Quality of Light

MACHINE VISION LENSES

2020 Ver.1.0

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Technology Function Performance

Note: Specifications and availability are subject to change without notice. **FAOV20992000AN**

About Us

Kowa Optical Products Co., Ltd. is part of Kowa Company, Ltd., one of the largest privately owned companies in Japan. Founded in 1894, Kowa produces a wide variety of products in a number of industries, including but not limited to healthcare, industrial, and energy conservation sectors.

Since 1946, Kowa has developed and manufactured high-end optical equipment such as CCTV and machine vision lenses, spotting scopes, handheld binoculars, and coin operated binoculars.
With over 70 years of technical experience, Kowa Optical Products Co., Ltd. continues its tradition of being a leader in its industries by providing innovative solutions and new technologies to solve even the toughest vision system obstacles.

Function Icons

- 3CCD — Lens for 3CCD Camera
- METAL — Lens with Metal Body
- RUGGED — Ruggedized lens
- FLOAT — Floating Mechanism Design
- LO-DIS — Low Distortion
- XD — Extra Low Dispersion
- SWIR — SWIR Coating
- IR — IR-Corrected
- WBMC — Wide-Band Multi-Coating
- WR — Water Resistance
- DR — Dust Resistance

- 4/3" — 4/3 Inch Format Lens
- 1/2" — 1/2 Inch Format Lens
- 1.1" — 1.1 Inch Format Lens
- 1/2.5" — 1/2.5 Inch Format Lens
- 1" — 1 Inch Format Lens
- 1/3" — 1/3 Inch Format Lens
- 2/3" — 2/3 Inch Format Lens
- fmm — Focal Length (mm)
- 1/1.8" — 1/1.8 Inch Format Lens

NEW PRODUCTS

2/3" ULTRA COMPACT 5 MEGAPIXEL 3.45µm

JC5MC Series NEW

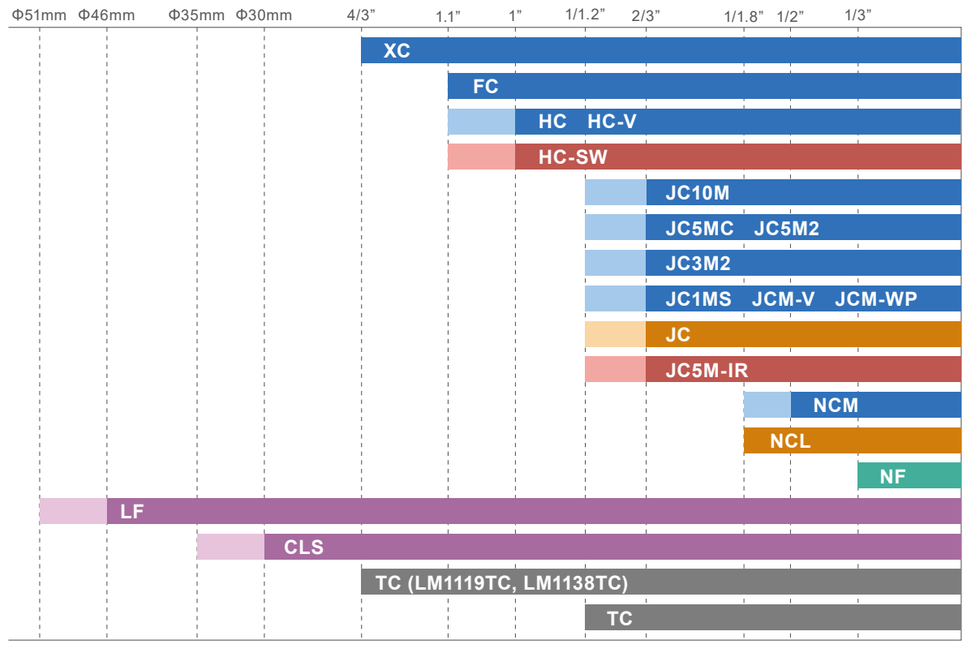
- One of the industry's smallest and lightest 5 megapixel lenses.
- Roughly half the size of Kowa's current 2/3" 5MP JC5M2 series lenses.
- Unique mechanical design to guard against strong vibration and shock.
- Easy to change the iris to the marked F-number by click-type iris mechanism. (F2.8, 4, 5.6, 8 and 16)

2/3" RUGGEDIZED WATER AND DUST RESISTANCE MEGAPIXEL

JCM-WP Series NEW

- Water repellency and easy cleaning of the front lens surface by applying Kowa's special coating.
- Two way reversible nut is utilized instead of thumb screws in order to tightly lock the focus adjustment ring in place.
- All internal glass elements are glued to the inside housing to improve stability.

CONTENTS



XC Series

High Resolution FA/MV Lenses

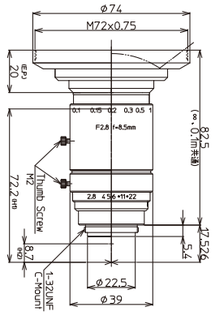
Features of XC Series

- Large image size of Φ23mm incorporated within a C-mount design.
- Megapixel resolution is maintained throughout the entire image even when the iris is fully opened.
- High precision aspherical lens greatly reduces distortion and produces a high-definition picture.
- The LM8XC generates a very wide 93.5° horizontal angle of view.
- Kowa's floating mechanism system virtually eliminates optical aberrations from close distance to infinity.

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8XC	✓	✓	✓	✓	✓	✓	✓	✓
LM12XC	✓	✓	✓	✓	✓	✓	✓	✓
LM16XC	✓	✓	✓	✓	✓	✓	✓	✓
LM25XC	✓	✓	✓	✓	✓	✓	✓	✓
LM35XC	✓	✓	✓	✓	✓	✓	✓	✓
LM50XC	✓	✓	✓	✓	✓	✓	✓	✓

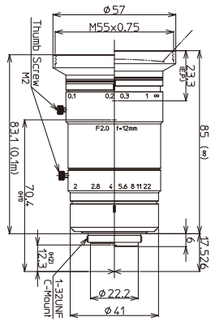
LM8XC



4/3" 8.5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

Model		LM8XC
Focal Length(mm)		8.5
Image Size(mm)		18.4×13.8(Φ23)
Iris Range(F-stop)		F2.8~F22
Focusing Range(m)		0.1~∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D.(mm)		238.4(H)×179.1(V)
Angle of View (Degrees)	4/3 Inch	93.5×77.1
	1.1 Inch	78.2×62.7
	1 Inch	72.9×57.9
	2/3 Inch	53.8×41.6
Resolution(Center, Corner)		160lp/mm, 80lp/mm
TV Distortion(%)		0.12
Back Focus in Air(mm)		12.9
Mount		C-mount
Filter Thread(mm)		M72×P0.75
Size(mm)(∞)		Φ74×82.5
Weight(g)		245
Temperature Range		−10°C~+50°C

LM12XC



4/3" 12mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

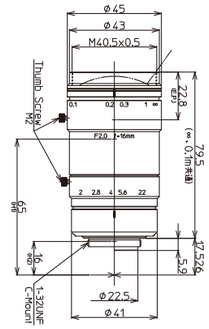
Model		LM12XC
Focal Length(mm)		12
Image Size(mm)		18.4×13.8(Φ23)
Iris Range(F-stop)		F2.0~F22
Focusing Range(m)		0.1~∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D.(mm)		181.5(H)×135.5(V)
Angle of View (Degrees)	4/3 Inch	74.9×59.6
	1.1 Inch	60.6×47.1
	1 Inch	55.9×43.1
	2/3 Inch	39.8×30.2
Resolution(Center, Corner)		160lp/mm, 80lp/mm
TV Distortion(%)		0.59
Back Focus in Air(mm)		13.0
Mount		C-mount
Filter Thread(mm)		M55×P0.75
Size(mm)(∞)		Φ57×85
Weight(g)		270
Temperature Range		−10°C~+50°C

Magnification Using A Close Up Ring

You can use close up rings to increase the magnification and decrease the minimum object distance (M.O.D.) of the lens. Simply screw in the spacer ring between the threads of the lens mount and camera.

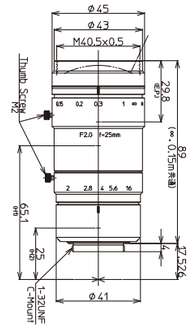
† Images may differ from the actual product.

LM16XC



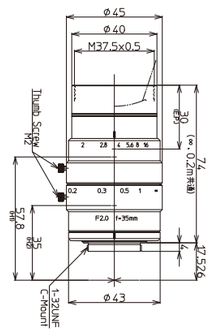
4/3" 16mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM25XC



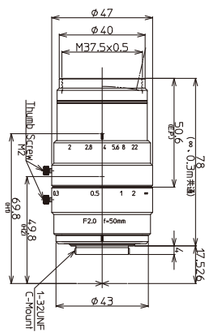
4/3" 25mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM35XC



4/3" 35mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

LM50XC



4/3" 50mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

Model	LM16XC	LM25XC	LM35XC	LM50XC
Focal Length(mm)	16	25	35	50
Image Size(mm)	18.4×13.8(Φ23)	18.4×13.8(Φ23)	18.4×13.8(Φ23)	18.4×13.8(Φ23)
Iris Range(F-stop)	F2.0~F22	F2.0~F16	F2.0~F16	F2.0~F22
Focusing Range(m)	0.1~∞	0.15~∞	0.2~∞	0.3~∞
Control Iris	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	134.6(H)×100.8(V)	124.8(H)×93.0(V)	100.3(H)×75.3(V)	100.2(H)×75.5(V)
Angle of View (Degrees) 4/3 Inch	60.6×47.2	40.9×31.1	29.6×22.4	20.6×15.7
Angle of View (Degrees) 1.1 Inch	48.0×36.8	31.8×24.0	22.8×17.2	16.0×12.0
Angle of View (Degrees) 1 Inch	44.0×33.6	28.9×21.8	20.8×15.6	14.6×11.0
Angle of View (Degrees) 2/3 Inch	30.9×23.3	20.1×15.2	14.3×10.8	10.1×7.6
Resolution(Center, Corner)	160lp/mm, 80lp/mm	160lp/mm, 80lp/mm	160lp/mm, 80lp/mm	160lp/mm, 80lp/mm
TV Distortion(%)	0.02	−0.57	−0.17	0.80
Back Focus in Air(mm)	13.0	24.3	15.2	21.6
Mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M40.5×P0.5	M40.5×P0.5	M37.5×P0.5	M37.5×P0.5
Size(mm)(∞)	Φ45×79.5	Φ45×89	Φ45×74	Φ47×78
Weight(g)	250	255	210	235
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM8XC	LM12XC	LM16XC	LM25XC	LM35XC	LM50XC
(Non)M.O.D./Magnification	100mm/0.08×	100mm/0.10×	100mm/0.14×	150mm/0.15×	200mm/0.18×	300mm/0.18×
(1mm Ring)M.O.D./Magnification	30mm/0.19×	48mm/0.19×	64mm/0.20×	115mm/0.19×	174mm/0.21×	273mm/0.20×
(5mm Ring)M.O.D./Magnification	–	–	21mm/0.46×	56mm/0.35×	117mm/0.33×	204mm/0.28×
(10mm Ring)M.O.D./Magnification	–	–	–	31mm/0.55×	85mm/0.48×	158mm/0.39×
(20mm Ring)M.O.D./Magnification	–	–	–	12mm/0.96×	58mm/0.77×	115mm/0.59×

† Images may differ from the actual product.

FC Series NEW

High Resolution FA/MV Lens

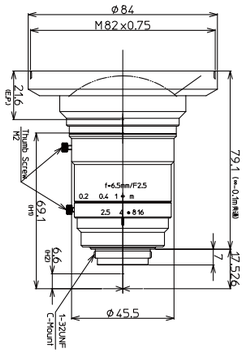
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM6FC	–	✓	✓	✓	✓	✓	✓	✓
LM8FC	–	✓	✓	✓	✓	✓	✓	✓
LM12FC	–	✓	✓	✓	✓	✓	✓	✓
LM16FC	–	✓	✓	✓	✓	✓	✓	✓
LM25FC	–	✓	✓	✓	✓	✓	✓	✓
LM35FC	–	✓	✓	✓	✓	✓	✓	✓
LM50FC	–	✓	✓	✓	✓	✓	✓	✓

Features of FC Series

- Large image size of Φ17.6mm (C-mount).
- Design optimization allows the high resolution compact lens.
- The extensive lineup of focal length.
  6.5mm, 8.5mm, 12mm, 16mm, 25mm, 35mm, and 50mm
- Kowa's floating mechanism system virtually eliminates optical aberrations from close distance to infinity.
- Kowa's wide-band multi-coating effectively decreases ghost and flare and produces a high transmission from the visible to NIR wavelength range.

LM6FC NEW



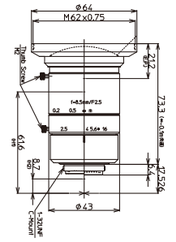
*Filter holder is removable

1.1" 6.5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

Model	LM6FC
Focal Length(mm)	6.5
Image Size(mm)	14.1×10.6(Φ17.6)
Iris Range(F-stop)	F2.5~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	256(H)×190(V)
Angle of View (Degrees) 1.1 Inch	95.7×78.7
Angle of View (Degrees) 1 Inch	89.9×73.0
Angle of View (Degrees) 2/3 Inch	68.1×53.5
Resolution(Center, Corner)	160lp/mm, 100lp/mm
TV Distortion(%)	−1.51
Back Focus in Air(mm)	10.9
Mount	C-mount
Filter Thread(mm)	M82×P0.75
Size(mm)(∞)	Φ84×79.1
Weight(g)	300
Temperature Range	−10°C~+50°C

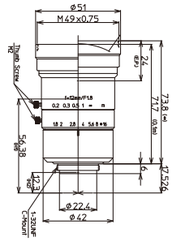
† Images may differ from the actual product.

LM8FC NEW



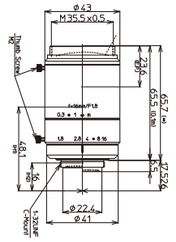
1.1" 8.5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM12FC NEW



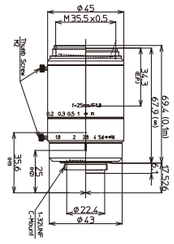
1.1" 12mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM16FC NEW



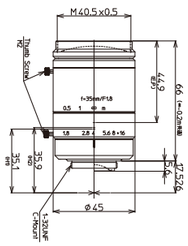
1.1" 16mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM25FC NEW



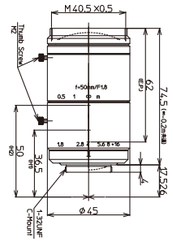
1.1" 25mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM35FC NEW



1.1" 35mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

LM50FC NEW



1.1" 50mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

Model	LM8FC	LM12FC	LM16FC	LM25FC	LM35FC	LM50FC
Focal Length(mm)	8.5	12	16	25	35	50
Image Size(mm)	14.1×10.6(Φ17.6)	14.1×10.6(Φ17.6)	14.1×10.6(Φ17.6)	14.1×10.6(Φ17.6)	14.1×10.6(Φ17.6)	14.1×10.6(Φ17.6)
Iris Range(F-stop)	F2.5~F16	F1.8~F16	F1.8~F16	F1.8~F16	F1.8~F16	F1.8~F16
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞	0.1~∞	0.2~∞	0.2~∞
Control Iris	Manual	Manual	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	184(H)×138(V)	135(H)×101(V)	102(H)×77(V)	64(H)×48(V)	84(H)×63(V)	59(H)×44(V)
Angle of View (Degrees) 1.1 Inch	79.2×63.8	60.0×46.9	48.0×36.7	31.5×23.9	22.1×16.7	16.1×12.1
Angle of View (Degrees) 1 Inch	73.9×58.8	55.3×42.9	43.6×33.4	28.7×21.7	20.2×15.2	14.6×11.0
Angle of View (Degrees) 2/3 Inch	54.5×42.1	39.6×30.1	30.8×23.3	20.0×15.0	14.0×10.5	10.1×7.6
Resolution(Center, Corner)	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm
TV Distortion(%)	0.55	0.26	−0.4	−0.3	0.01	-0.03
Back Focus in Air(mm)	12.9	14.5	11.9	13.3	15.5	14.8
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M62×P0.75	M49×P0.75	M35.5×P0.5	M35.5×P0.5	M40.5×P0.5	M40.5×P0.5
Size(mm)(∞)	Φ64×73.3	Φ51×73.8	Φ43×65.7	Φ45×67.9	Φ45×66	Φ45×74.5
Weight(g)	230	260	200	220	205	205
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM6FC	LM8FC	LM12FC	LM16FC	LM25FC	LM35FC	LM50FC
(Non)M.O.D./Magnification	100mm/0.06×	100mm/0.08×	100mm/0.11×	100mm/0.14×	100mm/0.22×	200mm/0.17×	200mm/0.24×
(1mm Ring)M.O.D./Magnification	–	28mm/0.19×	50mm/0.18×	64mm/0.20×	82mm/0.26×	170mm/0.20×	184mm/0.26×
(5mm Ring)M.O.D./Magnification	–	–	–	20mm/0.45×	45mm/0.41×	106mm/0.31×	140mm/0.35×
(10mm Ring)M.O.D./Magnification	–	–	–	–	25mm/0.61×	71mm/0.46×	108mm/0.46×
(20mm Ring)M.O.D./Magnification	–	–	–	–	–	42mm/0.75×	76mm/0.68×

† Images may differ from the actual product.

HC Series

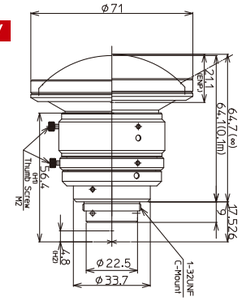
Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM4HC	–	–	✓	✓	✓	✓	✓	✓
LM6HC	–	–	✓	✓	✓	✓	✓	✓
LM8HC	–	–	✓	✓	✓	✓	✓	✓
LM12HC	–	◇	✓	✓	✓	✓	✓	✓
LM16HC	–	◇	✓	✓	✓	✓	✓	✓
LM25HC	–	◇	✓	✓	✓	✓	✓	✓
LM35HC	–	◇	✓	✓	✓	✓	✓	✓
LM50HC	–	◇	✓	✓	✓	✓	✓	✓
LM75HC	–	◇	✓	✓	✓	✓	✓	✓

✓ Compatible ◇ Suitable – Incompatible

Features of HC Series

- Wide product range: 9 lenses in HC series
- Up to 5 megapixels performance
- Excellent corner brightness
- High performance compact lenses
- Low distortion

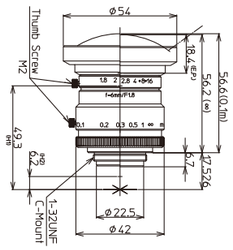
LM4HC NEW



1" 4.7mm METAL Metal Body

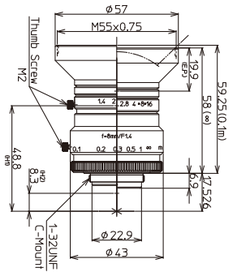
*Optional filter holder can be attached.

LM6HC



1" 6mm METAL Metal Body

LM8HC



1" 8mm METAL Metal Body

Model	LM4HC	LM6HC	LM8HC
Focal Length(mm)	4.7	6	8
Image Size(mm)	12.8×9.6 (Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)
Iris Range(F-stop)	F2.4~F11	F1.8~F11	F1.4~F16
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞
Control Iris	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	375.6(H)×272.1(V)	267.4(H)×196.3(V)	196.0(H)×143.2(V)
Angle of View (Degrees) 1 Inch	112.2×95.4	96.8×79.4	79.4×63.0
Angle of View (Degrees) 2/3 Inch	90.0×72.2	74.1×58.0	58.3×44.7
Angle of View (Degrees) 1/1.8 Inch	77.4×60.8	62.6×48.2	48.5×36.9
Resolution(Center, Corner)	100lp/mm, 50lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm
TV Distortion(%)	-0.58	−0.2	−1.2
Back Focus in Air(mm)	9.0	11.1	11.2
Mount	C-mount	C-mount	C-mount
Filter Thread(mm)	*	–	M55×P0.75
Size(mm)(∞)	Φ71×64.7	Φ54×56.2	Φ57×58
Weight(g)	360	215	205
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

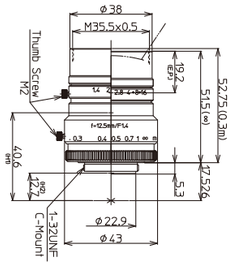
*Optional filter holder can be attached.

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM4HC	LM6HC	LM8HC	LM12HC	LM16HC	LM25HC	LM35HC	LM50HC	LM75HC
(Non)M.O.D./Magnification	100mm/0.04×	100mm/0.05×	100mm/0.07×	300mm/0.04×	300mm/0.05×	300mm/0.08×	300mm/0.12×	500mm/0.11×	1000mm/0.078×
(1mm Ring)M.O.D./Magnification	–	–	–	93mm/0.12×	134mm/0.11×	200mm/0.12×	243mm/0.15×	424mm/0.13×	858mm/0.091×
(5mm Ring)M.O.D./Magnification	–	–	–	–	–	83mm/0.28×	138mm/0.26×	269mm/0.20×	553mm/0.14×
(10mm Ring)M.O.D./Magnification	–	–	–	–	–	–	91mm/0.40×	189mm/0.30×	389mm/0.21×
(20mm Ring)M.O.D./Magnification	–	–	–	–	–	–	–	124mm/0.50×	251mm/0.34×

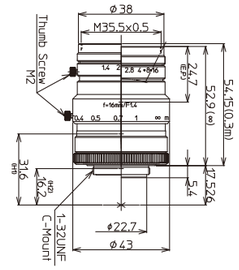
† Images may differ from the actual product.

