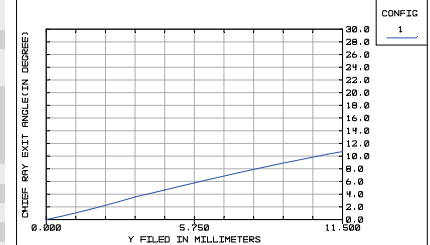


10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

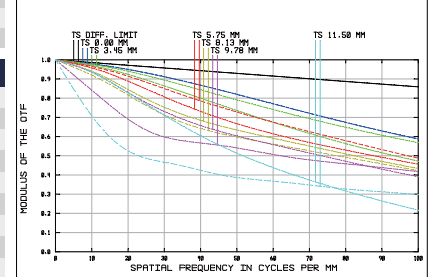
No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.1m ~ ∞
6	FOV(Diagonal X H X V)	4/3" 72.9° × 60.9° × 47.3°
		1" 54.0° × 44.2° × 33.6°
		1/2" 28.2° × 22.7° × 17.1°
		1/3" 21.3° × 17.1° × 12.8°
7	Object Size (at the minimum focus distance)	4/3" 195.5 × 145.5 × 107.3mm
		1" 125.4 × 99.2 × 73.8mm
		1/2" 61.2 × 48.8 × 36.5mm
		1/3" 45.7 × 36.5 × 27.4mm
8	BFL(in air)	21.00mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -2.81%@y=11.5mm
		1" -1.92%@y=8.0mm
		1/2" -0.59%@y=4.0mm
		1/3" -0.34%@y=3.0mm
11	Filter thread	M58.0 × 0.75mm
12	Lens Size(W X L)	60.2 × 89.9mm
13	Weight	338g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	23.83mm
16	Diameter of entrance pupil	8.01mm
17	Distance of exit pupil	-67.17mm
18	Diameter of exit pupil	34.78mm
19	Total optical length	99.94mm
20	Magnification	-0.132



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Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.13198	0.5709	0.5775
150mm	-0.09333	1.2810	1.3032
200mm	-0.07224	2.2708	2.3236
250mm	-0.05892	3.5381	3.6411
300mm	-0.04973	5.0805	5.2586
350mm	-0.04307	6.8956	7.1784
400mm	-0.03796	8.9812	9.4035
450mm	-0.03393	11.3350	11.9364
500mm	-0.03068	13.9548	14.7798
550mm	-0.02800	16.8383	17.9366



GA 4/3" 10M Series 600018

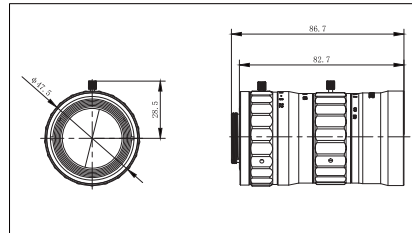
4/3" 10MP C M-Iris



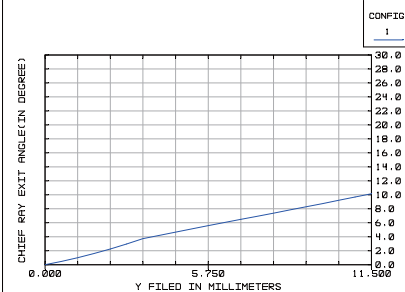
10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.15m ~ ∞
6	FOV(Diagonal X H X V)	4/3" 49.7° × 40.6° × 31.0°
		1" 35.7° × 28.8° × 21.8°
		1/2" 18.2° × 14.6° × 11.0°
		1/3" 13.7° × 11.0° × 8.2°
7	Object Size (at the minimum focus distance)	4/3" 157.7 × 125.7 × 93.9mm
		1" 109.1 × 87.1 × 65.2mm
		1/2" 54.3 × 43.4 × 32.5mm
		1/3" 40.8 × 32.6 × 24.5mm
8	BFL(in air)	22.43mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -0.66%@y=11.5mm
		1" -0.50%@y=8.0mm
		1/2" -0.16%@y=4.0mm
		1/3" -0.09%@y=3.0mm
11	Filter thread	M46.0 × 0.75mm
12	Lens Size(W X L)	51.8 × 86.7mm
13	Weight	251g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	25.29mm
16	Diameter of entrance pupil	12.58mm
17	Distance of exit pupil	-74.35mm
18	Diameter of exit pupil	37.42mm
19	Total optical length	96.85mm
20	Magnification	-0.1479

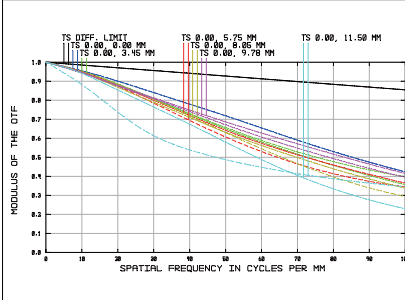
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.14790	0.5275	0.5313
200mm	-0.11394	0.9367	0.9456
250mm	-0.09271	1.4619	1.4792
300mm	-0.07817	2.1027	2.1326
350mm	-0.06758	2.8586	2.9061
400mm	-0.05952	3.7294	3.8003
450mm	-0.05318	4.7145	4.8154
500mm	-0.04806	5.8136	5.9520
550mm	-0.04385	7.0263	7.2105
600mm	-0.04031	8.3522	8.5914



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GA 4/3" 10M Series 600019

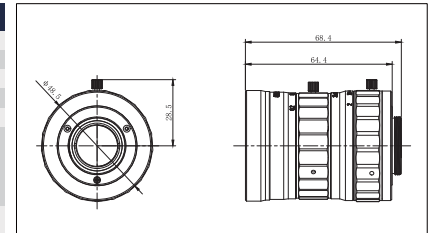
4/3" 10MP C M-Iris



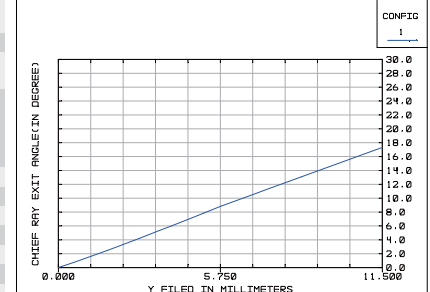
10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.2m ~ ∞
6	FOV(Diagonal X H X V)	4/3" 36.6° × 29.6° × 22.4°
		1" 25.9° × 20.8° × 15.7°
		1/2" 13.1° × 10.5° × 7.9°
		1/3" 9.8° × 7.9° × 5.9°
7	Object Size (at the minimum focus distance)	4/3" 120.9 × 96.7 × 72.4mm
		1" 84.0 × 67.2 × 50.3mm
		1/2" 41.9 × 33.5 × 25.1mm
		1/3" 31.5 × 25.2 × 18.9mm
8	BFL(in air)	18.65mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -0.56%@y=11.5mm
		1" -0.43%@y=8.0mm
		1/2" -0.13%@y=4.0mm
		1/3" -0.07%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W X L)	52.5 × 72.3mm
13	Weight	173g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	19.82mm
16	Diameter of entrance pupil	17.50mm
17	Distance of exit pupil	-42.34mm
18	Diameter of exit pupil	21.17mm
19	Total optical length	64.67mm
20	Magnification	-0.1914

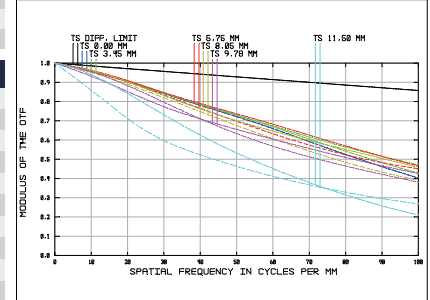
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
200mm	-0.19138	0.4789	0.4812
250mm	-0.15030	0.7478	0.7523
300mm	-0.12374	1.0761	1.0839
350mm	-0.10516	1.4639	1.4762
400mm	-0.09143	1.9108	1.9293
450mm	-0.08087	2.4169	2.4432
500mm	-0.07250	2.9821	3.0181
550mm	-0.06569	3.6062	3.6541
600mm	-0.06006	4.2891	4.3513
650mm	-0.05532	5.0308	5.1099



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MTF



GA 4/3" 10M Series 60020

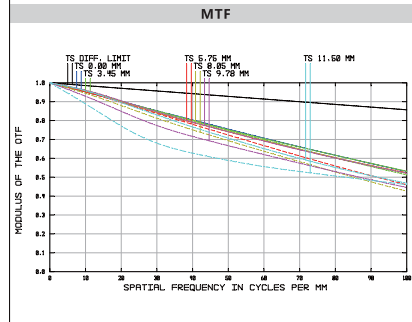
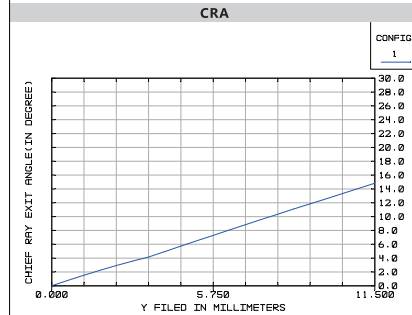
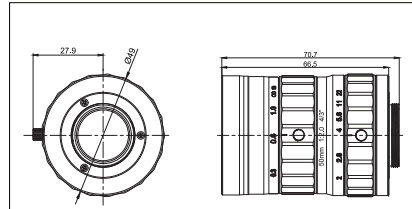
4/3" 10MP C M-Iris



10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	50mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	0.3m-∞
6	FOV(Diagonal X H X V)	4/3" 25.9° × 20.9° × 15.7°
		1" 18.2° × 14.6° × 11.0°
		1/2" 9.1° × 7.3° × 5.5°
		1/3" 6.9° × 5.5° × 4.1°
7	Object Size (at the minimum focus distance)	4/3" 118.8 × 95.0 × 71.2mm
		1" 82.6 × 66.0 × 49.5mm
		1/2" 41.3 × 33.0 × 24.8mm
		1/3" 31.0 × 24.8 × 18.6mm
8	BFL(in air)	20.29mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -0.14%@y=11.5mm
		1" -0.05%@y=8.0mm
		1/2" -0.01%@y=4.0mm
		1/3" -0.005%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W X L)	51.9 × 70.7mm
13	Weight	170g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	33.38mm
16	Diameter of entrance pupil	25.03mm
17	Distance of exit pupil	-40.77mm
18	Diameter of exit pupil	20.41mm
19	Total optical length	66.30mm
20	Magnification	-0.1942

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.19420	0.5283	0.5301
350mm	-0.16262	0.7188	0.7218
400mm	-0.13988	0.9386	0.9430
450mm	-0.12271	1.1876	1.1939
500mm	-0.10930	1.4657	1.4743
550mm	-0.09852	1.7730	1.7845
600mm	-0.08969	2.1094	2.1243
650mm	-0.08231	2.4748	2.4938
700mm	-0.07604	2.8694	2.8931
750mm	-0.07067	3.2930	3.3222



GA 4/3" 10M Series 60035

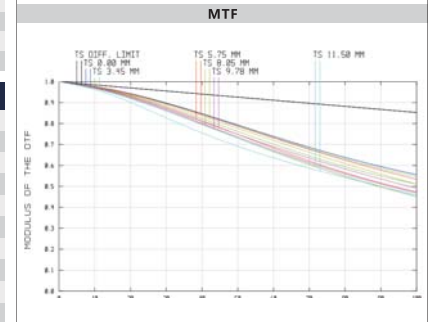
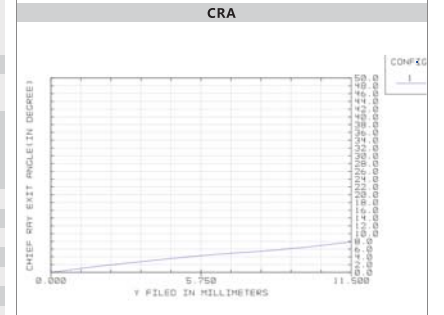
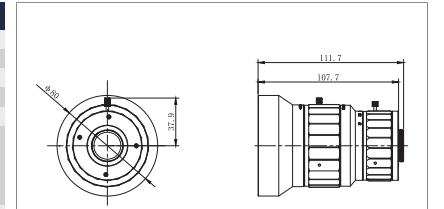
4/3" 10MP C M-Iris



10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	85mm
3	Mount	C-Mount
4	F/#	F2.0-F22
5	Working Distance	1.2m-∞
6	FOV(Diagonal X H X V)	4/3" 15.41° × 12.09° × 9.28°
		1" 10.75° × 8.61° × 6.46°
		1/2" 5.39° × 4.31° × 3.24°
		1/3" 4.04° × 3.24° × 2.43°
7	Object Size (at the minimum focus distance)	4/3" 309.7 × 241.98 × 185.43mm
		1" 215.23 × 171.94 × 128.82mm
		1/2" 107.31 × 85.82 × 64.35mm
		1/3" 80.45 × 64.35 × 48.26mm
8	BFL(in air)	24.5mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" 0.04%@y=11.5mm
		1" 0.05%@y=8.0mm
		1/2" 0.02%@y=4.0mm
		1/3" 0.01%@y=3.0mm
11	Filter thread	M77.0 × 0.75mm
12	Lens Size(W X L)	φ80 × 115.7mm
13	Weight	687g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	115.09mm
16	Diameter of entrance pupil	42.49mm
17	Distance of exit pupil	-60.98mm
18	Diameter of exit pupil	30.37mm
19	Total optical length	113.90mm
20	Magnification	-0.0746

Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1200mm	-0.07463	2.9227	2.9370
1250mm	-0.07150	3.1710	3.1872
1300mm	-0.06861	3.4294	3.4476
1350mm	-0.06595	3.6979	3.7183
1400mm	-0.06348	3.9765	3.9992
1450mm	-0.06120	4.2652	4.2904
1500mm	-0.05907	4.5639	4.5919
1550mm	-0.05709	4.8728	4.9036
1600mm	-0.05523	5.1917	5.2256
1650mm	-0.05349	5.5207	5.5579



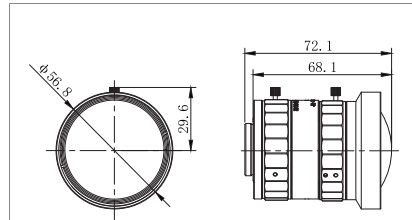
GA 4/3" 10M Series 600037

4/3" 10MP C M-Iris

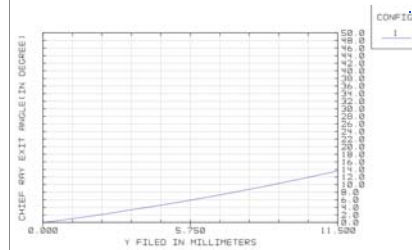


10M fixed focal length lens
C-mount
Max.sensor size 4/3"
Matching Large Sensor

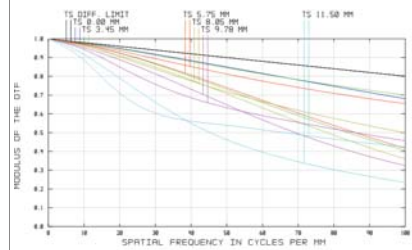
No	Item	Specifications
1	Max. sensor size	4/3"(23mm)
2	Focal Length	8.5mm
3	Mount	C-Mount
4	F/#	F2.8-F22
5	Working Distance	0.5m-∞
6	FOV(Diagonal X H X V)	4/3" 107.4° × 94.9° × 77.9°
		1" 86.7° × 73.6° × 58.0°
		1/2" 49.4° × 40.2° × 30.5°
		1/3" 37.8° × 30.5° × 23.7°
7	Object Size (at the minimum focus distance)	4/3" 1436.8 × 1145.9 × 848.6mm
		1" 990.8 × 784.1 × 580.7mm
		1/2" 480.9 × 382.6 × 285.6mm
		1/3" 358.2 × 285.6 × 213.6mm
8	BFL(in air)	18.87mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	4/3" -4.54%@y=11.5mm
		1" -4.22%@y=8.0mm
		1/2" -1.63%@y=4.0mm
		1/3" -0.97%@y=3.0mm
11	Filter thread	/
12	Lens Size(W X L)	58.0 × 72.1mm
13	Weight	317g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	3.16mm
16	Diameter of entrance pupil	19.14mm
17	Distance of exit pupil	-70.27mm
18	Diameter of exit pupil	25.65mm
19	Total optical length	85.64mm
20	Magnification	-0.0171



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Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
500mm	-0.01709	58.6458	76.6195
550mm	-0.01558	70.1388	94.1524
600mm	-0.01432	82.5144	113.8204
650mm	-0.01325	95.7425	135.7266
700mm	-0.01233	109.7947	159.9803
750mm	-0.01153	124.6433	186.6987
800mm	-0.01082	140.2624	216.0063
850mm	-0.01020	156.6268	248.0366
900mm	-0.00964	173.7125	282.9322
950mm	-0.00915	191.4966	320.8459

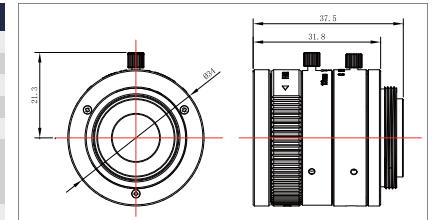
2/3" 2M Series 600000

2/3" 2MP C M-Iris

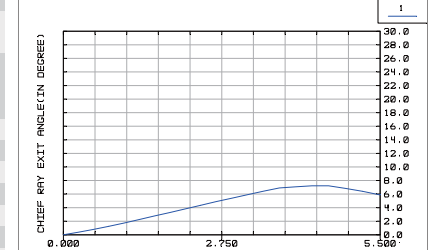


2M fixed focal length lens
C-mount ,Max.sensor size 2/3"

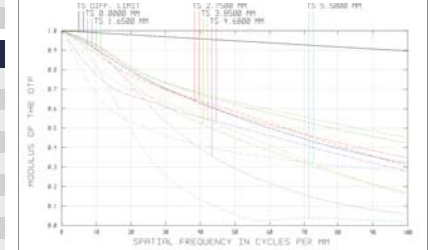
No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F1.4-C
5	Working Distance	0.15m - ∞
6	FOV(Diagonal x H x V)	2/3" 49.0° × 40.0° × 30.3°
		1/2" 36.5° × 29.4° × 22.2°
		1/3" 27.6° × 22.2° × 16.7°
7	Object Size (at the minimum focus distance)	2/3" 152.1 × 120.3 × 89.3mm
		1/2" 108.9 × 86.6 × 64.6mm
		1/3" 81.0 × 64.6 × 48.3mm
8	BFL(in air)	12.70mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	2/3" -1.8%@y=5.5mm
		1/2" -1.25%@y=4.0mm
		1/3" -0.78%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W x L)	38.3 × 37.5mm
13	Weight	71g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	17.87mm
16	Diameter of entrance pupil	8.60mm
17	Distance of exit pupil	-40.98mm
18	Diameter of exit pupil	28.39mm
19	Total optical length	46.20mm
20	Magnification	-0.075



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Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.07489	1.3850	1.4634
200mm	-0.05747	4.2177	4.4034
250mm	-0.04659	6.5556	6.9184
300mm	-0.03918	9.3908	10.0180
350mm	-0.03380	12.7160	13.7120
400mm	-0.02972	16.5220	18.0100
450mm	-0.02651	20.8040	22.9230
500mm	-0.02394	25.5520	28.6410
550mm	-0.02181	30.7610	34.6350
600mm	-0.02004	36.4230	41.4560



2/3" 2M Series 600001

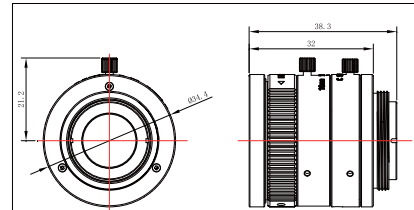
2/3" 2MP C M-Iris



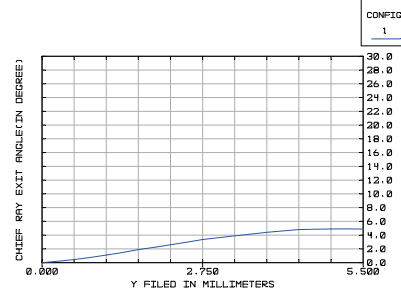
2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F1.4-C
5	Working Distance	0.3m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 37.6° × 30.4° × 22.9°
		1/2" 27.7° × 22.3° × 16.8°
		1/3" 20.9° × 16.8° × 12.6°
7	Object Size (at the minimum focus distance)	2/3" 215.2 × 170.9 × 127.5mm
		1/2" 155.1 × 123.6 × 92.4mm
		1/3" 115.8 × 92.4 × 69.2mm
8	BFL(in air)	12.67mm
9	Operation	Manual
	Aperture	M-Iris
10	Distortion	2/3" -1.00%@y=5.5mm
		1/2" -0.65%@y=4.0mm
		1/3" -0.39%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	38.2 × 38.5mm
13	Weight	76g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	16.09mm
16	Diameter of entrance pupil	11.43mm
17	Distance of exit pupil	-85.83mm
18	Diameter of exit pupil	60.59mm
19	Total optical length	46.10mm
20	Magnification	-0.0522

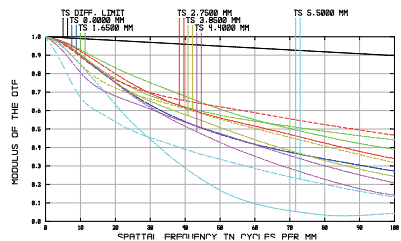
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.05219	5.3965	5.5979
350mm	-0.04500	7.3232	7.6431
400mm	-0.03955	9.5365	10.0140
450mm	-0.03528	12.0340	12.7140
500mm	-0.03184	14.8130	15.7450
550mm	-0.02901	17.8700	19.1120
600mm	-0.02665	21.2040	22.8170
650mm	-0.02463	24.8130	26.8640
700mm	-0.0229	28.6930	31.2550
750mm	-0.02141	32.8420	35.9940



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2/3" 2M Series 600002

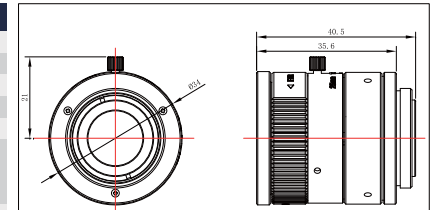
2/3" 2MP C M-Iris



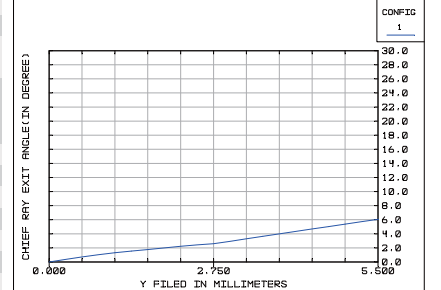
2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F1.4-C
5	Working Distance	0.25m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 24.7° × 19.9° × 15.0°
		1/2" 18.1° × 14.6° × 11.0°
		1/3" 13.7° × 11.0° × 8.2°
7	Object Size (at the minimum focus distance)	2/3" 117.9 × 94.1 × 70.4mm
		1/2" 85.5 × 68.3 × 51.1mm
		1/3" 64.0 × 51.1 × 38.3mm
8	BFL(in air)	13.60mm
9	Operation	Manual
	Aperture	M-Iris
10	Distortion	2/3" 0.27%@y=5.5mm
		1/2" 0.1%@y=4.0mm
		1/3" 0.04%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	38 × 40.5mm
13	Weight	83g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	32.27mm
16	Diameter of entrance pupil	17.88mm
17	Distance of exit pupil	-40.30mm
18	Diameter of exit pupil	28.79mm
19	Total optical length	53.76mm
20	Magnification	-0.0939

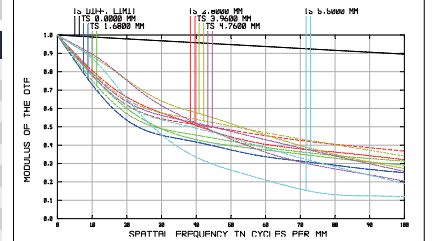
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
250mm	-0.09387	1.5813	1.6015
300mm	-0.07905	2.2742	2.0392
350mm	-0.06827	3.0915	3.1471
400mm	-0.06008	4.0328	4.1157
450mm	-0.05364	5.0975	5.2157
500mm	-0.04845	6.2853	6.4474
550mm	-0.04418	7.5957	7.8115
600mm	-0.04060	9.0282	9.3083
650mm	-0.03755	10.5820	10.9380
700mm	-0.03493	12.2580	12.7020



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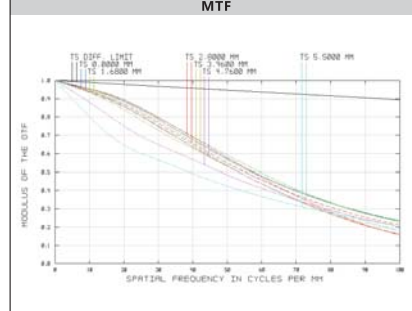
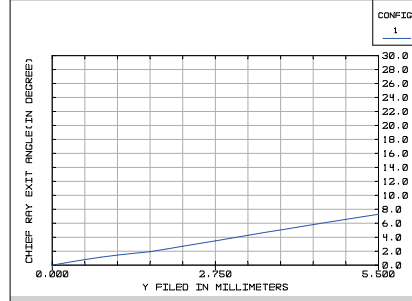
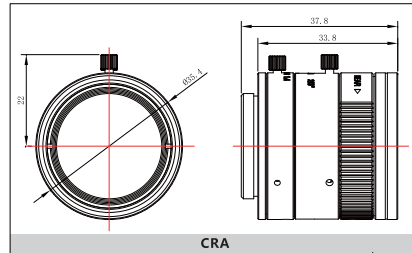
2/3" 2M Series 600003

2/3" 2MP C M-Iris



2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F1.4-C
5	Working Distance	0.3m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 17.7° × 14.2° × 10.7°
		1/2" 12.9° × 10.4° × 7.8°
		1/3" 9.7° × 7.8° × 5.8°
7	Object Size (at the minimum focus distance)	2/3" 94.4 × 75.2 × 56.2mm
		1/2" 68.3 × 54.5 × 40.8mm
		1/3" 51.1 × 40.8 × 30.6mm
8	BFL(In air)	14.70mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	2/3" -0.33%@y=5.5mm
		1/2" -0.17%@y=4.0mm
		1/3" -0.09%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	39.8 × 37.8mm
13	Weight	90g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	34.20mm
16	Diameter of entrance pupil	25mm
17	Distance of exit pupil	-35.79mm
18	Diameter of exit pupil	25.30mm
19	Total optical length	49.24mm
20	Magnification	-0.118



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
300mm	-0.11804	1.1571	1.1661
350mm	-0.10115	1.5740	1.5882
400mm	-0.08845	2.0545	2.0758
450mm	-0.07864	2.5985	2.6289
500mm	-0.07076	3.2060	3.2476
550mm	-0.06432	3.8768	3.9322
600mm	-0.05895	4.6107	4.6827
650mm	-0.05441	5.0477	5.4992
700mm	-0.05052	6.2677	6.3819
750mm	-0.04715	7.1904	7.3310

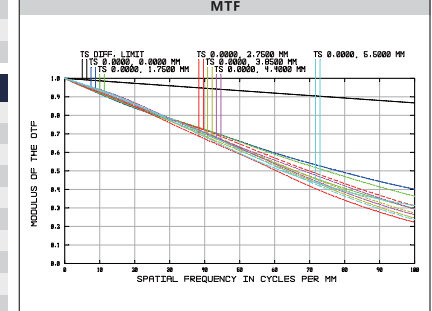
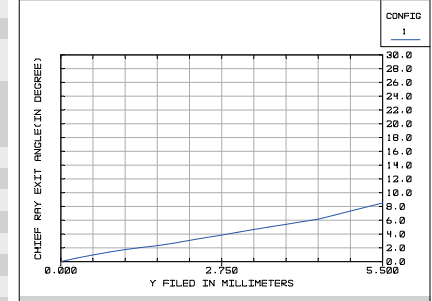
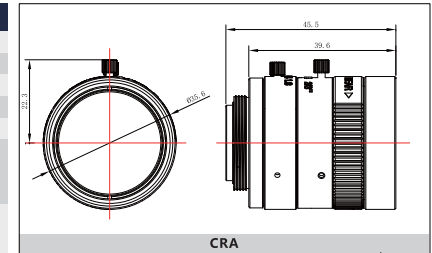
2/3" 2M Series 600004

2/3" 2MP C M-Iris



2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	50mm
3	Mount	C-Mount
4	F/#	F1.8-C
5	Working Distance	0.5m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 12.5° × 9.1° × 7.5°
		1/2" 10.0° × 7.3° × 5.5°
		1/3" 7.5° × 5.5° × 4.1°
7	Object Size (at the minimum focus distance)	2/3" 101.4 × 81.0 × 60.6mm
		1/2" 73.6 × 58.8 × 44.1mm
		1/3" 55.1 × 44.1 × 33.0mm
8	BFL(In air)	12.94mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	2/3" -0.22%@y=5.5mm
		1/2" -0.1%@y=4.0mm
		1/3" -0.05%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	40.1 × 45.5mm
13	Weight	98g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	44.29mm
16	Diameter of entrance pupil	27.74mm
17	Distance of exit pupil	-31.00mm
18	Diameter of exit pupil	16.22mm
19	Total optical length	54.70mm
20	Magnification	-0.1092



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
500mm	-0.10918	2.0432	2.0601
550mm	-0.09845	2.4713	2.4937
600mm	-0.08963	2.9398	2.9689
650mm	-0.08227	3.4488	3.8458
700mm	-0.07603	3.9982	4.0444
750mm	-0.07066	4.5879	4.6447
800mm	-0.06601	5.2178	5.2868
850mm	-0.06192	5.8880	5.9708
900mm	-0.05832	6.5984	6.6966
950mm	-0.05511	7.3490	7.4645



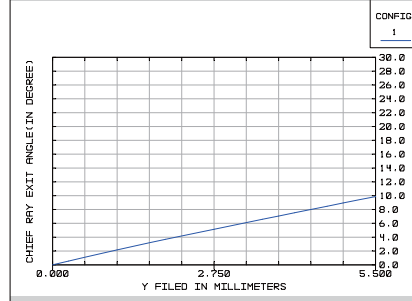
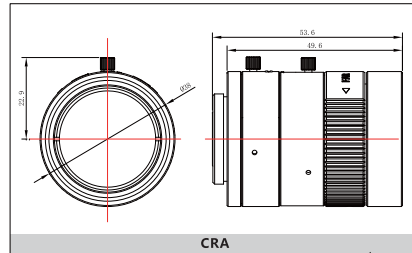
2/3" 2M Series 60005

2/3" 2MP C M-Iris



2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	75mm
3	Mount	C-Mount
4	F/#	F2.8-C
5	Working Distance	1.1m-∞
6	FOV(Diagonal X H X V)	2/3" 8.4° × 6.7° × 5.0°
		1/2" 6.1° × 4.9° × 3.7°
		1/3" 4.6° × 3.7° × 2.8°
7	Object Size (at the minimum focus distance)	2/3" 140.7 × 112.6 × 84.5mm
		1/2" 102.4 × 81.9 × 61.5mm
		1/3" 76.8 × 61.5 × 46.1mm
8	BFL(in air)	14.35mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" 0.36%@y=5.5mm
		1/2" 0.2%@y=4.0mm
		1/3" 0.11%@y=3.0mm
11	Filter thread	M30.5 × 0.5mm
12	Lens Size(W X L)	42 × 53.6mm
13	Weight	140g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	55.28mm
16	Diameter of entrance pupil	26.72mm
17	Distance of exit pupil	-28.30mm
18	Diameter of exit pupil	10.10mm
19	Total optical length	64.43mm
20	Magnification	-0.0781



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1100mm	-0.07814	6.8583	6.9449
1150mm	-0.07426	7.4938	7.5927
1200mm	-0.07075	8.1573	8.2697
1250mm	-0.06756	8.8487	8.9758
1300mm	-0.06464	9.5680	9.7110
1350mm	-0.06196	10.3150	10.4750
1400mm	-0.05950	11.0900	11.2690
1450mm	-0.05722	11.8930	12.0920
1500mm	-0.05511	12.7240	12.9440
1550mm	-0.05316	13.5830	13.8250

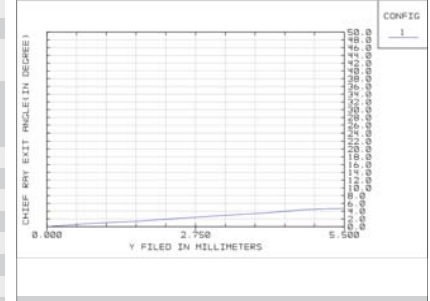
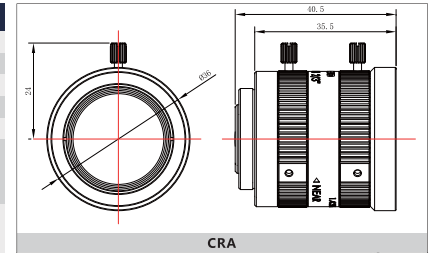
2/3" 2M Series 60036

2/3" 2MP C M-Iris



2M Series
C-mount ,Max.sensor size 2/3"

No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	8mm
3	Mount	C-Mount
4	F/#	F1.4-C
5	Working Distance	0.1m-∞
6	FOV(Diagonal X H X V)	2/3" 68.63° × 56.97° × 43.98°
		1/2" 52.39° × 42.74° × 32.55°
		1/3" 40.24° × 32.55° × 24.62°
7	Object Size (at the minimum focus distance)	2/3" 160.96 × 123.93 × 91.70mm
		1/2" 111.90 × 88.88 × 66.53mm
		1/3" 83.25 × 66.53 × 49.92mm
8	BFL(in air)	11.76mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	2/3" -2.81%@y=5.5mm
		1/2" -1.93%@y=4.0mm
		1/3" -1.23%@y=3.0mm
11	Filter thread	M34 × 0.5mm
12	Lens Size(W X L)	40.9 × 40.5mm
13	Weight	/
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	13.48mm
16	Diameter of entrance pupil	5.60mm
17	Distance of exit pupil	-49.13mm
18	Diameter of exit pupil	35.19mm
19	Total optical length	50.07mm
20	Magnification	-0.0737



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
100mm	-0.07370	2.4019	2.5231
150mm	-0.05100	5.3401	5.7494
200mm	-0.03900	9.3821	10.3535
250mm	-0.03158	14.4896	16.3894
300mm	-0.02653	20.6259	23.9143
350mm	-0.02287	27.7561	32.9883
400mm	-0.02010	35.8468	43.6748
450mm	-0.01793	44.8660	56.0407
500mm	-0.01618	54.7832	70.1569

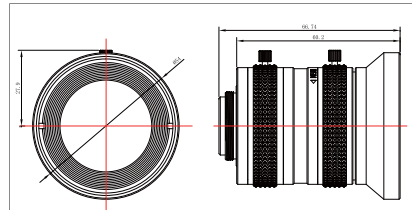


1" 5M Series 600027

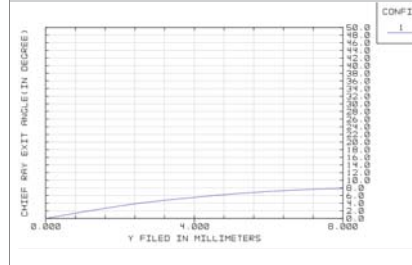
1" 5MP C M-Iris



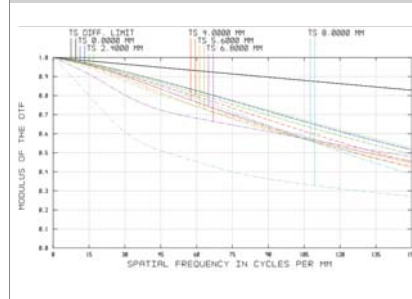
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F1.6-F22
5	Working Distance	1m - ∞
6	FOV(Diagonal X H X V)	1" 68.84° × 57.12° × 44.08°
		1/2" 37.15° × 29.99° × 22.64°
		1/3" 28.16° × 22.64° × 17.04°
7	Object Size (at the minimum focus distance)	1" 1874.12 × 1106.10 × 751.06mm
		1/2" 614.10 × 486.54 × 368.80mm
		1/3" 471.75 × 369.88 × 273.76mm
8	BFL(in air)	13.53mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" -2.88%@y=8.0mm
		1/2" -1.06%@y=4.0mm
		1/3" -0.63%@y=3.0mm
11	Filter thread	M52 × 0.75
12	Lens Size(W X L)	54 × 66.39mm
13	Weight	183g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	23.34mm
16	Diameter of entrance pupil	7.52mm
17	Distance of exit pupil	-33.40mm
18	Diameter of exit pupil	20.80mm
19	Total optical length	74.47mm
20	Magnification	-0.012



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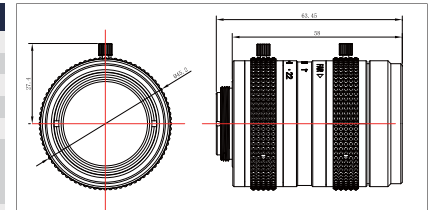
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1000mm	-0.01181	71.1663	82.9766
1050mm	-0.01126	78.1827	91.8628
1100mm	-0.01076	85.5028	101.2418
1150mm	-0.01030	93.1234	111.1196
1200mm	-0.00988	101.0414	121.5027
1250mm	-0.00949	130.2261	164.5020
1300mm	-0.00913	140.268	178.8669
1350mm	-0.00879	150.6402	193.9167
1400mm	-0.00848	171.3386	209.6623
1450mm	-0.00820	202.36	226.1100

1" 5M Series 600028

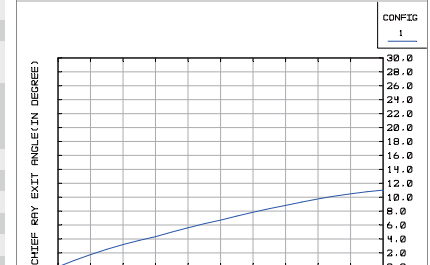
1" 5MP C M-Iris



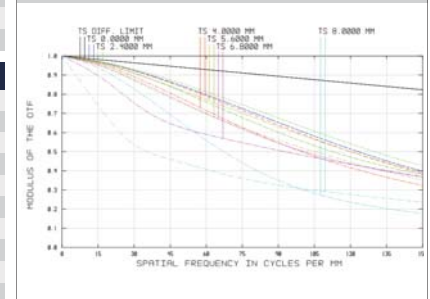
No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	16mm
3	Mount	C-Mount
4	F/#	F1.6-F22
5	Working Distance	1m - ∞
6	FOV(Diagonal X H X V)	1" 54.38° × 44.20° × 33.54°
		1/2" 28.12° × 22.54° × 16.91°
		1/3" 21.14° × 16.94° × 12.72°
7	Object Size (at the minimum focus distance)	1" 1043.34 × 824.12 × 611.12mm
		1/2" 506.90 × 403.93 × 302.01mm
		1/3" 378.32 × 301.96 × 226.06mm
8	BFL(in air)	12.17mm
9	Operation	Focus Manual
	Aperture	M-Iris
10	Distortion	1" -3.73%@y=8.0mm
		1/2" -1.09%@y=4.0mm
		1/3" -0.63%@y=3.0mm
11	Filter thread	M37.5 × 0.5mm
12	Lens Size(W X L)	43 × 64.06mm
13	Weight	202g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	24.39mm
16	Diameter of entrance pupil	10.11mm
17	Distance of exit pupil	-24.16mm
18	Diameter of exit pupil	15.10mm
19	Total optical length	72.21mm
20	Magnification	-0.016



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Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1000mm	-0.01596	83.3273	99.9919
1050mm	-0.01521	91.4872	109.7943
1100mm	-0.01453	99.9928	120.2115
1150mm	-0.01390	108.8399	130.2521
1200mm	-0.01333	126.0244	138.9257
1250mm	-0.01280	135.542	145.2421
1300mm	-0.01232	150.3886	159.2112
1350mm	-0.01187	166.5604	174.8431
1400mm	-0.01145	178.0534	178.1481
1450mm	-0.01105	198.8637	200.137

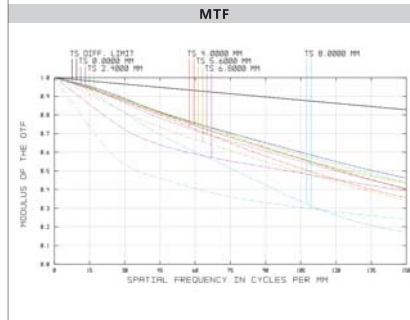
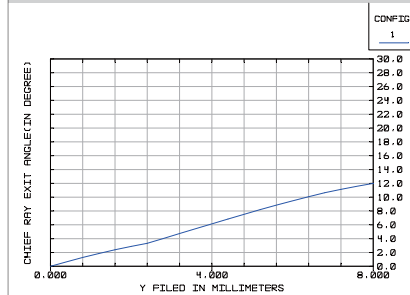
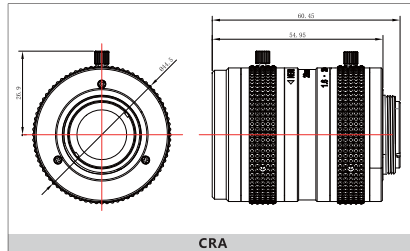


1" 5M Series 600029

1" 5MP C M-Iris



No	Item	Specifications	
1	Max. sensor size	1"(16mm)	
2	Focal Length	20mm	
3	Mount	C-Mount	
4	F/#	F1.6-F22	
5	Working Distance	1m ~ ∞	
6	FOV(Diagonal X H X V)	1"	44.74° × 36.08° × 27.24°
		1/2"	22.82° × 18.19° × 13.83°
		1/3"	17.12° × 13.72° × 10.30°
7	Object Size (at the minimum focus distance)	1"	830.48 × 657.00 × 488.54mm
		1/2"	405.80 × 323.69 × 242.30mm
		1/3"	303.32 × 246.44 × 184.54mm
8	BFL(in air)	12.20mm	
9	Operation	Focus	Manual
		Aperture	M-Iris
10	Distortion	1"	-2.87%@y=8.0mm
		1/2"	-0.72%@y=4.0mm
		1/3"	-0.41%@y=3.0mm
11	Filter thread	M39 × 0.5mm	
12	Lens Size(W X L)	43 × 60.4mm	
13	Weight	169g	
14	Work Temperature	-20°C ~ +60°C	
15	Distance of entrance pupil	26.58mm	
16	Diameter of entrance pupil	12.50mm	
17	Distance of exit pupil	-33.84mm	
18	Diameter of exit pupil	21.14mm	
19	Total optical length	69.44mm	
20	Magnification	-0.020	



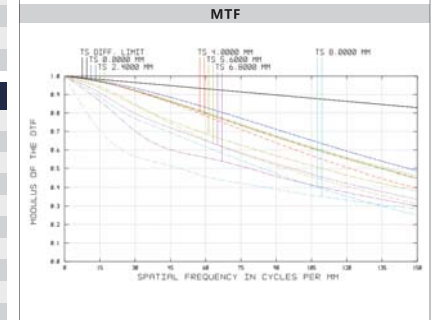
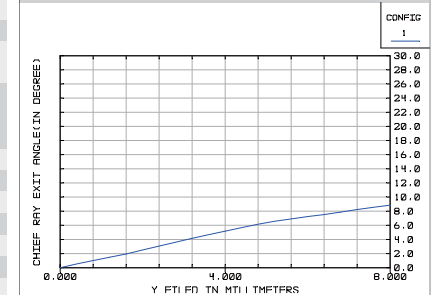
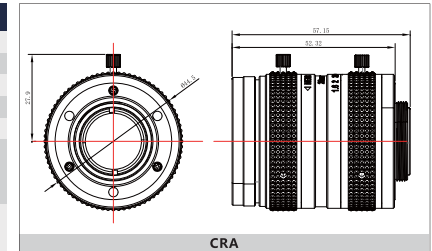
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1000mm	-0.01986	28.8653	30.6338
1050mm	-0.01892	44.7781	45.8256
1100mm	-0.01807	58.8265	59.1808
1150mm	-0.01728	62.0098	62.7002
1200mm	-0.01657	65.3274	68.3846
1250mm	-0.01591	68.7789	69.2347
1300mm	-0.01530	68.3635	71.2513
1350mm	-0.01474	72.0808	73.4352
1400mm	-0.01422	74.9302	76.7871
1450mm	-0.01373	82.9111	83.3079

1" 5M Series 600030

1" 5MP C M-Iris



No	Item	Specifications	
1	Max. sensor size	1"(16mm)	
2	Focal Length	25mm	
3	Mount	C-Mount	
4	F/#	F1.6-F22	
5	Working Distance	1m ~ ∞	
6	FOV(Diagonal X H X V)	1"	36.12° × 29.04° × 21.86°
		1/2"	18.20° × 14.63° × 11.02°
		1/3"	13.70° × 10.96° × 8.24°
7	Object Size (at the minimum focus distance)	1"	662.10 × 525.12 × 391.24mm
		1/2"	325.22 × 259.61 × 194.43mm
		1/3"	243.28 × 194.40 × 145.66mm
8	BFL(in air)	12.69mm	
9	Operation	Focus	Manual
		Aperture	M-Iris
10	Distortion	1"	-2.06%@y=8.0mm
		1/2"	-0.52%@y=4.0mm
		1/3"	-0.29%@y=3.0mm
11	Filter thread	M39 × 0.5mm	
12	Lens Size(W X L)	41.5 × 57.15mm	
13	Weight	157g	
14	Work Temperature	-20°C ~ +60°C	
15	Distance of entrance pupil	27.15mm	
16	Diameter of entrance pupil	15.65mm	
17	Distance of exit pupil	-42.03mm	
18	Diameter of exit pupil	26.27mm	
19	Total optical length	63.52mm	
20	Magnification	-0.025	



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
1000mm	-0.02474	18.5918	19.3098
1050mm	-0.02358	20.4784	21.3096
1100mm	-0.02252	22.4543	23.4101
1150mm	-0.02155	24.5193	25.6114
1200mm	-0.02066	26.6730	27.9139
1250mm	-0.01984	28.9153	30.3179
1300mm	-0.01909	31.2459	32.8237
1350mm	-0.01839	33.6645	35.4316
1400mm	-0.01773	36.1709	38.1418
1450mm	-0.01713	38.7649	40.9547



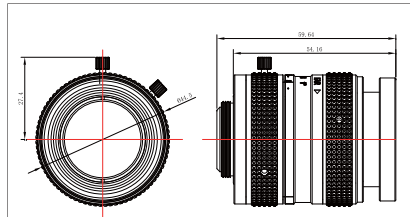
1" 5M Series 600031

1" 5MP C M-Iris

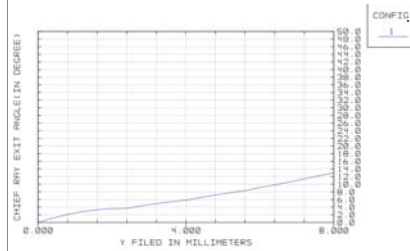


No	Item	Specifications
1	Max. sensor size	1"(16mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F1.4-F22
5	Working Distance	0.4m ~ ∞
6	FOV(Diagonal X H X V)	1" 25.68° × 20.72° × 15.62°
		1/2" 13.04° × 10.44° × 7.79°
		1/3" 9.80° × 7.84° × 5.88°
7	Object Size (at the minimum focus distance)	1" 176.46 × 141.64 × 106.34mm
		1/2" 88.63 × 70.86 × 53.24mm
		1/3" 66.46 × 53.18 × 39.88mm
8	BFL(in air)	12.82mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	2/3" 0.26%@y=8mm
		1/2" -0.07%@y=4.0mm
		1/3" -0.05%@y=3.0mm
11	Filter thread	M39 × 0.5mm
12	Lens Size(W X L)	41 × 56.28mm
13	Weight	155g
14	Work Temperature	-20°C ~ +60°C
15	Distance of entrance pupil	32.14mm
16	Diameter of entrance pupil	24.17mm
17	Distance of exit pupil	-40.48mm
18	Diameter of exit pupil	27.83mm
19	Total optical length	62.73mm
20	Magnification	-0.090

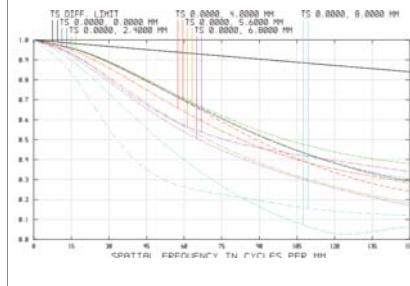
Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
400mm	-0.09029	1.5479	1.5599
450mm	-0.07992	1.9581	1.9752
500mm	-0.07170	2.4162	2.4398
550mm	-0.06504	2.9222	2.9536
600mm	-0.05947	3.4759	3.5167
650mm	-0.05479	4.0774	4.1292
700mm	-0.05082	4.7266	4.7913
750mm	-0.04737	5.4233	5.5029
800mm	-0.04437	6.1676	6.2641
850mm	-0.04172	6.9592	7.0751



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Grand Unified Optics (Beijing)Co., Ltd has launched the GAOPTICS® of machine vision lens for the automation industry, committed to providing customers with high-quality products and services,

GAOPTICS® includes 1/1.8 "6M Series, 1" 8M Series, 4/3 "10M Series, SWIR Series, Large field double telecentric lens Series,

GA Fixed Focal Lens



GA 1/1.8" 6M fixed focal length lens
For small pixel design, matching small image plane high resolution chip
Can be used in logistics industry, AOI testing, electronic parts testing industry, etc.