LM12HC



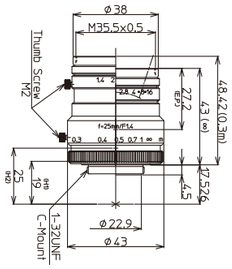
1" 12.5mm METAL Metal Body

LM16HC



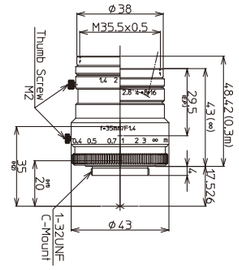
1" 16mm METAL Metal Body

LM25HC



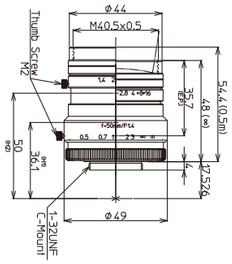
1" 25mm METAL Metal Body

LM35HC



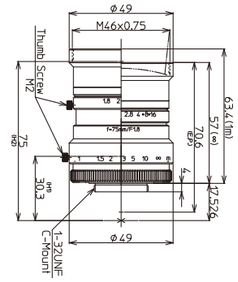
1" 35mm METAL Metal Body

LM50HC



1" 50mm METAL Metal Body

LM75HC



1" 75mm METAL Metal Body

Model	LM12HC	LM16HC	LM25HC	LM35HC	LM50HC	LM75HC
Focal Length(mm)	12.5	16	25	35	50	75
Image Size(mm)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F1.4~F16	F1.4~F16	F1.4~F16	F1.8~F16
Focusing Range(m)	0.3~∞	0.3~∞	0.3~∞	0.3~∞	0.5~∞	1.0~∞
Control Iris	Manual	Manual	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	330.6(H)×243.5(V)	251.5(H)×186.2(V)	160.7(H)×119.2(V)	110.1(H)×82.0(V)	121.8(H)×91.3(V)	165.5(H)×123.9(V)
Angle of View (Degrees) 1 Inch	55.6×42.5	44.3×33.6	29.3×22.0	20.9×15.8	14.5×10.8	9.7×7.3
Angle of View (Degrees) 2/3 Inch	39.1×29.5	30.8×23.2	20.2×15.1	14.4×10.8	10.0×7.5	6.7×5.0
Angle of View (Degrees) 1/1.8 Inch	32.1×24.2	25.3×19.0	16.5×12.4	11.8×8.8	8.2×6.2	5.5×4.1
Resolution(Center, Corner)	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm
TV Distortion(%)	−1.58	−1.0	−1.0	−0.5	0.05	−0.2
Back Focus in Air(mm)	12.6	12.6	16.5	16.8	14.8	14.5
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M35.5×P0.5	M35.5×P0.5	M35.5×P0.5	M35.5×P0.5	M40.5×P0.5	M46×P0.75
Size(mm)(∞)	Φ43×51.5	Φ43×52.9	Φ43×43	Φ43×43	Φ49×48	Φ49×57
Weight(g)	160	150	135	135	210	195
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

HC-V Series

High Resolution FA/MV Lenses

Kowa's new HC-V series is made for use in high vibration and shock environments.
With a design based on Kowa's standard 1" HC lenses, this new ruggedized megapixel lens series is ideal for applications that require increased durability and high optical performance.

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8HC-V	–	–	✓	✓	✓	✓	✓	✓
LM12HC-V	–	◇	✓	✓	✓	✓	✓	✓
LM16HC-V	–	◇	✓	✓	✓	✓	✓	✓
LM25HC-V	–	◇	✓	✓	✓	✓	✓	✓
LM35HC-V	–	◇	✓	✓	✓	✓	✓	✓
LM50HC-V	–	◇	✓	✓	✓	✓	✓	✓
LM75HC-V	–	◇	✓	✓	✓	✓	✓	✓

Features of HC-V Series

- Up to 5 megapixels performance
- Unique mechanical design to guard against strong vibration and shock.
- Two way reversible nut is utilized instead of thumb screws in order to tightly lock the focus adjustment ring in place.
- Utilizing two way reversible nut contributes to the prevention of screw dropping troubles.
- All internal glass elements are glued to the inside housing to improve stability.
- Interchangeable iris plates are used to select the F-stop.

Interchangeable Iris Plates

1. The HC-V series uses interchangeable iris plates instead of mechanical iris diaphragms with moving blades. You can choose from four iris plates to adjust the F-stop.

Interchangeable Iris Plates

Focus Adjustment Procedure

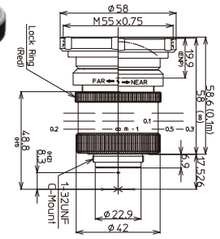
2. Unscrew the bottom ring of the outside body to adjust the focus to optimal position.
3. Screw the red two way reversible nut on the center body towards the bottom ring to lock in the focus.

Instruction Video

Two Way Reversible Nut

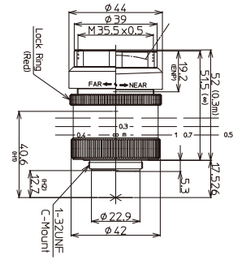
† Images may differ from the actual product.

LM8HC-V



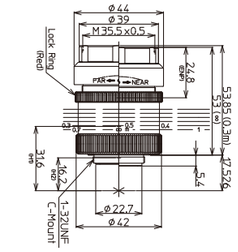
1" 8mm METAL Metal Body RUGGED Ruggedized lens

LM12HC-V



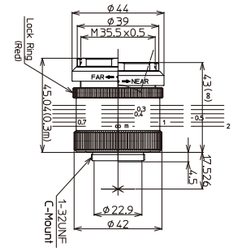
1" 12.5mm METAL Metal Body RUGGED Ruggedized lens

LM16HC-V



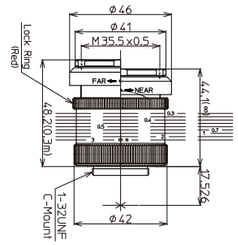
1" 16mm METAL Metal Body RUGGED Ruggedized lens

LM25HC-V



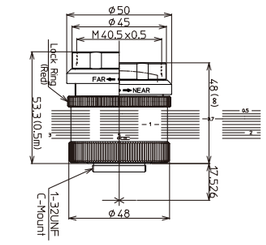
1" 25mm METAL Metal Body RUGGED Ruggedized lens

LM35HC-V



1" 35mm METAL Metal Body RUGGED Ruggedized lens

LM50HC-V



1" 50mm METAL Metal Body RUGGED Ruggedized lens

Model	LM8HC-V	LM12HC-V	LM16HC-V	LM25HC-V	LM35HC-V	LM50HC-V
Focal Length (mm)	8	12.5	16	25	35	50
Image Size (mm)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)
Iris Range (F-stop)	F1.4 / F2.8 / F4 / F8	F1.4 / F2.8 / F4 / F8	F1.4 / F2.8 / F4 / F8	F1.4 / F2.8 / F4 / F8	F1.4 / F2.8 / F4 / F8	F1.4 / F2.8 / F4 / F8
Focusing Range (m)	0.1~∞	0.3~∞	0.3~∞	0.3~∞	0.3~∞	0.5~∞
Control Iris	–	–	–	–	–	–
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)	196.0(H)×143.0(V)	330.6(H)×243.5(V)	251.5(H)×186.2(V)	160.7(H)×119.2(V)	110.1(H)×82.0(V)	121.8(H)×91.3(V)
Angle of View (Degrees) 1 Inch	79.7×63.0	55.6×42.5	44.3×33.6	29.3×22.0	20.9×15.8	14.5×10.8
Angle of View (Degrees) 2/3 Inch	58.3×44.7	39.1×29.5	30.8×23.2	20.2×15.1	14.4×10.8	10.0×7.5
Angle of View (Degrees) 1/1.8 Inch	48.5×36.9	32.1×24.2	25.3×19.0	16.5×12.4	11.8×8.8	8.2×6.2
Resolution(Center, Corner)	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm
TV Distortion (%)	−1.2	−1.58	−1.0	−1.0	−0.5	0.05
Back Focus in Air(mm)	11.2	12.6	12.6	16.5	16.8	14.8
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread (mm)	M55×P0.75	M35.5×P0.5	M35.5×P0.5	M35.5×P0.5	M35.5×P0.5	M40.5×P0.5
Size (mm)(∞)	Φ58×58	Φ44×51.5	Φ44×53	Φ44×43	Φ46×44.1	Φ50×48
Weight(g)	183	130	120	104	133	170
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

2/3" 10MEGAPIXEL (Better than 2.4μm)

JC10M Series

High Resolution FA/MV Lenses

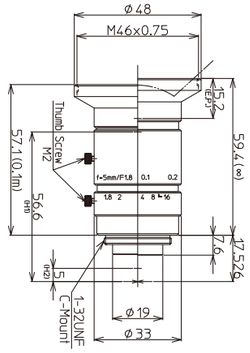
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JC10M	–	–	–	–	✓	✓	✓	✓
LM8JC10M	–	–	–	–	✓	✓	✓	✓
LM12JC10M	–	–	–	–	✓	✓	✓	✓
LM16JC10M	–	–	–	◇	✓	✓	✓	✓
LM25JC10M	–	–	–	◇	✓	✓	✓	✓
LM35JC10M	–	–	–	◇	✓	✓	✓	✓
LM50JC10M	–	–	–	◇	✓	✓	✓	✓

Features of JC10M Series

- 200lp/mm center resolution and low distortion maximize performance of high-end inspection.
- Incorporating Kowa's wide-band multi-coating and floating mechanism system, the JC10M lens series greatly reduces chromatic aberration from close distance to infinity and maintains a high transmission from visible to NIR.
- Short minimum object distance and compact design using aspherical lenses (5 models/f=5~25mm) allow for easy installation in compact machine vision systems.

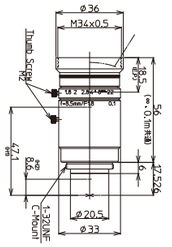
LM5JC10M



2/3" 5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

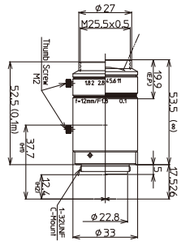
Model	LM5JC10M
Focal Length(mm)	5
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.8~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	197.0(H)×147.0(V)
Angle of View (Degrees) 2/3 Inch	82.2×66.5
Angle of View (Degrees) 1/1.8 Inch	71.1×56.5
Angle of View (Degrees) 1/2 Inch	64.9×51.1
Resolution(Center, Corner)	200lp/mm, 160lp/mm
TV Distortion(%)	−0.33
Back Focus in Air(mm)	10.3
Mount	C-mount
Filter Thread(mm)	M46×P0.75
Size(mm)(∞)	Φ48×59.4
Weight(g)	120
Temperature Range	−10°C~+50°C

LM8JC10M



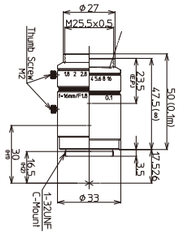
2/3" 8.5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM12JC10M



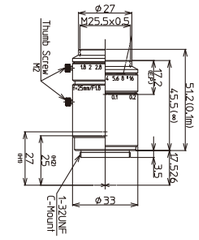
2/3" 12mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

LM16JC10M



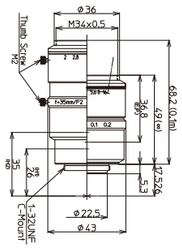
2/3" 16mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

LM25JC10M



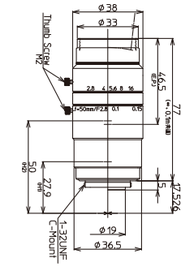
2/3" 25mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

LM35JC10M



2/3" 35mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating WBMC Wide-Band Multi-Coating

LM50JC10M



2/3" 50mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating XD Extra Low Dispersion WBMC Wide-Band Multi-Coating

Model	LM8JC10M	LM12JC10M	LM16JC10M	LM25JC10M	LM35JC10M	LM50JC10M
Focal Length(mm)	8.5	12	16	25	35	50
Image Size(mm)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.8~F22	F1.8~F11	F1.8~F16	F1.8~F16	F2.0~F16	F2.8~F16
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞	0.1~∞	0.1~∞	0.1~∞
Control Iris	Manual	Manual	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	133.2(H)×99.6(V)	80.7(H)×60.2(V)	61.1(H)×45.7(V)	36.7(H)×27.5(V)	23.4(H)×17.6(V)	19.1(H)×14.3(V)
Angle of View (Degrees) 2/3 Inch	54.0×41.9	39.1×29.8	30.0×22.7	20.0×15.1	14.3×10.8	10.1×7.6
Angle of View (Degrees) 1/1.8 Inch	45.3×34.8	32.4×24.6	24.7×18.6	16.4×12.3	11.7×8.8	8.2×6.1
Angle of View (Degrees) 1/2 Inch	40.8×31.2	28.9×21.9	22.0×16.6	14.6×11.0	10.4×7.8	7.3×5.5
Resolution(Center, Corner)	200lp/mm, 160lp/mm	200lp/mm, 160lp/mm	200lp/mm, 160lp/mm	200lp/mm, 160lp/mm	200lp/mm, 160lp/mm	200lp/mm, 160lp/mm
TV Distortion(%)	0.31	−0.12	−0.20	−0.09	0.05	−0.02
Back Focus in Air(mm)	12.1	13.9	14.6	17.9	14.2	12.8
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M34×P0.5	M25.5×P0.5	M25.5×P0.5	M25.5×P0.5	M34×P0.5	M30.5×P0.5
Size(mm)(∞)	Φ36×56.0	Φ33×53.5	Φ33×47.5	Φ33×45.5	Φ43×49	Φ38×77
Weight(g)	115	105	90	95	160	170
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM5JC10M	LM8JC10M	LM12JC10M	LM16JC10M	LM25JC10M	LM35JC10M	LM50JC10M
(Non)M.O.D./Magnification	100mm/0.05×	100mm/0.07×	100mm/0.11×	100mm/0.15×	100mm/0.24×	100mm/0.38×	100mm/0.46×
(1mm Ring)M.O.D./Magnification	–	20mm/0.20×	48mm/0.19×	61mm/0.21×	79mm/0.28×	85mm/0.40×	91mm/0.48×
(5mm Ring)M.O.D./Magnification	–	–	–	18mm/0.45×	46mm/0.44×	65mm/0.50×	76mm/0.58×
(10mm Ring)M.O.D./Magnification	–	–	–	–	29mm/0.63×	49mm/0.62×	64mm/0.70×
(20mm Ring)M.O.D./Magnification	–	–	–	–	–	31mm/0.87×	49mm/0.94×

† Images may differ from the actual product.

† Images may differ from the actual product.

JC5M2 Series

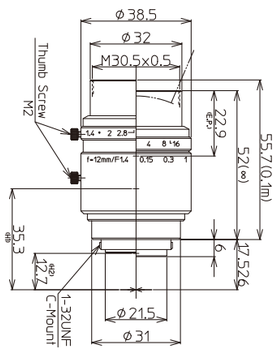
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM12JC5M2	–	–	–	–	✓	✓	✓	✓
LM16JC5M2	–	–	–	–	✓	✓	✓	✓
LM25JC5M2	–	–	–	◇	✓	✓	✓	✓
LM35JC5M2	–	–	◇	◇	✓	✓	✓	✓

Features of JC5M2 Series

- Incorporating Kowa's floating mechanism system, the JC5M2 lens series greatly reduces chromatic aberration from close distance to infinity.
- With a fast F-stop, locking screws, and a compact design, these lenses provide a good value between price versus performance.
- Kowa's floating mechanism system virtually eliminates optical aberrations from close distance to infinity.

LM12JC5M2

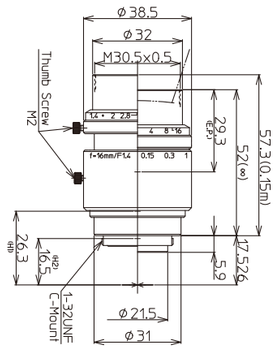


2/3" 12.5mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating

Model	LM12JC5M2
Focal Length(mm)	12.5
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	81.4(H)×60.9(V)
Angle of View (Degrees) 2/3 Inch	38.4×29.2
Angle of View (Degrees) 1/1.8 Inch	31.7×24.0
Angle of View (Degrees) 1/2 Inch	28.4×21.4
Resolution(Center, Corner)	160lp/mm, 125lp/mm
TV Distortion(%)	−0.06
Back Focus in Air(mm)	11.5
Mount	C-mount
Filter Thread(mm)	M30.5×P0.5
Size(mm)(∞)	Φ38.5×52
Weight(g)	130
Temperature Range	−10°C~+50°C

† Images may differ from the actual product.

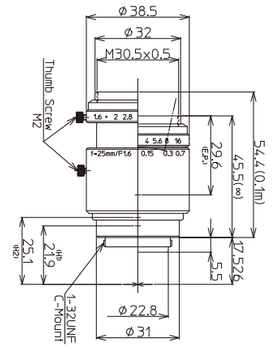
LM16JC5M2



2/3" 16mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating

Model	LM16JC5M2
Focal Length(mm)	16
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	64.6(H)×48.4(V)
Angle of View (Degrees) 2/3 Inch	29.9×22.7
Angle of View (Degrees) 1/1.8 Inch	24.7×18.6
Angle of View (Degrees) 1/2 Inch	22.0×16.6
Resolution(Center, Corner)	160lp/mm, 125lp/mm
TV Distortion(%)	0.03
Back Focus in Air(mm)	11.6
Mount	C-mount
Filter Thread(mm)	M30.5×P0.5
Size(mm)(∞)	Φ38.5×52
Weight(g)	125
Temperature Range	−10°C~+50°C

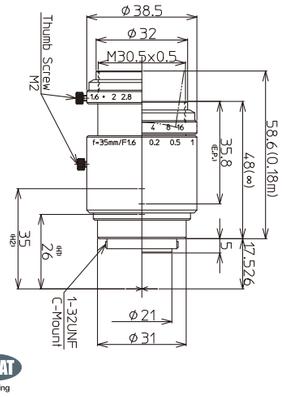
LM25JC5M2



2/3" 25mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating

Model	LM25JC5M2
Focal Length(mm)	25
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.6~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	35.1(H)×26.3(V)
Angle of View (Degrees) 2/3 Inch	19.9×15.0
Angle of View (Degrees) 1/1.8 Inch	16.4×12.3
Angle of View (Degrees) 1/2 Inch	14.6×10.9
Resolution(Center, Corner)	160lp/mm, 125lp/mm
TV Distortion(%)	−0.01
Back Focus in Air(mm)	11.2
Mount	C-mount
Filter Thread(mm)	M30.5×P0.5
Size(mm)(∞)	Φ38.5×45.5
Weight(g)	115
Temperature Range	−10°C~+50°C

LM35JC5M2



2/3" 35mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating

Model	LM35JC5M2
Focal Length(mm)	35
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.6~F16
Focusing Range(m)	0.18~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	42.1(H)×31.6(V)
Angle of View (Degrees) 2/3 Inch	14.3×10.8
Angle of View (Degrees) 1/1.8 Inch	11.7×8.8
Angle of View (Degrees) 1/2 Inch	10.4×7.8
Resolution(Center, Corner)	160lp/mm, 125lp/mm
TV Distortion(%)	−0.03
Back Focus in Air(mm)	12.2
Mount	C-mount
Filter Thread(mm)	M30.5×P0.5
Size(mm)(∞)	Φ38.5×48
Weight(g)	120
Temperature Range	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM12JC5M2	LM16JC5M2	LM25JC5M2	LM35JC5M2
(Non)M.O.D./Magnification	100mm/0.109×	100mm/0.137×	100mm/0.251×	180mm/0.209×
(1mm Ring)M.O.D./Magnification	50mm/0.184×	62mm/0.195×	86mm/0.288×	160mm/0.235×
(5mm Ring)M.O.D./Magnification	–	–	54mm/0.434×	109mm/0.341×
(10mm Ring)M.O.D./Magnification	–	–	–	78mm/0.470×
(20mm Ring)M.O.D./Magnification	–	–	–	49mm/0.728×

† Images may differ from the actual product.

JC5MC Series NEW

High Resolution FA/MV Lenses

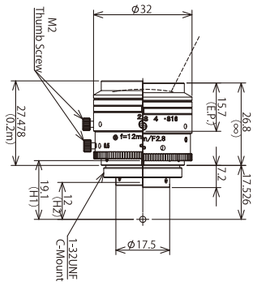
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8JC5MC	–	–	–	–	✓	✓	✓	✓
LM12JC5MC	–	–	–	–	✓	✓	✓	✓
LM16JC5MC	–	–	–	–	✓	✓	✓	✓
LM25JC5MC	–	–	–	–	✓	✓	✓	✓

Features of JC5MC Series

- One of the industry's smallest and lightest 5 megapixel lenses.
- Roughly half the size of Kowa's current 2/3" 5MP JC5M2 series lenses.
- Unique mechanical design to guard against strong vibration and shock.
- Easy to change the iris to the marked F-number by click-type iris mechanism. (F2.8, 4, 5.6, 8 and 16)

LM12JC5MC NEW

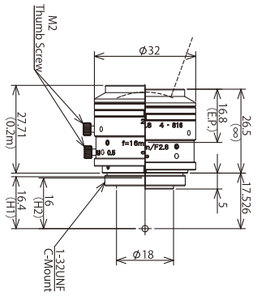


2/3" 12mm METAL Metal Body LO-DIS Low Distortion

Model	LM12JC5MC
Focal Length(mm)	12
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F2.8~F16
Focusing Range(m)	0.2~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	159.0(H)×118.0(V)
Angle of View (Degrees) 2/3 Inch	41.0×31.2
Angle of View (Degrees) 1/1.8 Inch	33.9×25.6
Angle of View (Degrees) 1/2 Inch	30.3×22.8
Resolution(Center, Corner)	160lp/mm, 100lp/mm
TV Distortion(%)	-0.27
Back Focus in Air(mm)	12.6
Mount	C-mount
Filter Thread(mm)	*
Size(mm)(∞)	Φ32×26.8
Weight(g)	55
Temperature Range	−10°C~+50°C

*Optional filter holder can be attached.(M30.5×P0.5)

LM16JC5MC NEW

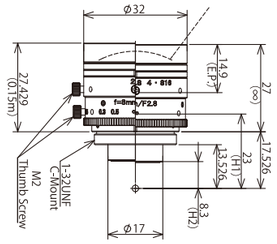


2/3" 16mm METAL Metal Body LO-DIS Low Distortion

Model	LM16JC5MC
Focal Length(mm)	16
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F2.8~F16
Focusing Range(m)	0.2~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	117.0(H)×88.0(V)
Angle of View (Degrees) 2/3 Inch	30.9×23.4
Angle of View (Degrees) 1/1.8 Inch	25.5×19.2
Angle of View (Degrees) 1/2 Inch	22.7×17.2
Resolution(Center, Corner)	160lp/mm, 100lp/mm
TV Distortion(%)	-0.04
Back Focus in Air(mm)	14.7
Mount	C-mount
Filter Thread(mm)	*
Size(mm)(∞)	Φ32×26.5
Weight(g)	55
Temperature Range	−10°C~+50°C

*Optional filter holder can be attached.(M30.5×P0.5)

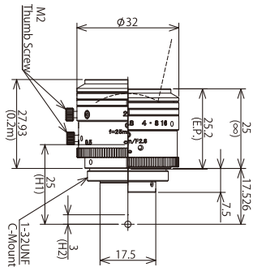
LM8JC5MC NEW



2/3" 8mm METAL Metal Body LO-DIS Low Distortion

Model	LM8JC5MC
Focal Length(mm)	8
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F2.8~F16
Focusing Range(m)	0.15~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	178.0(H)×132.0(V)
Angle of View (Degrees) 2/3 Inch	57.6×44.4
Angle of View (Degrees) 1/1.8 Inch	48.1×36.7
Angle of View (Degrees) 1/2 Inch	43.1×32.8
Resolution(Center, Corner)	160lp/mm, 100lp/mm
TV Distortion(%)	-0.85
Back Focus in Air(mm)	10.8
Mount	C-mount
Filter Thread(mm)	M30.5×P0.5
Size(mm)(∞)	Φ32×27
Weight(g)	55
Temperature Range	−10°C~+50°C

LM25JC5MC NEW



2/3" 25mm METAL Metal Body LO-DIS Low Distortion

Model	LM25JC5MC
Focal Length(mm)	25
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F2.8~F16
Focusing Range(m)	0.2~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	75.0(H)×56.0(V)
Angle of View (Degrees) 2/3 Inch	20.0×15.0
Angle of View (Degrees) 1/1.8 Inch	16.4×12.4
Angle of View (Degrees) 1/2 Inch	14.6×11.0
Resolution(Center, Corner)	160lp/mm, 100lp/mm
TV Distortion(%)	0.11
Back Focus in Air(mm)	11.7
Mount	C-mount
Filter Thread(mm)	*
Size(mm)(∞)	Φ32×25
Weight(g)	55
Temperature Range	−10°C~+50°C

*Optional filter holder can be attached.(M30.5×P0.5)

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM8JC5MC	LM12JC5MC	LM16JC5MC	LM25JC5MC
(Non)M.O.D./Magnification	150mm/0.05×	200mm/0.06×	200mm/0.08×	200mm/0.12×
(1mm Ring)M.O.D./Magnification	35mm/0.18×	75mm/0.13×	105mm/0.14×	145mm/0.16×
(5mm Ring)M.O.D./Magnification	–	–	–	66mm/0.32×
(10mm Ring)M.O.D./Magnification	–	–	–	–
(20mm Ring)M.O.D./Magnification	–	–	–	–

† Images may differ from the actual product.