GA 1" 8M fixed focal length lens
1" compact design, high resolution, C-mount
Can be used in electronic component testing, packaging testing, etc.



GA 4/3" 10M fixed focal length lens
C-mount, Max. sensor Size 4/3"
Can be used in electronic component testing, printing testing, railway testing, etc.



GA SWIR Lens
C-mount, Large aperture design,
working wavelength is 800-1800nm or 700-1700nm
Can be used for silicon wafer detection and food detection

GA Large field double telecentric lens



Double telecentric design, Large field design, C-mount,
Can be used in semiconductor testing, industrial testing, etc.



Swir

SWIR

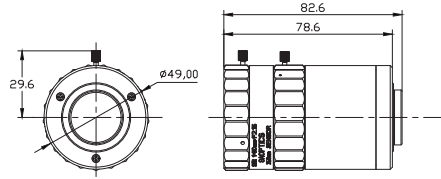
GAOPTICS® SWIR LENSES ARE DESIGNED WITH HIGH TRANSMISSION AND HIGH RESOLUTION. THERE ARE 1" AND 25.6MM SENSOR SIZE FOR THIS LENS, AND THE 25.6MM SWIR LENS IS SPECIAL DESIGN FOR SWIR LINE SCAN CAMERA.

GA 25.6mm SWIR f=50mm	
680000	45
GA 25.6mm SWIR f=25mm	
680001	46
GA 1" SWIR f=25mm	
680003	47
GA 1" SWIR f=35mm	
680004	48



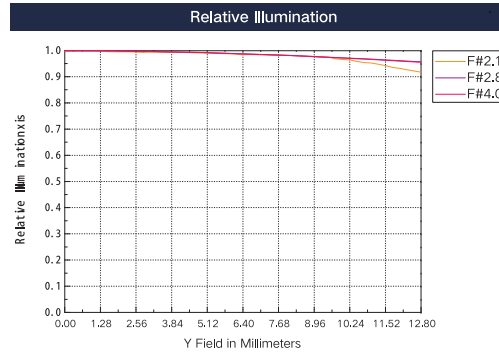
GA 25.6mm SWIR f=50mm 680000

Max. sensor size 25.6mm C 800-1800nm

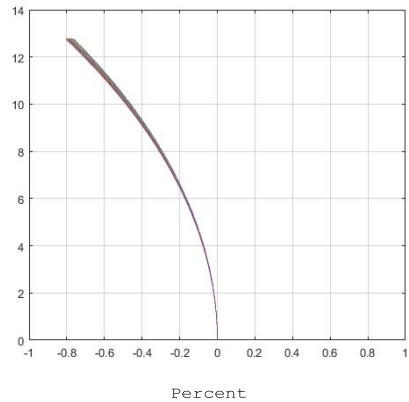


Large sensor format and high resolution SWIR Lens
 High resolution
 Large aperture design
 Compact design
 800-1800nm

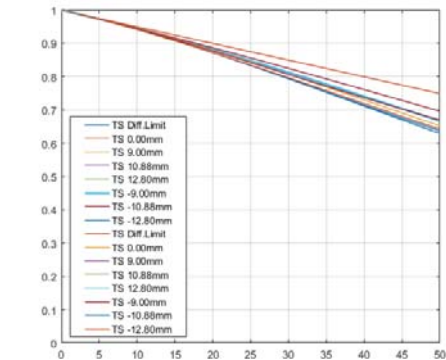
No	Item	Specifications
1	Focal Length	50mm
2	Working Distance(Min.)	275mm
3	Focus Range	275mm-∞
4	The total length of lens(TTL)	82.8mm
5	FOV	28.9°
6	Filter Thread	M46x0.75
7	Camera Mount	C-Mount
8	F/#	F/2.15 - F/16
9	Magnification	0X - 0.185X
10	Distortion	< 1.0%
11	Max. sensor size	25.6mm
12	Lens QTY (Group)	9 (6)
13	Working Wavelength	800-1800nm
14	Weight	250g



Distortion

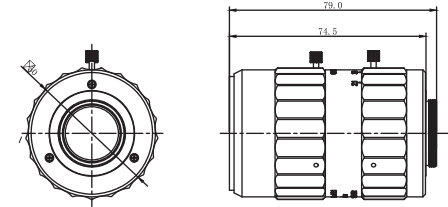


MTF



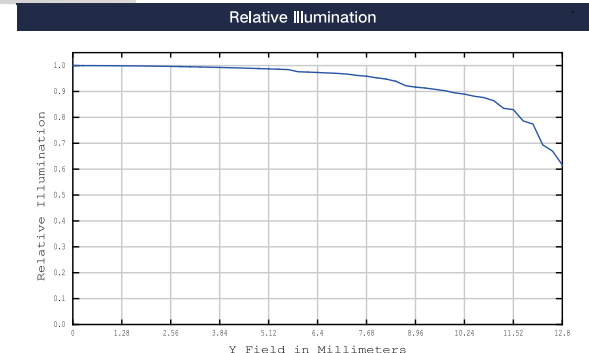
GA 25.6mm SWIR f=25mm 680001

Max. sensor size 25.6mm C 800-1800nm

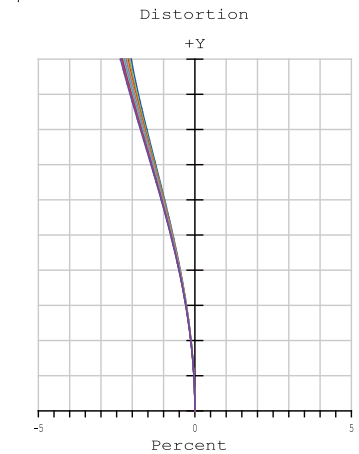


Large sensor format and high resolution SWIR Lens
 High resolution
 Large aperture design
 Compact design
 800-1800nm

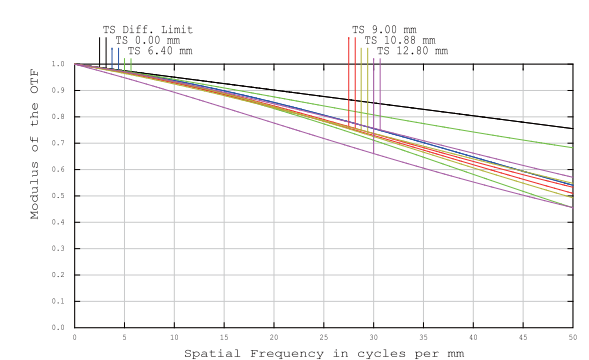
No	Item	Specifications
1	Focal Length	25mm
2	Working Distance(Min.)	200mm
3	Focus Range	200mm-∞
4	The total length of lens(TTL)	79mm
5	FOV	54.52°
6	Filter Thread	M46x0.75
7	Camera Mount	C-Mount
8	F/#	F/2.1 - F/16
9	Magnification	0 x - 0.113 x
10	Distortion	< 2.4%
11	Max. sensor size	25.6mm
12	Lens QTY (Group)	9 (6)
13	Working Wavelength	800-1800nm
14	Weight	/



Distortion

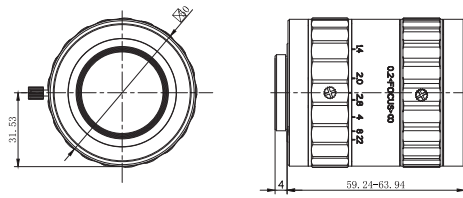


MTF



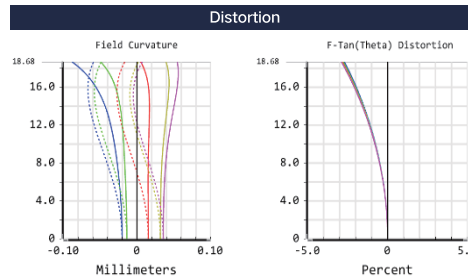
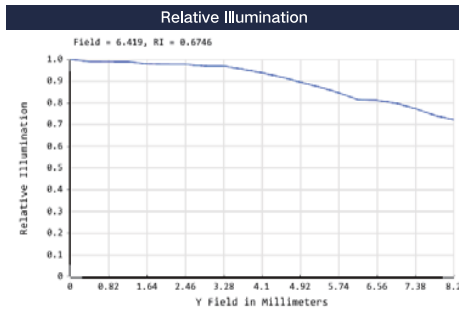
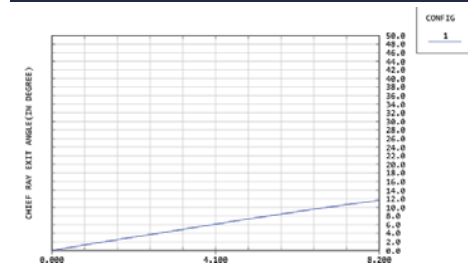
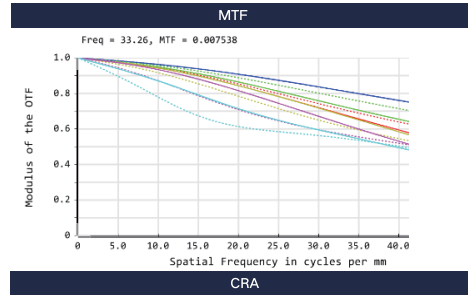
GA 1" SWIR f=25mm 680003

Max. sensor size 1" C 700-1700nm



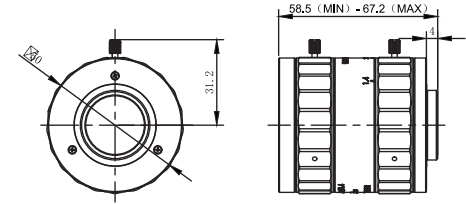
Large sensor format and high resolution SWIR Lens
 High resolution
 Large aperture design
 Compact design
 700-1700nm

No	Item	Specifications
1	Max. Sensor size	1"(16.2mm)
2	Focal Length	25mm
3	Mount	C-Mount
4	F/#	F1.4-F22
5	Focusing Range	0.3m-∞
6	FOV (Diagonal x H xV)	1" 36.46° × 29.24° × 21.97°
		2/3" 25.15° × 20.15° × 15.13°
		1/2" 18.32° × 14.67° × 11.01°
7	Object Size (at the minimum focus distance)	1" 198.59 × 156.1 × 116.22mm
		2/3" 133.56 × 106.37 × 79.51mm
8	BFL (in air)	1/2" 96.57 × 77.08 × 57.71mm
		20.73mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	1" -2.69% @ y=8mm
		2/3" -1.24% @ y=5.5mm
		1/2" -0.65% @ y=4.0mm
11	Working Wavelength	700-1700nm
12	Lens Size(W x L)	64 × 56.6mm
13	Weight	<200g
14	Work Temperature	-10°C ~ +50°C



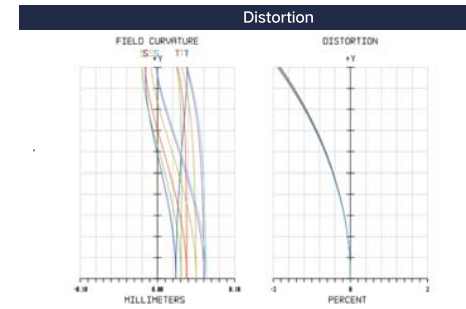
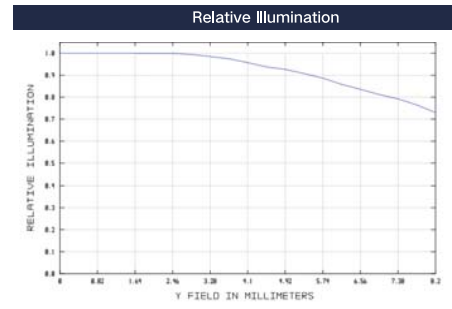
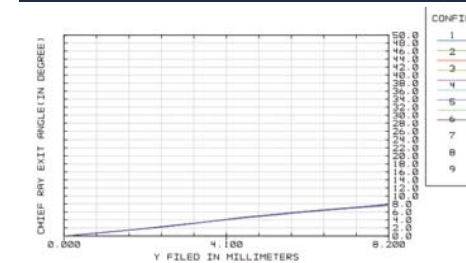
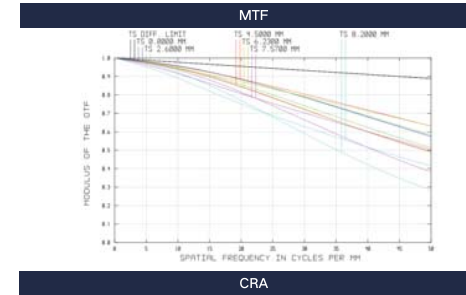
GA 1" SWIR f=35mm 680004

Max. sensor size 1" C 700-1700nm



Large sensor format and high resolution SWIR Lens
 High resolution
 Large aperture design
 Compact design
 700-1700nm

No	Item	Specifications
1	Max. Sensor size	1"(16.4mm)
2	Focal Length	35mm
3	Mount	C-Mount
4	F/#	F1.4-F22
5	Focusing Range	0.3m-∞
6	Object Size (at the minimum focus distance)	1" 26.54° × 21.23° × 15.92°
		2/3" 18.03° × 14.43° × 10.82°
		1/2" 13.19° × 10.55° × 7.91°
7	FOV (Diagonal x H xV)	1" 135.934 × 108.747 × 81.56mm
		2/3" 91.748 × 73.399 × 55.05mm
8	BFL (in air)	1/2" 66.93 × 53.55 × 40.16mm
		21.49mm
9	Operation	Focus Manual
		Aperture M-Iris
10	Distortion	1" -1.94% @ y=8mm
		2/3" -0.84% @ y=4.4mm
		1/3" -0.49% @ y=4.0mm
11	Working Wavelength	700-1700nm
12	Lens Size(W x L)	56.2 × 58.5mm
13	Weight	189g
14	Work Temperature	-10°C ~ +50°C



T elecentric Lens

THE MAGNIFICATION IS FIXED WITHIN THE WORKING DISTANCE FOR TELECENTRIC LENS , SO IT CAN BE USED WIDELY IN INDUSTRIAL MEASURING FIELD. GAOPTICS® LARGE FIELD DOUBLE TELECENTRIC LENS CAN COVER FOV OF 65MM、100MM、150MM、250MM AND THE SENSOR SIZE OF 1/1.8"、2/3"、1"、4/3"。

GA Large field double telecentric lens

610006/610007 In-Line Illumination (1/1.8", 0.138X)	49
610008/610009 In-Line Illumination (1/1.8", 0.09X)	49
610039/610044 In-Line Illumination (1/1.8", 0.06X)	50
610010/610011 In-Line Illumination (1/1.8", 0.036X)	50
610012/610013 In-Line Illumination (2/3", 0.176X)	51
610014/610015 In-Line Illumination (2/3", 0.114X)	51
610040/610045 In-Line Illumination (2/3", 0.076X)	52
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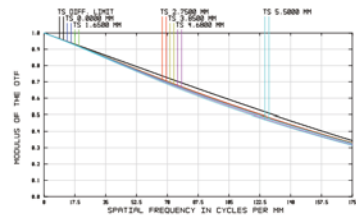
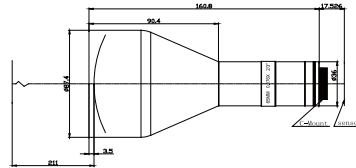
Compact double telecentric lens

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GA Large Field Double Telecentric Lens 610012/610013 (In-Line Illumination)

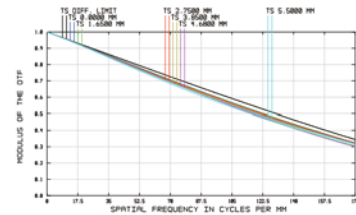
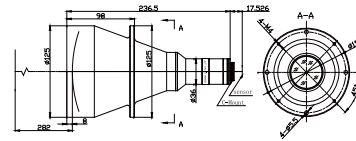
0.176X 2/3" C



Stock No.: 610012/610013 (In-Line Illumination)		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.176X
3	Working Distance	211.00mm
4	Object Space DOV	± 6.85mm
5	Telecentricity	< 0.06 °
6	Distortion	< 0.03%
7	F/#	F5.3
8	Resolution/MTF @F5.3	> 30%@175lp/mm
9	Object Space FOV	Φ62.5mm
10	Image Space FOV	Φ11mm
		2/3" 50.0 × 37.5mm
11	Sensor Size Range (H × V)	1/1.8" 41 × 31mm
		1/2.5" 33 × 24mm
12	Camera Mount	C-Mount
13	Lens Size (Dia. × Length)	Φ87.4 × 160.8mm
14	The distance from the front end of imaging lens to the first surface of the first glass lens	3.5mm

GA Large Field Double Telecentric Lens 610014/610015 (In-Line Illumination)

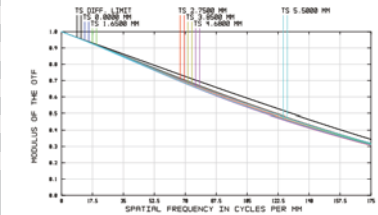
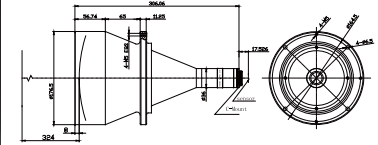
0.114X 2/3" C



Stock No.: 610014/610015 (In-Line Illumination)		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.114X
3	Working Distance	282.00mm
4	Object Space DOV	± 16.32mm
5	Telecentricity	< 0.1 °
6	Distortion	< 0.05%
7	F/#	F5.3
8	Resolution/MTF @F5.3	> 30%@175lp/mm
9	Object Space FOV	Φ96.49mm
10	Image Space FOV	Φ11mm
		2/3" 77.2 × 57.9mm
11	Sensor Size Range (H × V)	1/1.8" 63.2 × 47.4mm
		1/2.5" 50.9 × 37.7mm
12	Camera Mount	C-Mount
13	Lens Size (Dia. × Length)	Φ125.0 × 236.5mm
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8.0mm

GA Large Field Double Telecentric Lens 610040/610045 (In-Line Illumination)

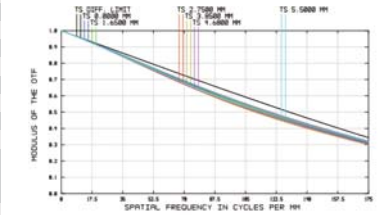
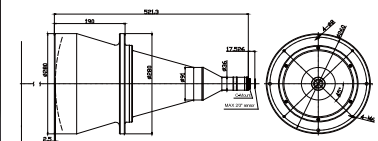
0.076X 2/3" C



Stock No.: 610040/610045 (In-Line Illumination)		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.076X
3	Working Distance	324mm
4	Object Space DOV	± 36.71mm
5	Telecentricity	< 0.03 °
6	Distortion	< 0.03%
7	F/#	F5.3
8	Resolution/MTF @F5.3	> 30%@175lp/mm
9	Object Space FOV	Φ11mm
10	Image Space FOV	Φ144mm
		2/3" 116 × 87mm
11	Sensor Size Range (H × V)	1/1.8" 95 × 71mm
		1/2.5" 76.3 × 56.6mm
12	Camera Mount	C-Mount
13	Lens Size (Dia. × Length)	Φ176.5 × 306.06mm
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8mm

GA Large Field Double Telecentric Lens 610016/610017 (In-Line Illumination)

0.046X 2/3" C

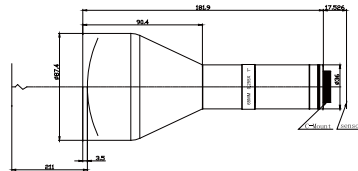


Stock No.: 610016/610017 (In-Line Illumination)		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.046X
3	Working Distance	431mm
4	Object Space DOV	± 101.96mm
5	Telecentricity	< 0.02 °
6	Distortion	< 0.02%
7	F/#	F5.3
8	Resolution/MTF @F5.3	> 30%@170lp/mm
9	Object Space FOV	Φ11mm
10	Image Space FOV	Φ241.2mm
		2/3" 193 × 145mm
11	Sensor Size Range (H × V)	1/1.8" 158 × 118mm
		1/2.5" 127.2 × 94.3mm
12	Camera Mount	C-Mount
13	Lens Size (Dia. × Length)	Φ280 × 521.3mm
14	The distance from the front end of imaging lens to the first surface of the first glass lens	2.5mm

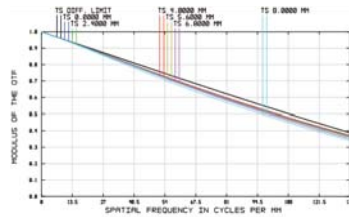


GA Large Field Double Telecentric Lens 610018/610019 (In-Line Illumination)

0.255X 1" C

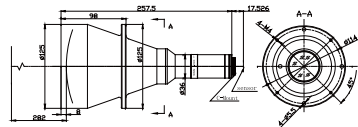


Stock No.: 610018/610019 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.255X	
3	Working Distance	211.00mm	
4	Object Space DOV	±3.94mm	
5	Telecentricity	< 0.06 °	
6	Distortion	< 0.03%	
7	F/#	F6.4	
8	Resolution/MTF @F6.4	> 30%@135lp/mm	
9	Object Space FOV	Φ62.7mm	
10	Image Space FOV	Φ16mm	
11	Sensor Size Range (H × V)	1"	50 × 38mm
		2/3"	35 × 26mm
		1/1.8"	28 × 21mm
		1/2.5"	22.7 × 16.9mm
12	Camera Mount	C-Mount	
13	Lens Size (Dia. × Length)	Φ87.4 × 181.9mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	3.5mm	

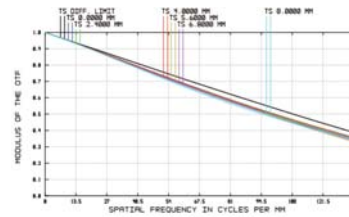


GA Large Field Double Telecentric Lens 610020/610021 (In-Line Illumination)

0.166X 1" C

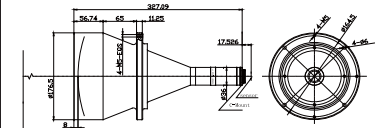


Stock No.: 610020/610021 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.166X	
3	Working Distance	282.00mm	
4	Object Space DOV	±9.29mm	
5	Telecentricity	< 0.05 °	
6	Distortion	< 0.05%	
7	F/#	F6.4	
8	Resolution/MTF @F6.4	> 30%@135lp/mm	
9	Object Space FOV	Φ96.38mm	
10	Image Space FOV	Φ16mm	
11	Sensor Size Range (H × V)	1"	77 × 58mm
		2/3"	53 × 40mm
		1/1.8"	43 × 33mm
		1/2.5"	34.9 × 25.9mm
12	Camera Mount	C-Mount	
13	Lens Size (Dia. × Length)	Φ125.0 × 257.5mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8.0mm	

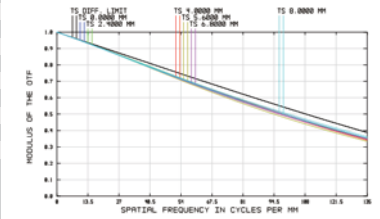


GA Large Field Double Telecentric Lens 610041/610046 (In-Line Illumination)

0.110X 1" C

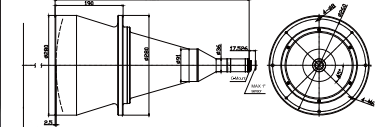


Stock No.: 610041/610046 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.110X	
3	Working Distance	324mm	
4	Object Space DOV	±21.16mm	
5	Telecentricity	< 0.03 °	
6	Distortion	< 0.03%	
7	F/#	F6.4	
8	Resolution/MTF @F6.4	> 30%@140lp/mm	
9	Object Space FOV	Φ16mm	
10	Image Space FOV	Φ145.45mm	
11	Sensor Size Range (H × V)	1"	116 × 87mm
		2/3"	80 × 60mm
		1/1.8"	65 × 49mm
		1/2.5"	52.7 × 39.1mm
12	Camera Mount	C-Mount	
13	Lens Size (Dia. × Length)	Φ176.5 × 327.09mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8mm	

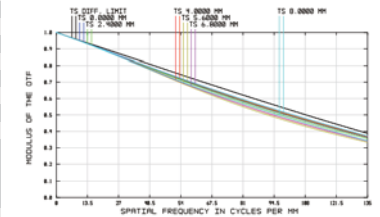


GA Large Field Double Telecentric Lens 610022/610023 (In-Line Illumination)

0.066X 1" C

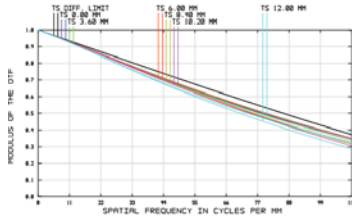
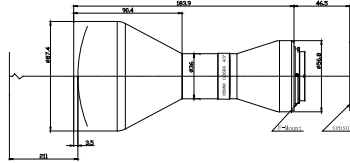


Stock No.: 610022/610023 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.0664X	
3	Working Distance	431mm	
4	Object Space DOV	±58.07mm	
5	Telecentricity	< 0.02 °	
6	Distortion	< 0.02%	
7	F/#	F6.4	
8	Resolution/MTF @F6.4	> 30%@140lp/mm	
9	Object Space FOV	Φ16mm	
10	Image Space FOV	Φ240.9mm	
11	Sensor Size Range (H × V)	1"	193 × 145mm
		2/3"	133 × 99mm
		1/1.8"	108 × 81mm
		1/2.5"	87.3 × 64.8mm
12	Camera Mount	C-Mount	
13	Lens Size (Dia. × Length)	Φ280 × 542.3mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	2.5mm	



GA Large Field Double Telecentric Lens 610024/610025 (In-Line Illumination)

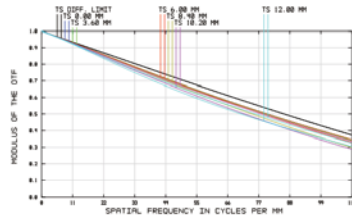
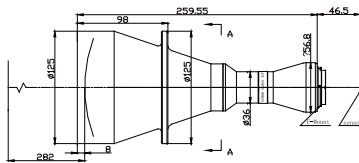
0.369X | 4/3" | F



Stock No.: 610024/610025 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.369X	
3	Working Distance	211.00mm	
4	Object Space DOV	± 2.35mm	
5	Telecentricity	< 0.1 °	
6	Distortion	< 0.04%	
7	F/#	F8	
8	Resolution/MTF @F8	> 30%@105lp/mm	
9	Object Space FOV	Φ65mm	
10	Image Space FOV	Φ24mm	
11	Sensor Size Range (H × V)	4/3"	51 × 37mm
		1"	35 × 26mm
		2/3"	24 × 18mm
		1/1.8"	20 × 15mm
1/2.5"	15.7 × 11.7mm		
12	Camera Mount	F-Mount	
13	Lens Size (Dia. × Length)	Φ87.4 × 183.9mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	3.5mm	

GA Large Field Double Telecentric Lens 610026/610027 (In-Line Illumination)

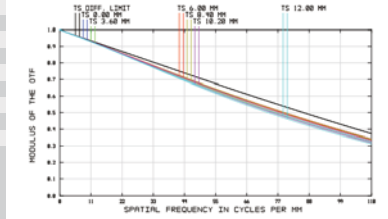
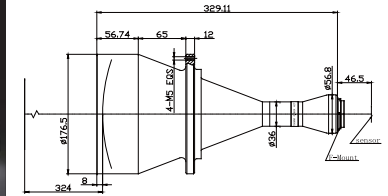
0.240X | 4/3" | F



Stock No.: 610026/610027 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.240X	
3	Working Distance	282.00mm	
4	Object Space DOV	± 5.56mm	
5	Telecentricity	< 0.05 °	
6	Distortion	< 0.05%	
7	F/#	F8	
8	Resolution/MTF @F8	> 30%@100lp/mm	
9	Object Space FOV	Φ100mm	
10	Image Space FOV	Φ24mm	
11	Sensor Size Range (H × V)	4/3"	78 × 56mm
		1"	53 × 40.0mm
		2/3"	37 × 28mm
		1/1.8"	30 × 23mm
		1/2.5"	24.2 × 17.9mm
12	Camera Mount	F-Mount	
13	Lens Size (Dia. × Length)	Φ125.0 × 259.55mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8.0mm	

GA Large Field Double Telecentric Lens 610042/610047 (In-Line Illumination)

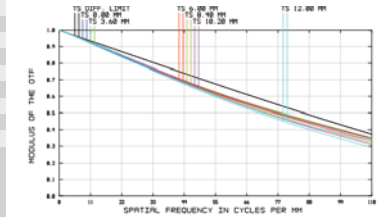
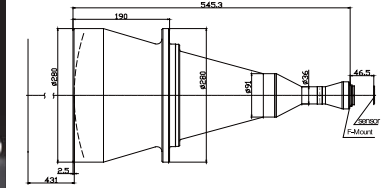
0.160X | 4/3" | F



Stock No.: 610042/610047 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.160X	
3	Working Distance	324mm	
4	Object Space DOV	± 12.5mm	
5	Telecentricity	< 0.03 °	
6	Distortion	< 0.04%	
7	F/#	F8	
8	Resolution/MTF @F8	> 30%@110lp/mm	
9	Object Space FOV	Φ24mm	
10	Image Space FOV	Φ150mm	
11	Sensor Size Range (H × V)	4/3"	118 × 84mm
		1"	80 × 60mm
		2/3"	55 × 41mm
		1/1.8"	45 × 34mm
		1/2.5"	36.3 × 26.9mm
12	Camera Mount	F-Mount	
13	Lens Size (Dia. × Length)	Φ176.5 × 329.1mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	8mm	

GA Large Field Double Telecentric Lens 610028/610029 (In-Line Illumination)

0.096X | 4/3" | F

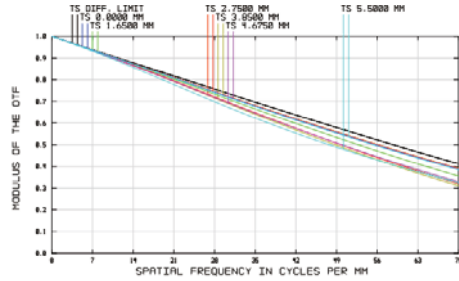
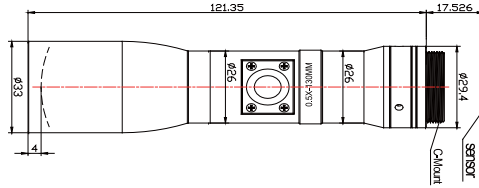


Stock No.: 610028/610029 (In-Line Illumination)			
NO	Item	Specifications	
1	Optical Configuration	Double Telecentric	
2	Magnification	0.096X	
3	Working Distance	431mm	
4	Object Space DOV	± 34.72mm	
5	Telecentricity	< 0.02 °	
6	Distortion	< 0.02%	
7	F/#	F8	
8	Resolution/MTF @F8	> 30%@110lp/mm	
9	Object Space FOV	Φ24mm	
10	Image Space FOV	Φ250mm	
11	Sensor Size Range (H × V)	4/3"	196 × 141mm
		1"	133 × 100.0mm
		2/3"	92 × 69mm
		1/1.8"	75 × 56mm
		1/2.5"	60.4 × 44.8mm
12	Camera Mount	F-Mount	
13	Lens Size (Dia. × Length)	Φ280 × 545.3mm	
14	The distance from the front end of imaging lens to the first surface of the first glass lens	2.5mm	



Compact Double Telecentric Lens 610030

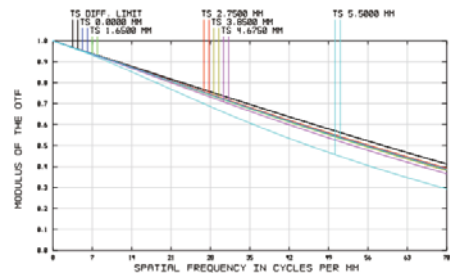
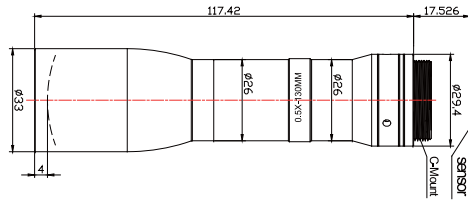
0.5X 2/3" C



Stock No.: 610030		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.5X
3	Working Distance	130.00mm
4	Object Space DOV	± 1.92mm
5	Telecentricity	< 0.03 °
6	Distortion	< 0.03%
7	F/#	F12
8	Resolution/MTF @F12	> 30%@70lp/mm
9	Object Space FOV	Φ22mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 17.6 × 13.2mm 1/2" 12.8 × 9.6mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 121.35mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm

Compact Double Telecentric Lens 610031

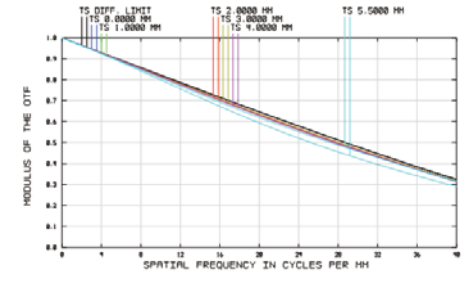
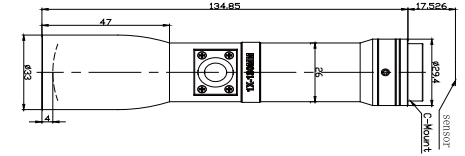
0.5X 2/3" C



Stock No.: 610031		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	0.5X
3	Working Distance	130.00mm
4	Object Space DOV	± 1.92mm
5	Telecentricity	< 0.03 °
6	Distortion	< 0.03%
7	F/#	F12
8	Resolution/MTF @F12	> 30%@70lp/mm
9	Object Space FOV	Φ22mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 17.6 × 13.2mm 1/2" 12.8 × 9.6mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 117.42mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm

Compact Double Telecentric Lens 610032

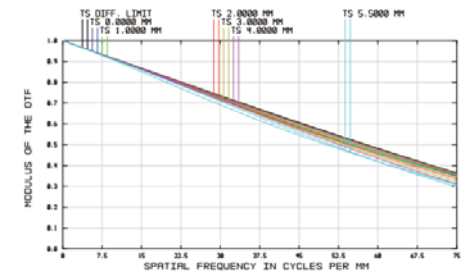
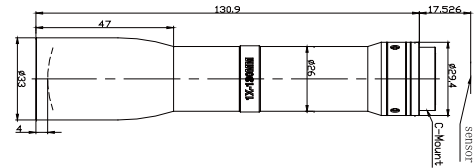
1.0X 2/3" C



Stock No.: 610032		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	1.0X
3	Working Distance	130.00mm
4	Object Space DOV	± 0.48mm
5	Telecentricity	< 0.03 °
6	Distortion	< 0.03%
7	F/#	F12
8	Resolution/MTF @F12	> 30%@75lp/mm
9	Object Space FOV	Φ11mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 8.8 × 6.6mm 1/2" 6.4 × 4.8mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 134.85mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm

Compact Double Telecentric Lens 610033

1.0X 2/3" C

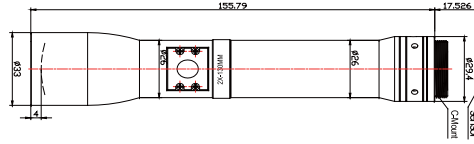


Stock No.: 610033		
NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	1.0X
3	Working Distance	130.00mm
4	Object Space DOV	± 0.48mm
5	Telecentricity	< 0.03 °
6	Distortion	< 0.03%
7	F/#	F12
8	Resolution/MTF @F12	> 30%@75lp/mm
9	Object Space FOV	Φ11mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 8.8 × 6.6mm 1/2" 6.4 × 4.8mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 130.9mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm



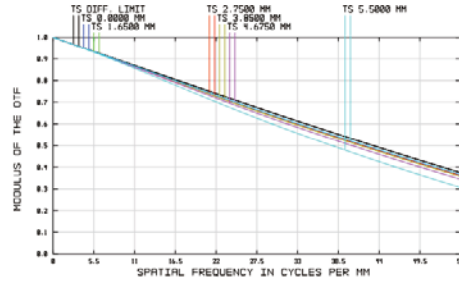
Compact Double Telecentric Lens 610034

2.0X 2/3" C



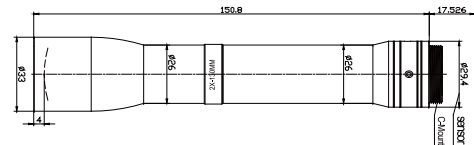
Stock No.: 610034

NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	2.0X
3	Working Distance	130.00mm
4	Object Space DOV	±0.16mm
5	Telecentricity	<0.04°
6	Distortion	<0.05%
7	F/#	F16
8	Resolution/MTF @F16	>30%@55lp/mm
9	Object Space FOV	Φ5.5mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 4.4 × 3.3mm 1/2" 3.2 × 2.4mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 155.79mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm



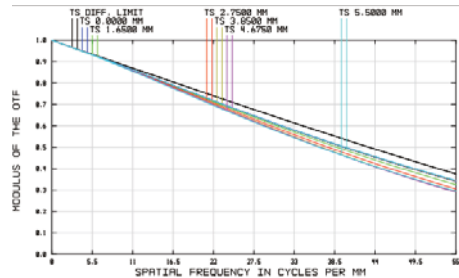
Compact Double Telecentric Lens 610035

2.0X 2/3" C



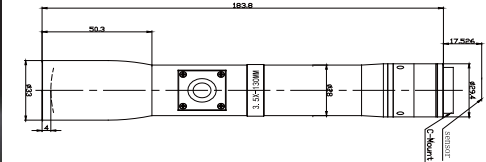
Stock No.: 610035

NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	2.0X
3	Working Distance	130.00mm
4	Object Space DOV	±0.16mm
5	Telecentricity	<0.04°
6	Distortion	<0.05%
7	F/#	F16
8	Resolution/MTF @F16	>30%@55lp/mm
9	Object Space FOV	Φ5.5mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 4.4 × 3.3mm 1/2" 3.2 × 2.4mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 150.8mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.5mm



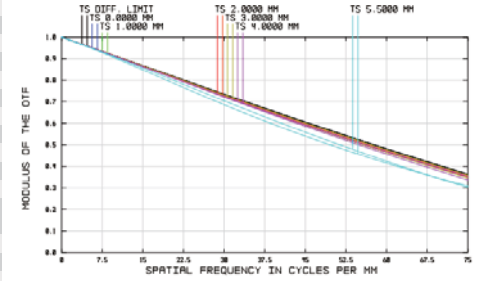
Compact Double Telecentric Lens 610036

3.5X 2/3" C



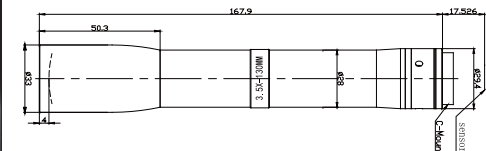
Stock No.: 610036

NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	3.5X
3	Working Distance	130.00mm
4	Object Space DOV	±0.08mm
5	Telecentricity	<0.06°
6	Distortion	<0.05%
7	F/#	F24
8	Resolution/MTF @F24	>30%@40lp/mm
9	Object Space FOV	Φ3.1mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 2.5 × 1.8mm 1/2" 1.8 × 1.3mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 183.8mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm



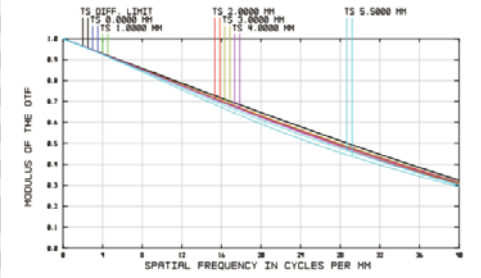
Compact Double Telecentric Lens 610037

3.5X 2/3" C



Stock No.: 610037

NO	Item	Specifications
1	Optical Configuration	Double Telecentric
2	Magnification	3.5X
3	Working Distance	130.00mm
4	Object Space DOV	±0.08mm
5	Telecentricity	<0.06°
6	Distortion	<0.05%
7	F/#	F24
8	Resolution/MTF @F24	>30%@40lp/mm
9	Object Space FOV	Φ3.1mm
10	Image Space FOV	Φ11mm
11	Sensor Size Range (H×V)	2/3" 2.5 × 1.8mm 1/2" 1.8 × 1.3mm
12	Filter thread	M30.5 × 0.5mm
13	Camera Mount	C-Mount
14	Lens Size (Dia. × Length)	Φ33.0 × 167.9mm
15	The distance from the front end of imaging lens to the first surface of the first glass lens	4.0mm



Manual Zoom Lens

ZOOM LENS IS THE LENS WITH VARIABLE FOCAL LENGTH, WE CAN OFFER 12-36MM FL RANGE ZOOM LENS OF 2M PIXEL AND 5M PIXEL FOR YOUR APPLICATION.