† Images may differ from the actual product.

JC3M2 Series

High Resolution FA/MV Lenses

✓ Compatible ◇ Suitable – Incompatible

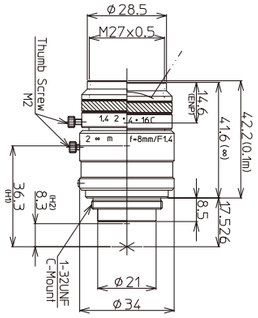
Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8JC3M2	–	–	–	–	✓	✓	✓	✓
LM12JC3M2	–	–	–	–	✓	✓	✓	✓
LM16JC3M2	–	–	–	–	✓	✓	✓	✓
LM25JC3M2	–	–	–	–	✓	✓	✓	✓
LM35JC3M2	–	–	◇	◇	✓	✓	✓	✓
LM50JC3M2	–	◇	◇	◇	✓	✓	✓	✓

Features of JC3M2 Series

- Kowa's wide-band multi-coating effectively decreases glare and refraction and produces a high transmission from the visible to NIR wavelength range.
- Kowa's floating mechanism system virtually eliminates optical aberrations from close distance to infinity.
- Low distortion
- Excellent corner brightness

*Except for LM8JC3M2 and LM12JC3M2

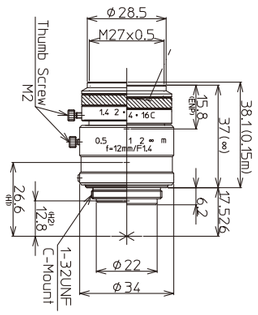
LM8JC3M2



Model	LM8JC3M2
Focal Length(mm)	8
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~Close
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	120.3(H)×90.0(V)
Angle of 2/3 Inch	56.5×43.9
View 1/1.8 Inch	47.4×36.3
(Degrees) 1/2 Inch	42.6×32.5
Resolution(Center, Corner)	120lp/mm, 100lp/mm
TV Distortion(%)	−0.6
Back Focus in Air(mm)	9.74
Mount	C-mount
Filter Thread(mm)	M27×P0.5
Size(mm)(∞)	Φ34×41.6
Weight(g)	90
Temperature Range	−10°C~+50°C

2/3" 8mm METAL Metal Body WBMC Wide-Band Multi-Coating

LM12JC3M2

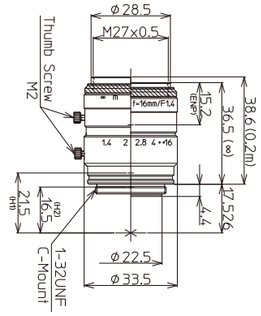


Model	LM12JC3M2
Focal Length(mm)	12
Image Size(mm)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~Close
Focusing Range(m)	0.15~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	110.0(H)×82.5(V)
Angle of 2/3 Inch	38.3×29.1
View 1/1.8 Inch	31.7×24.0
(Degrees) 1/2 Inch	28.3×21.4
Resolution(Center, Corner)	120lp/mm, 100lp/mm
TV Distortion(%)	−0.07
Back Focus in Air(mm)	11.7
Mount	C-mount
Filter Thread(mm)	M27×P0.5
Size(mm)(∞)	Φ34×37
Weight(g)	85
Temperature Range	−10°C~+50°C

2/3" 12mm METAL Metal Body WBMC Wide-Band Multi-Coating

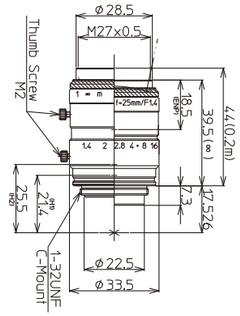
† Images may differ from the actual product.

LM16JC3M2



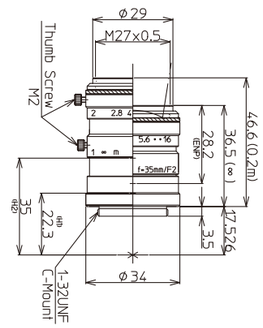
2/3" 16mm METAL Metal Body FLOAT Floating WBMC Wide-Band Multi-Coating

LM25JC3M2



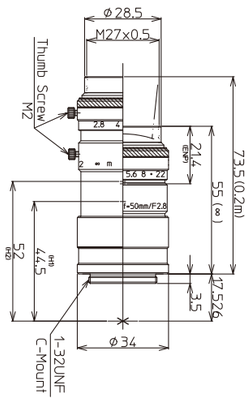
2/3" 25mm METAL Metal Body FLOAT Floating WBMC Wide-Band Multi-Coating

LM35JC3M2



2/3" 35mm METAL Metal Body FLOAT Floating WBMC Wide-Band Multi-Coating

LM50JC3M2



2/3" 50mm METAL Metal Body FLOAT Floating WBMC Wide-Band Multi-Coating

Model	LM16JC3M2	LM25JC3M2	LM35JC3M2	LM50JC3M2
Focal Length(mm)	16	25	35	50
Image Size(mm)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F2.0~F16	F2.8~F22
Focusing Range(m)	0.2~∞	0.2~∞	0.2~∞	0.2~∞
Control Iris	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	112.8(H)×84.4(V)	71.1(H)×53.3(V)	47.9(H)×35.8(V)	29.3(H)×21.9(V)
Angle of 2/3 Inch	30.0×22.7	19.6×14.8	14.4×10.8	9.6×7.2
View 1/1.8 Inch	24.7×18.6	16.1×12.1	11.8×8.8	7.9×5.9
(Degrees) 1/2 Inch	21.8×16.4	14.0×10.5	10.5×7.9	7.0×5.2
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm
TV Distortion(%)	−0.05	−0.04	−0.2	−0.03
Back Focus in Air(mm)	13.1	11.7	20.1	35.5
Mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5
Size(mm)(∞)	Φ33.5×36.5	Φ33.5×39.5	Φ34×36.5	Φ34×55
Weight(g)	85	90	70	95
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM8JC3M2	LM12JC3M2	LM16JCM	LM25JC3M2	LM35JC3M2	LM50JC3M2
(Non)M.O.D./Magnification	100mm/0.07×	150mm/0.08×	200mm/0.08×	200mm/0.12×	200mm/0.18×	200mm/0.30×
(1mm Ring)M.O.D./Magnification	31mm/0.19×	70mm/0.16×	110mm/0.14×	150mm/0.16×	173mm/0.21×	190mm/0.32×
(5mm Ring)M.O.D./Magnification	–	–	–	73mm/0.31×	115mm/0.32×	160mm/0.39×
(10mm Ring)M.O.D./Magnification	–	–	–	–	81mm/0.45×	132mm/0.49×
(20mm Ring)M.O.D./Magnification	–	–	–	–	51mm/0.73×	102mm/0.68×

† Images may differ from the actual product.

NCM/JCM Series

High Resolution FA/MV Lenses

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3NCM	–	–	–	–	–	✓	✓	✓
LM4NCM	–	–	–	–	–	✓	✓	✓
LM6NCM	–	–	–	–	–	◇	✓	✓
LM5JCM	–	–	–	–	✓	✓	✓	✓

Features of WIDE NCM/JCM Series

- Super wide optical design
- Large angle of view
- Expansion angle
  (Horizontal angle 82degree, Vertical angle 66degree)

† 2/3" model: LM5JCM, 1/1.8" model: LM3NCM

Low distortion

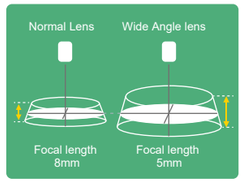
- Reduces the distortion to corner

† LM5JCM: Under 0.5%, LM3NCM: Under 0.4% (TV distortion)

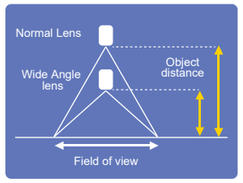
High quality

- Adapts to 2 megapixcel cameras
- Improves center and corner resolution
- High transmittance

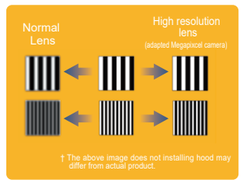
Long Depth of field



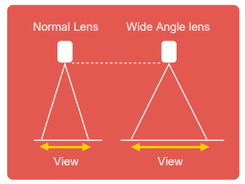
Short Close distance



Clear image

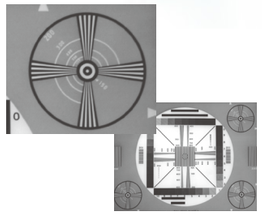


Large field of view

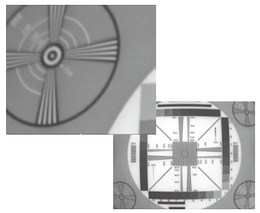


Corner image comparison
(Super wide angle lens vs. Standard lens)

LM5JCM: 2/3inch f=5mm

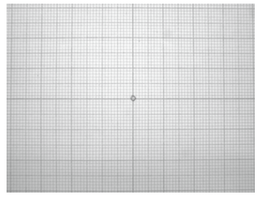


LM6JC: 2/3inch f=6mm

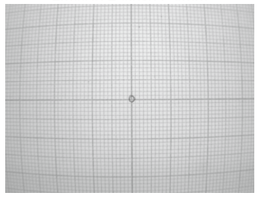


Distortion comparison at short distance object

LM5JCM: 2/3inch f=5mm



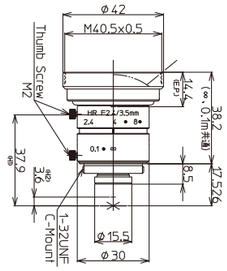
LM6JC: 2/3inch f=6mm



Capture image taken by 2megapixcel camera

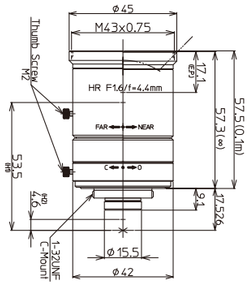
† Images may differ from the actual product.

LM3NCM



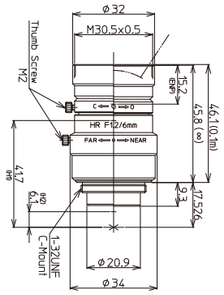
1/1.8" 3.5mm METAL Metal Body LO-DIS Low Distortion

LM4NCM



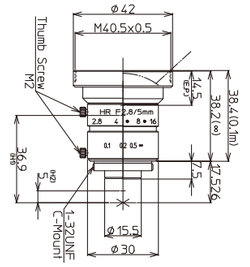
1/1.8" 4.4mm METAL Metal Body LO-DIS Low Distortion

LM6NCM



1/2" 6mm METAL Metal Body LO-DIS Low Distortion

LM5JCM



2/3" 5mm METAL Metal Body LO-DIS Low Distortion

Model	LM3NCM	LM4NCM	LM6NCM	LM5JCM
Focal Length(mm)	3.5	4.4	6	5
Image Size(mm)	7.2×5.4(Φ9)	7.2×5.4(Φ9)	6.4×4.8(Φ8)	8.8×6.6(Φ11)
Iris Range(F-stop)	F2.4~F14	F1.6~F16	F1.2~Close	F2.8~F16
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞	0.1~∞
Control Iris	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	226.3(H)×171.4(V)	190.0(H)×141.2(V)	122.2(H)×91.0(V)	200.8(H)×150.8(V)
Angle of View (Degrees) 2/3 inch	–	–	–	82.4×66.9
Angle of View (Degrees) 1/1.8 inch	89.0×73.8	76.6×61.3	–	71.7×57.1
Angle of View (Degrees) 1/2 inch	82.4×66.9	70.2×55.5	56.2×43.5	65.2×51.3
Angle of View (Degrees) 1/3 inch	66.9×52.7	55.5×43	43.5×33.2	–
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm
TV Distortion(%)	0.4	−0.2	−0.2	0.5
Back Focus in Air(mm)	9.7	8.75	8.2	10.0
Mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M40.5×P0.5	M43×P0.75	M30.5×P0.5	M40.5×P0.5
Size(mm)(∞)	Φ42×38.2	Φ45×57.3	Φ34×45.8	Φ42×38.2
Weight(g)	85	150	100	84
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

JC1MS Series

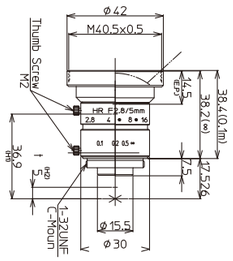
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JCM	–	–	–	–	✓	✓	✓	✓
LM8JC1MS	–	–	–	–	✓	✓	✓	✓
LM12JC1MS	–	–	–	–	✓	✓	✓	✓
LM16JC1MS	–	–	–	–	✓	✓	✓	✓
LM25JC1MS	–	–	–	–	✓	✓	✓	✓
LM35JC1MS	–	–	◇	◇	✓	✓	✓	✓
LM50JC1MS	–	◇	◇	◇	✓	✓	✓	✓
LM75JC1MS	–	◇	◇	◇	✓	✓	✓	✓
LM100JC1MS	–	–	◇	◇	✓	✓	✓	✓

Features of JC1MS Series

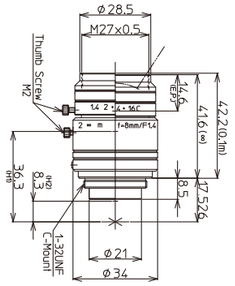
- Wide product range: 9 lenses in JC1MS series
- Equivalent to 2 megapixels performance
- World standard and popular lens series
- Excellent corner brightness
- Low distortion

LM5JCM



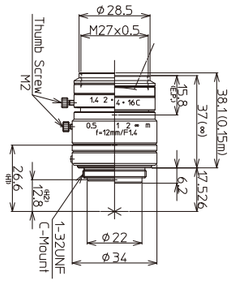
2/3" 5mm METAL Metal Body LO-DIS Low Distortion

LM8JC1MS



2/3" 8mm METAL Metal Body LO-DIS Low Distortion

LM12JC1MS



2/3" 12mm METAL Metal Body LO-DIS Low Distortion

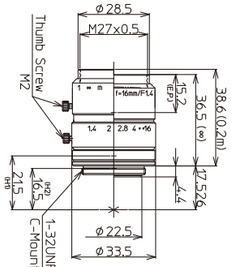
Model	LM5JCM	LM8JC1MS	LM12JC1MS
Focal Length(mm)	5	8	12
Image Size(mm)	8.8×6.6(Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range(F-stop)	F2.8~F16	F1.4~Close	F1.4~Close
Focusing Range(m)	0.1~∞	0.1~∞	0.15~∞
Control Iris	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	200.8(H)×150.8(V)	120.3(H)×90.0(V)	110.0(H)×82.5(V)
Angle of View (Degrees) 2/3 Inch	82.4×66.9	56.5×43.9	38.3×29.1
Angle of View (Degrees) 1/1.8 Inch	71.7×57.1	47.4×36.3	31.7×24.0
Angle of View (Degrees) 1/2 Inch	65.2×51.3	42.6×32.5	28.3×21.4
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm
TV Distortion(%)	0.5	−0.6	−0.07
Back Focus in Air(mm)	10.0	9.74	11.7
Mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M40.5×P0.5	M27×P0.5	M27×P0.5
Size(mm)(∞)	Φ42×38.2	Φ34×41.6	Φ34×37
Weight(g)	84	90	85
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM5JM	LM8JC1MS	LM12JC1MS	LM16JC1MS	LM25JC1MS	LM35JC1MS	LM50JC1MS	LM75JC1MS	LM100JC1MS
(Non)M.O.D./Magnification	100mm/0.04×	100mm/0.07×	150mm/0.08×	200mm/0.08×	200mm/0.12×	200mm/0.18×	200mm/0.30×	1200mm/0.07×	2000mm/0.05×
(1mm Ring)M.O.D./Magnification	–	30mm/0.20×	70mm/0.16×	110mm/0.14×	150mm/0.16×	175mm/0.21×	190mm/0.32×	1010mm/0.08×	1700mm/0.06×
(5mm Ring)M.O.D./Magnification	–	–	–	–	73mm/0.31×	115mm/0.32×	160mm/0.39×	630mm/0.13×	1060mm/0.10×
(10mm Ring)M.O.D./Magnification	–	–	–	–	–	81mm/0.46×	135mm/0.48×	440mm/0.20×	740mm/0.15×
(20mm Ring)M.O.D./Magnification	–					51mm/0.73×	105mm/0.65×	285mm/0.34×	480mm/0.25×

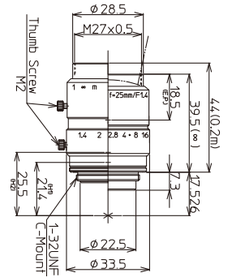
† Images may differ from the actual product.

LM16JC1MS



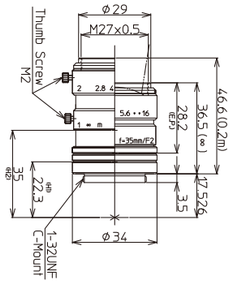
2/3" 16mm METAL Metal Body LO-DIS Low Distortion FLOAT Floating

LM25JC1MS



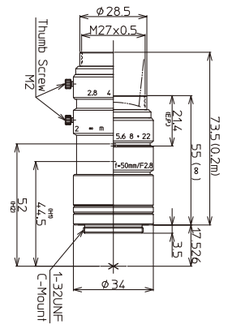
2/3" 25mm METAL Metal Body FLOAT Floating

LM35JC1MS



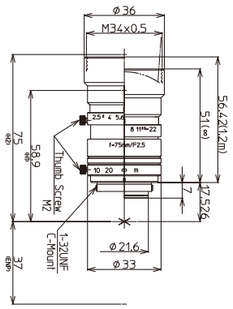
2/3" 35mm METAL Metal Body FLOAT Floating

LM50JC1MS



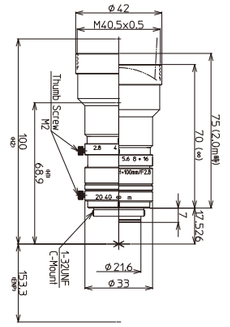
2/3" 50mm METAL Metal Body FLOAT Floating

LM75JC1MS



2/3" 75mm METAL Metal Body FLOAT Floating

LM100JC1MS



2/3" 100mm METAL Metal Body FLOAT Floating

Model	LM16JC1MS	LM25JC1MS	LM35JC1MS	LM50JC1MS	LM75JC1MS	LM100JC1MS
Focal Length(mm)	16	25	35	50	75	100
Image Size(mm)	8.8×6.6 (Φ11)	8.8×6.6(Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F2.0~F16	F2.8~F22	F2.5~F22	F2.8~F32
Focusing Range(m)	0.2~∞	0.2~∞	0.2~∞	0.2~∞	1.2~∞	2.0~∞
Control Iris	Manual	Manual	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	112.8(H)×84.4(V)	71.1(H)×53.3(V)	47.9(H)×35.8(V)	29.3(H)×21.9(V)	132.6(H)×99.6(V)	168.8(H)×126.6(V)
Angle of View (Degrees) 2/3 Inch	30.0×22.7	19.6×14.8	14.4×10.8	9.6×7.2	6.7×5.0	5.0×3.8
Angle of View (Degrees) 1/1.8 Inch	24.7×18.6	16.1×12.1	11.8×8.8	7.9×5.9	5.5×4.1	4.1×3.1
Angle of View (Degrees) 1/2 Inch	21.8×16.4	14.0×10.5	10.5×7.9	7.0×5.2	4.9×3.7	3.7×2.8
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion(%)	−0.05	−0.04	-0.2	-0.03	−0.1	−0.05
Back Focus in Air(mm)	13.1	11.7	20.1	35.5	18.0	19.0
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M34×P0.5	M40.5×P0.5
Size(mm)(∞)	Φ33.5×36.5	Φ33.5×39.5	Φ34×36.5	Φ34×55	Φ36×51	Φ42×70
Weight(g)	85	90	70	95	105	145
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

JCM-V Series

High Resolution FA/MV Lenses

Kowa's new JCM-V Series is designed for use in high vibration and shock environments.
With a design based on Kowa's standard 2/3" JCM lenses, this new ruggedized megapixel lens series is ideal for applications that require increased durability and high optical performance.

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JCM-V	–	–	–	–	✓	✓	✓	✓
LM8JCM-V	–	–	–	–	✓	✓	✓	✓
LM12JCM-V	–	–	–	–	✓	✓	✓	✓
LM16JCM-V	–	–	–	–	✓	✓	✓	✓
LM25JCM-V	–	–	–	–	✓	✓	✓	✓
LM35JCM-V	–	–	◇	◇	✓	✓	✓	✓
LM50JCM-V	–	◇	◇	◇	✓	✓	✓	✓

Features of JCM-V Series

- Equivalent to 2 megapixels performance
- Two way reversible nut is utilized instead of thumb screws in order to tightly lock the focus adjustment ring in place.
- Utilizing two way reversible nut contributes to the prevention of screw dropping troubles.
- Interchangeable iris plates are used to select the F-stop.
- Unique mechanical design to guard against strong vibration and shock.
- All internal glass elements are glued to the inside housing to improve stability.

Interchangeable Iris Plates

1 The JCM-V series uses interchangeable iris plates instead of mechanical iris diaphragms with moving blades. You can choose from four iris plates to adjust the F-stop.

Interchangeable Iris Plates

Focus Adjustment Procedure

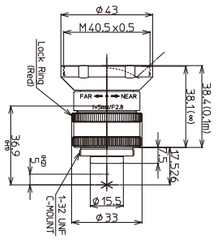
2 Unscrew the bottom ring of the outside body to adjust the focus to optimal position.

3 Screw the red two way reversible nut on the center body towards the bottom ring to lock in the focus.

Instruction Video

Two Way Reversible Nut

LM5JCM-V

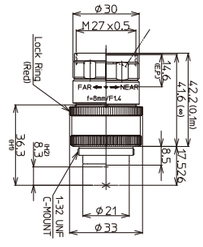


2/3" 5mm METAL Metal Body RUGGED Ruggedized lens

Model	LM5JCM-V
Focal Length (mm)	5
Image Size (mm)	8.8×6.6 (Φ11)
Iris Range (F-stop)	F2.8 / F4 / F5.6 / F8
Focusing Range (m)	0.1~∞
Control Iris	–
Control Focus	Manual
Shooting Range at M.O.D. (mm)	200.8(H)×150.8((V)
Angle of View (Degrees) 2/3 Inch	82.4×66.9
Angle of View (Degrees) 1/1.8 Inch	71.7×57.1
Angle of View (Degrees) 1/2 Inch	65.2×51.3
Resolution(Center, Corner)	120lp/mm, 100lp/mm
TV Distortion (%)	0.5
Back Focus in Air(mm)	10.0
Mount	C-mount
Filter Thread (mm)	M40.5×P0.5
Size (mm)(∞)	Φ43×38.1
Weight(g)	73
Temperature Range	−10°C~+50°C

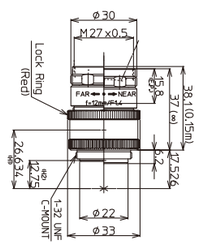
† Images may differ from the actual product.