2/3" Manual Zoom Lens

640000 (2/3",12-36mm,2M)	61
640001 (2/3",12-36mm,5M)	63

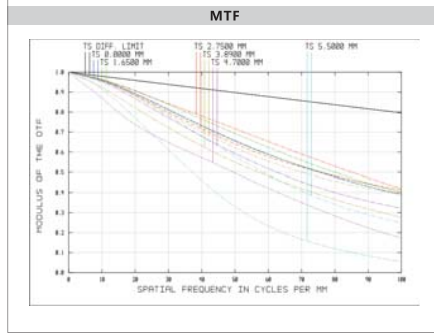
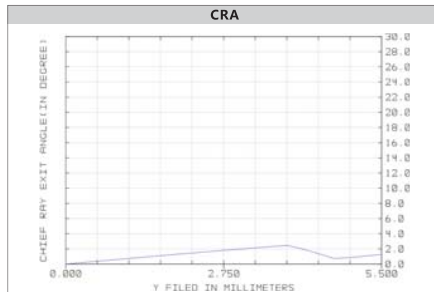


2/3" Manual Zoom Lens 640000

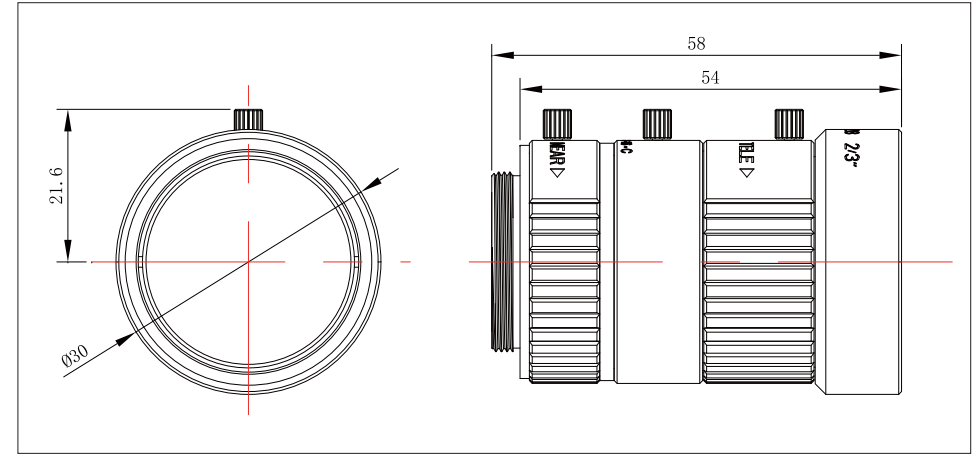
2/3" 2MP C M-Iris



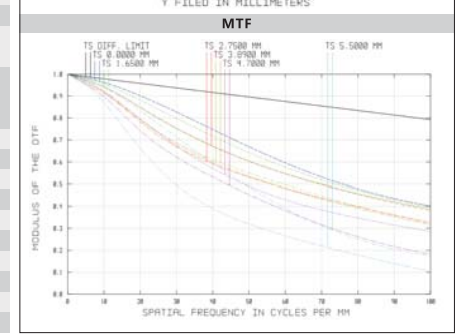
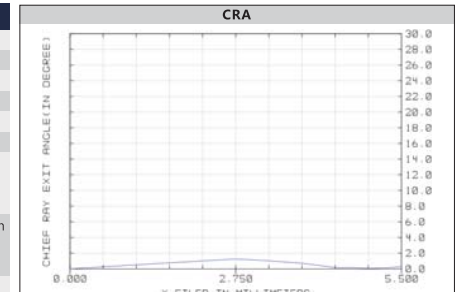
W		
No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F2.8-C
5	Working Distance	0.15m-∞
6	FOV(Diagonal X H X V)	2/3" 50.8 ° × 41.3 ° × 31.2 °
		1/2" 37.6 ° × 30.3 ° × 22.8 °
		1/3" 28.5 ° × 22.8 ° × 17.2 °
7	Object Size (at the minimum focus distance)	2/3" 167.8 × 132.0 × 97.5mm
		1/2" 119.3 × 94.4 × 70.1mm
		1/3" 88.3 × 70.1 × 52.3mm
8	BFL(in air)	14.36mm
9	Operation	Focus Manual
10	Operation	Focus Manual
		Aperture M-Iris
11	Distortion	2/3" -3.43%@y=5.5mm
		1/2" -2.33%@y=4.0mm
		1/3" -1.42%@y=3.0mm
12	Filter thread	M35.5 × 0.5mm
13	Lens Size(W X L)	40.3 × 58mm
14	Weight	105g
15	Work Temperature	-10°C ~ +50°C
16	Distance of entrance pupil	25.35mm
17	Diameter of entrance pupil	4.30mm
18	Distance of exit pupil	-84.90mm
19	Diameter of exit pupil	30.38mm
20	Total optical length	65.92mm
21	Magnification	-0.0684



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.06840	4.8000	5.1282
200mm	-0.05324	8.4433	9.2220
250mm	-0.04359	13.0550	14.5770
300mm	-0.03690	18.6050	21.2390
350mm	-0.03199	25.0640	29.2540



T		
No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	36mm
3	Mount	C-Mount
4	F/#	F2.8-C
5	Working Distance	0.45m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 17.0 ° × 13.8 ° × 10.4 °
		1/2" 12.6 ° × 10.1 ° × 7.6 °
		1/3" 9.5 ° × 7.6 ° × 5.7 °
7	Object Size (at the minimum focus distance)	2/3" 168.3 × 135.3 × 101.8mm
		1/2" 123.2 × 98.7 × 74.2mm
		1/3" 92.6 × 74.2 × 55.7mm
8	BFL(in air)	12.62mm
9	Operation	Focus Manual
10	Operation	Focus Manual
		Aperture M-Iris
11	Distortion	2/3" 2.30%@y=5.5mm
		1/2" 1.14%@y=4.0mm
		1/3" 0.62%@y=3.0mm
12	Filter thread	M35.5 × 0.5mm
13	Lens Size(W X L)	40.3 × 58mm
14	Weight	105g
15	Work Temperature	-10°C ~ +50°C
16	Distance of entrance pupil	67.7mm
17	Diameter of entrance pupil	12.67mm
18	Distance of exit pupil	-121.24mm
19	Diameter of exit pupil	42.72mm
20	Total optical length	70.28mm
21	Magnification	-0.0682



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
450mm	-0.06820	5.0087	5.1227
500mm	-0.06221	6.1760	6.3324
550mm	-0.05720	7.4637	9.6719
600mm	-0.05294	8.8715	9.1418
650mm	-0.04917	10.3990	10.7430

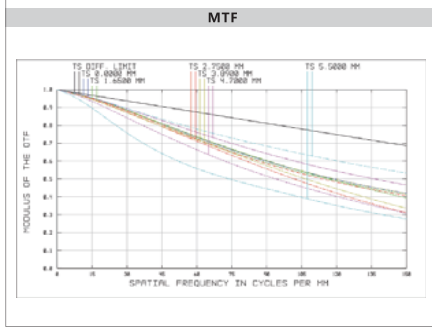
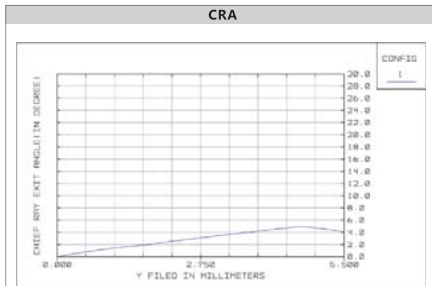


2/3" Manual Zoom Lens 640001

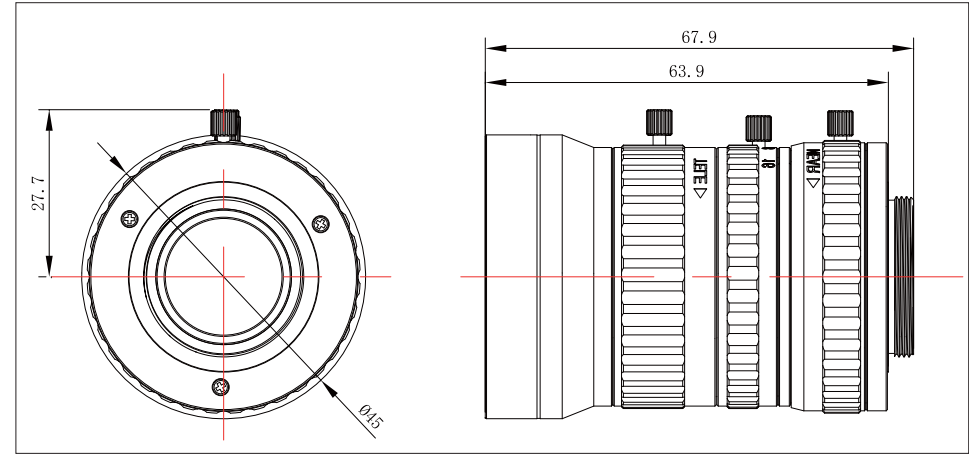
2/3" 5MP C M-Iris



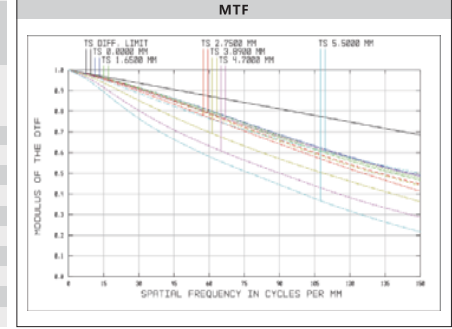
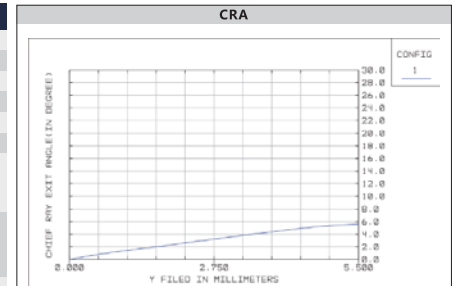
W		
No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	12mm
3	Mount	C-Mount
4	F/#	F2.8-F16
5	Working Distance	0.15m ~ ∞
6	FOV(Diagonal X H X V)	2/3" 50.8° × 41.3° × 31.3°
		1/2" 37.7° × 30.3° × 22.8°
		1/3" 28.5° × 22.8° × 17.2°
7	Object Size (at the minimum focus distance)	2/3" 173.2 × 135.8 × 100.2mm
		1/2" 122.7 × 97.1 × 72.2mm
		1/3" 90.8 × 72.2 × 53.8mm
8	BFL(in air)	18.93mm
9	Operation	Focus Manual
		Aperture Manual M-Iris
10	Distortion	2/3" -3.45%@y=5.5mm
		1/2" -2.22%@y=4.0mm
		1/3" -1.34%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W X L)	50.3 × 67.9mm
13	Weight	188g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	31.34mm
16	Diameter of entrance pupil	4.22mm
17	Distance of exit pupil	-37.88mm
18	Diameter of exit pupil	13.34mm
19	Total optical length	78.69mm
20	Magnification	-0.0673



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
150mm	-0.06732	2.2324	2.3009
200mm	-0.05255	3.9491	4.1115
250mm	-0.04310	6.1401	6.4573
300mm	-0.03654	8.7986	9.3468
350mm	-0.03170	11.9180	12.7880



T		
No	Item	Specifications
1	Max. sensor size	2/3"(11mm)
2	Focal Length	36mm
3	Mount	C-Mount
4	F/#	F2.8-F16
5	Working Distance	0.45m ~ ∞
6	FOV(Diagonal x H x V)	2/3" 17.2° × 13.8° × 10.5°
		1/2" 12.6° × 10.1° × 7.6°
		1/3" 9.5° × 7.6° × 5.7°
7	Object Size (at the minimum focus distance)	2/3" 157.4 × 125.9 × 94.5mm
		1/2" 144.5 × 91.6 × 68.7mm
		1/3" 85.9 × 68.7 × 51.5mm
8	BFL(in air)	18.87mm
9	Operation	Focus Manual
		Aperture Manual M-Iris
10	Distortion	2/3" 1.45%@y=5.5mm
		1/2" 0.69%@y=4.0mm
		1/3" 0.37%@y=3.0mm
11	Filter thread	M40.5 × 0.5mm
12	Lens Size(W x L)	49 × 67.9mm
13	Weight	188g
14	Work Temperature	-10°C ~ +50°C
15	Distance of entrance pupil	96.36mm
16	Diameter of entrance pupil	12.66mm
17	Distance of exit pupil	-37.95mm
18	Diameter of exit pupil	13.38mm
19	Total optical length	78.67mm
20	Magnification	-0.0699



Focus Distance	Magnification	Front DOV(mm)	Back DOV(mm)
450mm	-0.06986	2.2584	2.2813
500mm	-0.06361	2.7866	2.8180
550mm	-0.05840	3.3699	3.4118
600mm	-0.05398	4.0083	4.0626
650mm	-0.05019	4.7015	4.7706



Motorized Zoom Lens

AND NOW , WE HAVE TWO SERIES MOTORIZED ZOOM LENSES ,WHICH ARE THE 33X (1/2" 10-330MM FL RANGE)AND 60X (1/1.8" 12.5-750MM FL RANGE) FOR YOUR CHOICE.

HD&Through Fog Motorized Zoom Lens

640004	(1/2",33X)	65
640006	(1/1.8",60X)	67

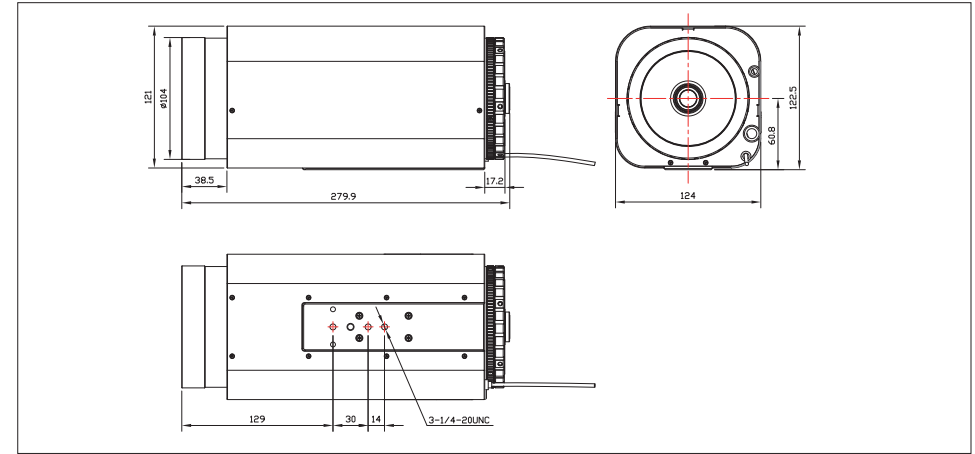
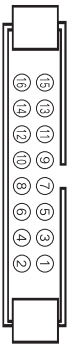


Motorized Zoom Lens 640004 640004

C 2MP DC MOTO



W				
No.	Item	Specification		
1	Max. sensor size	1/2"(8mm)		
2	Focal Length	10-330		
3	Mount	C-Mount		
4	F/#	F1.5-F360C		
5	Working Distance	2.8m-∞		
6	FOV(Diagonal X H X V)	1/2"	43.2° × 34.8° × 26.2°	
		1/3"	32.6° × 26.2° × 19.7°	
		1/4"	24.6° × 19.7° × 14.8°	
7	BFL(in air)	14.67mm		
8	Operation	Focus	Motorized	
		Zoom	Motorized	
		Iris	DC Auto	
9	Distortion	1/2"	-3.33%@y=4.0mm	
		1/3"	-2.0%@y=3.0mm	
		1/4"	-1.16%@y=2.25mm	
10	Filter thread	M100 × 1		
11	Lens Size(W X H X L)	124 × 122.5 × 275.7mm		
12	Weight	3.15kg		
13	Ambient Temperature	-10°C ~ +50°C		
14	Control Connector	16 Pin Connector		
		1	DC12V+	
		2	GND	
		3	Wild+	
		4	Zoom	Tele- Voltage
		5	Focus	Far+ Near- Voltage
		6		
		7	Potentiometer Power(input)	
		8	Potentiometer GND	
		9	Focus Potentiomete(output)	
		10	Zoom Potentiomete(output)	
		11	GND	
		12	NC	
		13	Manual B	
		14	Manual A	
		15	RS485B	
16	RS485A			



T				
No.	Item	Specification		
1	Max. sensor size	1/2"(8mm)		
2	Focal Length	10-330		
3	Mount	C-Mount		
4	F/#	F1.5-F360C		
5	Working Distance	2.8m-∞		
6	FOV(Diagonal X H X V)	1/2"	1.36° × 1.10° × 0.82°	
		1/3"	1.04° × 0.82° × 0.62°	
		1/4"	0.78° × 0.62° × 0.46°	
7	BFL(in air)	14.67mm		
8	Operation	Focus	Motorized	
		Zoom	Motorized	
		Iris	DC Auto	
9	Distortion	1/2"	2.20%@y=4.0mm	
		1/3"	1.22%@y=3.0mm	
		1/4"	0.68%@y=2.25mm	
10	Filter thread	M100 × 1		
11	Lens Size(W X H X L)	124 × 122.5 × 275.7mm		
12	Weight	3.15kg		
13	Ambient Temperature	-10°C ~ +50°C		
14	Control Connector	16 Pin Connector		
		1	DC12V+	
		2	GND	
		3	Wild+	
		4	Zoom	Tele- Voltage
		5	Focus	Far+ Near- Voltage
		6		
		7	Potentiometer Power(input)	
		8	Potentiometer GND	
		9	Focus Potentiomete(output)	
		10	Zoom Potentiomete(output)	
		11	GND	
		12	NC	
		13	Manual B	
		14	Manual A	
		15	RS485B	
16	RS485A			

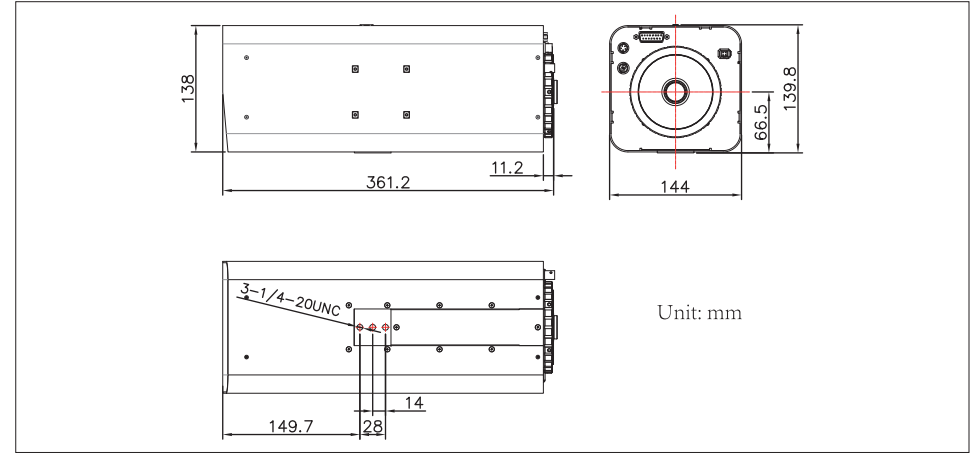
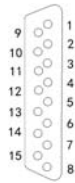


Motorized Zoom Lens 640004 640006

C 3MP DC MOTO

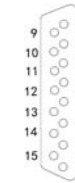


W		
No.	item	Specification
1	Max. sensor size	1/1.8" (9mm)
2	Focal Length	12.5-750.0mm
3	Mount	C-Mount
4	F/#	F3.5-F360C
5	Working Distance	5m-∞
6	FOV(Diagonal X H X V)	1/1.8" 38.80° × 33.82° × 19.02°
		1/2" 34.70° × 30.24° × 17.01°
		1/3" 26.30° × 22.92° × 12.89°
7	BFL(in air)	29.17mm
		Motorized
8	Operation	Motorized
		DC Auto
9	Distortion	1/1.8" -1.64%@y=4.5mm
		1/2" -1.50%@y=4.0mm
		1/3" -1.01%@y=3.0mm
10	Filter thread	M114 × 0.75
11	Lens Size(W X H X L)	144.0 × 139.8 × 361.2mm
12	NDFilter	1/8,1/64
13	Weight	5.79kg
14	Ambient Temperature	-10°C ~ +50°C
15	Control Socket	15Pin Connector
		1 Focus+
		2 Focus-
		3 Zoom+
		4 Zoom-
		5 Filter+
		6 Filter-
		7 Aperture+
		8 Aperture-
		9 PRESET_VCC
		10 PRESET_FOCUS
		11 PRESET_ZOOM
		12 PRESET_GND
		13 NC
		14 RS485+
15 RS485-		
16	Filter Control	5 Filter - No Filter(Energizing Position)
		6 Filter + →Infrared Filter→NDFilter1/8→NDFilter1/64
		5 Filter + No Filter(Energizing Position)
		6 Filter - ←Infrared Filter←NDFilter1/8←NDFilter1/64
17	Electric Socket	4 Pin Socket
		1 NC
		2 GND
		3 NC
4 DC12V+		



Unit: mm

T		
No.	item	Specification
1	Max. sensor size	1/1.8" (9mm)
2	Focal Length	12.5-750.0mm
3	Mount	C-Mount
4	F/#	F3.5-F360C
5	Working Distance	5m-∞
6	FOV(Diagonal X H X V)	1/1.8" 0.71° × 0.62° × 0.35°
		1/2" 0.63° × 0.55° × 0.31°
		1/3" 0.47° × 0.41° × 0.23°
7	BFL(in air)	29.17mm
		Motorized
8	Operation	Motorized
		DC Auto
9	Distortion	1/1.8" 1.36%@y=4.5mm
		1/2" 1.14%@y=4.0mm
		1/3" 0.68%@y=3.0mm
10	Filter thread	M114 × 0.75
11	Lens Size(W X H X L)	144.0 × 139.8 × 361.2mm
12	NDFilter	1/8,1/64
13	Weight	5.79kg
14	Ambient Temperature	-10°C ~ +50°C
15	Control Socket	15Pin Connector
		1 Focus+
		2 Focus-
		3 Zoom+
		4 Zoom-
		5 Filter+
		6 Filter-
		7 Aperture+
		8 Aperture-
		9 PRESET_VCC
		10 PRESET_FOCUS
		11 PRESET_ZOOM
		12 PRESET_GND
		13 NC
		14 RS485+
15 RS485-		
16	Filter Control	5 Filter - No Filter(Energizing Position)
		6 Filter + →Infrared Filter→NDFilter1/8→NDFilter1/64
		5 Filter + No Filter(Energizing Position)
		6 Filter - ←Infrared Filter←NDFilter1/8←NDFilter1/64
17	Electric Socket	4 Pin Socket
		1 NC
		2 GND
		3 NC
4 DC12V+		



Infrared Lens

INFRARED LENS IS DESIGNED WITH THE WAVELENGTH RANGE IS 8-12 μm , WHICH IS USED WIDELY IN DEFENSE FIELD , MILITARY FIELD AND OTHER RELATED FIELD.

GA Long wavelength Infrared lens

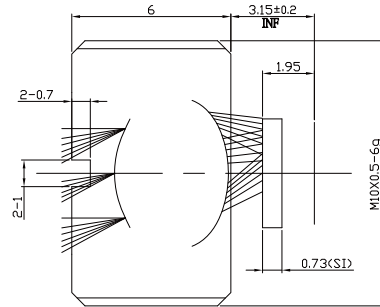
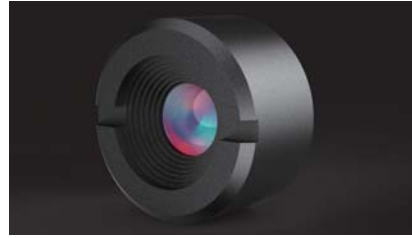
680200	69
680201	69
680202	68
680203	68
680204	69
680205	69
680206	70
680207	70



GA Long Wavelength Infrared lens 680204

8-12 μm Customizable interface

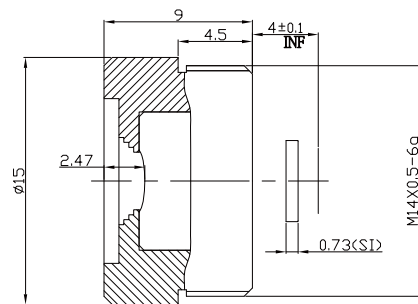
NO	Item	Specification
1	EFL	3.7mm
2	Sensor	256x192 12 μm
3	F/#	1.1
4	FOV (HxV)	45.6° x34.4°
5	Wavelength	8-12 μm
6	Transmittance	>88%
7	Front Lens Coating	HD
8	Focus	Fixed
9	Focus distance	0.1m- ∞
10	Athermalizing	Optical athermalization
11	Sealing	/
12	Operation Temperature	-40~80 °C
13	Weight	<5g
14	Appearance Grade	60~40



GA Long Wavelength Infrared lens 680205

8-12 μm Customizable interface

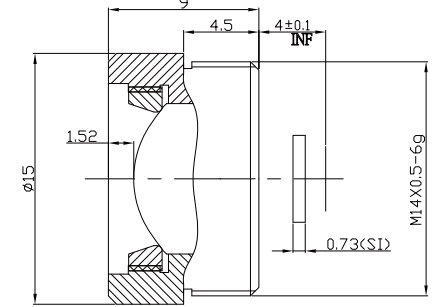
NO	Item	Specification
1	EFL	3.5mm
2	Sensor	256x192 12 μm
3	F/#	1.0
4	FOV (HxV)	49.1° x36.7°
5	Wavelength	8-12 μm
6	Transmittance	>88%
7	Front Lens Coating	HD
8	Focus	Fixed
9	Focus distance	0.1m- ∞
10	Athermalizing	Optical athermalization
11	Sealing	/
12	Operation Temperature	-40~80 °C
13	Weight	<10g
14	Appearance Grade	60~40
15	Distortion	10%
16	Number of lenses	1



GA Long Wavelength Infrared lens 680206

8-12 μm Customizable interface

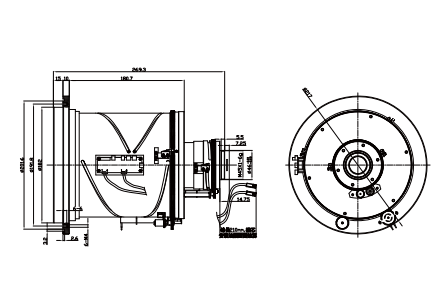
NO	Item	Specification
1	EFL	7mm
2	Sensor	256x192 12 μm
3	F/#	1.0
4	FOV (HxV)	24.8° x18.7°
5	Wavelength	8-12 μm
6	Transmittance	>88%
7	Front Lens Coating	HD
8	Focus	Fixed
9	Focus distance	0.2m- ∞
10	Athermalizing	Optical athermalization
11	Sealing	/
12	Operation Temperature	-40~80 °C
13	Weight	<10g
14	Appearance Grade	60~40
15	Number of lenses	2



GA Long Wavelength Infrared lens 680207

8-12 μm Customizable interface

NO	Item	Specification
1	EFL	36-180mm
2	Sensor	640x512 17 μm
3	F/#	1.2
4	FOV (HxV)	Min FOV 3.5° x2.8° Max FOV 17.4° x13.9°
5	Wavelength	8-12 μm
6	Transmittance	/
7	Front Lens Coating	HD
8	Focus	Motorized
9	Zoom	Motorized
10	Focus distance	2m- ∞
11	Athermalizing	Optical athermalization
12	Sealing	/
13	Operation Temperature	-40~80 °C
14	Weight	<5.5kg
15	Appearance Grade	60~40



Line Scan Lens

LINE SCAN LENS ALSO CALLED LINEAR ARRAY LENS, IT CAN BE USED WITH LINEAR SCAN CAMERAS WHOSE PHOTSENSITIVE CHIPS ARE ARRANGED LINEARLY. THE LENS IS USED WIDELY IN INDUSTRIAL QUICK DETECTION BASED ON ITS LARGE SENSOR SIZE .