LM8JCM-V



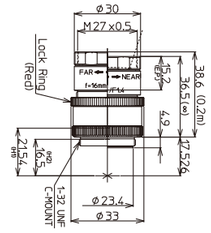
2/3" 8mm METAL Metal Body RUGGED Ruggedized lens

LM12JCM-V



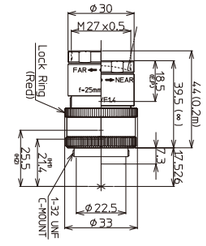
2/3" 12mm METAL Metal Body RUGGED Ruggedized lens

LM16JCM-V



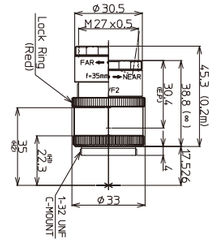
2/3" 16mm METAL Metal Body RUGGED Ruggedized lens

LM25JCM-V



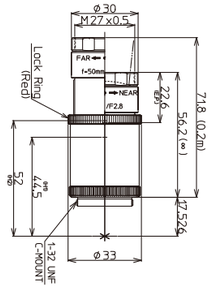
2/3" 25mm METAL Metal Body RUGGED Ruggedized lens

LM35JCM-V



2/3" 35mm METAL Metal Body RUGGED Ruggedized lens

LM50JCM-V



2/3" 50mm METAL Metal Body RUGGED Ruggedized lens

Model	LM8JCM-V	LM12JCM-V	LM16JCM-V	LM25JCM-V	LM35JCM-V	LM50JCM-V
Focal Length (mm)	8	12	16	25	35	50
Image Size (mm)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-stop)	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F2 / F4 / F8 / F16	F2.8 / F4 / F8 / F16
Focusing Range (m)	0.1~∞	0.15~∞	0.2~∞	0.2~∞	0.2~∞	0.2~∞
Control Iris	–	–	–	–	–	–
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)	120.3(H)×90.0(V)	110.0(H)×82.5(V)	112.8(H)×84.4(V)	71.1(H)×53.3(V)	47.9(H)×35.8(V)	29.3(H)×21.9(V)
Angle of View (Degrees) 2/3 Inch	56.5×43.9	38.3×29.1	30.0×22.7	19.6×14.8	14.4×10.8	9.6×7.2
Angle of View (Degrees) 1/1.8 Inch	47.4×36.3	31.7×24.0	24.7×18.6	16.1×12.1	11.8×8.8	7.9×5.9
Angle of View (Degrees) 1/2 Inch	42.6×32.5	28.3×21.4	21.8×16.4	14.0×10.5	10.5×7.9	7.0×5.2
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm
TV Distortion (%)	−0.6	−0.07	−0.05	−0.04	−0.2	−0.03
Back Focus in Air(mm)	9.74	11.7	13.1	11.7	20.1	35.5
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread (mm)	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)(∞)	Φ33.0×41.6	Φ33.0×37.0	Φ33.0×36.5	Φ33.0×39.5	Φ33.0×38.8	Φ33.0×56.2
Weight(g)	88	75	76.5	83	72.5	85
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

JCM-WP Series NEW

High Resolution FA/MV Lenses

The JCM-WP series is a water and dust resistant high-resolution lens with a design based on Kowa's ruggedized megapixel JCM-V lenses.

*Performance may no be secured depending on environment and condition to be used.
*Not intended for underwater use.
*Refer to the instructions and our web page for more information.

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JCM-WP	–	–	–	–	✓	✓	✓	✓
LM8JCM-WP	–	–	–	–	✓	✓	✓	✓
LM12JCM-WP	–	–	–	–	✓	✓	✓	✓
LM16JCM-WP	–	–	–	–	✓	✓	✓	✓
LM25JCM-WP	–	–	–	–	✓	✓	✓	✓
LM35JCM-WP	–	–	◇	◇	✓	✓	✓	✓
LM50JCM-WP	–	◇	◇	◇	✓	✓	✓	✓

† Image is for illustration purposes

Features of JCM-WP Series

- Water repellency and easy cleaning of the front lens surface by applying Kowa's special coating.
- Two way reversible nut is utilized instead of thumb screws in order to tightly lock the focus adjustment ring in place.
- Utilizing two way reversible nut contributes to the prevention of screw dropping troubles.
- Interchangeable iris plates are used to select the F-stop.
- All internal glass elements are glued to the inside housing to improve stability.
- Equivalent to 2 megapixels performance

Interchangeable Iris Plates

1 The JCM-WP series uses interchangeable iris plates instead of mechanical iris diaphragms with moving blades. You can choose from four iris plates to adjust the F-stop.

Interchangeable Iris Plates

Focus Adjustment Procedure

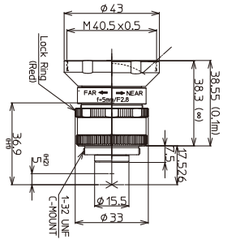
2 Unscrew the bottom ring of the outside body to adjust the focus to optimal position.

3 Screw the red two way reversible nut on the center body towards the bottom ring to lock in the focus.

Instruction Video

Two Way Reversible Nut

LM5JCM-WP NEW

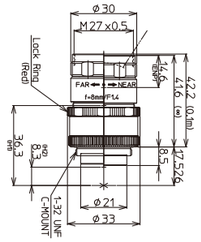


2/3" 5mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

Model	LM5JCM-WP
Focal Length (mm)	5
Image Size (mm)	8.8×6.6 (Φ11)
Iris Range (F-stop)	F2.8 / F4 / F5.6 / F8
Focusing Range (m)	0.1~∞
Control Iris	–
Control Focus	Manual
Shooting Range at M.O.D. (mm)	200.8(H)×150.8((V)
Angle of View (Degrees) 2/3 Inch	82.4×66.9
Angle of View (Degrees) 1/1.8 Inch	71.7×57.1
Angle of View (Degrees) 1/2 Inch	65.2×51.3
Resolution(Center, Corner)	120lp/mm, 100lp/mm
TV Distortion (%)	0.5
Back Focus in Air(mm)	10.2
Mount	C-mount
Filter Thread (mm)	M40.5×P0.5
Size (mm)(∞)	Φ43×38.3
Weight(g)	75
Temperature Range	−10°C~+50°C

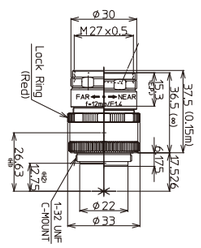
† Images may differ from the actual product.

LM8JCM-WP NEW



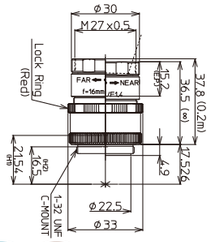
2/3" 8mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

LM12JCM-WP NEW



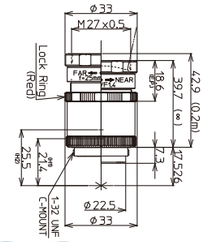
2/3" 12mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

LM16JCM-WP NEW



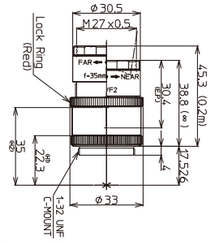
2/3" 16mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

LM25JCM-WP NEW



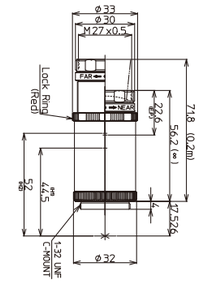
2/3" 25mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

LM35JCM-WP NEW



2/3" 35mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

LM50JCM-WP NEW



2/3" 50mm METAL Metal Body RUGGED Ruggedized lens WR Water Resistance DR Dust Resistance

Model	LM8JCM-WP	LM12JCM-WP	LM16JCM-WP	LM25JCM-WP	LM35JCM-WP	LM50JCM-WP
Focal Length (mm)	8	12	16	25	35	50
Image Size (mm)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-stop)	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F1.4 / F4 / F8 / F16	F2 / F4 / F8 / F16	F2.8 / F4 / F8 / F16
Focusing Range (m)	0.1~∞	0.15~∞	0.2~∞	0.2~∞	0.2~∞	0.2~∞
Control Iris	–	–	–	–	–	–
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)	120.3(H)×90.0(V)	110.0(H)×82.5(V)	112.8(H)×84.4(V)	71.1(H)×53.3(V)	47.9(H)×35.8(V)	29.3(H)×21.9(V)
Angle of View (Degrees) 2/3 Inch	56.5×43.9	38.3×29.1	30.0×22.7	19.6×14.8	14.4×10.8	9.6×7.2
Angle of View (Degrees) 1/1.8 Inch	47.4×36.3	31.7×24.0	24.7×18.6	16.1×12.1	11.8×8.8	7.9×5.9
Angle of View (Degrees) 1/2 Inch	42.6×32.5	28.3×21.4	21.8×16.4	14.0×10.5	10.5×7.9	7.0×5.2
Resolution(Center, Corner)	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm	120lp/mm, 100lp/mm
TV Distortion (%)	−0.6	−0.07	−0.05	−0.04	−0.2	−0.03
Back Focus in Air(mm)	9.74	11.7	13.1	11.7	19.9	35.4
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread (mm)	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)(∞)	Φ33.0×41.6	Φ33.0×36.5	Φ33.0×36.5	Φ33.0×39.7	Φ33.0×38.8	Φ33.0×56.2
Weight(g)	85	75	75	75	65	85
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

JC Series

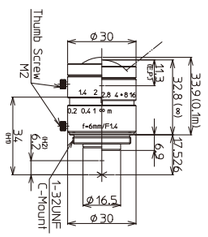
- High resolution
- Low distortion
- Excellent cost performance
- Compact, lightweight and durable
- Excellent corner brightness

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM6JC	–	–	–	–	✓	✓	✓	✓
LM8JC	–	–	–	–	✓	✓	✓	✓
LM12JC	–	–	–	–	✓	✓	✓	✓
LM16JC	–	–	–	–	✓	✓	✓	✓
LM25JC	–	–	–	–	✓	✓	✓	✓
LM35JC	–	–	–	◇	✓	✓	✓	✓
LM50JC	–	◇	◇	◇	✓	✓	✓	✓

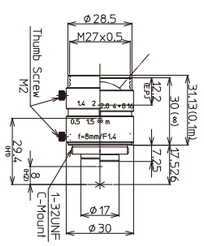
LM6JC

2/3" 6mm METAL Metal Body



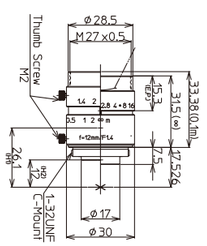
LM8JC

2/3" 8mm METAL Metal Body



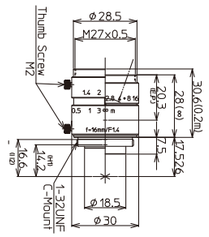
LM12JC

2/3" 12mm METAL Metal Body



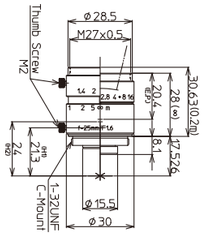
LM16JC

2/3" 16mm METAL Metal Body



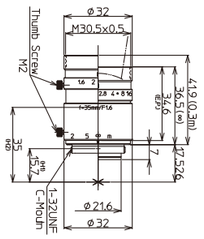
LM25JC

2/3" 25mm METAL Metal Body



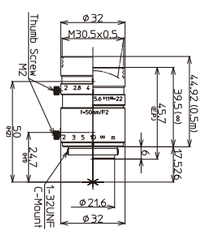
LM35JC

2/3" 35mm METAL Metal Body



LM50JC

2/3" 50mm METAL Metal Body



† Images may differ from the actual product.

Model	LM6JC	LM8JC	LM12JC	LM16JC	LM25JC	LM35JC	LM50JC
Focal Length(mm)	6	8	12	16	25	35	50
Image Size(mm)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F1.4~F16	F1.4~F16	F1.6~F16	F1.6~F16	F2.0~F22
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞	0.2~∞	0.2~∞	0.3~∞	0.5~∞
Control Iris	Manual	Manual	Manual	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	190.6(H)×130.3(V)	136.0(H)×96.1(V)	81.1(H)×59.4(V)	111.8(H)×82.6(V)	72.1(H)×53.7(V)	76.0H)×56.9(V)	85.0(H)×63.6(V)
Angle of View (Degrees) 2/3 Inch	81.9×61.2	64.2×47.7	42.5×31.7	30.5×22.8	21.0×15.7	14.4×10.8	10.1×7.6
Angle of View (Degrees) 1/1.8 Inch	66.9×50.1	52.4×39.1	34.6×25.9	23.8×18.7	17.2×12.9	11.8×8.8	8.2×6.2
Angle of View (Degrees) 1/2 Inch	59.4×44.5	46.2×34.6	30.7×23.0	22.2×16.6	15.3×11.4	10.5×7.9	7.3×5.5
Resolution(Center, Corner)	100lp/mm, 60lp/mm	100lp/mm,60lp/mm	100lp/mm,60lp/mm	100lp/mm,60lp/mm	100lp/mm,60lp/mm	100lp/mm,60lp/mm	100lp/mm,60lp/mm
TV Distortion(%)	−10.7	−6.2	−2.5	−1.5	−0.6	−0.2	−0.1
Back Focus in Air(mm)	11.3	11.3	11.1	12.1	10.3	14.9	17.2
Mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	–	M27×P0.5	M27×P0.5	M27×P0.5	M27×P0.5	M30.5×P0.5	M30.5×P0.5
Size(mm)(∞)	Φ30×32.8	Φ30×30	Φ30×31.5	Φ30×28	Φ30×28	Φ32×36.5	Φ32×39.5
Weight(g)	65	60	60	55	55	85	90
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM6JC	LM8JC	LM12JC	LM16JC	LM25JC	LM35JC	LM50JC
(Non)M.O.D./Magnification	100mm/0.06×	100mm/0.07×	100mm/0.12×	200mm/0.08×	200mm/0.12×	300mm/0.12×	500mm/0.10×
(1mm Ring)M.O.D./Magnification	–	–	50mm/0.19×	110mm/0.14×	136mm/0.15×	240mm/0.14×	422mm/0.12×
(5mm Ring)M.O.D./Magnification	–	–	–	–	46mm/0.31×	132mm/0.26×	264mm/0.20×
(10mm Ring)M.O.D./Magnification	–	–	–	–	–	84mm/0.40×	183mm/0.30×
(20mm Ring)M.O.D./Magnification	–	–	–	–	–	–	117mm/0.50×

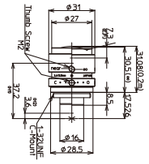
1/1.8" STANDARD

NCL Series

- 4 wide angle lenses
- Locking screws
- Metal body

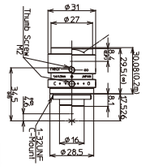
LM4NCL

1/1.8" 3.5mm METAL Metal Body



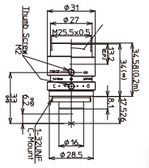
LM5NCL

1/1.8" 4.5mm METAL Metal Body



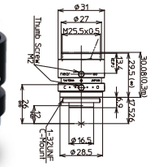
LM6NCL

1/1.8" 6mm METAL Metal Body



LM12NCL

1/1.8" 12mm METAL Metal Body



Model	LM4NCL	LM5NCL	LM6NCL	LM12NCL
Focal Length(mm)	3.5	4.5	6	12
Image Size(mm)	7.2×5.4(Φ9)	7.2×5.4(Φ9)	7.2×5.4(Φ9)	7.2×5.4(Φ9)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F1.4~F16	F1.4~F16
Focusing Range(m)	0.2~∞	0.2~∞	0.2~∞	0.3~∞
Control Iris	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	679.9(H)×389.3(V)	405.3(H)×273.8(V)	255.8(H)×188.7(V)	189.9(H)×140.0(V)
Angle of View (Degrees) 1/1.8 inch	117.7×86.7	88.8×66.9	62.7×48.4	34.6×25.9
Angle of View (Degrees) 1/2 inch	103.6×76.7	79.0×59.4	57.3×44.0	30.7×23.0
Angle of View (Degrees) 1/3 inch	76.7×57.7	59.4×45.1	44.0×33.7	23.0×17.2
Resolution(Center, Corner)	100lp/mm, 60lp/mm	100lp/mm, 60lp/mm	100lp/mm, 60lp/mm	100lp/mm, 60lp/mm
TV Distortion(%)	−28.0	−17.5	−1.0	−0.8
Back Focus in Air(mm)	8.9	10.0	9.5	11.1
Mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	–	–	M25.5×P0.5	M25.5×P0.5
Size(mm)(∞)	Φ31×30.5	Φ31×29.5	Φ31×34	Φ31×29.5
Weight(g)	60	55	60	55
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM4NCL	–	–	–	–	–	✓	✓	✓
LM5NCL	–	–	–	–	–	✓	✓	✓
LM6NCL	–	–	–	–	–	✓	✓	✓
LM12NCL	–	–	–	–	◇	✓	✓	✓

Diagram of M.O.D. / Magnification Using A Close Up Ring

Model	LM4NCL	LM5NCL	LM6NCL	LM12NCL
(Non)M.O.D./Magnification	200mm/0.018×	200mm/0.02×	200mm/0.03×	300mm/0.08×
(1mm Ring)M.O.D./Magnification	–	–	22mm/0.19×	93mm/0.12×
(5mm Ring)M.O.D./Magnification	–	–	–	22mm/0.45×

† Images may differ from the actual product.

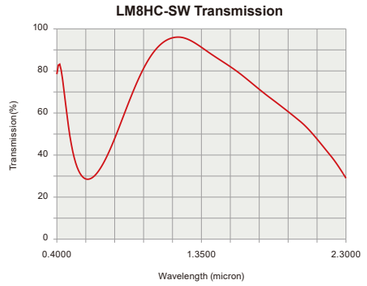
1" SWIR MEGAPIXEL

HC-SW Series

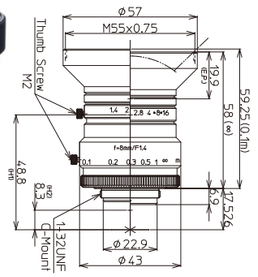
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8HC-SW	–	–	✓	✓	✓	✓	✓	✓
LM12HC-SW	–	◇	✓	✓	✓	✓	✓	✓
LM16HC-SW	–	◇	✓	✓	✓	✓	✓	✓
LM25HC-SW	–	◇	✓	✓	✓	✓	✓	✓
LM35HC-SW	–	◇	✓	✓	✓	✓	✓	✓
LM50HC-SW	–	◇	✓	✓	✓	✓	✓	✓

- Incorporating Kowa's special coating technology, the 1" format HC-SW series will maintains high transmission from 800nm to 1900nm.
- Designed for Near Infrared(NIR) and Short Wavelength Infrared (SWIR) applications.



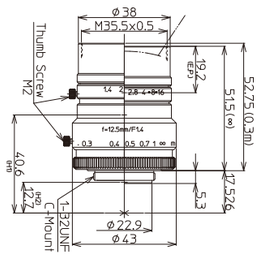
LM8HC-SW



1" 8mm METAL Metal Body SWIR SWIR Coating

Model	LM8HC-SW
Focal Length(mm)	8
Image Size(mm)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.4~F16
Focusing Range(m)	0.1~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	196.0(H)×143.2(V)
Angle of 1 inch	79.4×63.0
View 2/3 inch	58.3×44.7
(Degrees) 1/1.8 inch	48.5×36.9
Resolution(Center, Corner)	120lp/mm, 80lp/mm
TV Distortion(%)	−1.2
Back Focus in Air(mm)	11.2
Mount	C-mount
Filter Thread(mm)	M55×P0.75
Size(mm)(∞)	Φ57×58
Weight(g)	205
Temperature Range	−10°C~+50°C

LM12HC-SW

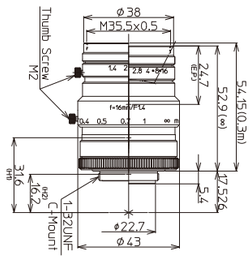


1" 12.5mm METAL Metal Body SWIR SWIR Coating

Model	LM12HC-SW
Focal Length(mm)	12.5
Image Size(mm)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.4~F16
Focusing Range(m)	0.3~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	330.6(H)×243.5(V)
Angle of 1 inch	55.6×42.5
View 2/3 inch	39.1×29.5
(Degrees) 1/1.8 inch	32.1×24.2
Resolution(Center, Corner)	120lp/mm, 80lp/mm
TV Distortion(%)	−1.58
Back Focus in Air(mm)	12.6
Mount	C-mount
Filter Thread(mm)	M35.5×P0.5
Size(mm)(∞)	Φ43×51.5
Weight(g)	160
Temperature Range	−10°C~+50°C

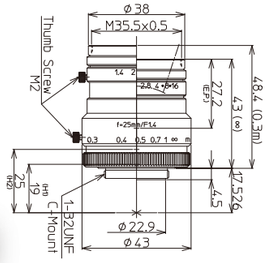
† Images may differ from the actual product.