GAOPTICS® PUSH OUT A SERIES OF CONTINUOUS VARIABLE LINE SCAN LENS WITH HIGH RESOLUTION AND LOW DISTORTION IN ORDER TO MEET THE REQUIREMENT FROM QUICK DETECTION MARKET, THE OPTICAL DESIGN IS UNIQUE FOR THIS LENS AND THEY ARE MANY MOUNTS CAN BE CHOSED ACCORDING TO DIFFERENT APPLICATION, SUCH AS M42、M58、M72……

620000	(60mm,Max.sensor size 60mm)	73
620001	(60mm,Max.sensor size 60mm)	75
620002	(60mm,Max.sensor size 60mm)	77
620006	(60mm,Max.sensor size 60mm)	79
620003	(60mm,Max.sensor size 60mm)	81
620004	(60mm,Max.sensor size 60mm)	83
620005	(60mm,Max.sensor size 60mm)	85
620007	(60mm,Max.sensor size 60mm)	87
620008	(60mm,Max.sensor size 60mm)	89

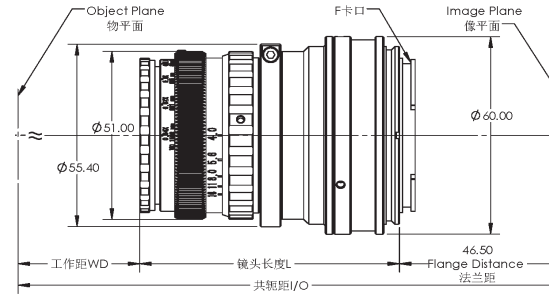
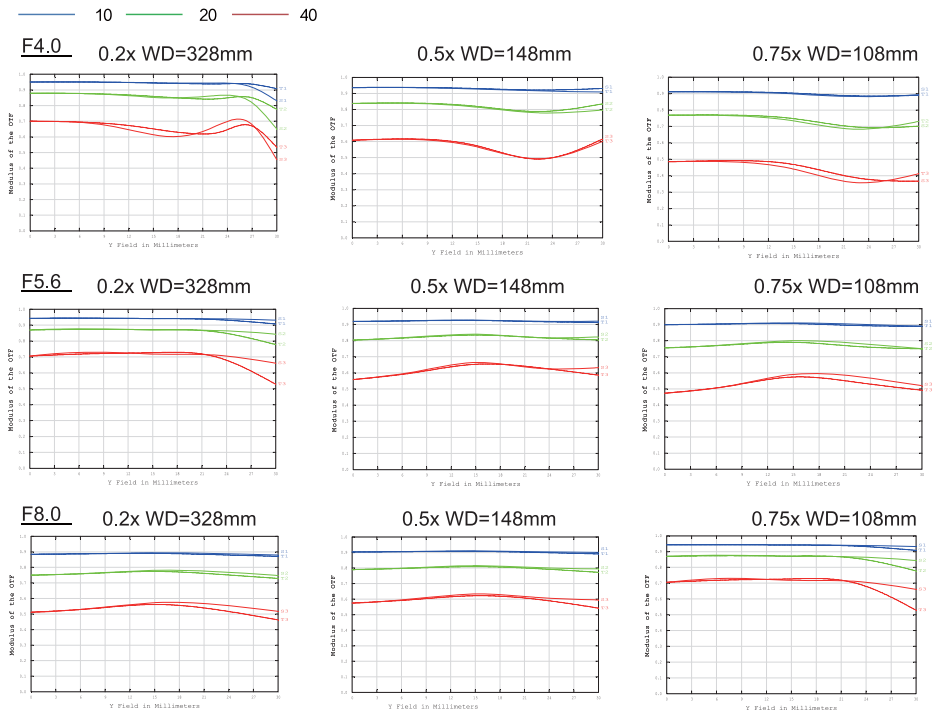


Line Scan Lens 620000

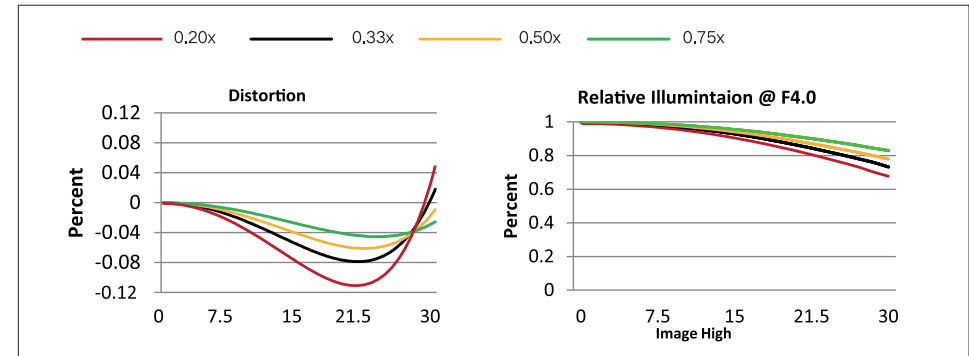
F | 0.2X-0.75X | Φ60mm



MTF with reference to image height for visible spectrum						
Wavelength λ	[nm]:	656	587	546	486	435
Spectral weighting	[%]:	15	20	30	25	10
Spatial frequency R	[1/mm]:	10	20	40		
Image circle	[mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 - 22
Max. sensor size	60mm
Magnification	0.2x - 0.75x
Transmission	400 ~ 700nm
Mount	F - mount
Weight	312g/351g Without Extension ring/With Extension ring



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)	Φ57FOV(mm)	Φ60FOV(mm)
0.20x	437	328	62	216.4	285.0	300.0
0.25x	380	269	65	173.1	228.0	240.0
0.28x	356	243	67	154.5	203.6	214.3
0.33x	323	206	71	131.1	172.7	181.8
0.39x	303	182	74	110.9	146.2	153.8
0.45x	287	163	78	96.2	126.7	133.3
0.50x	276	148	81	86.5	114.0	120.0
0.60x	262	128	88	72.1	95.0	100.0
0.65x	257	120	90	66.6	87.7	92.3
0.75x	251	108	97	57.7	76.0	80.0

Introduction for the use of lens

- The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
- Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
- Please make sure the lens be installed into the camera.
- Rotated the focusing ring to get the clear image.
- When the magnification is greater than 0.45x, the extension ring should be used.
- Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



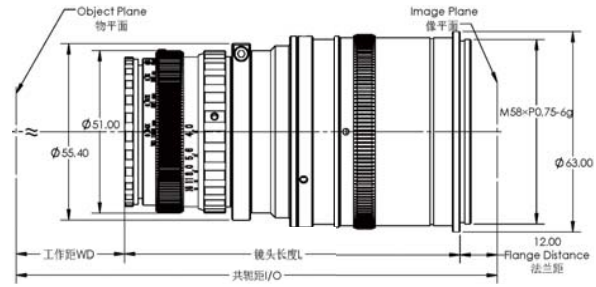
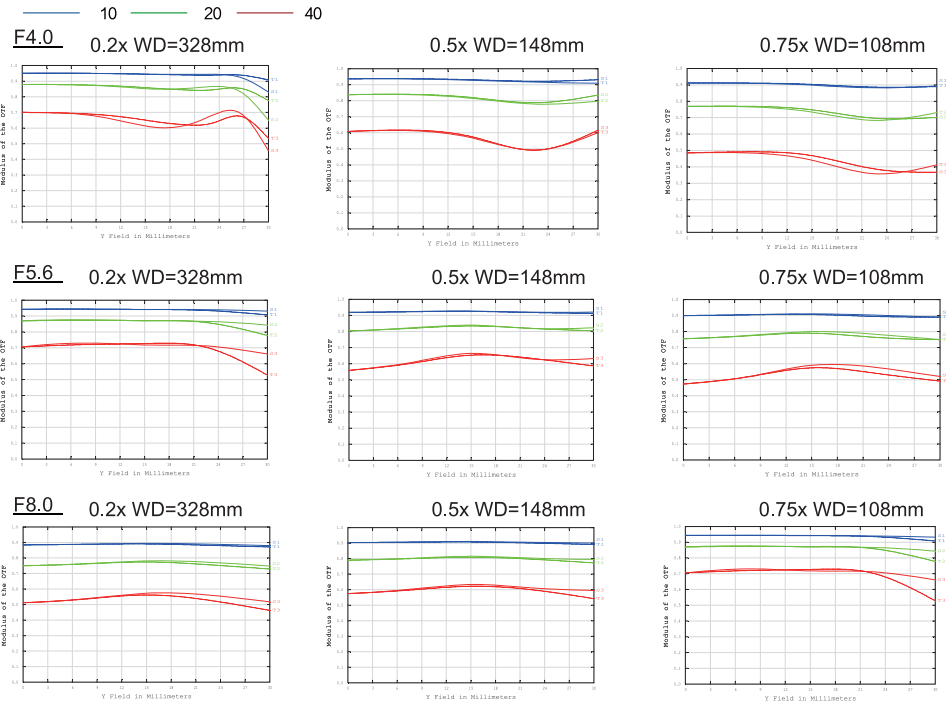
Line Scan Lens 620001

M58x0.75 0.15X-0.75X Φ60mm

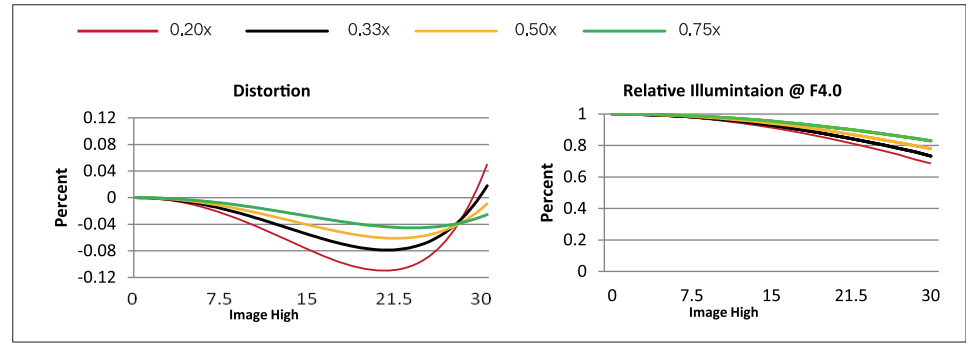


MTF with reference to image height for visible spectrum

Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 - 22
Max. sensor size	60mm
Magnification	0.2x - 0.75x
Transmission	400 - 700nm
Mount	M58 × 0.75
Weight	385g/424g Without Extension ring/With Extension ring



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)	Φ57FOV(mm)	Φ60FOV(mm)
0.20x	437	328	97	216.4	285.0	300.0
0.25x	380	269	99	173.1	228.0	240.0
0.28x	356	243	101	154.5	203.6	214.3
0.33x	323	206	105	131.1	172.7	181.8
0.39x	303	182	109	110.9	146.2	153.8
0.45x	287	163	112	96.2	126.7	133.3
0.50x	276	148	116	86.5	114.0	120.0
0.60x	262	128	122	72.1	95.0	100.0
0.65x	257	120	125	66.6	87.7	92.3
0.75x	251	108	131	57.7	76.0	80.0

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. When the magnification is greater than 0.45x, the extension ring should be used.
6. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



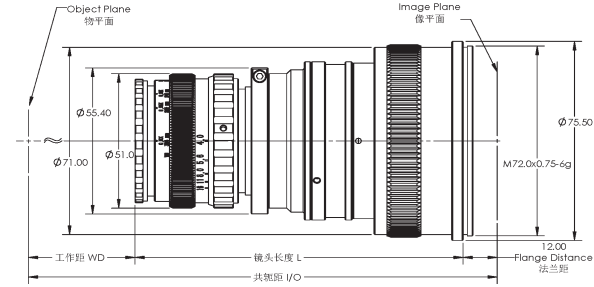
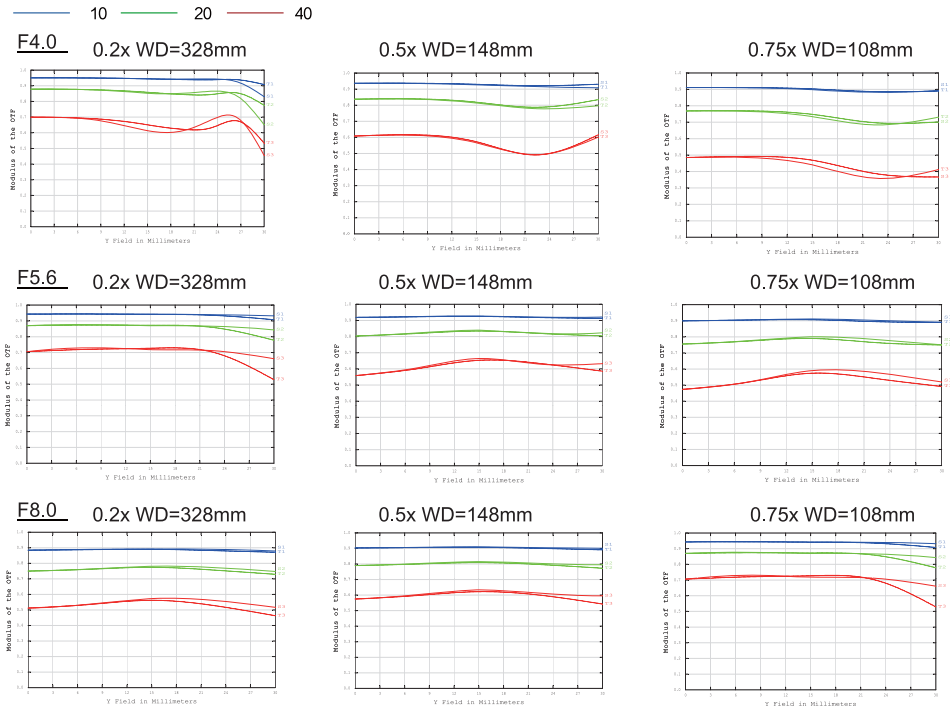
Line Scan Lens 620002

M72x0.75 0.2X-0.75X Φ60mm

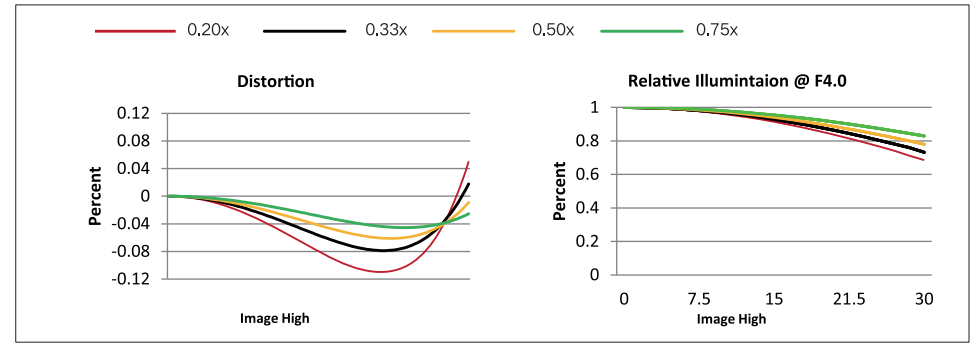


MTF with reference to image height for visible spectrum

Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 ~ 22
Max. sensor size	60mm
Magnification	0.2x ~ 0.75x
Transmission	400 ~ 700nm
Mount	M72 × 0.75
Weight	401g/440g Without Extension ring/With Extension ring



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)	Φ57FOV(mm)	Φ60FOV(mm)
0.20x	437	328	97	216.4	285.0	300.0
0.25x	380	269	99	173.1	228.0	240.0
0.28x	356	243	101	154.5	203.6	214.3
0.33x	323	206	105	131.1	172.7	181.8
0.39x	303	182	109	110.9	146.2	153.8
0.45x	287	163	112	96.2	126.7	133.3
0.50x	276	148	116	86.5	114.0	120.0
0.60x	262	128	122	72.1	95.0	100.0
0.65x	257	120	125	66.6	87.7	92.3
0.75x	251	108	131	57.7	76.0	80.0

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. When the magnification is greater than 0.45x, the extension ring should be used.
6. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



Line Scan Lens 620006

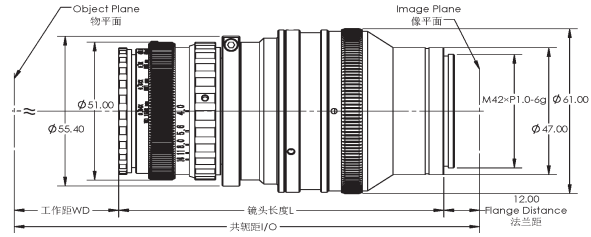
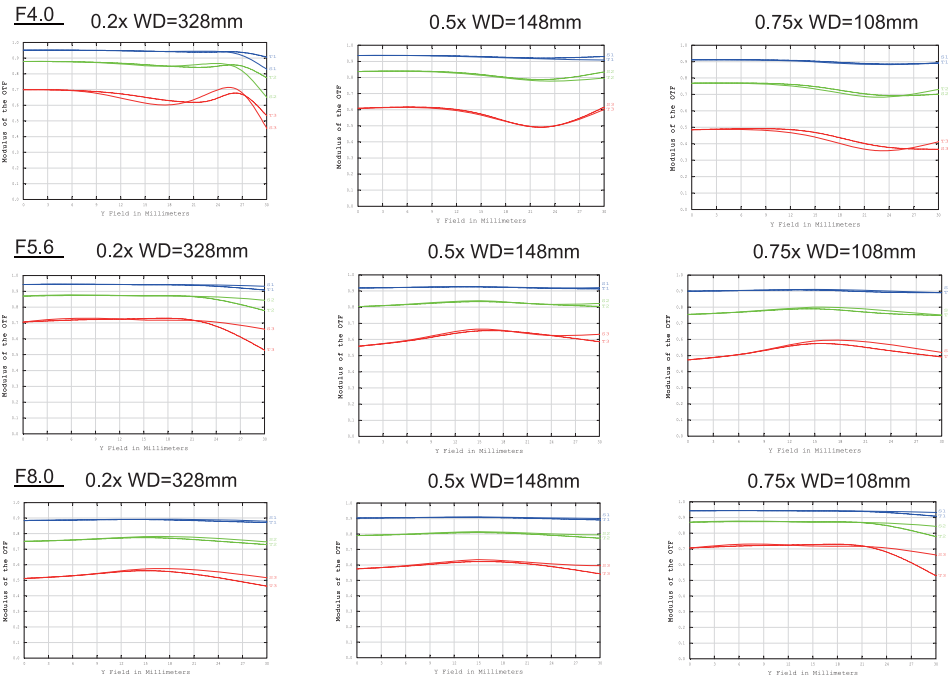
M42x1.0 0.2X-0.75X Φ60mm



MTF with reference to image height for visible spectrum

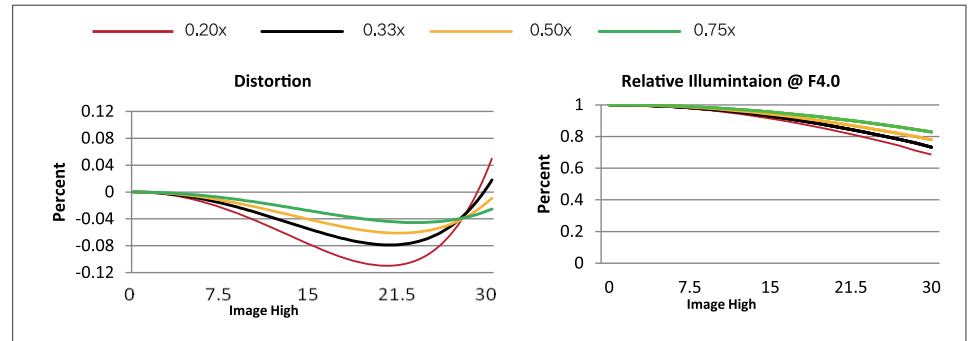
Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				

10 20 40



Technical Specifications

Focal Length	60mm
F/#	4 ~ 22
Max. sensor size	60mm
Magnification	0.2x ~ 0.75x
Transmission	400 ~ 700nm
Mount	M42 × 1.0
Weight	379g/418g Without Extension ring/With Extension ring



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)	Φ57FOV(mm)	Φ60FOV(mm)
0.20x	437	328	97	216.4	285.0	300.0
0.25x	380	269	99	173.1	228.0	240.0
0.28x	356	243	101	154.5	203.6	214.3
0.33x	323	206	105	131.1	172.7	181.8
0.39x	303	182	109	110.9	146.2	153.8
0.45x	287	163	112	96.2	126.7	133.3
0.50x	276	148	116	86.5	114.0	120.0
0.60x	262	128	122	72.1	95.0	100.0
0.65x	257	120	125	66.6	87.7	92.3
0.75x	251	108	131	57.7	76.0	80.0

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. When the magnification is greater than 0.45x, the extension ring should be used.
6. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.

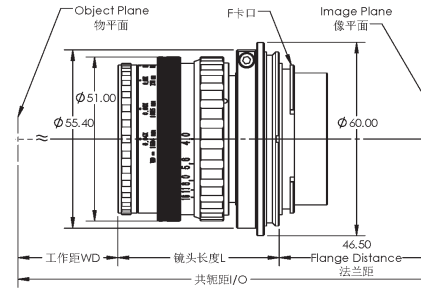
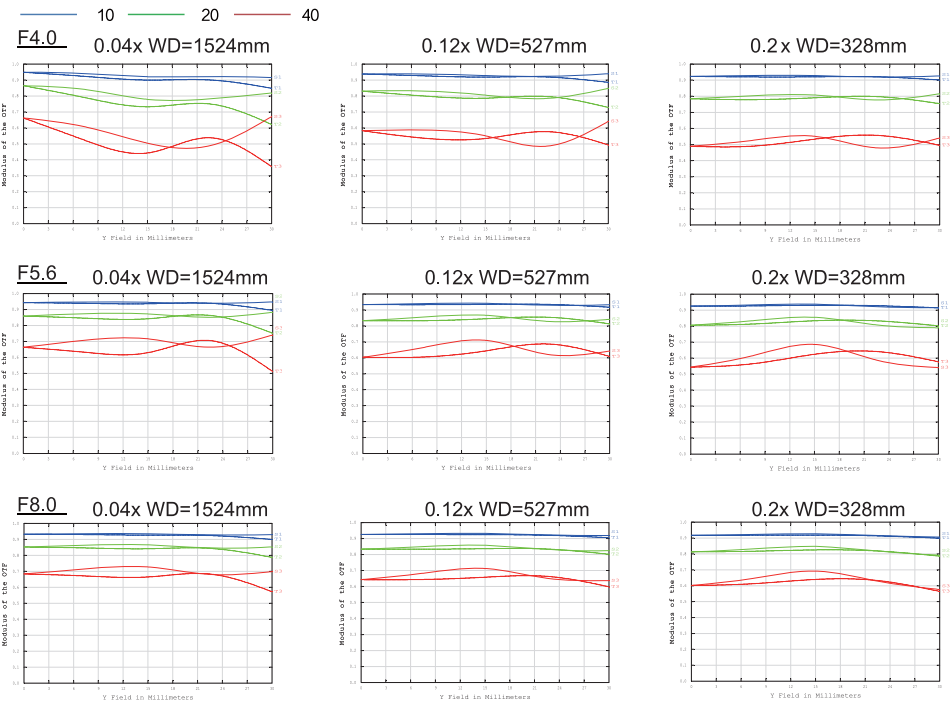


Line Scan Lens 620003

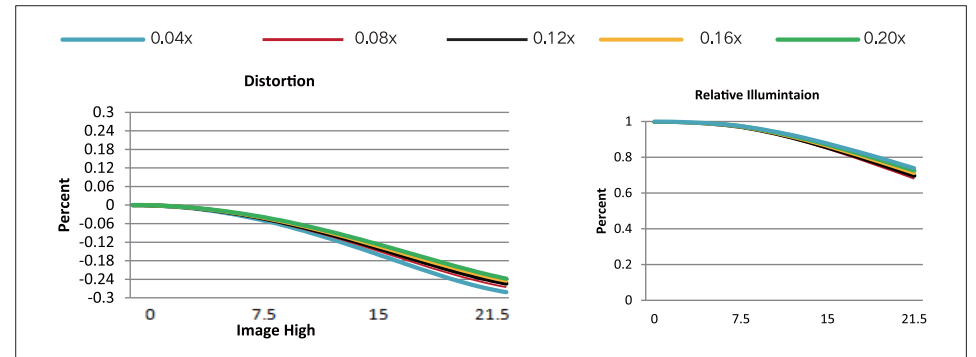
F 0.04X-0.2X Φ60mm



MTF with reference to image height for visible spectrum						
Wavelength λ	[nm]:	656	587	546	486	435
Spectral weighting	[%]:	15	20	30	25	10
Spatial frequency R	[1/mm]:	10	20	40		
Image circle	[mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 - 22
Max. sensor size	60mm
Magnification	0.04x ~ 0.2x
Transmission	400 ~ 700nm
Mount	F - mount
Weight	323g



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)
0.04x	1619	1524	49	1081.8
0.06x	1121	1025	50	721.2
0.08x	874	776	51	540.9
0.10x	726	627	52	432.7
0.12x	628	527	54	360.6
0.14x	558	456	55	309.1
0.16x	505	403	56	270.4
0.18x	465	361	57	240.4
0.20x	433	328	59	216.4

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



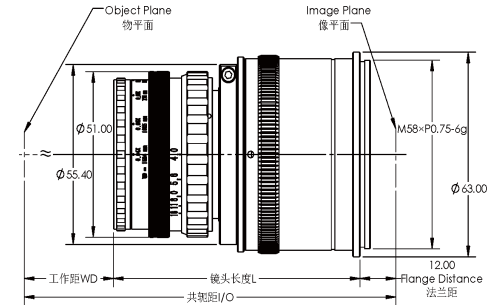
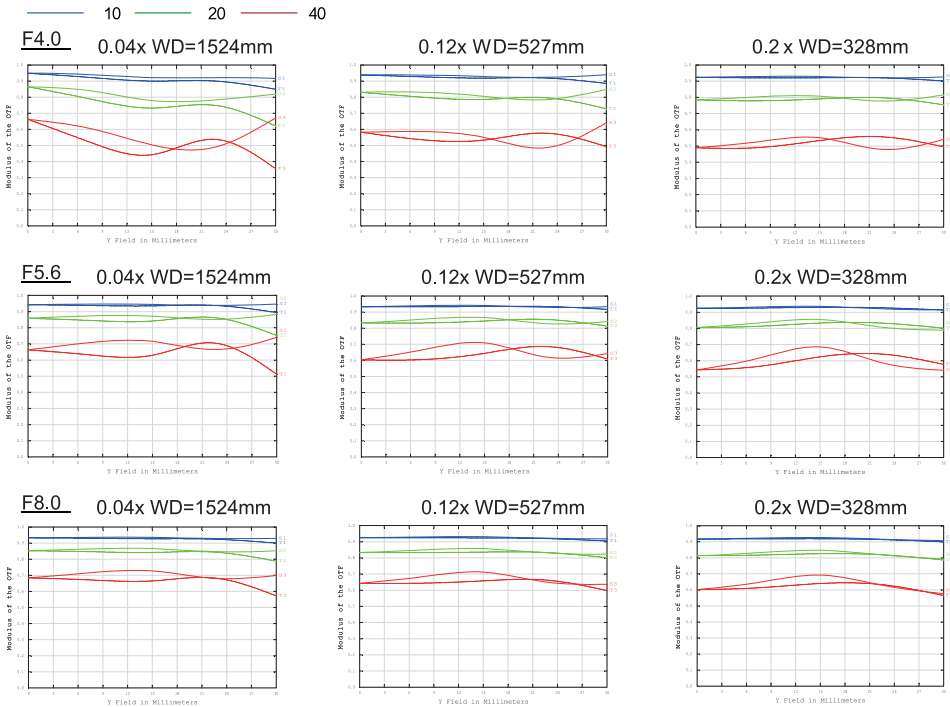
Line Scan Lens 620004

M58x0.75 0.04X-0.2X Φ60mm

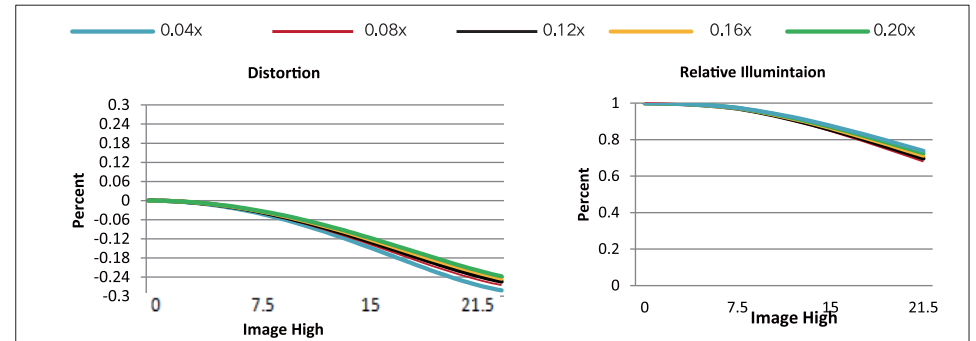


MTF with reference to image height for visible spectrum

Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 ~ 22
Max. sensor size	60mm
Magnification	0.04x ~ 0.2x
Transmission	400 ~ 700nm
Mount	M58 × 0.75
Weight	407g



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)
0.04x	1619	1524	83	1081.8
0.06x	1121	1025	84	721.2
0.08x	874	776	86	540.9
0.10x	726	627	87	432.7
0.12x	628	527	88	360.6
0.14x	558	456	89	309.1
0.16x	505	403	91	270.4
0.18x	465	361	92	240.4
0.20x	433	328	93	216.4

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



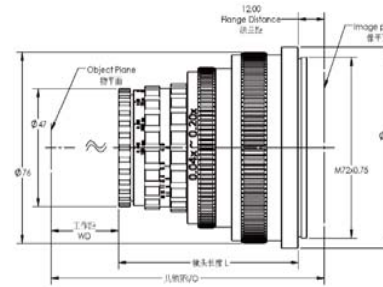
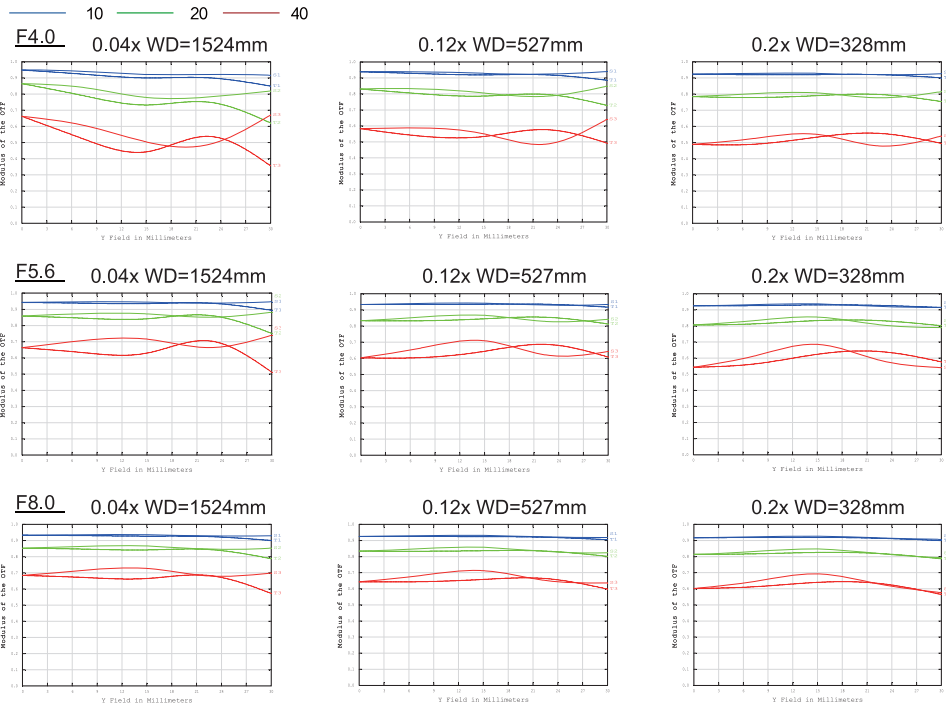
Line Scan Lens 620005

M72x0.75 0.04X-0.2X Φ60mm

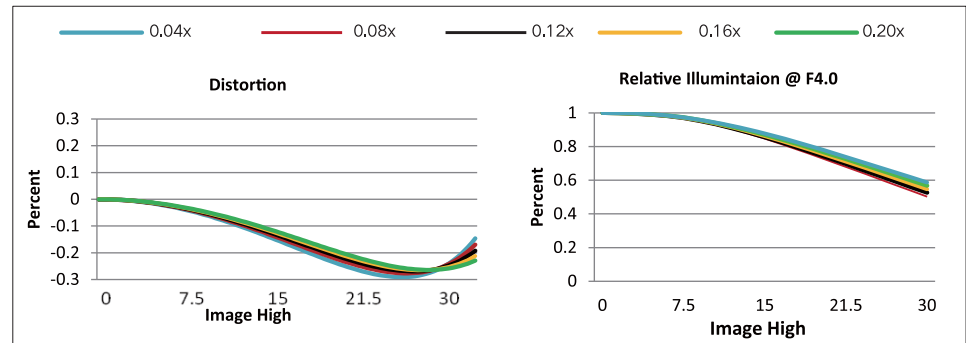


MTF with reference to image height for visible spectrum

Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 ~ 22
Max. sensor size	60mm
Magnification	0.04x ~ 0.2x
Transmission	400 ~ 700nm
Mount	M72 × 0.75
Weight	432g



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)	Φ57FOV(mm)	Φ60FOV(mm)
0.04x	1619	1524	83	1081.8	1425.0	1500.0
0.06x	1121	1025	84	721.2	950.0	1000.0
0.08x	874	776	86	540.9	712.5	750.0
0.10x	726	627	87	432.7	570.0	600.0
0.12x	628	527	88	360.6	475.0	500.0
0.14x	558	456	89	309.1	407.1	428.6
0.16x	505	403	91	270.4	356.3	365.0
0.18x	465	361	92	240.4	316.7	333.3
0.20x	433	328	93	216.4	285.0	300.0

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



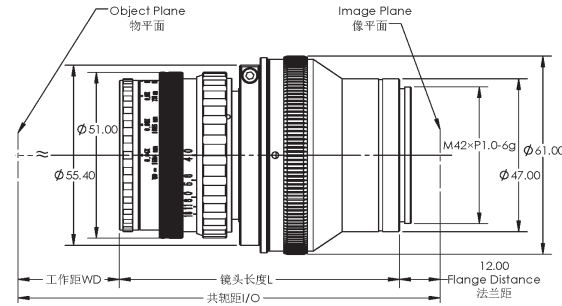
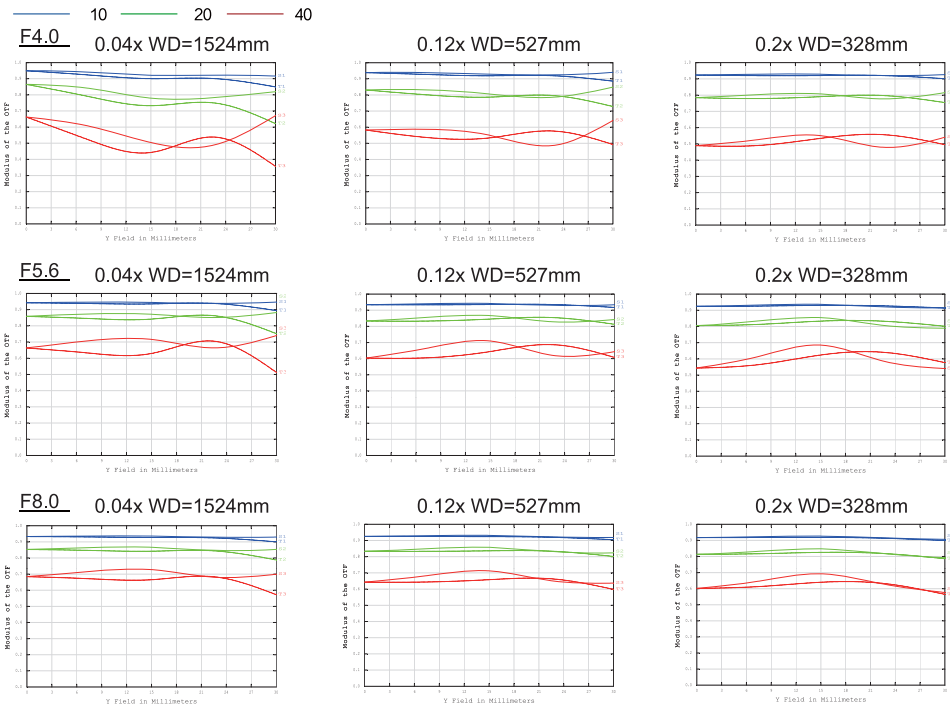
Line Scan Lens 620007

M42x1.0 0.04X-0.2X Φ60mm

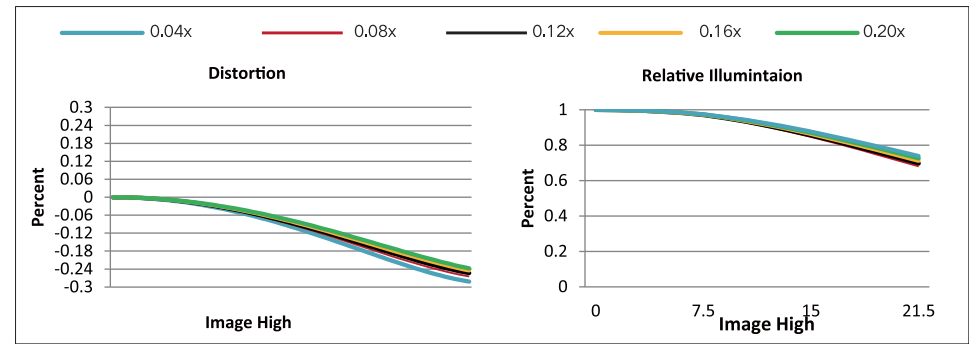


MTF with reference to image height for visible spectrum

Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				



Technical Specifications	
Focal Length	60mm
F/#	4 ~ 22
Max. sensor size	60mm
Magnification	0.04x ~ 0.2x
Transmission	400 ~ 700nm
Mount	M42 × 1.0
Weight	385g



Magnification (β)	I/O (mm)	Working Distance (mm)	Lens Length (mm)	Φ43.27FOV(mm)
0.04x	1619	1524	83	1081.8
0.06x	1121	1025	84	721.2
0.08x	874	776	86	540.9
0.10x	726	627	87	432.7
0.12x	628	527	88	360.6
0.14x	558	456	89	309.1
0.16x	505	403	91	270.4
0.18x	465	361	92	240.4
0.20x	433	328	93	216.4

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



Line Scan Lens 620008

M42x1.0 0.0X-0.5X Φ60mm

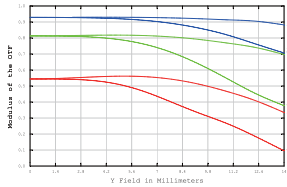


MTF with reference to image height for visible spectrum

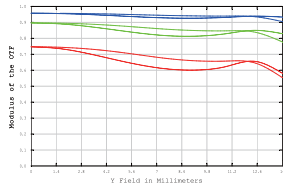
Wavelength λ [nm]:	656	587	546	486	435
Spectral weighting [%]:	15	20	30	25	10
Spatial frequency R [1/mm]:	10	20	40		
Image circle [mm]:	60				

— 10 — 20 — 40

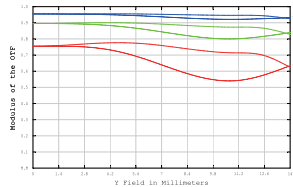
F4.0 0.5x WD=87.7mm O/I=152mm



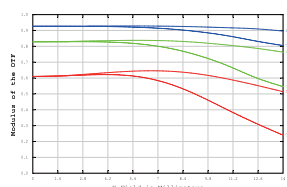
0.1x WD=346.7mm O/I=397mm



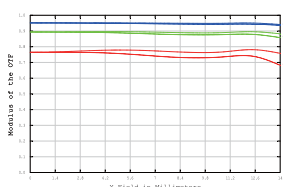
0.0x WD=∞



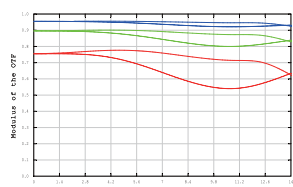
F5.6 0.5x WD=87.7mm O/I=152mm



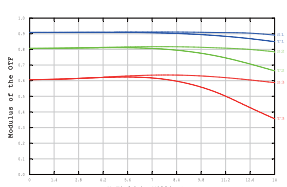
0.1x WD=346.7mm O/I=397mm



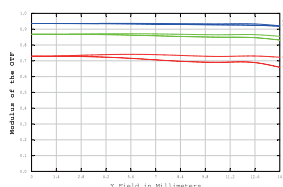
0.0x WD=∞



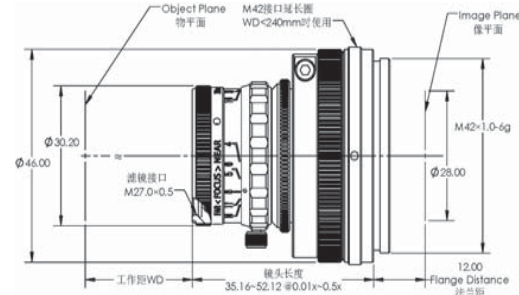
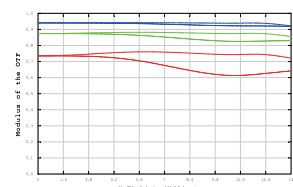
F8.0 0.5x WD=87.7mm O/I=152mm



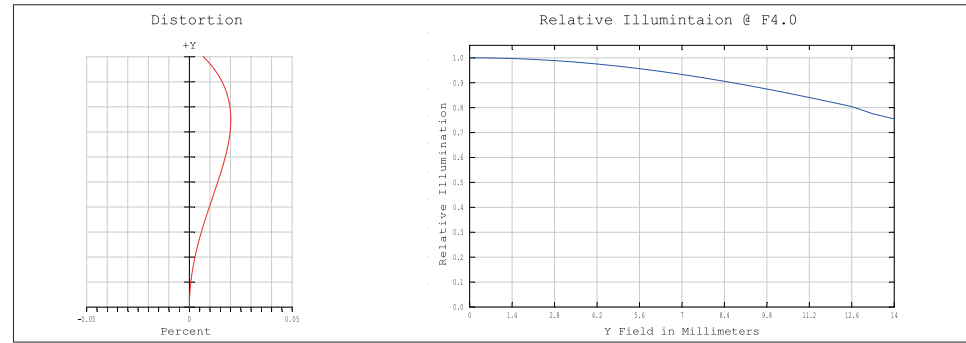
0.1x WD=346.7mm O/I=397mm



0.0x WD=∞



Technical Specifications	
Focal Length	35mm
F/#	4.0 ~ 16
Max. sensor size	28,0mm
Magnification	0.0x ~ 0.5x
Transmission	400nm ~ 700nm
Mount	M42x1.0
Weight	81.5g



4K7 μm 芯片			
Magnification (β)	Working Distance (mm)	FOV (mm)	Lens Length (12mm flange distance)
0.5	88	56	52.12
0.4	105.5	70	48.67
0.3	134.7	93.3	45.22
0.2	193	140	41.76
0.1	368.3	280	38.29
0.08	455.5	350	37.59
0.05	718	560	36.55
0.02	1768	1400	35.50
0.01	3518	2800	35.16

2K7 μm 芯片			
Magnification (β)	Working Distance (mm)	FOV (mm)	Lens Length (12mm flange distance)
0.5	88	28	52.12
0.4	105.5	35	48.67
0.3	134.7	46.7	45.22
0.2	193	70	41.76
0.1	368.3	140	38.29
0.08	455.5	175	37.59
0.05	718	280	36.55
0.02	1768	700	35.50
0.01	3518	1400	35.16

Introduction for the use of lens

1. The magnification can be calculated based on the object size and sensor size, magnification=sensor width/object length. We need to notice the allowance when calculated, such as we can calculate the magnification based on the object size 110mm when the object size 100mm, it depends.
2. Please make sure the ratio adjusting ring to the suitable position based on the calculated magnification, please adjust to approximate position and lock the ration adjusting ring if it is not the magnification in above data sheet.
3. Please make sure the lens be installed into the camera.
4. Rotated the focusing ring to get the clear image.
5. Please make the aperture to suitable position based on the light or depth of field. We can get the clear image as well when we reduce the aperture.



R

elay Lens

RELAY LENS IS ALSO CALLED EXTENDER LENS. THE HIGH LEVEL IMAGING QUALITY IS NEEDED BASED ON THE QUICK DEVELOPMENT OF HIGH PIXELS MOBILE CAMERA , THE TRADITIONAL TESTING METHOD CAN ' T MEET THE TESTING REQUIREMENT DUE TO IT NEED HUGE TESTING SPACE , THE HUGE TESTING SPACE IS NOT NEEDED FOR THE GAOPTICS RELAY LENS DETECTION SYSTEM TO MEET CURRENT DEVELOPMENT REQUIREMENT , IT IS USED WIDELY IN MOBILE CAMERA MODULE DETECTION FIELD 、 LAPTOP CAMERA MODULE DETECTION FIELD AND OTHER RELATED FIELD.