LM16HC-SW



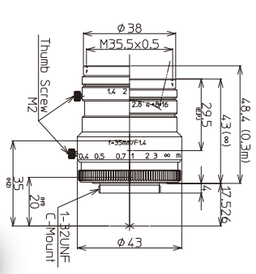
1" 16mm METAL Metal Body SWIR SWIR Coating

LM25HC-SW



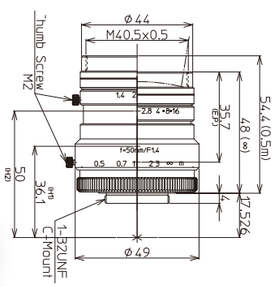
1" 25mm METAL Metal Body SWIR SWIR Coating

LM35HC-SW



1" 35mm METAL Metal Body SWIR SWIR Coating

LM50HC-SW



1" 50mm METAL Metal Body SWIR SWIR Coating

Model	LM16HC-SW	LM25HC-SW	LM35HC-SW	LM50HC-SW
Focal Length(mm)	16	25	35	50
Image Size(mm)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F1.4~F16	F1.4~F16
Focusing Range(m)	0.3~∞	0.3~∞	0.3~∞	0.5~∞
Control Iris	Manual	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	251.5(H)×186.2(V)	160.7(H)×119.2(V)	110.1(H)×82.0(V)	121.8(H)×91.3(V)
Angle of 1 inch	44.3×33.6	29.3×22.0	20.9×15.8	14.5×10.8
View 2/3 inch	30.8×23.2	20.2×15.1	14.4×10.8	10.0×7.5
(Degrees) 1/1.8 inch	25.3×19.0	16.5×12.4	11.8×8.8	8.2×6.2
Resolution(Center, Corner)	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm
TV Distortion(%)	−1.0	−1.0	−0.5	0.05
Back Focus in Air(mm)	12.6	16.5	16.8	14.8
Mount	C-mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M35.5×P0.5	M35.5×P0.5	M35.5×P0.5	M40.5×P0.5
Size(mm)(∞)	Φ43×52.9	Φ43×43	Φ43×43	Φ49×48
Weight(g)	150	135	135	210
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

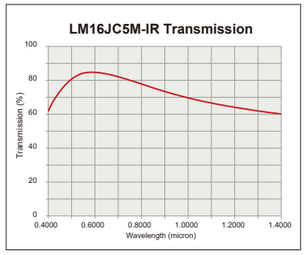
2/3" 5 MEGAPIXEL IR-CORRECTED 3.45 µm

JC5M-IR Series

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM16JC5M-IR	–	–	–	–	✓	✓	✓	✓
LM25JC5M-IR	–	–	–	◇	✓	✓	✓	✓
LM35JC5M-IR	–	–	–	◇	✓	✓	✓	✓

- 5 megapixel lens
- IR corrected design
- Fast F-stop of F1.4 *LM35JC5M-IR is F2.0
- Low distortion



LM16JC5M-IR

2/3" 16mm METAL Metal Body LO-DIS Low Distortion IR IR-Corrected

LM25JC5M-IR

2/3" 25mm METAL Metal Body LO-DIS Low Distortion IR IR-Corrected

LM35JC5M-IR

2/3" 35mm METAL Metal Body LO-DIS Low Distortion IR IR-Corrected

Model	LM16JC5M-IR	LM25JC5M-IR	LM35JC5M-IR
Focal Length(mm)	16	25	35
Image Size(mm)	8.8×6.6(Φ11)	8.8×6.6(Φ11)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.4~F16	F1.4~F16	F2.0~F22
Focusing Range(m)	0.3~∞	0.3~∞	0.3~∞
Control Iris	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	171.4(H)×127.4(V)	113.3(H)×84.5(V)	75.8(H)×56.6(V)
Angle of View (Degrees) 2/3 Inch	30.9×23.2	20.1×15.1	13.9×10.5
Angle of View (Degrees) 1/1.8 Inch	25.4×19.0	16.5×12.4	11.4×8.3
Angle of View (Degrees) 1/2 Inch	22.6×16.9	14.6×11.0	10.2×7.6
Resolution(Center, Corner)	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm	120lp/mm, 80lp/mm
TV Distortion(%)	−0.8	−0.3	−0.3
Back Focus in Air(mm)	14.7	12	19.2
Mount	C-mount	C-mount	C-mount
Filter Thread(mm)	M27×P0.5	M30.5×P0.5	M30.5×P0.5
Size(mm)(∞)	Φ34.0×44.5	Φ34.0×47.0	Φ34.0×43.0
Weight(g)	100	110	100
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

Reduction of visible-NIR focus shift

Visible design lens

Wavelength Change

Visible NIR

Focus Shift

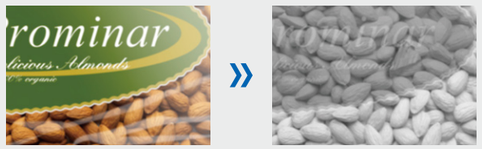
IR Corrected design lens Kowa's IR-lens

Wavelength Change

Visible NIR

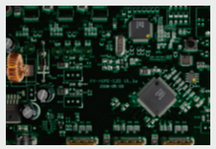
Maintains sharp Focus

Examples

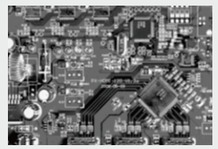


Visible

NIR



Visible



NIR

† Images may differ from the actual product.

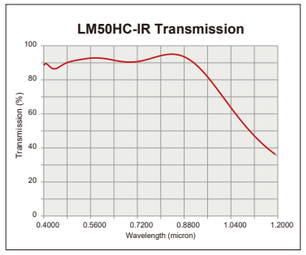
1" 5 MEGAPIXEL IR-CORRECTED

HC-IR Series

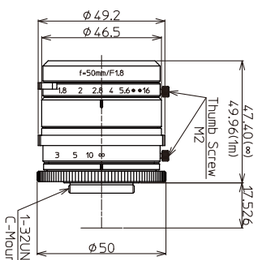
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM50HC-IR	–	◇	✓	✓	✓	✓	✓	✓
LM60HC-IR	–	◇	✓	✓	✓	✓	✓	✓

- IR corrected design
- High performance compact lens
- Excellent corner brightness
- Low distortion

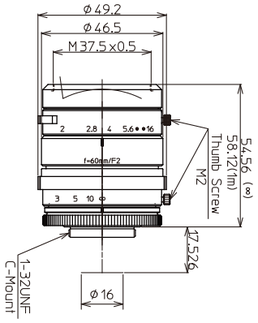


LM50HC-IR



1" 50mm METAL Metal Body LO-DIS Low Distortion IR IR-Corrected

LM60HC-IR



1" 60mm METAL Metal Body LO-DIS Low Distortion IR IR-Corrected

Model	LM50HC-IR	LM60HC-IR
Focal Length(mm)	50	60
Image Size(mm)	12.8×9.6(Φ16)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.8~F16	F2.0~F16
Focusing Range(m)	1.0~∞	1.0~∞
Control Iris	Manual	Manual
Control Focus	Manual	Manual
Shooting Range at M.O.D.(mm)	246.0(H)×184.0(V)	216.9(H)×162.1(V)
Angle of View (Degrees) 1 Inch	14.4×10.8	12.2×9.2
Angle of View (Degrees) 2/3 Inch	9.9×7.5	8.4×6.3
Angle of View (Degrees) 1/1.8 Inch	8.2×6.2	6.9×5.2
Resolution(Center, Corner)	160lp/mm, 125lp/mm	160lp/mm, 125lp/mm
TV Distortion(%)	−0.09	−0.06
Back Focus in Air(mm)	20.4	15.7
Mount	C-mount	C-mount
Filter Thread(mm)	—	M37.5×P0.5
Size(mm)(∞)	Φ50.0×47.4	Φ49.2×54.6
Weight(g)	180	200
Temperature Range	−10°C~+50°C	−10°C~+50°C

† Images may differ from the actual product.

LINE SCAN Φ46.0mm IMAGE SIZE Φ30.0mm IMAGE SIZE (3CCD)

LF Series

- Large format (Image size Φ46.0mm)
- Corresponds to 4K Line Scan Camera
- Low distortion
- Suitable for close distance inspection

Optimized design for machine vision

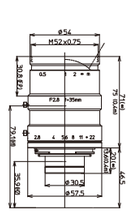
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Φ)							
	57.0	51.0	46.0	38.0	35.0	30.0	23.0 4/3"	18.0 1"
LM28LF	–	–	✓	✓	✓	✓	✓	✓
LM35LF	–	◇	✓	✓	✓	✓	✓	✓
LM50LF	–	◇	✓	✓	✓	✓	✓	✓

LM28LF

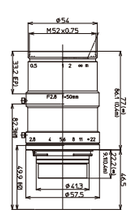
28mm METAL Metal Body LO-DIS Low Distortion

LM35LF



35mm METAL Metal Body LO-DIS Low Distortion

LM50LF



50mm METAL Metal Body LO-DIS Low Distortion

Model	LM28LF	LM28LF-48	LM35LF	LM35LF-48	LM50LF	LM50LF-48
Focal Length(mm)	28		35		50	
Image Size(mm)	46.0(Φ46)		46.0(Φ46)		46.0(Φ46)	
Iris Range(F-stop)	F2.8~F22		F2.8~F22		F2.8~F22	
Focusing Range(m) (FROM SENSOR)	0.5~∞		0.4~∞		0.4~∞	
Control Iris	Manual		Manual		Manual	
Control Focus	Manual		Manual		Manual	
Shooting Range at M.O.D.(mm)	424.3×281.1		239.9×160.3		162.9×108.9	
Angle of View Full size	64.6×45.8		53.7×37.2		39.7×27.1	
Angle of View 4/3 inch	35.8×27.2		28.9×21.8		20.9×15.7	
Angle of View (Degrees) 1 inch	25.3×19.1		20.3×15.3		14.6×11.0	
Resolution(Center, Corner)	160lp/mm, 63lp/mm		160lp/mm, 63lp/mm		160lp/mm, 63lp/mm	
TV Distortion(%)	−0.17		−0.15		−0.04	
Flange Back in Air(mm)	46.5	17.5	46.5	17.5	46.5	17.5
Mount	Nikon F-mount	TFL-II mount	Nikon F-mount	TFL-II mount	Nikon F-mount	TFL-II mount
Filter Thread(mm)	M72×P0.75		M52×P0.75		M52×P0.75	
Size(mm)(∞)	Φ75×98	Φ75×127	Φ57.5×71	Φ57.5×100	Φ57.5×77	Φ57.5×106
Weight(g)	500		430		470	

Nikon is a trademark of Nikon Corporation.

CLS Series

- For industrial 3CCD color line scan camera
- Ultra high resolution ► For use with 30mm length line sensor
- Low chromatic aberration ► Excellent corner brightness
- Close up lens is available for close distance applications

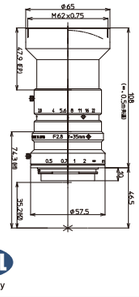
✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Φ)							
	57.0	51.0	46.0	38.0	35.0	30.0	23.0 4/3"	18.0 1"
LM28CLS	–	–	–	–	–	✓	✓	✓
LM35CLS	–	–	–	–	–	✓	✓	✓
LM50CLS	–	–	–	–	◇	✓	✓	✓

LM28CLS

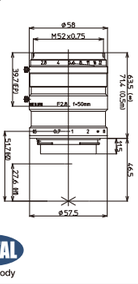
28mm 3CCD 3CCD Camera METAL Metal Body

LM35CLS



35mm 3CCD 3CCD Camera METAL Metal Body

LM50CLS



50mm 3CCD 3CCD Camera METAL Metal Body

Model	LM28CLS	LM35CLS	LM50CLS
Focal Length(mm)	28	35	50
Image Size(mm)	30.0(Φ30)	30.0(Φ30)	30.0(Φ30)
Iris Range(F-stop)	F2.8~F22	F2.8~F22	F2.8~F22
Focusing Range(m) (FROM SENSOR)	0.5~∞	0.5~∞	0.5~∞
Control Iris	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	317.9(V)	259.1(V)	157.7(V)
Angle of View(Degrees)	55.2(V)	46.1(V)	32.3(V)
Resolution(Center, Corner)	160lp/mm, 63lp/mm	160lp/mm, 63lp/mm	160lp/mm, 63lp/mm
TV Distortion(%)	−0.1	0.06	−0.1
Flange Back in Air(mm)	46.5	46.5	46.5
Mount	Nikon F-mount	Nikon F-mount	Nikon F-mount
Filter Thread(mm)	M72×P0.75	M62×P0.75	M52×P0.75
Size(mm)(∞)	Φ75×108	Φ65×108	Φ58×63.5
Weight(g)	482	480	358

Nikon is a trademark of Nikon Corporation.
† Images may differ from the actual product.

1/2.5" MEGAPIXEL S-MOUNT LENS (3.2μm) NEW

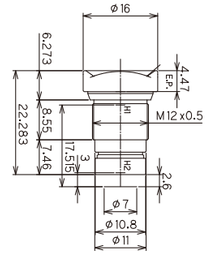
- Low distortion
- Wide optical design
- High transmission from VIS to NIR

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	1	1/1.2	2/3	1/1.8	1/2	1/2.5	1/2.8	1/3
LM3NF	–	–	–	–	–	✓	✓	✓
LM5NF	–	–	–	–	–	✓	✓	✓
LM9NF	–	–	–	–	–	✓	✓	✓

LM3QS28 / 40 / 56 NEW

1/2.5" 3mm



Model	LM3QS28	LM3QS40	LM3QS56
Focal Length(mm)	3		
Image Size	1/2.5		
Iris Range(F-stop)	F2.8	F4	F5.6
Focusing Range(m)	0.1~∞		
Angle of View 1/2.5 inch	86.7×70.6		
Angle of View 1/2.8 inch	83.3×58.2		
Angle of View (Degrees) 1/3 inch	76.9×61.6		
Resolution(Center, Corner)	160lp/mm, 125lp/mm		
TV Distortion(%)	0.02		
Back Focus in Air(mm)	2.6		
Mount	S-mount (M12×0.5)		
Size(mm)(∞)	Φ16×22.3		
Weight(g)	6		
Temperature Range	−10°C~+50°C		

1/3" NF-MOUNT

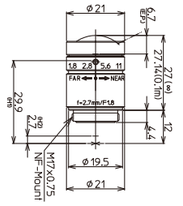
Compact NF-mt. lens Series

- Introducing the lineup of megapixel NF-mount lenses. The compact body and high resolution design will maximize the performance of NF-mount camera.

✓ Compatible ◇ Suitable – Incompatible

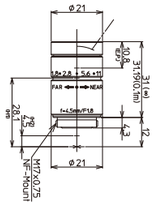
Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3NF	–	–	–	–	–	–	–	✓
LM5NF	–	–	–	–	–	–	–	✓
LM9NF	–	–	–	–	–	–	◇	✓

LM3NF



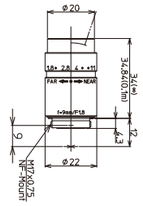
1/3" 2.7mm METAL Metal Body

LM5NF



1/3" 4.5mm METAL Metal Body

LM9NF



1/3" 9mm METAL Metal Body

Model	LM3NF	LM5NF	LM9NF
Focal Length(mm)	2.7	4.5	9
Image Size(mm)	4.8×3.6(Φ6)	4.8×3.6(Φ6)	4.8×3.6(Φ6)
Iris Range(F-stop)	F1.8~F11	F1.8~F11	F1.8~F11
Focusing Range(m)	0.1~∞	0.1~∞	0.1~∞
Control Iris	Manual	Manual	Manual
Control Focus	Manual	Manual	Manual
Shooting Range at M.O.D.(mm)	262.7(H)×167.8(V)	122.9(H)×89.9(V)	58.1(H)×43.3(V)
Angle of View(Degrees) 1/3 Inch	102.3×76.7	59.2×45.0	30.2×22.8
Resolution(Center, Corner)	100lp/mm, 60lp/mm	100lp/mm, 60lp/mm	100lp/mm, 60lp/mm
TV Distortion(%)	−7.3	−2.8	−0.6
Back Focus in Air(mm)	7.8	8.1	8.6
Mount	NF-mount	NF-mount	NF-mount
Size(mm)(∞)	Φ21×27	Φ21×31	Φ22×34
Weight(g)	30	35	40
Temperature Range	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

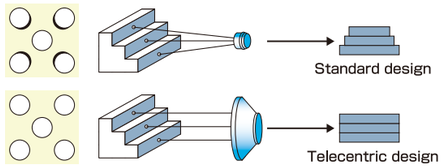
† Images may differ from the actual product.

TELECENTRIC Series

High Resolution Lenses

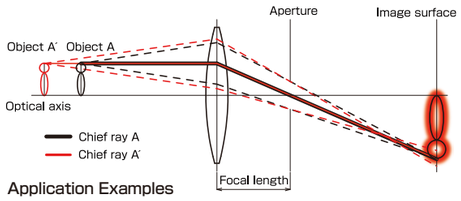
Features of TC Series

- Produces high contrast and resolution in both the center and corners.
- Virtually no TV distortion of entire image area.



Telecentric Optical System

In a telecentric optical system, there is no change in magnification when focusing. Thus, the magnification remains constant at different working distances. Similarly, the movement of an object also does not change the magnification, which makes a telecentric lens ideal for measuring objects with high accuracy.
In a telecentric optical system, the chief rays are parallel to the optical axis.
As a result, the aperture becomes greater as the magnification is fixed by the focusing rays. This means that the F-number on a telecentric lens tends to be larger when compared to a standard megapixel lens.



Application Examples

- Surface inspection of silicon wafers
- Image defect inspections
- Inspection of dirt on prisms and glass circuit boards
- Measurement of thread pitches
- Reading 2D codes

✓ Compatible ◇ Suitable – Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM1119TC	✓	✓	✓	✓	✓	✓	✓	✓
LM1138TC	✓	✓	✓	✓	✓	✓	✓	✓
LM1120TC					✓	✓	✓	✓
LM1121TC					✓	✓	✓	✓
LM1122TC					✓	✓	✓	✓
LM1123TC					✓	✓	✓	✓
LM1125TC					✓	✓	✓	✓
LM50TC					✓	✓	✓	✓

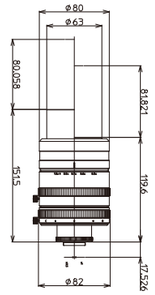
Collapse telecentricity

4/3” MACRO ZOOM 21 MEGAPIXEL

- Telecentric lens with variable magnification
- Able to resolve up to 21 megapixels
- 0.5×~1.0× for macro use

LM1119TC

4/3" METAL Metal Body



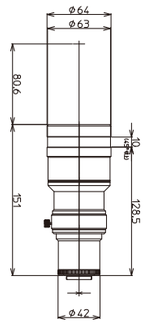
Model		LM1119TC		LM1138TC
Magnification Range		0.5~1.0×		2.0×
Image Size		18.4×13.8(Φ23)		18.4×13.8(Φ23)
Shooting Magnification		0.5×	1.0×	2.0×
Objective N.A.		0.05	0.1	0.2
W.D(mm)		80	81.8	80.6
Shooting Range (mm)	4/3 inch	36.8×27.6	18.4×13.8	9.20×6.90
	1 inch	25.6×19.2	12.8×9.6	6.40×4.8
	2/3 inch	17.6×13.2	8.8×6.6	4.4×3.3
TV Distortion(%)		0.1	0.1	0.1
Back Focus in Air(mm)		14.7		15.0
Mount		C-mount		C-mount
Resolution		120lp/mm		120lp/mm
Size(mm)(∞)		Φ82×151.5		Φ64×151.0
Weight(g)		1000		830
Temperature Range		−10°C~+50°C		−10°C~+50°C
Storage Temperature Range		−20°C~+60°C		−20°C~+60°C

4/3” MACRO 21 MEGAPIXEL

- 2.0x for macro use
- Able to resolve up to 21 megapixels

LM1138TC

4/3" METAL Metal Body



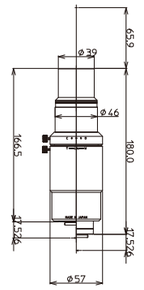
† Images may differ from the actual product.

2/3” TELECENTRIC 5 MEGAPIXEL PLUS

- Telecentric lens with variable magnification
- Able to adjust the magnification to match with the pixel size of the camera
- Lenses are designed with an optical magnification that is ideal for over 5 megapixels
- Distortion free lenses of less than 0.02%. TV distortion is limited to 0.25% on the entire image area even when used with a 5 megapixel camera

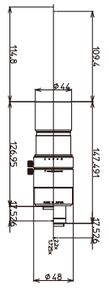
LM1120TC

2/3" METAL DIS-F Metal Body Distortion Free



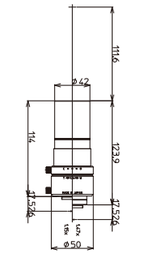
LM1121TC

2/3" METAL DIS-F Metal Body Distortion Free



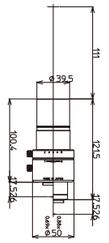
LM1122TC

2/3" METAL DIS-F Metal Body Distortion Free



LM1123TC

2/3" METAL DIS-F Metal Body Distortion Free

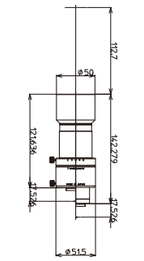


2/3” MACRO ZOOM

- Telecentric lens with variable magnification
- 0.3×~1.0× for macro use

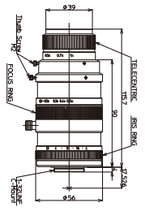
LM1125TC

2/3" METAL DIS-F Metal Body Distortion Free



LM50TC

2/3" METAL Metal Body



Model		LM1120TC			LM1121TC			LM1122TC			LM1123TC			LM1125TC			LM50TC	
Magnification Range		3.45~4.4×			1.725~2.2×			1.15~1.47×			0.69~0.88×			0.346~0.44×			0.3~1.0×	
Image Size		8.8×6.6(Φ11)			8.8×6.6(Φ11)			8.8×6.6(Φ11)			8.8×6.6(Φ11)			8.8×6.6(Φ11)			8.8×6.6(Φ11)	
Shooting Magnification		3.45×	4.0×	4.4×	1.725×	2.0×	2.2×	1.15×	1.3×	1.47×	0.69×	0.8×	0.88×	0.346×	0.4×	0.44×	0.3×	1.0×
Objective N.A.		0.2	0.2	0.2	0.131	0.131	0.131	0.101	0.101	0.101	0.07	0.07	0.07	0.04	0.04	0.04	0.038	0.100
W.D(mm)		65.9	65.9	65.9	114.8	111.4	109.4	111.6	111.6	111.6	111.0	111.0	111.0	112.7	112.7	112.7	193.4	81.8
Shooting Range (mm)	2/3 inch	2.6×1.9	2.2×1.7	2.0×1.5	5.1×3.8	4.4×3.3	4.0×3.0	7.6×5.7	6.6×5.0	6.0×4.5	12.7×9.6	11.0×8.2	10.0×7.5	25.4×19.1	22.0×16.5	20.0×15.0	29.5×22.2	8.8×6.6
	1/1.8 inch	2.1×1.6	1.8×1.4	1.6×1.2	4.2×3.1	3.6×2.7	3.3×2.4	6.3×4.7	5.5×4.1	4.9×3.7	10.4×7.8	9.0×6.7	8.2×6.1	20.9×15.7	18.1×13.6	16.5×12.3	24.1×18.0	7.2×5.4
	1/2 inch	1.9×1.4	1.6×1.2	1.5×1.1	3.7×2.8	3.2×2.4	2.9×2.2	5.6×4.2	4.9×3.7	4.3×3.3	9.3×7.0	8.0×6.0	7.3×5.5	18.6×13.9	16.1×12.1	14.6×11.0	21.4×16.0	6.4×4.8
TV Distortion(%)		0.015	0.003	−0.002	0.011	0.004	0.001	−0.015	−0.001	0.011	−0.001	−0.009	0.005	0.02	−0.009	0.01	−0.19	−0.1
Back Focus in Air(mm)		17.1	24.5	30	55.8	67.7	76.3	18.7	23.6	29.8	34	28.8	25.3	17.6	17	16.5	22.0	
Mount		C-mount			C-mount			C-mount			C-mount			C-mount			C-mount	
Resolution		120lp/mm			120lp/mm			120lp/mm			120lp/mm			120lp/mm			120lp/mm	
Filter Thread(mm)		-			-			-			-			-			M37.5×P0.5	
Size(mm)(∞)		Φ57×180.0			Φ48×147.5			Φ50×123.9			Φ50×121.5			Φ51.5×142.3			Φ56×115.7	
Weight(g)		645			420			330			290			420			317	
Temperature Range		−10°C~+50°C			−10°C~+50°C			−10°C~+50°C			−10°C~+50°C			−10°C~+50°C			−10°C~+50°C	
Storage Temperature Range		−20°C~+60°C			−20°C~+60°C			−20°C~+60°C			−20°C~+60°C			−20°C~+60°C			−20°C~+60°C	

† Images may differ from the actual product.

VARIFOCAL

✓ Compatible ◇ Suitable — Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LMVZ166HC	–	–	✓	✓	✓	✓	✓	✓
LMVZ4411	–	–	–	–	–	✓	✓	✓
LMVZ655	–	–	–	–	–	–	✓	✓
LMVZ990-IR	–	–	–	–	–	–	✓	✓

1" VARIFOCAL

LMVZ166HC

1" | 16-64mm | METAL Metal Body | LO-DIS Low Distortion

Model	LMVZ166HC
Focal Length(mm)	16~64(4.0×)
Image Size(mm)	12.8×9.6(Φ16)
Iris Range(F-stop)	F1.8~F16
Focusing Range(m)	1.0~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	W881.4×639.7/T238.2×177.9
Angle of View (Degrees) 1 Inch	W45.9×34.2/T11.7×14.6
Angle of View (Degrees) 2/3 Inch	W31.3×23.4/T8.1×6.1
Angle of View (Degrees) 1/1.8 Inch	W25.5×19.1/T6.6×5.0
TV Distortion(%)	W−3.4/T0.2
Back Focus in Air(mm)	W29.2/T29.5
Mount	C-mount
Filter Thread(mm)	M58×P0.75
Size(mm)(∞)	Φ60×124
Weight(g)	370
Temperature Range	−10°C~+50°C

1/1.8" VARIFOCAL

LMVZ4411

1/1.8" | 4.4-11mm | LO-DIS Low Distortion

Model	LMVZ4411
Focal Length(mm)	4.4~11(2.5×)
Image Size(mm)	7.2×5.4(Φ9)
Iris Range(F-stop)	F1.6~F16
Focusing Range(m)	0.3~∞
Control Iris	Manual
Control Focus	Manual
Shooting Range at M.O.D.(mm)	W507.5×379.0/T211.4×159.0
Angle of View (Degrees) 1/1.8 Inch	W76.6×61.2/T36.7×28.0
Angle of View (Degrees) 1/2 Inch	W70.2×55.5/T32.9×25.0
Angle of View (Degrees) 1/3 Inch	W55.5×43.0/T25.0×18.9
TV Distortion(%)	W−0.2/T0.4
Back Focus in Air(mm)	W8.8/T14.5
Mount	C-mount
Filter Thread(mm)	M43×P0.75
Size(mm)(∞)	Φ45×56.5
Weight(g)	125
Temperature Range	−10°C~+50°C

1/2" VARIFOCAL

LMVZ655

※(1)

1/2" | 6.5-52mm | METAL Metal Body

LMVZ990-IR

1/2" | 9-90mm | METAL Metal Body | XD Extra Low Dispersion | IR IR-Corrected

Model	LMVZ655	LMVZ990-IR
Focal Length(mm)	6.5~52(8×)	9~90(10×)
Image Size(mm)	6.4×4.8(Φ8)	6.4×4.8(Φ8)
Iris Range(F-stop)	F1.8~Close	F1.8~F16
Focusing Range(m)	0.2~∞	0.3~∞
Control Iris	Manual	Manual
Control Focus	Manual	Manual
Shooting Range at M.O.D.(mm)	W232.8×168.2/T141.4×106.0	W252.7×182.5/T94.4×70.8
Angle of View (Degrees) 1/2 Inch	W54.8×41.1/T7.1×5.4	W41.1×30.3/T4.2×3.1
Angle of View (Degrees) 1/3 Inch	W41.1×30.8/T5.4×4.0	W30.3×22.5/T3.1×2.4
TV Distortion(%)	W−1.2/T0.1	W−4.3/T0.3
Back Focus in Air(mm)	W10.2/T13.1	W15.4/T11.7
Mount	C-mount	C-mount
Filter Thread(mm)	M43×P0.75	M43×P0.75
Size(mm)(∞)	Φ46×73.5	Φ45×93
Weight(g)	163	194
Temperature Range	−10°C~+50°C	−10°C~+50°C

※(1) Available while stocks last

† Images may differ from the actual product.

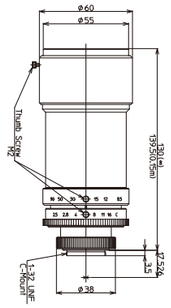
MACRO ZOOM

✓ Compatible ◇ Suitable — Incompatible

Model	Format Size(Inch)							
	4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LMZ50M	–	–	–	–	–	–	–	✓
LMZ45T3	–	–	–	–	✓	✓	✓	✓
LMZ68M	–	–	–	–	–	–	✓	✓
LMZ69M	–	–	–	–	✓	✓	✓	✓

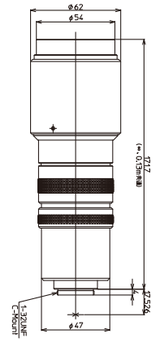
- 2 zoom ranges (6× and 10×)
- Excellent for pattern matching, measurement, inspection, and character recognition

LMZ50M



1/3" | inf~0.7× | 8.5-90mm | METAL Metal Body

LMZ45T3



2/3" | inf~1.1× | 18-108mm | METAL Metal Body

LMZ68M

1/2" | 8-48mm | METAL Metal Body

LMZ69M

2/3" | 11.5-69mm | METAL Metal Body

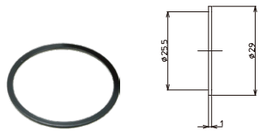
Model	LMZ50M		LMZ45T3	
Magnification	inf~0.7×		inf~1.1×	
Zoom Magnification	10×		6×	
Image Size(mm)	4.8×3.6(Φ6)		8.8×6.6(Φ11)	
Close up lens	3Dpt.un-installed	3Dpt.installed	3Dpt.un-installed	3Dpt.installed
Shooting Magnification	Inf~0.28×	0.07~0.7×	Inf~0.72×	0.053~1.1×
W.D (mm)	Inf~M.O.D=310	WD=310~150	Inf~M.O.D=185	WD=330~115
Iris Range(F-stop)	F2.5~Close		F2.5~Close	
Object side N.A.	–	–	–	–
Image side N.A.	–	–	–	–
TV Distortion(%)	0.1	0.1	−0.3	−0.1
Angle of View(Degrees) 2/3 inch	–	–	inf wide: 27.3×20.5° inf tele: 4.7×3.5° WD=185 wide: 67.0×50.1 WD=185 tele: 11.7×9.0	WD=330 wide: 165.4×123.8 WD=330 tele: 28.3×21.3 WD=115 wide: 43.8×32.8 WD=115 tele: 7.6×5.9
Angle of View(Degrees) 1/2 inch	–	–	inf wide: 19.9×14.9° inf tele: 3.4×2.6° WD=185 wide: 48.6×36.5 WD=185 tele: 8.7×6.6	WD=330 wide: 120.0×89.8 WD=330 tele: 20.7×15.6 WD=115 wide: 31.8×23.8 WD=115 tele: 5.7×4.3
Angle of View(Degrees) 1/3 inch	inf wide: 31.3×23.5° inf tele: 3.2×2.4° WD=310 wide: 140.7×103.0 WD=310 tele: 14.0×10.4	WD=310 wide: 172.0×128.4 WD=310 tele: 17.1×12.8 WD=150 wide: 69.1×51.7 WD=150 tele: 6.9×5.2	inf wide: 14.9×11.2° inf tele: 2.6×2.0° WD=185 wide: 36.5×27.3 WD=185 tele: 6.6×5.0	WD=330 wide: 89.8×67.4 WD=330 tele: 15.6×11.7 WD=115 wide: 23.8×17.9 WD=115 tele: 4.3×3.3
Mount	C-mount		C-mount	
Control Iris	Manual		Manual	
Control Focus	Manual		Manual	
Control Zoom	Manual		Manual	
Filter Thread(mm)	M48×P0.75		M52×P0.75	
Size(mm)(∞)	Φ60×130		Φ62×171.7	
Weight(g)	437		595	
Temperature Range	−10°C~+50°C		−10°C~+50°C	

Model	LMZ68M	LMZ69M
Focal Length(mm)	8~48(6×)	11.5~69(6×)
Image Size(mm)	6.4×4.8(Φ8)	8.8×6.6(Φ11)
Iris Range(F-stop)	F1.0~Close	F1.4~Close
Focusing Range(m)	1.0~∞	1.0~∞
(Macro)	0.01	0.01
Control Iris	Manual	Manual
Control Focus	Manual	Manual
Control Zoom	Manual	Manual
Angle of View(Degrees)	W43.6×33.4/T7.7×5.7	W41.9×32.0/T7.3×5.5
Mount	C-mount	C-mount
Filter Thread(mm)	M46×0.75	M46×0.75
Size(mm)(∞)	Φ50.5×92.8	Φ50.5×98.2
Weight(g)	280	300
Temperature Range	−10°C~+50°C	−10°C~+50°C

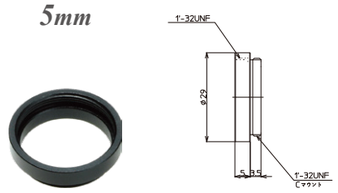
† Images may differ from the actual product.

Close Up Rings

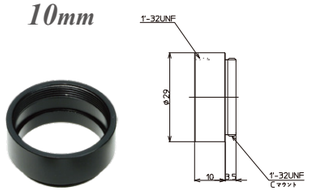
1mm



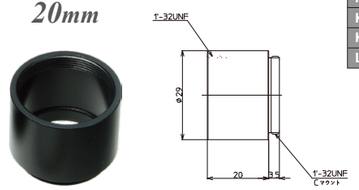
5mm



10mm



20mm



Model	Specification
KW-EXT1	1mm
KW-EXT5	5mm
KW-EXT10	10mm
KW-EXT20	20mm
LMZ4S	1mm, 5mm, 10mm, 20mm

Filter Holders

- An optional filter holder can be attached to the JC5MC series. (LM12JC5MC, LM16JC5MC and LM25JC5MC)

Model	Specification
FL-12JC5MC	Φ32
FL-16JC5MC	
FL-25JC5MC	

Field of View

FC series

LM6FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.007	2252.1	1669.3	2033.1	1506.4	1377.1	1026.1
950	0.007	2141.3	1587.1	1933.1	1432.3	1309.4	975.6
900	0.007	2030.4	1505.0	1833.0	1358.1	1241.6	925.1
850	0.008	1919.6	1422.9	1732.9	1284.0	1173.8	874.6
800	0.008	1808.7	1340.7	1632.9	1209.9	1106.1	824.1
750	0.009	1697.9	1258.6	1532.8	1135.8	1038.3	773.6
700	0.009	1587.0	1176.4	1432.8	1061.6	970.5	723.1
650	0.010	1476.2	1094.3	1332.7	987.5	902.8	672.6
600	0.011	1365.3	1012.1	1232.6	913.4	835.0	622.1
550	0.012	1254.5	930.0	1132.6	839.2	767.2	571.6
500	0.013	1143.6	847.8	1032.5	765.1	699.4	521.1
450	0.014	1032.7	765.6	932.4	691.0	631.7	470.6
400	0.016	921.9	683.5	832.3	616.8	563.9	420.1
350	0.018	811.0	601.3	732.3	542.7	496.1	369.6
300	0.021	700.1	519.2	632.2	468.5	428.3	319.1
250	0.025	589.2	437.0	532.1	394.4	360.5	268.6
200	0.031	478.2	354.8	431.9	320.2	292.7	218.1
150	0.040	367.2	272.6	331.8	246.0	224.9	167.6
100	0.057	255.8	190.1	231.2	171.6	156.9	117.0

LM8FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.009	1688.7	1269.1	1534.6	1147.5	1050.3	783.9
950	0.009	1605.1	1206.3	1458.6	1090.8	998.3	745.1
900	0.009	1520.6	1142.9	1381.9	1033.5	945.9	706.0
850	0.010	1436.3	1079.7	1305.3	976.3	893.6	667.0
800	0.011	1353.4	1017.3	1230.0	919.9	842.0	628.5
750	0.011	1270.5	955.0	1154.6	863.5	790.4	590.0
700	0.012	1187.5	892.6	1079.2	807.2	738.8	551.5
650	0.013	1104.0	829.9	1003.3	750.5	686.9	512.7
600	0.014	1020.6	767.2	927.5	693.8	635.0	474.0
550	0.015	937.7	704.9	852.2	637.4	583.5	435.5
500	0.017	854.9	642.6	776.9	581.1	531.9	397.0
450	0.019	772.1	580.3	701.6	524.8	480.4	358.6
400	0.021	689.2	518.0	626.3	468.4	428.8	320.1
350	0.024	606.2	455.6	550.9	412.0	377.1	281.5
300	0.027	523.2	393.3	475.5	355.6	325.5	243.0
250	0.033	440.3	330.9	400.1	299.2	273.9	204.5
200	0.040	357.2	268.5	324.6	242.8	222.2	165.9
150	0.052	273.9	205.9	248.9	186.2	170.5	127.3
100	0.075	190.1	143.0	172.8	129.4	118.5	88.5

LM12FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.012	1174.7	883.2	1067.1	799.4	732.2	548.0
950	0.013	1117.0	839.8	1014.7	760.1	696.2	521.1
900	0.013	1059.3	796.4	962.3	720.8	660.3	494.1
850	0.014	1001.6	753.0	909.8	681.5	624.3	467.2
800	0.015	943.9	709.6	857.4	642.2	588.3	440.2
750	0.016	886.2	666.2	805.0	603.0	552.3	413.3
700	0.017	828.5	622.8	752.6	563.7	516.3	386.4
650	0.018	770.8	579.4	700.2	524.4	480.3	359.5
600	0.020	713.1	536.0	647.7	485.1	444.3	332.5
550	0.022	655.4	492.6	595.3	445.8	408.4	305.6
500	0.024	597.7	449.2	542.9	406.5	372.4	278.6
450	0.026	540.0	405.8	490.4	367.2	336.4	251.7
400	0.030	482.3	362.4	438.0	327.9	300.4	224.8
350	0.034	424.6	319.0	385.5	288.6	264.4	197.8
300	0.039	366.8	275.5	333.1	249.3	228.4	170.9
250	0.046	309.1	232.1	280.6	210.0	192.3	143.9
200	0.057	251.3	188.6	228.1	170.7	156.3	116.9
150	0.074	193.4	145.1	175.5	131.3	120.2	89.9
100	0.106	135.3	101.4	122.8	91.8	84.0	62.8

LM16FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.016	905.7	677.6	820.7	612.8	561.2	419.9
950	0.017	861.1	644.2	780.4	582.7	533.6	399.3
900	0.017	816.6	610.9	740.0	552.6	506.0	378.6
850	0.019	772.1	577.6	699.7	522.4	478.4	358.0
800	0.020	727.5	544.3	659.3	492.3	450.8	337.3
750	0.021	683.0	511.0	618.9	462.2	423.2	316.7
700	0.022	638.4	477.7	578.6	432.0	395.6	296.0
650	0.024	593.9	444.3	538.2	401.9	368.0	275.4
600	0.026	549.4	411.0	497.8	371.7	340.4	254.7
550	0.028	504.8	377.7	457.5	341.6	312.8	234.1
500	0.031	460.3	344.3	417.1	311.4	285.2	213.4
450	0.034	415.7	311.0	376.7	281.3	257.6	192.7
400	0.038	371.1	277.7	336.3	251.1	230.0	172.1
350	0.044	326.6	244.3	295.9	221.0	202.4	151.4
300	0.051	282.0	211.0	255.5	190.8	174.7	130.8
250	0.060	237.4	177.6	215.1	160.6	147.1	110.1
200	0.074	192.8	144.2	174.7	130.5	119.5	89.4
150	0.096	148.1	110.8	134.2	100.2	91.8	68.7
100	0.138	103.3	77.3	93.6	69.9	64.0	47.9

LM25FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.025	576.2	431.8	522.5	390.8	358.0	268.2
950	0.026	547.8	410.6	496.7	371.5	340.4	255.0
900	0.027	519.5	389.3	471.0	352.3	322.8	241.8
850	0.029	491.1	368.0	445.3	333.1	305.1	228.6
800	0.031	462.7	346.8	419.6	313.8	287.5	215.4
750	0.033	434.4	325.5	393.8	294.6	269.9	202.2
700	0.035	406.0	304.2	368.1	275.3	252.2	188.9
650	0.038	377.6	283.0	342.4	256.1	234.6	175.7
600	0.041	349.2	261.7	316.6	236.8	216.9	162.5
550	0.044	320.9	240.4	290.9	217.5	199.3	149.3
500	0.049	292.5	219.1	265.2	198.3	181.7	136.1
450	0.054	264.1	197.9	239.4	179.0	164.0	122.9
400	0.060	235.7	176.6	213.7	159.8	146.4	109.6
350	0.069	207.3	155.3	187.9	140.5	128.7	96.4
300	0.079	178.9	134.0	162.2	121.2	111.1	83.2
250	0.094	150.5	112.7	136.4	102.0	93.4	69.9
200	0.117	122.1	91.4	110.6	82.7	75.7	56.7
150	0.152	93.6	70.0	84.8	63.3	58.0	43.4
100	0.219	65.2	48.7	59.0	44.0	40.3	30.2

LM35FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.035	399.0	300.0	362.2	271.7	249.1	186.8
950	0.037	379.3	285.2	344.4	258.3	236.8	177.6
900	0.039	359.7	270.4	326.5	244.9	224.5	168.4
850	0.042	340.0	255.7	308.7	231.6	212.3	159.2
800	0.044	320.4	240.9	290.9	218.2	200.0	150.0
750	0.047	300.8	226.1	273.0	204.8	187.7	140.8
700	0.050	281.1	211.4	255.2	191.4	175.5	131.6
650	0.054	261.5	196.6	237.4	178.0	163.2	122.4
600	0.058	241.8	181.8	219.5	164.6	150.9	113.2
550	0.064	222.1	167.0	201.7	151.3	138.6	104.0
500	0.070	202.4	152.2	183.8	137.8	126.4	94.8
450	0.077	182.7	137.4	165.9	124.4	114.1	85.5
400	0.087	163.0	122.5	148.0	111.0	101.7	76.3
350	0.099	143.2	107.7	130.0	97.5	89.4	67.0
300	0.114	123.4	92.8	112.0	84.0	77.0	57.8
250	0.136	103.5	77.8	93.9	70.4	64.6	48.4
200	0.169	83.4	62.7	75.7	56.8	52.0	39.0

LM50FC

WD	Magnification	Fields of View (mm)					
		1.1"		1"		2/3"	
mm		H	V	H	V	H	V
1000	0.049	289.2	217.3	262.5	196.7	180.3	135.2
950	0.051	275.0	206.6	249.6	187.1	171.5	128.6
900	0.054	260.8	196.0	236.7	177.4	162.6	121.9
850	0.057	246.6	185.3	223.8	167.8	153.8	115.3
800	0.061	232.4	174.6	210.9	158.1	144.9	108.6
750	0.065	218.1	163.9	198.0	148.4	136.0	102.0
700	0.069	203.9	153.2	185.1	138.7	127.2	95.3
650	0.075	189.6	142.5	172.1	129.0	118.3	88.7
600	0.081	175.4	131.8	159.2	119.3	109.4	82.0
550	0.088	161.1	121.0	146.2	109.6	100.5	75.3
500	0.096	146.7	110.3	133.2	99.9	91.5	68.6
450	0.107	132.4	99.5	120.2	90.1	82.6	61.9
400	0.120	118.0	88.7	107.1	80.3	73.6	55.2
350	0.136	103.5	77.8	94.0	70.5	64.6	48.4
300	0.159	89.0	66.9	80.8	60.6	55.5	41.6
250	0.190	74.3	55.8	67.4	50.6	46.4	34.8
200	0.238	59.3	44.6	53.9	40.4	37.0	27.8

JC5MCseries

LM8JC5MC

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.008	1113.2	824.7	902.9	670.2	798.8	593.8
950	0.009	1058.2	784.0	858.3	637.0	759.3	564.4
900	0.009	1003.3	743.2	813.7	603.9	719.9	535.1
850	0.010	948.3	702.5	769.1	570.8	680.4	505.7
800	0.010	893.3	661.7	724.5	537.7	640.9	476.4
750	0.011	838.4	621.0	679.9	504.5	601.4	447.0
700	0.012	783.4	580.2	635.3	471.4	562.0	417.7
650	0.013	728.3	539.5	590.6	438.3	522.5	388.3
600	0.014	673.5	498.7	546.0	405.2	483.0	359.0
550	0.015	618.5	458.0	501.4	372.0	443.5	329.6
500	0.016	563.6	417.2	456.8	338.9	404.1	300.3
450	0.018	508.6	376.5	412.2	305.8	364.6	270.9
400	0.020	453.6	335.7	367.6	272.7	325.1	241.6
350	0.023	398.7	294.9	323.0	239.5	285.6	212.2
300	0.027	343.7	254.2	278.4	206.4	246.2	182.9
250	0.032	288.7	213.4	233.8	173.3	206.7	153.5
200	0.039	233.8	172.7	189.2	140.2	167.2	124.2
150	0.051	178.8	131.9	144.6	107.0	127.7	94.8

LM12JC5MC

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.012	756.7	564.1	616.4	460.0	546.7	408.3
950	0.012	719.3	536.2	585.9	437.3	519.6	388.1
900	0.013	682.0	508.3	555.5	414.5	492.6	367.9
850	0.014	644.6	480.4	525.0	391.8	465.6	347.7
800	0.015	607.2	452.6	494.6	369.1	438.6	327.5
750	0.016	569.9	424.7	464.1	346.3	411.6	307.4
700	0.017	532.5	396.8	433.7	323.6	384.6	287.2
650	0.018	495.2	369.0	403.2	300.9	357.6	267.0
600	0.020	457.8	341.1	372.8	278.1	330.6	246.8
550	0.021	420.4	313.2	342.3	255.4	303.6	226.7
500	0.023	383.1	285.4	311.9	232.7	276.5	206.5
450	0.026	345.7	257.5	281.4	209.9	249.5	186.3
400	0.029	308.3	229.6	251.0	187.2	222.5	166.1
350	0.033	271.0	201.8	220.5	164.5	195.5	145.9
300	0.038	233.6	173.9	190.1	141.7	168.5	125.8
250	0.046	196.3	146.0	159.6	119.0	141.5	105.6
200	0.057	158.9	118.1	129.2	96.3	114.5	85.4