630000/630001/630002	91
630003/630004/630005	92
630006/630007/630008	93
630009/630010/630011	94

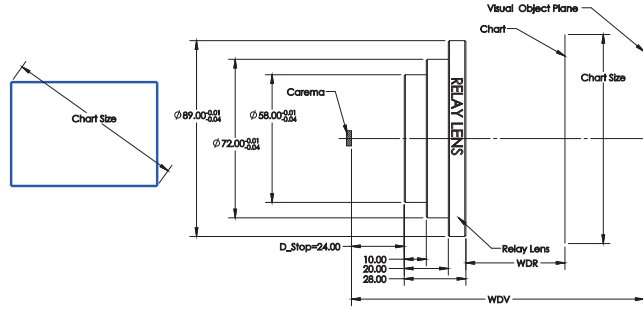


Relay lens

630000/630001/630002

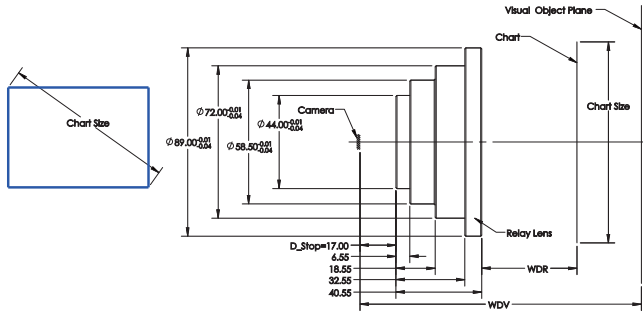
630000

SPECIFICATIONS		
MAX FOV	70 °	
DISTORTION	0.5%	
D_STOP	24	
WDV	WDR	Chart Size
1000	300.4	459.1
2000	365.2	544.5
3000	392.4	580.5
4000	407.5	600.3
5000	417.0	612.9
8000	432.1	632.7
10000	437.3	639.6
20000	448.1	653.9



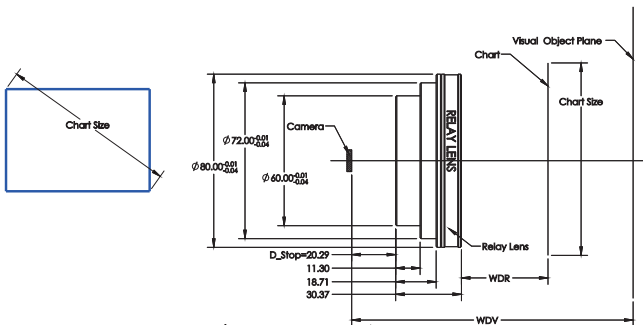
630001

SPECIFICATIONS		
MAX FOV	70 °	
DISTORTION	0.15%	
D_STOP	17	
WDV	WDR	Chart Size
1000	215.5	387.5
2000	259.7	454.0
3000	278.0	481.5
4000	288.0	496.5
5000	294.3	506.0
8000	304.2	520.9
10000	307.6	526.1
20000	314.7	536.8



630002

SPECIFICATIONS		
MAX FOV	88 °	
DISTORTION	0.18%	
D_STOP	20.29	
WDV	WDR	Chart Size
600	187.753	427.3
1000	226.233	500.7
3000	280.45	604.1
4000	288.83	620.0
5000	294.07	630.0
6000	297.66	636.9
10000	305.08	651.0
20000	310.85	662.0

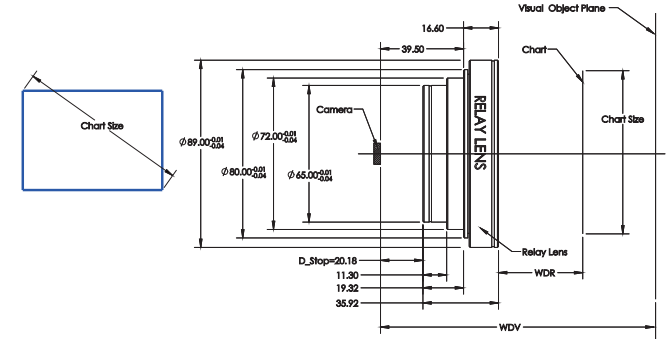


Relay lens

630003/630004/630005

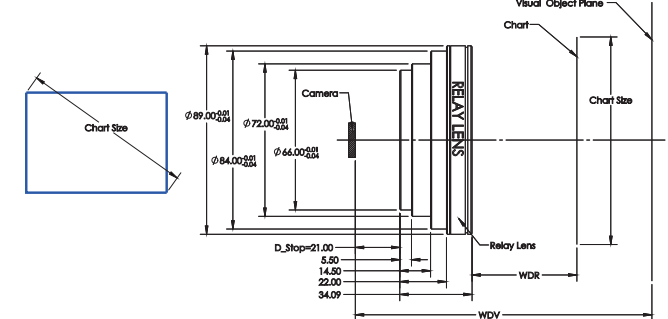
630003

SPECIFICATIONS		
MAX FOV	90 °	
DISTORTION	0.6%	
D_STOP	20.18	
WDV	WDR	Chart Size
300	118.0	321.9
400	142.9	372.4
500	161.8	411.0
600	176.8	441.4
1000	214.9	517.7
5000	281.0	652.7



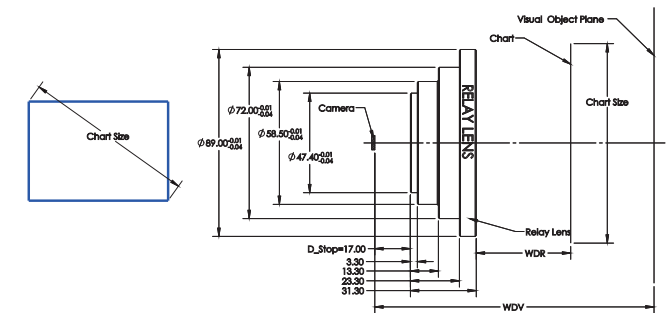
630004

SPECIFICATIONS		
MAX FOV	88 °	
DISTORTION	0.2%	
D_STOP	20	
WDV	WDR	Chart Size
1000	230.1	517.4
2000	271.4	596.4
3000	288.3	628.5
4000	297.3	646.4
5000	303.0	657.3
8000	312.0	674.3
10000	314.9	680.2
20000	321.2	692.3



630005

SPECIFICATIONS		
MAX FOV	88 °	
DISTORTION	0.26%	
D_STOP	17	
WDV	WDR	Chart Size
1000	276.6	569.2
2000	327.2	662.4
3000	348.6	700.6
4000	360.0	722.1
5000	366.7	734.4
8000	378.0	754.9
10000	381.9	762.0
20000	389.9	776.6

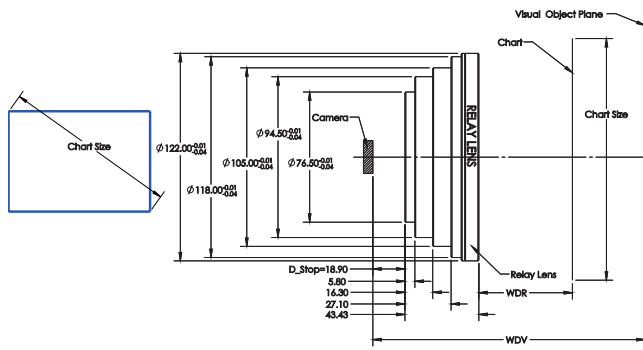


Relay lens

630006/630007/630008

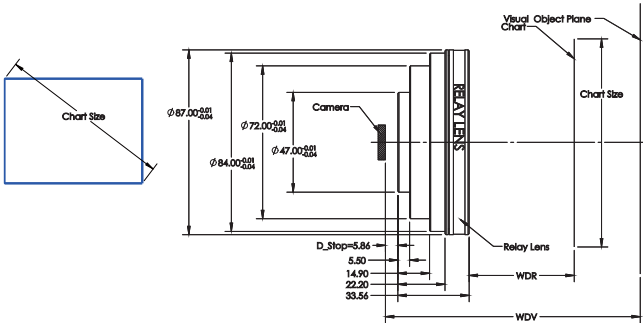
630006

SPECIFICATIONS		
MAX FOV		108 °
DISTORTION		0.5%
D_STOP		18.9
WDV	WDR	Chart Size
1000	400.1	1210.1
2000	525.1	1553.2
3000	584.0	1714.6
4000	618.2	1808.5
5000	640.5	1869.9
8000	677.0	1970.1
10000	690.1	2005.9
20000	717.6	2081.6



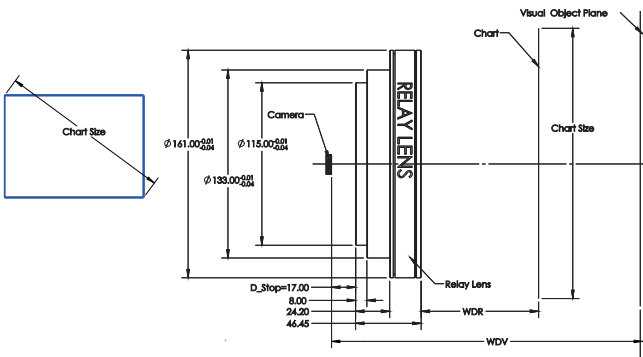
630007

SPECIFICATIONS		
MAX FOV		120 °
DISTORTION		1%
D_STOP		5.86
WDV	WDR	Chart Size
300	88.1	406.3
400	100.8	453.8
500	109.9	487.6
600	116.7	513.0
800	126.2	548.6
1000	132.6	572.3
1500	141.9	607.2
5000	157.0	663.5
10000	160.6	676.9
20000	162.5	683.8



630008

SPECIFICATIONS		
MAX FOV		130 °
DISTORTION		24.7%
D_STOP		17
WDV	WDR	Chart Size
1000	260.1	956.9
2000	305.5	1097.7
3000	323.8	1154.5
4000	333.7	1185.2
5000	339.9	1204.3
8000	349.6	1234.3
10000	352.9	1244.7
20000	359.8	1265.9

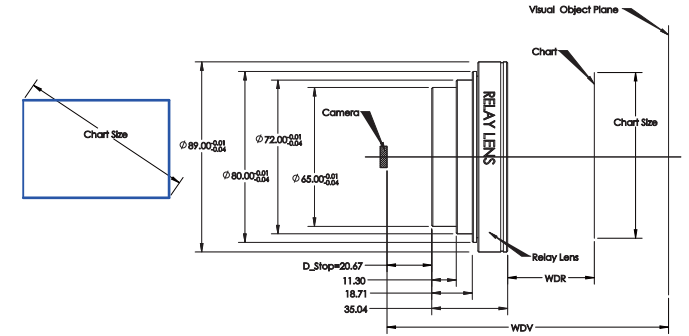


Relay lens

630009/630010/630011

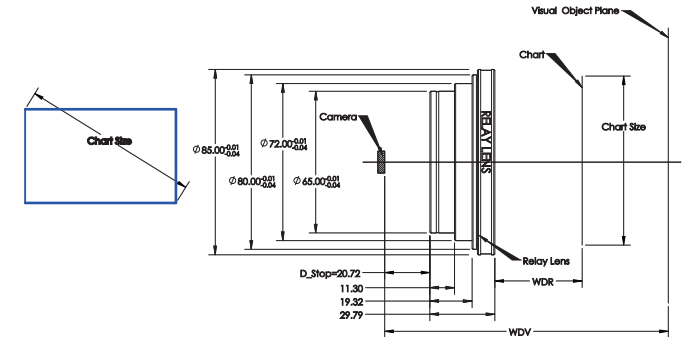
630009

SPECIFICATIONS		
MAX FOV		88 °
DISTORTION		0.23%
D_STOP		20.67
WDV	WDR	Chart Size
1000	221.6	500.0
2000	260.3	574.3
3000	275.8	603.9
4000	284.2	619.9
5000	289.4	629.9
8000	297.6	645.5
10000	300.4	650.3
20000	306.2	661.2



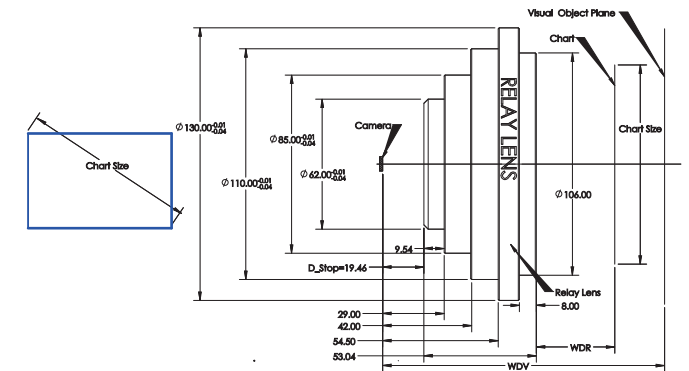
630010

SPECIFICATIONS		
MAX FOV		88 °
DISTORTION		0.38
D_STOP		20.72
WDV	WDR	Chart Size
300	124.4	310.6
400	149.3	359.2
500	168.4	396.3
600	183.4	425.6
800	205.5	469.0



630011

SPECIFICATIONS		
MAX FOV		90 °
DISTORTION		0.17%
D_STOP		19.46
WDV	WDR	Chart Size
600	82.5	286.7
1500	105.3	339.4
3000	114.9	361.5
5000	119.1	371.2
8000	121.6	376.9
10000	122.4	378.8
20000	124.1	382.7
Infinity	125.8	386.8



Custom Service

Custom Service We can provide quick custom service for imaging lens if you understand below parameters fully .

Optical System Analysis : Analyzed the parameters of optical system and provided the overall design scheme based on the customers' requirements.

Optical system design : Completed the optical system design, tolerance analysis etc, based on the optical system parameters' requirements.

Optical-mechanical structure design : Completed the optical-mechanical structure design、mechanical simulation analysis、optical-mechanical thermal integrated analysis etc, based on the optical system designed requirements.

Custom optical system : Completed the manufacture、assembly、test of the optical system based on the result of optical design.

Mass customization service of optical system : Provided the unique、exclusive、mass customization of optical system for customers and can sign the only supply agreement with customers as well.

Assessment service of optical system : Conducted the professional analysis and gave feasible evaluation and modified suggestion for customers' design.

Technical parameters list for imaging lens

Number	Parameter name	Reference	Note
Basic System Parameters			
1	Working Distance(mm)		The distance from the front end of lens to object.
2	Back focal length(mm)		The distance from the back mechanical end surface of lens to sensor.
3	I/O (mm)		The distance between the image and object.
4	Focal length of system(mm)		
5	Diameter of Entrance pupil(mm)		Effective clear aperture when imaged
6	Working wavelength range(nm)		The spectrum range when imaging lens worked
7*1	Full angle of field(°)		The viewing angle that can view the whole object.
8*2	Full field of view(mm)		The viewing area that can view the whole object.
9	Sensor size(mm)		The target size of detector.
10	Primary magnification		The ratio between sensor size and FOV.
11	Zoom Ratio		The ratio between the sensor size and FOV when the working focal length is different for zoom lens.
Optical Performance			
12	Transmission(%)		Attenuation rate of lens to image beam intensity.
13	Relative illumination(%)		The ratio of outer illumination and central illumination.
14	MTF (%/lp/mm)		The stripe contrast under distinguishable line pair per millimeter.
15	Distortion(%)		The ratio of the height difference between off-axis beam imaging point and ideal imaging point and the height of ideal imaging point.
Detector Parameters			
16	Sensor size (mm x mm)		The target size of detector
17	Horizontal/Vertical resolution(px x px)		The horizontal pixel QTY of detector and vertical pixel QTY of detector
18	Horizontal/Vertical pixel size (μm x μm)		
Port Requirement			
19	The total length of lens (mm)		
20	The position of entrance pupil(mm)		The distance between the entrance pupil of lens and the front mechanical end surface of lens
21	Size of entrance pupil(mm)		The diameter of entrance pupil for lens
22	The maximum diameter(mm)		
23	Weight(kg)		
Illumination *3			
24	The object luminous characteristic function		The changes in the function between the emitted intensity of object and angle of emission.
25	Lighting characteristic function		The changes in the function between emitted intensity of light source and angle of emission.
26	The reflective character of object		The function of reflective character for object to lighting light.
Environment			
27	Work temperature (°C)		The environmental temperature range when the lens worked normally.
28	Storage temperature (°C)		The environmental temperature range when the lens is stored
29	Vibration(g)		The maximum vibratory acceleration when the lens worked normally.
30	Impact(g)		Maximum impact acceleration that the lens can be allowed.
31	Others		Humidity、Acid and alkali、Sealing etc.

*1 : It is ok that you choose one of item7 or item 8. *2 : It is ok that you choose one of item7 or item 8. *3 : The customers can describe your requirements qualitatively if you don't have the function.



Filter

FILTER IS THE OPTICAL COMPONENT CAN BE USED TO CHOOSE THE RADIANT WAVELENGTH ,THE GA OPTICS ® FILTER WITH STANDARD SCREW THREAD CAN BE FIXED ON THE FRONT OF IMAGING LENS EASILY.



F

ilter

No	Diameter(mm)	CWL(nm)	No	Diameter(mm)	CWL(nm)	No	Diameter(mm)	CWL(nm)
670000	30,5	880	670009	30,5	590	670018	30,5	518
670001	37,5	880	670010	37,5	590	670019	37,5	518
670002	40,5	880	670011	40,5	590	670020	40,5	518
670003	30,5	634	670012	30,5	524	670021	30,5	470
670004	37,5	634	670013	37,5	524	670022	37,5	470
670005	40,5	634	670014	40,5	524	670023	40,5	470
670006	30,5	660	670015	30,5	548	670024	30,5	330
670007	37,5	660	670016	37,5	548	670025	37,5	330
670008	40,5	660	670017	40,5	548	670026	40,5	330

Number	Filter	CWL(nm)	FWHM(nm)	Transmission(%)	Blocking Range(nm)/ OD≥ 3.0 OD≥ 4.0	
1	NUV	330	95	74	400-650	200-250
2	BLUE	470	85	95	200-400	550-1200
3	CYAN	518	95	89	600-1000	200-450
4	GREEN	524	92	94	200-450	600-1000
5	VISIBLE	548	290	95	200-370	750-1100
6	ORANGE	590	79	89	700-1050	200-500
7	PINK	634	70	93	200-550	700-1050
8	RED	660	66	94	200-550	720-1120
9	NIR	880	135	96	200-750	1000-1200



Camera is an image acquisition equipment, which is composed of image sensor as the core component, as well as image signal processing circuit and power supply.

There are many kinds of cameras, which can be divided into ultraviolet camera, visible camera, near infrared camera and so on according to spectral characteristics; C-mount camera, F-mount camera, CS-mount camera and so on according to lens interface; USB camera, mesh camera, CamLink camera and so on according to data interface.

SWIR Camera

SWIR camera, also known as near-infrared camera, short-wave near-infrared camera, is an imaging element that can image near-infrared light.

This series SWIR camera has a working band of 900-1700nm and a resolution of 640X512 or 320X256. For different applications, it is equipped with different data interface series such as USB, Gigabit Network and Camera Link.



USB SWIR Camera

Compact size, light weight and low power consumption

USB interface, easy to operate

Supporting PAL/NTSC Analog Video Synchronization Output

Stock No.	680100	680101	680102
Detector		InGaAs Focal Plane Detector	
Working Wavelength	400 ~ 1700 nm	900 ~ 1700 nm	900 ~ 1700 nm
Resolution	640 x 512	640 x 512	320 x 256
Pixel Size	15 μm	15 μm	30 μm
Sensor Size	9.6mm x 7.68mm	9.6mm x 7.68mm	9.6mm x 7.68mm
Quantum Efficiency		> 70 % (1.0 ~ 1.6 μm)	
Frame Rate		50 Hz/ 100 Hz	
Integral Type		snapshot	
Integration Time		50 μs ~ 20 ms	
On-Board Image Processing	Correction of bad points / Image smoothing / Image denoising / Controllable shutter compensation		
ADC		14 bit	
Analog Video Output		PAL / NTSC , SMA connector	
Digital Output		USB	
Power Input		12V DC	
Power		2.5W (25°C)	
Size		65 mm x 58 mm x 64.5 mm	
Weight		300 g (Not includ lens)	
Lens Mount		C-Mount	
Installation Thread		1/4-20	
Ambient Temperature		-20 °C ~ +50 °C	
Storage Temperature		-40 °C ~ +80 °C	



Short Wavelength Infrared Camera

Gigabit Network SWIR camera

High frame rate and high sensitivity
 On-board Image Processing Function
 Supporting PAL Analog Video Synchronization Output
 Gigabit Network interface, suitable for long-distance control

Stock No.	680103	680104	680105
Detector	InGaAs Focal Plane Detector		
Working Wavelength	400 ~ 1700 nm	900 ~ 1700 nm	900 ~ 1700 nm
Resolution	640 x 512	640 x 512	320 x 256
Pixel Size	15 μm	15 μm	30 μm
Sensor Size	9.6mm x 7.68mm	9.6mm x 7.68mm	9.6mm x 7.68mm
Quantum Efficiency	> 70 % (1.0 ~ 1.6 μm)		
Frame Rate	50 Hz/ 100 Hz		
Integral Type	snapshot		
Integration Time	50 μs ~ 20 ms, 100Hz Max Time of exposure 9ms		
On-Board Image Processing	Correction of bad points / Image smoothing / Image denoising / Controllable shutter compensation		
ADC	14 bit		
Analog Video Output	PAL		
Digital Output	1000M GiGE		
Power Input	DC 8-12V		
Power	< 4W (no TEC)		
Size	67 mm x 70 mm x 60 mm		
Weight	175 g (Not includ lens)		
Lens Mount	C-Mount		
Ambient Temperature	-20 °C ~ +50 °C		
Storage Temperature	-40 °C ~ + 70 °C		



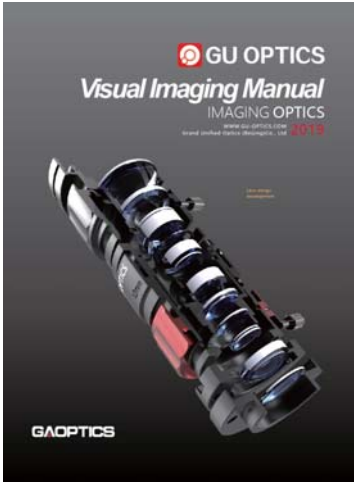
Camera Link SWIR Camera

Trigger synchronization function
 100 Hz frame rate at full resolution
 Supporting PAL Analog Video Synchronization Output Equipment
 Camera Link interface, good communication stability

Stock No.	680106	680107
Detector	InGaAs Focal Plane Detector	
Working Wavelength	400 ~ 1700 nm	900 ~ 1700 nm
Resolution	640 x 512	640 x 512
Pixel Size	15 μm	15 μm
Sensor Size	9.6mm x 7.68mm	9.6mm x 7.68mm
Quantum Efficiency	> 70 % (1.0 ~ 1.6 μm)	
Frame Rate	50 Hz/ 100 Hz	
Integral Type	snapshot	
Integration Time	50 μs ~ 20 ms, 100Hz Max Time of exposure 9ms	
On-Board Image Processing	Correction of bad points / Image smoothing / Image denoising / Controllable shutter compensation	
ADC	14 bit	
Analog Video Output	PAL	
Digital output	SDR 26 pin connector , Base Camera Link	
External synchronization	Camelink CC1	
Control serial port	Camelink SerTC , SerTFG , 115200 bps	
External synchronization delay	< 1us	
Power input	DC 8-24V	
power	< 3W (no TEC)	
Size	67 mm x 70 mm x 60 mm	
Weight	175 g (Not includ lens)	
Lens Mount	C-Mount	
Ambient Temperature	-20 °C ~ +50 °C	
Storage Temperature	-40 °C ~ + 70 °C	



INTRODUCING THE 2019 MASTER IMAGING OPTICS CATALOGUE



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If you require additional information not stated in our catalog, call our technical experts for help for Optics and Optical Equipment Information:

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