LM16JC5MC

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.016	559.6	419.0	457.4	342.6	406.2	304.4
950	0.017	532.0	398.4	434.8	325.6	386.2	289.4
900	0.018	504.4	377.6	412.2	308.6	366.2	274.2
850	0.019	476.6	356.8	389.6	291.8	346.0	259.2
800	0.020	449.0	336.2	367.0	274.8	326.0	244.2
750	0.021	421.4	315.4	344.4	257.8	305.8	229.2
700	0.022	393.8	294.8	321.8	241.0	285.8	214.0
650	0.024	366.0	274.0	299.2	224.0	265.6	199.0
600	0.026	338.4	253.4	276.6	207.0	245.6	184.0
550	0.028	310.8	232.6	254.0	190.2	225.6	169.0
500	0.031	283.2	211.8	231.2	173.2	205.4	153.8
450	0.035	255.6	191.2	208.6	156.2	185.4	138.8
400	0.039	227.8	170.4	186.0	139.2	165.2	123.8
350	0.044	200.2	149.8	163.4	122.4	145.2	108.8
300	0.051	172.6	129.0	140.8	105.4	125.0	93.6
250	0.061	145.0	108.4	118.2	88.4	105.0	78.6
200	0.080	117.2	87.6	95.6	71.6	85.0	63.6

LM25JC5MC

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.025	356.8	267.6	291.8	219.0	259.4	194.6
950	0.026	339.2	254.4	277.6	208.2	246.6	185.0
900	0.027	321.6	241.2	263.2	197.4	233.8	175.4
850	0.029	304.0	228.0	248.8	186.6	221.0	165.8
800	0.031	286.4	214.8	234.4	175.8	208.2	156.2
750	0.033	268.8	201.6	220.0	165.0	195.6	146.6
700	0.035	251.4	188.4	205.6	154.2	182.8	137.0
650	0.038	233.8	175.2	191.2	143.4	170.0	127.4
600	0.041	216.2	162.0	176.8	132.6	157.2	117.8
550	0.044	198.6	148.8	162.4	121.8	144.4	108.2
500	0.049	181.0	135.6	148.0	111.0	131.6	98.6
450	0.054	163.4	122.4	133.6	100.2	118.8	89.0
400	0.061	145.8	109.2	119.2	89.4	106.0	79.4
350	0.069	128.2	96.0	104.8	78.6	93.2	69.8
300	0.080	110.6	82.8	90.4	67.8	80.4	60.2
250	0.095	93.0	69.6	76.0	57.0	67.6	50.6
200	0.120	75.4	56.4	61.6	46.2	54.8	41.0

NCM/JC1MSseries

JC3NCM

WD	Magni-fication	Fields of View (mm)					
		1/1.8"		1/2"		1/3"	
mm		H	V	H	V	H	V
1000	0.00360	2003.1	1513.4	1786.2	1347.7	1347.7	1011.6
950	0.00380	1904.4	1438.8	1698.1	1281.3	1281.3	961.7
900	0.00400	1805.7	1364.1	1610.1	1214.8	1214.8	911.8
850	0.00420	1706.9	1289.5	1522.0	1148.3	1148.3	861.9
800	0.00450	1608.2	1214.9	1434.0	1081.8	1081.8	812.0
750	0.00480	1509.5	1140.3	1345.9	1015.4	1015.4	762.1
700	0.00510	1410.8	1065.6	1257.9	948.9	948.9	712.2
650	0.00550	1312.1	991.0	1169.8	882.4	882.4	662.2
600	0.00590	1213.3	916.4	1081.8	816.0	816.0	612.3
550	0.00650	1114.6	841.7	993.7	749.5	749.5	562.4
500	0.00710	1015.9	767.1	905.7	683.0	683.0	512.5
450	0.00780	917.2	692.5	817.6	616.5	616.5	462.6
400	0.00880	818.5	617.8	729.5	550.1	550.1	412.7
350	0.01000	719.7	543.2	641.5	483.6	483.6	362.8
300	0.01160	621.0	468.6	553.4	417.1	417.1	312.9
250	0.01380	522.3	394.0	465.4	350.7	350.7	263.0
200	0.01700	423.6	319.3	377.3	284.2	284.2	213.1
150	0.02230	324.9	244.7	289.3	217.7	217.7	163.2
100	0.03210	226.1	170.1	201.2	151.2	151.2	113.3

LM4NCM

WD	Magni-fication	Fields of View (mm)					
		1/1.8"		1/2"		1/3"	
mm		H	V	H	V	H	V
1000	0.00450	1610.8	1206.3	1431.1	1071.3	1071.3	801.3
950	0.00480	1531.8	1147.1	1360.9	1018.7	1018.7	762.0
900	0.00500	1452.9	1087.9	1290.7	966.1	966.1	722.6
850	0.00530	1373.9	1028.8	1220.6	913.6	913.6	683.3
800	0.00560	1294.9	969.6	1150.4	861.0	861.0	644.0
750	0.00600	1216.0	910.4	1080.2	808.4	808.4	604.6
700	0.00640	1137.0	851.2	1010.0	755.9	755.9	565.3
650	0.00690	1058.1	792.0	939.9	703.3	703.3	526.0
600	0.00750	979.1	732.9	869.7	650.7	650.7	486.6
550	0.00810	900.2	673.7	799.5	598.2	598.2	447.3
500	0.00890	821.2	614.5	729.3	545.6	545.6	408.0
450	0.00980	742.3	555.3	659.2	493.0	493.0	368.6
400	0.01100	663.4	496.2	589.0	440.5	440.5	329.3
350	0.01250	584.4	437.0	518.8	387.9	387.9	290.0
300	0.01450	505.5	377.8	448.7	335.3	335.3	250.6
250	0.01720	426.6	318.7	378.5	282.8	282.8	211.3
200	0.02110	347.7	259.5	308.4	230.2	230.2	172.0
150	0.02740	268.8	200.4	238.3	177.7	177.7	132.6
100	0.03900	190.1	141.3	168.2	125.2	125.2	93.3

LM6NCM

WD	Magni-fication	Fields of View (mm)					
		1/1.8"		1/2"		1/3"	
mm		H	V	H	V	H	V
1000	0.00600	-	-	1081.4	808.4	808.4	603.3
950	0.00630	-	-	1028.1	768.6	768.6	573.6
900	0.00670	-	-	974.9	728.7	728.7	543.8
850	0.00710	-	-	921.6	688.8	688.8	514.0
800	0.00750	-	-	868.3	649.0	649.0	484.3
750	0.00800	-	-	815.0	609.1	609.1	454.5
700	0.00860	-	-	761.7	569.3	569.3	424.8
650	0.00920	-	-	708.4	529.4	529.4	395.0
600	0.00990	-	-	655.1	489.5	489.5	365.3
550	0.01080	-	-	601.8	449.7	449.7	335.5
500	0.01190	-	-	548.6	409.8	409.8	305.8
450	0.01320	-	-	495.3	370.0	370.0	276.0
400	0.01480	-	-	442.0	330.1	330.1	246.2
350	0.01680	-	-	388.7	290.2	290.2	216.5
300	0.01950	-	-	335.4	250.4	250.4	186.7
250	0.02320	-	-	282.1	210.5	210.5	157.0
200	0.02860	-	-	228.8	170.7	170.7	127.2
150	0.03730	-	-	175.6	130.8	130.8	97.5
100	0.05380	-	-	122.3	90.9	90.9	67.7

LM5JCM

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.00490	1781.3	1345.0	1465.0	1102.1	1304.7	979.5
950	0.00520	1693.5	1278.6	1392.8	1047.7	1240.4	931.1
900	0.00550	1605.7	1212.3	1320.5	993.3	1176.0	882.8
850	0.00580	1517.9	1145.9	1248.2	938.9	1111.6	834.5
800	0.00620	1430.1	1079.6	1176.0	884.5	1047.3	786.1
750	0.00660	1342.3	1013.2	1103.7	830.2	982.9	737.8
700	0.00700	1254.5	946.9	1031.5	775.8	918.5	689.5
650	0.00750	1166.6	880.5	959.2	721.4	854.2	641.1
600	0.00820	1078.8	814.2	887.0	667.0	789.8	592.8
550	0.00890	991.0	747.9	814.7	612.6	725.5	544.4
500	0.00980	903.2	681.5	742.5	558.3	661.1	496.1
450	0.01080	815.4	615.2	670.2	503.9	596.7	447.8
400	0.01210	727.6	548.8	598.0	449.5	532.4	399.4
350	0.01380	639.8	482.5	525.7	395.1	468.0	351.1
300	0.01600	552.0	416.1	453.4	340.7	403.6	302.8
250	0.01900	464.2	349.8	381.2	286.4	339.3	254.4
200	0.02350	376.3	283.4	308.9	232.0	274.9	206.1
150	0.03070	288.5	217.1	236.7	177.6	210.5	157.7
100	0.04440	200.7	150.7	164.4	123.2	146.2	109.4

LM8JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.00820	1083.6	813.6	888.1	664.1	788.7	589.4
950	0.00860	1030.1	773.4	844.2	631.3	749.7	560.3
900	0.00910	976.5	733.2	800.3	598.4	710.7	531.2
850	0.00960	923.0	693.0	756.5	565.6	671.8	502.0
800	0.01020	869.5	652.8	712.6	532.8	632.8	472.9
750	0.01090	816.0	612.6	668.7	500.0	593.8	443.8
700	0.01170	762.5	572.4	624.8	467.2	554.9	414.6
650	0.01250	709.0	532.2	581.0	434.4	515.9	385.5
600	0.01360	655.5	492.0	537.1	401.5	476.9	356.4
550	0.01480	601.9	451.8	493.2	368.7	437.9	327.3
500	0.01620	548.4	411.6	449.3	335.9	399.0	298.1
450	0.01800	494.9	371.4	405.5	303.1	360.0	269.0
400	0.02020	441.4	331.2	361.6	270.3	321.0	239.9
350	0.02300	387.9	291.0	317.7	237.5	282.1	210.7
300	0.02660	334.4	250.8	273.8	204.6	243.1	181.6
250	0.03170	280.9	210.6	230.0	171.8	204.1	152.5
200	0.03920	227.4	170.4	186.1	139.0	165.2	123.3
150	0.05140	173.8	130.2	142.2	106.2	126.2	94.2
100	0.07450	120.3	90.0	98.3	73.4	87.2	65.1

LM12JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.01260	702.2	525.7	573.9	429.5	509.7	381.5
950	0.01330	667.4	499.7	545.5	408.3	484.5	362.6
900	0.01400	632.7	473.7	517.1	387.0	459.3	343.8
850	0.01480	598.0	447.7	488.7	365.8	434.0	324.9
800	0.01570	563.3	421.7	460.3	344.5	408.8	306.0
750	0.01680	528.5	395.7	432.0	323.3	383.6	287.1
700	0.01800	493.8	369.7	403.6	302.0	358.4	268.2
650	0.01930	459.1	343.7	375.2	280.8	333.2	249.4
600	0.02090	424.3	317.7	346.8	259.5	308.0	230.5
550	0.02280	389.6	291.7	318.4	238.3	282.7	211.6
500	0.02500	354.9	265.6	290.0	217.0	257.5	192.7
450	0.02770	320.2	239.6	261.6	195.7	232.3	173.9
400	0.03110	285.4	213.6	233.2	174.5	207.1	155.0
350	0.03540	250.7	187.6	204.8	153.2	181.9	136.1
300	0.04110	216.0	161.6	176.4	132.0	156.7	117.2
250	0.04900	181.3	135.6	148.0	110.7	131.4	98.3
200	0.06070	146.5	109.6	119.7	89.5	106.2	79.5
150	0.07960	111.8	83.6	91.3	68.2	81.0	60.6

LM16JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.01640	541.1	405.1	442.2	331.1	392.8	294.1
950	0.01720	514.2	385.0	420.3	314.7	373.3	279.6
900	0.01820	487.4	365.0	398.4	298.3	353.8	265.0
850	0.01920	460.6	344.9	376.4	281.9	334.4	250.4
800	0.02040	433.8	324.8	354.5	265.5	314.9	235.8
750	0.02170	407.0	304.7	332.6	249.1	295.5	221.3
700	0.02330	380.2	284.7	310.7	232.7	276.0	206.7
650	0.02500	353.4	264.6	288.8	216.2	256.5	192.1
600	0.02710	326.6	244.5	266.9	199.8	237.1	177.5
550	0.02950	299.8	224.5	245.0	183.4	217.6	163.0
500	0.03240	273.0	204.4	223.1	167.0	198.2	148.4
450	0.03600	246.2	184.3	201.2	150.7	178.7	133.8
400	0.04030	219.4	164.3	179.3	134.3	159.3	119.3
350	0.04590	192.7	144.2	157.4	117.9	139.8	104.7
300	0.05340	165.9	124.2	135.6	101.5	120.4	90.2
250	0.06360	139.2	104.2	113.7	85.1	101.0	75.6
200	0.07870	112.5	84.2	91.9	68.8	81.6	61.1

LM25JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.02540	346.3	259.7	283.4	212.5	251.9	188.9
950	0.02680	329.1	246.8	269.3	201.9	239.3	179.5
900	0.02820	311.9	233.9	255.1	191.3	226.8	170.1
850	0.02990	294.6	220.9	241.0	180.7	214.2	160.6
800	0.03170	277.4	208.0	226.9	170.2	201.7	151.2
750	0.03390	260.2	195.1	212.8	159.6	189.2	141.8
700	0.03630	242.9	182.2	198.7	149.0	176.6	132.4
650	0.03900	225.7	169.2	184.6	138.4	164.1	123.0
600	0.04230	208.5	156.3	170.5	127.9	151.6	113.7
550	0.04610	191.3	143.4	156.5	117.3	139.1	104.3
500	0.05060	174.0	130.5	142.4	106.7	126.5	94.9
450	0.05620	156.8	117.6	128.3	96.2	114.0	85.5
400	0.06310	139.6	104.7	114.2	85.6	101.5	76.1
350	0.07200	122.5	91.8	100.2	75.1	89.0	66.7
300	0.08380	105.3	78.9	86.1	64.5	76.5	57.4
250	0.10020	88.1	66.0	72.0	54.0	64.0	48.0
200	0.12460	70.8	53.1	57.9	43.4	51.5	38.6

LM35JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.03540	249.2	186.6	203.6	152.6	180.9	135.6
950	0.03730	236.6	177.2	193.3	144.9	171.8	128.7
900	0.03940	224.0	167.7	183.0	137.1	162.6	121.9
850	0.04180	211.4	158.3	172.7	129.4	153.5	115.0
800	0.04440	198.8	148.9	162.4	121.7	144.3	108.2
750	0.04740	186.2	139.4	152.1	114.0	135.2	101.3
700	0.05090	173.6	130.0	141.9	106.3	126.0	94.4
650	0.05480	161.0	120.6	131.6	98.6	116.9	87.6
600	0.05950	148.4	111.1	121.3	90.9	107.8	80.7
550	0.06500	135.8	101.7	111.0	83.2	98.6	73.9
500	0.07170	123.3	92.3	100.7	75.5	89.5	67.1
450	0.07980	110.7	82.9	90.5	67.8	80.4	60.2
400	0.09000	98.2	73.5	80.2	60.1	71.3	53.4
350	0.10320	85.6	64.1	70.0	52.4	62.2	46.6
300	0.12090	73.1	54.7	59.7	44.7	53.1	39.8
250	0.14580	60.6	45.4	49.5	37.1	44.0	33.0
200	0.18350	48.2	36.1	39.4	29.5	35.0	26.2

LM50JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
1000	0.05360	164.3	123.2	134.4	100.8	119.5	89.6
950	0.05650	155.8	116.9	127.5	95.6	113.3	85.0
900	0.05970	147.4	110.5	120.6	90.4	107.2	80.4
850	0.06340	138.9	104.2	113.6	85.2	101.0	75.8
800	0.06750	130.4	97.8	106.7	80.0	94.9	71.1
750	0.07220	122.0	91.5	99.8	74.8	88.7	66.5
700	0.07750	113.5	85.1	92.9	69.7	82.6	61.9
650	0.08380	105.1	78.8	86.0	64.5	76.4	57.3
600	0.09110	96.6	72.5	79.1	59.3	70.3	52.7
550	0.09980	88.2	66.1	72.1	54.1	64.1	48.1
500	0.11040	79.7	59.8	65.2	48.9	58.0	43.5
450	0.12350	71.3	53.5	58.3	43.7	51.8	38.9
400	0.14000	62.9	47.1	51.4	38.6	45.7	34.3
350	0.16170	54.4	40.8	44.5	33.4	39.6	29.7
300	0.19130	46.0	34.5	37.6	28.2	33.5	25.1
250	0.23410	37.6	28.2	30.8	23.1	27.4	20.5
200	0.30100	29.3	21.9	23.9	18.0	21.3	16.0

LM75JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
2000	0.03880	226.1	169.8	185.2	139.0	164.7	123.6
1900	0.04090	214.4	161.0	175.6	131.8	156.2	117.2
1800	0.04330	202.7	152.3	166.0	124.6	147.7	110.8
1700	0.04590	191.1	143.5	156.5	117.5	139.2	104.4
1600	0.04890	179.4	134.7	146.9	110.3	130.6	98.0
1500	0.05230	167.7	125.9	137.3	103.1	122.1	91.7
1400	0.05620	156.0	117.2	127.8	95.9	113.6	85.3
1300	0.06080	144.4	108.4	118.2	88.7	105.1	78.9
1200	0.06620	132.7	99.6	108.6	81.5	96.6	72.5

LM100JC1MS

WD	Magni-fication	Fields of View (mm)					
		2/3"		1/1.8"		1/2"	
mm		H	V	H	V	H	V
3000	0.03430	257.0	192.6	210.1	157.5	186.7	140.0
2900	0.03550	248.2	186.0	202.9	152.1	180.3	135.2
2800	0.03680	239.3	179.4	195.7	146.7	173.9	130.4
2700	0.03820	230.5	172.8	188.5	141.3	167.5	125.6
2600	0.03970	221.7	166.2	181.3	135.9	161.1	120.8
2500	0.04140	212.9	159.6	174.1	130.5	154.7	116.0
2400	0.04320	204.1	153.0	166.9	125.1	148.3	111.2
2300	0.04510	195.3	146.4	159.7	119.7	141.9	106.4
2200	0.04720	186.5	139.8	152.5	114.3	135.5	101.6
2100	0.04960	177.7	133.2	145.3	108.9	129.1	96.8
2000	0.05220	168.9	126.6	138.1	103.5	122.7	92.0

FA LENS SPECIFICATION

4/3" 20 MEGAPIXEL PLUS

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM8XC	✓	✓	✓	✓	✓	✓	✓	✓	8.5	18.4×13.8(Φ23)	F2.8~F22	0.1~∞	C	93.5×77.1	0.12	Φ74×82.5	245	6
LM12XC	✓	✓	✓	✓	✓	✓	✓	✓	12	18.4×13.8(Φ23)	F2.0~F22	0.1~∞	C	74.9×59.6	0.59	Φ57×85	270	6
LM16XC	✓	✓	✓	✓	✓	✓	✓	✓	16	18.4×13.8(Φ23)	F2.0~F22	0.1~∞	C	60.6×47.2	0.02	Φ45×79.5	250	7
LM25XC	✓	✓	✓	✓	✓	✓	✓	✓	25	18.4×13.8(Φ23)	F2.0~F16	0.15~∞	C	40.9×31.1	−0.57	Φ45×89	255	7
LM35XC	✓	✓	✓	✓	✓	✓	✓	✓	35	18.4×13.8(Φ23)	F2.0~F16	0.2~∞	C	29.6×22.4	−0.17	Φ45×74	210	7
LM50XC	✓	✓	✓	✓	✓	✓	✓	✓	50	18.4×13.8(Φ23)	F2.0~F22	0.3~∞	C	20.6×15.7	0.80	Φ47×78	235	7

1.1" 12MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
NEW LM6FC	–	✓	✓	✓	✓	✓	✓	✓	6.5	14.1×10.6(Φ17.6)	F2.5~F16	0.1~∞	C	95.7×78.7	-1.51	Φ84×79.1	300	8
NEW LM8FC	–	✓	✓	✓	✓	✓	✓	✓	8.5	14.1×10.6(Φ17.6)	F2.5~F16	0.1~∞	C	79.2×63.8	0.55	Φ64×73.3	230	8
NEW LM12FC	–	✓	✓	✓	✓	✓	✓	✓	12	14.1×10.6(Φ17.6)	F1.8~F16	0.1~∞	C	60.0×46.9	0.26	Φ51×73.8	260	8
NEW LM16FC	–	✓	✓	✓	✓	✓	✓	✓	16	14.1×10.6(Φ17.6)	F1.8~F16	0.1~∞	C	48.0×36.7	-0.4	Φ43×65.7	200	9
NEW LM25FC	–	✓	✓	✓	✓	✓	✓	✓	25	14.1×10.6(Φ17.6)	F1.8~F16	0.1~∞	C	31.5×23.9	-0.3	Φ45×67.9	220	9
NEW LM35FC	–	✓	✓	✓	✓	✓	✓	✓	35	14.1×10.6(Φ17.6)	F2.0~F16	0.2~∞	C	22.1×16.7	0.01	Φ45×66	205	9
NEW LM50FC	–	✓	✓	✓	✓	✓	✓	✓	50	14.1×10.6(Φ17.6)	F1.8~F16	0.2~∞	C	16.1×12.1	-0.03	Φ45×74.5	205	9

1" MEGAPIXEL PLUS

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
NEW LM4HC	–	–	✓	✓	✓	✓	✓	✓	4.7	12.8×9.6(Φ16)	F2.8~F16	0.1~∞	C	112.2×95.4	−0.58	Φ54×56.2	360	10
LM6HC	–	–	✓	✓	✓	✓	✓	✓	6	12.8×9.6(Φ16)	F1.8~F11	0.1~∞	C	96.8×79.4	−0.2	Φ54×56.2	215	10
LM8HC	–	–	✓	✓	✓	✓	✓	✓	8	12.8×9.6(Φ16)	F1.4~F16	0.1~∞	C	79.4×63.0	−1.2	Φ57×58	205	10
LM12HC	–	◇	✓	✓	✓	✓	✓	✓	12.5	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	55.6×42.5	−1.58	Φ43×51.5	160	10
LM16HC	–	◇	✓	✓	✓	✓	✓	✓	16	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	44.3×33.6	−1.0	Φ43×52.9	150	10
LM25HC	–	◇	✓	✓	✓	✓	✓	✓	25	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	29.3×22.0	−1.0	Φ43×43	135	11
LM35HC	–	◇	✓	✓	✓	✓	✓	✓	35	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	20.9×15.8	−0.5	Φ43×43	135	11
LM50HC	–	◇	✓	✓	✓	✓	✓	✓	50	12.8×9.6(Φ16)	F1.4~F16	0.5~∞	C	14.5×10.8	0.05	Φ49×48	210	11
LM75HC	–	◇	✓	✓	✓	✓	✓	✓	75	12.8×9.6(Φ16)	F1.8~F16	1.0~∞	C	9.7×7.3	−0.2	Φ49×57	195	11

1" RUGGEDIZED MEGAPIXEL PLUS

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM8HC-V	–	–	✓	✓	✓	✓	✓	✓	8	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.1~∞	C	79.7×63.0	−1.2	Φ58×58	183	13
LM12HC-V	–	◇	✓	✓	✓	✓	✓	✓	12.5	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.3~∞	C	55.6×42.5	−1.58	Φ44×51.5	130	13
LM16HC-V	–	◇	✓	✓	✓	✓	✓	✓	16	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.3~∞	C	44.3×33.6	−1.0	Φ44×53	120	13
LM25HC-V	–	◇	✓	✓	✓	✓	✓	✓	25	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.3~∞	C	29.3×22.0	−1.0	Φ43×43	104	13
LM35HC-V	–	◇	✓	✓	✓	✓	✓	✓	35	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.3~∞	C	20.9×15.8	−0.5	Φ46×44.1	133	13
LM50HC-V	–	◇	✓	✓	✓	✓	✓	✓	50	12.8×9.6(Φ16)	F1.4/2.8/4/8	0.5~∞	C	14.5×10.8	0.05	Φ50×48	170	13

2/3" 10 MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM5JC10M	–	–	–	–	✓	✓	✓	✓	5	8.8×6.6(Φ11)	F1.8~F16	0.1~∞	C	82.2×66.5	−0.33	Φ48×59.4	120	14
LM8JC10M	–	–	–	–	✓	✓	✓	✓	8.5	8.8×6.6(Φ11)	F1.8~F22	0.1~∞	C	54.0×41.9	0.31	Φ36×56	115	15
LM12JC10M	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.8~F11	0.1~∞	C	39.1×29.8	−0.12	Φ33×53.5	105	15
LM16JC10M	–	–	–	◇	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.8~F16	0.1~∞	C	30.0×22.7	−0.20	Φ33×50	90	15
LM25JC10M	–	–	–	◇	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.8~F16	0.1~∞	C	20.0×15.1	−0.09	Φ33×45.5	95	15
LM35JC10M	–	–	–	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2.0~F16	0.1~∞	C	14.3×10.8	0.05	Φ43×49	160	15
LM50JC10M	–	–	–	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.8~F16	0.1~∞	C	10.1×7.6	−0.02	Φ38×77	170	15

2/3" 5 MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM12JC5M2	–	–	–	–	✓	✓	✓	✓	12.5	8.8×6.6(Φ11)	F1.4~F16	0.1~∞	C	38.4×29.2	−0.06	Φ38.5×52	130	16
LM16JC5M2	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4~F16	0.1~∞	C	29.9×22.7	0.03	Φ38.5×52	125	17
LM25JC5M2	–	–	–	◇	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.6~F16	0.1~∞	C	19.9×15.0	−0.01	Φ38.5×45.5	115	17
LM35JC5M2	–	–	◇	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F1.6~F16	0.18~∞	C	14.3×10.8	−0.03	Φ38.5×48	120	17

2/3" ULTRA COMPACT 5 MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
NEW LM8JC5MC	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F2.8~F16	0.15~∞	C	57.6×44.4	−0.85	Φ32×27	55	18
NEW LM12JC5MC	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F2.8~F16	0.2~∞	C	41.0×31.2	−0.27	Φ32×26.8	55	19
NEW LM16JC5MC	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F2.8~F16	0.2~∞	C	30.9×23.4	−0.04	Φ32×26.5	55	19
NEW LM25JC5MC	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F2.8~F16	0.2~∞	C	20.0×15.0	0.11	Φ32×25	55	19

2/3" 3 MEGAPIXEL

*Applicable on 1/1.2'' as well (Except for LM8JC3M2)

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM8JC3M2	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F1.4~Close	0.1~∞	C	56.5×43.9	−0.6	Φ34×41.6	90	20
LM12JC3M2	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.4~Close	0.15~∞	C	38.3×29.1	−0.07	Φ34×37	85	20
LM16JC3M2	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4~F16	0.2~∞	C	30.0×22.7	−0.05	Φ33.5×36.5	85	21
LM25JC3M2	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.4~F16	0.2~∞	C	19.6×14.8	−0.04	Φ33.5×39.5	90	21
LM35JC3M2	–	–	◇	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2.0~F16	0.2~∞	C	14.4×10.8	−0.2	Φ34×36.5	70	21
LM50JC3M2	–	◇	◇	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.8~F22	0.2~∞	C	9.6×7.2	−0.03	Φ34×55	95	21

WIDE MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM3NCM	–	–	–	–	–	✓	✓	✓	3.5	7.2×5.4(Φ9)	F2.4~F14	0.1~∞	C	89.0×73.8	0.4	Φ42×38.2	85	23
LM4NCM	–	–	–	–	–	✓	✓	✓	4.4	7.2×5.4(Φ9)	F1.6~F16	0.1~∞	C	76.6×61.3	−0.2	Φ45×57.3	150	23
LM6NCM	–	–	–	–	–	◇	✓	✓	6	6.4×4.8(Φ8)	F1.2~Close	0.1~∞	C	56.2×43.5	−0.2	Φ34×45.8	100	23
LM5JCM	–	–	–	–	✓	✓	✓	✓	5	8.8×6.6(Φ11)	F2.8~F16	0.1~∞	C	82.4×66.9	0.5	Φ42×38.2	84	23

2/3" MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM5JCM	–	–	–	–	✓	✓	✓	✓	5	8.8×6.6(Φ11)	F2.8~F16	0.1~∞	C	82.4×66.9	0.5	Φ42×38.2	84	24
LM8JC1MS	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F1.4~Close	0.1~∞	C	56.5×43.9	−0.60	Φ34×41.6	90	24
LM12JC1MS	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.4~Close	0.15~∞	C	38.3×29.1	−0.07	Φ34×37	85	24
LM16JC1MS	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4~F16	0.2~∞	C	30.0×22.7	−0.05	Φ33.5×36.5	85	25
LM25JC1MS	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.4~F16	0.2~∞	C	19.6×14.8	−0.04	Φ33.5×39.5	90	25
LM35JC1MS	–	–	◇	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2.0~F16	0.2~∞	C	14.4×10.8	0.2	Φ34×36.5	70	25
LM50JC1MS	–	◇	◇	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.8~F22	0.2~∞	C	9.6×7.2	0.2	Φ34×55	95	25
LM75JC1MS	–	◇	◇	◇	✓	✓	✓	✓	75	8.8×6.6(Φ11)	F2.5~F22	1.2~∞	C	6.7×5.0	−0.1	Φ36×51	105	25
LM100JC1MS	–	–	◇	◇	✓	✓	✓	✓	100	8.8×6.6(Φ11)	F2.8~F32	2.0~∞	C	5.0×3.8	−0.05	Φ42×70	145	25

2/3" RUGGEDIZED MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM5JCM-V	–	–	–	–	✓	✓	✓	✓	5	8.8×6.6(Φ11)	F2.8/4/5.6/8	0.1~∞	C	82.4×66.9	0.5	Φ43×38.1	73	26
LM8JCM-V	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F1.4/4/8/16	0.1~∞	C	56.5×43.9	−0.6	Φ33×41.6	88	27
LM12JCM-V	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.4/4/8/16	0.15~∞	C	38.3×29.1	−0.07	Φ33×37	75	27
LM16JCM-V	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4/4/8/16	0.2~∞	C	30.0×22.7	−0.05	Φ33×36.5	76.5	27
LM25JCM-V	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.4/4/8/16	0.2~∞	C	19.6×14.8	−0.04	Φ33×39.5	83	27
LM35JCM-V	–	–	◇	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2/4/8/16	0.2~∞	C	14.4×10.8	−0.2	Φ33×38.8	72.5	27
LM50JCM-V	–	◇	◇	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.8/4/8/16	0.2~∞	C	9.6×7.2	−0.03	Φ33×56.2	85	27

How to read the Format Size(Inch) table

✓ Compatible: Ideal sensor size. ◇ Suitable: Can be used depending on applications. – Incompatible: Can not be used.

FA LENS SPECIFICATION

2/3" RUGGEDIZED WATER AND DUST RESISTANCE MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
NEW LM5JCM-WP	–	–	–	–	✓	✓	✓	✓	5	8.8×6.6(Φ11)	F2.8/4/5.6/8	0.1~∞	C	82.4×66.9	0.5	Φ43×38.3	75	28
NEW LM8JCM-WP	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F1.4/4/8/16	0.1~∞	C	56.5×43.9	−0.6	Φ33×41.6	85	29
NEW LM12JCM-WP	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.4/4/8/16	0.15~∞	C	38.3×29.1	−0.07	Φ33×36.5	75	29
NEW LM16JCM-WP	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4/4/8/16	0.2~∞	C	30.0×22.7	−0.05	Φ33×36.5	75	29
NEW LM25JCM-WP	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.4/4/8/16	0.2~∞	C	19.6×14.8	−0.04	Φ33×39.7	75	29
NEW LM35JCM-WP	–	–	◇	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2/4/8/16	0.2~∞	C	14.4×10.8	−0.2	Φ33×38.8	65	29
NEW LM50JCM-WP	–	◇	◇	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.8/4/8/16	0.2~∞	C	9.6×7.2	−0.03	Φ33×56.2	85	29

2/3" STANDARD

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM6JC	–	–	–	–	✓	✓	✓	✓	6	8.8×6.6(Φ11)	F1.4~F16	0.1~∞	C	81.9×61.2	−10.7	Φ30×32.8	65	30
LM8JC	–	–	–	–	✓	✓	✓	✓	8	8.8×6.6(Φ11)	F1.4~F16	0.1~∞	C	64.2×47.7	−6.2	Φ30×30	60	30
LM12JC	–	–	–	–	✓	✓	✓	✓	12	8.8×6.6(Φ11)	F1.4~F16	0.1~∞	C	42.5×31.7	−2.5	Φ30×31.5	60	30
LM16JC	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4~F16	0.2~∞	C	30.5×22.8	−1.5	Φ30×28	55	30
LM25JC	–	–	–	–	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.6~F16	0.2~∞	C	21.0×15.7	−0.6	Φ30×28	55	30
LM35JC	–	–	–	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F1.6~F16	0.3~∞	C	14.4×10.8	−0.2	Φ32×36.5	85	30
LM50JC	–	◇	◇	◇	✓	✓	✓	✓	50	8.8×6.6(Φ11)	F2.0~F22	0.5~∞	C	10.1×7.6	−0.1	Φ32×39.5	90	31

1/1.8" STANDARD

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM4NCL	–	–	–	–	–	✓	✓	✓	3.5	7.2×5.4(Φ9)	F1.4~F16	0.2~∞	C	117.7×86.7	−28.0	Φ31×30.5	60	31
LM5NCL	–	–	–	–	–	✓	✓	✓	4.5	7.2×5.4(Φ9)	F1.4~F16	0.2~∞	C	88.8×66.9	−17.5	Φ31×29.5	55	31
LM6NCL	–	–	–	–	–	✓	✓	✓	6	7.2×5.4(Φ9)	F1.4~F16	0.2~∞	C	62.7×48.4	−1.0	Φ31×34	60	31
LM12NCL	–	–	–	–	◇	✓	✓	✓	12	7.2×5.4(Φ9)	F2.8~F32	0.3~∞	C	34.6×25.9	−0.8	Φ31×29.5	55	31

1" SWIR MEGAPIXEL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM8HC-SW	–	–	✓	✓	✓	✓	✓	✓	8	12.8×9.6(Φ16)	F1.4~F16	0.1~∞	C	79.4×63.0	−1.2	Φ57×58	205	32
LM12HC-SW	–	◇	✓	✓	✓	✓	✓	✓	12.5	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	55.6×42.5	−1.58	Φ43×51.5	160	32
LM16HC-SW	–	◇	✓	✓	✓	✓	✓	✓	16	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	44.3×33.6	−1.0	Φ43×52.9	150	33
LM25HC-SW	–	◇	✓	✓	✓	✓	✓	✓	25	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	29.3×22.0	−1.0	Φ43×43	135	33
LM35HC-SW	–	◇	✓	✓	✓	✓	✓	✓	35	12.8×9.6(Φ16)	F1.4~F16	0.3~∞	C	20.9×15.8	−0.5	Φ43×43	135	33
LM50HC-SW	–	◇	✓	✓	✓	✓	✓	✓	50	12.8×9.6(Φ16)	F1.4~F16	0.5~∞	C	14.5×10.8	0.05	Φ49×48	210	33

2/3" 5 MEGAPIXEL IR-CORRECTED

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM16JC5M-IR	–	–	–	–	✓	✓	✓	✓	16	8.8×6.6(Φ11)	F1.4~F16	0.3~∞	C	30.9×23.2	−0.8	Φ34×44.5	100	34
LM25JC5M-IR	–	–	–	◇	✓	✓	✓	✓	25	8.8×6.6(Φ11)	F1.4~F16	0.3~∞	C	20.1×15.1	−0.3	Φ34×47	110	34
LM35JC5M-IR	–	–	–	◇	✓	✓	✓	✓	35	8.8×6.6(Φ11)	F2.0~F22	0.3~∞	C	13.9×10.5	−0.3	Φ34×43	100	34

1" 5 MEGAPIXEL IR-CORRECTED

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM50HC-IR	–	◇	✓	✓	✓	✓	✓	✓	50	12.8×9.6(Φ16)	F1.8~F16	1.0~∞	C	14.4×10.8	−0.09	Φ50×47.4	180	35
LM60HC-IR	–	◇	✓	✓	✓	✓	✓	✓	60	12.8×9.6(Φ16)	F2.0~F16	1.0~∞	C	12.2×9.2	−0.06	Φ49.2×54.6	200	35

LINE SCAN

Model	Format Size(Inch) 57.0	51.0	46.0	38.0	35.0	30.0	23.0 4/3"	18.0 1.1"	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM28LF	–	–	✓	✓	✓	✓	✓	✓	28	46.0(Φ46)	F2.8~F22	0.5~∞	Nikon F	64.6×45.8	−0.17	Φ75×98	500	36
LM35LF	–	◇	✓	✓	✓	✓	✓	✓	35	46.0(Φ46)	F2.8~F22	0.4~∞	Nikon F	53.7×37.2	−0.15	Φ57.5×71	430	36
LM50LF	–	◇	✓	✓	✓	✓	✓	✓	50	46.0(Φ46)	F2.8~F22	0.4~∞	Nikon F	39.7×27.1	−0.04	Φ57.5×77	470	36

3CCD LARGE FORMAT

Model	Format Size(Inch) 57.0	51.0	46.0	38.0	35.0	30.0	23.0 4/3"	18.0 1.1"	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM28CLS	–	–	–	–	–	✓	✓	✓	28	30.0(Φ30)	F2.8~F22	0.5~∞	Nikon F	55.2(V)	−0.1	Φ75×108	482	36
LM35CLS	–	–	–	–	–	✓	✓	✓	35	30.0(Φ30)	F2.8~F22	0.5~∞	Nikon F	46.1(V)	0.06	Φ65×108	480	36
LM50CLS	–	–	–	–	◇	✓	✓	✓	50	30.0(Φ30)	F2.8~F22	0.5~∞	Nikon F	32.3(V)	−0.1	Φ58×63.5	358	36

S-Mount

Model	Format Size(Inch) 1	1/1.2	2/3	1/1.8	1/2	1/2.5	1/2.8	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
NEW LM3QS28	–	–	–	–	–	✓	✓	✓	3	5.7×4.28(Φ7.13)	F2.8	0.1~∞	S (M12×0.5)	86.7×70.6	0.02	Φ16×22.3	6	37
NEW LM3QS40	–	–	–	–	–	✓	✓	✓			F4							
NEW LM3QS56	–	–	–	–	–	✓	✓	✓			F5.6							

1/3" NF-MOUNT

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LM3NF	–	–	–	–	–	–	–	✓	2.7	4.8×3.6(Φ6)	F1.8~F11	0.1~ ∞	NF	102.3×76.7	−7.3	Φ21×27	30	37
LM5NF	–	–	–	–	–	–	–	✓	4.5	4.8×3.6(Φ6)	F1.8~F11	0.1~ ∞	NF	59.2×45.0	−2.8	Φ21×31	35	37
LM9NF	–	–	–	–	–	–	◇	✓	9	4.8×3.6(Φ6)	F1.8~F11	0.1~ ∞	NF	30.2×22.8	−0.6	Φ22×34	40	37

TELECENTRIC

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Magnification Range	Image Size(mm)	Shooting Magnification	W.D(mm)	Shooting Range(mm)	TV Distortion(%)	Mount	Size(mm)(∞)	Weight(g)	Page
LM1119TC	✓	✓	✓	✓	✓	✓	✓	✓	0.5~1.0×	18.4×13.8(Φ23)	0.5× 1.0×	80 81.8	36.8×27.6 18.4×13.8	0.1 0.1	C	Φ82×151.5	1000	38
LM1138TC	✓	✓	✓	✓	✓	✓	✓	✓	2.0×	18.4×13.8(Φ23)	2.0×	80.6	9.20×6.90	0.1	C	Φ64×151	830	38
LM1120TC	–	–	–	–	✓	✓	✓	✓	3.45~4.4×	8.8×6.6(Φ11)	3.45× 4.0× 4.4×	65.9 65.9 65.9	2.6×1.9 2.2×1.7 2.0×1.5	0.015 0.003 −0.002	C	Φ57×180	645	39
LM1121TC	–	–	–	–	✓	✓	✓	✓	1.725~2.2×	8.8×6.6(Φ11)	1.725× 2.0× 2.2×	114.8 111.4 109.4	5.1×3.8 4.4×3.3 4.0×3.0	0.011 0.004 0.001	C	Φ48×147.5	420	39
LM1122TC	–	–	–	–	✓	✓	✓	✓	1.15~1.47×	8.8×6.6(Φ11)	1.15× 1.3× 1.47×	111.6 111.6 111.6	7.6×5.7 6.6×5.0 6.0×4.5	−0.015 −0.001 0.011	C	Φ50×123.9	330	39
LM1123TC	–	–	–	–	✓	✓	✓	✓	0.69~0.88×	8.8×6.6(Φ11)	0.69× 0.8× 0.88×	111.0 111.0 111.0	12.7×9.6 11.0×8.2 10.0×7.5	−0.001 −0.009 0.005	C	Φ50×121.5	290	39
LM1125TC	–	–	–	–	✓	✓	✓	✓	0.346~0.44×	8.8×6.6(Φ11)	0.346× 0.4× 0.44×	112.7 112.7 112.7	25.4×19.1 22.0×16.5 20.0×15.0	0.02 −0.009 0.01	C	Φ51.5×142.3	420	39
LM50TC	–	–	–	–	✓	✓	✓	✓	0.3~1.0×	8.8×6.6(Φ11)	0.3× 1.0×	193.4 81.8	29.5×22.2 8.8×6.6	−0.19 −0.1	C	Φ56×115.7	317	39

Collapse telecentricity

VARIFOCAL

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LMVZ166HC	–	–	✓	✓	✓	✓	✓	✓	16~64(4.0×)	12.8×9.6(Φ16)	F1.8~F16	1.0~∞	C	W45.9×34.2/T11.7×14.6	W−3.4/T0.2	Φ60×124	370	40
LMVZ4411	–	–	–	–	–	✓	✓	✓	4.4~11(2.5×)	7.2×5.4(Φ9)	F1.6~F16	0.3~∞	C	W76.6×61.2/T36.7×28.0	W−0.2/T0.4	Φ45×56.5	125	40
LMVZ655	–	–	–	–	–	–	✓	✓	6.5~52(8×)	6.4×4.8(Φ8)	F1.8~Close	0.2~∞	C	W54.8×41.1/T7.1×5.4	W−1.2/T0.1	Φ46×73.5	163	40
LMVZ990-IR	–	–	–	–	–	–	✓	✓	9~90(10×)	6.4×4.8(Φ8)	F1.8~F16	0.3~∞	C	W41.1×30.3/T4.2×3.1	W−4.3/T0.3	Φ45×93	194	40

MACRO ZOOM

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)	Page
LMZ50M	–	–	–	–	–	–	–	✓	8.5~90(10.6×)	4.8×3.6(Φ6)	F2.5~Close	0.15~∞	C	W31.3×23.5/T3.2×2.4	0.1	Φ60×130	437	41
LMZ45T3	–	–	–	–	✓	✓	✓	✓	18~108(6×)	8.8×6.6(Φ11)	F2.5~Close	0.115~∞	C	W27.3×20.5/T4.7×3.5	−0.3(3Dpt.un-installed −0.1(3Dpt.installed	Φ62×171.7	595	41
LMZ68M	–	–	–	–	–	–	✓	✓	8~48(6×)	6.4×4.8(Φ8)	F1.0~Close	1.0~∞(0.01 at Macro)	C	W43.6×33.4/T7.7×5.7	–	Φ50.5×92.8	280	41
LMZ69M	–	–	–	–	✓	✓	✓	✓	11.5~69(6×)	8.8×6.6(Φ11)	F1.4~Close	1.0~∞(0.01 at Macro)	C	W41.9×32.0/T7.3×5.5	–	Φ50.5×98.2	300	41

Build-to-Order

＊For questions and concerns, please contact our sales representatives.

1" 6 MEGAPIXEL PLUS

Model	Format Size(Inch) 4/3	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3	Focal Length(mm)	Image Size	Iris Range (F-stop)	Focusing Range(m)	Mount	Field Angle(H×V)	TV Distortion(%)	Size(mm)(∞)	Weight(g)
LM12SC	–	◇	✓	✓	✓	✓	✓	✓	12	12.8×9.6(Φ16)	F1.8~F16	0.1~∞	C	55.9×43.1	−0.55	Φ43×84	255
LM16SC	◇	◇	✓	✓	✓	✓	✓	✓	16	12.8×9.6(Φ16)	F1.8~F16	0.1~∞	C	44.0×33.6	0.02	Φ43×80	240
LM25SC	◇	◇	✓	✓	✓	✓	✓	✓	25	12.8×9.6(Φ16)	F1.8~F16	0.15~∞	C	28.9×21.8	−0.34	Φ43×89	245
LM35SC	◇	◇	✓	✓	✓	✓	✓	✓	35	12.8×9.6(Φ16)	F2.0~F16	0.2~∞	C	20.8×15.6	0.02	Φ43×74	200
LM50SC	◇	◇	✓	✓	✓	✓	✓	✓	50	12.8×9.6(Φ16)	F2.0~F16	0.3~∞	C	14.6×11.0	0.30	Φ43×78.5	210

How to read the Format Size(Inch) table ✓ Compatible: Ideal sensor size. ◇ Suitable: Can be used depending on applications. – Incompatible: Can not be used.

Various types of lenses are used in machine vision systems. In order to achieve the highest performance, it is important to select the lens most suitable for the application.

Product Number Breakdown Ex. LM 12 JCM
①Represents lens function
●LM·····KOWA CCTV lenses
●LMZ·····KOWA Zoom lenses
●LMVZ·····KOWA Varifocal lenses

②Represents focal length (fixed focal length lenses)

③Represents format sizes and lens type

●XC ····· 4/3 inch format megapixel lens
●CLS ····· 3CCD color line scan lens
●SC,HC···· 1 inch format megapixel lens
●HC-SW ···· 1 inch format SWIR lens
●JC ····· 2/3 inch format lens
●JCM ·····2/3 inch format megapixel lens
●NCL ····· 1/2 inch format lens
●NCM ·····1/2 inch format megapixel lens
●M ····· Macro lens
●TC ····· Telecentric lens
●NC3 ····· 1/2 inch format 3CCD megapixel lens
●IR ····· IR-corrected lens
●NF ····· NF mount lens

■Quick selection - How to calculate focal length

Ex) A 2/3″ camera is used to capture an object 100mm wide from a distance of 300mm.
Use the picture below and the image size chart to substitute for Y, L, and Y′. Then, to capture the entire object, use the formula f=L*Y′/Y to calculate focal length.

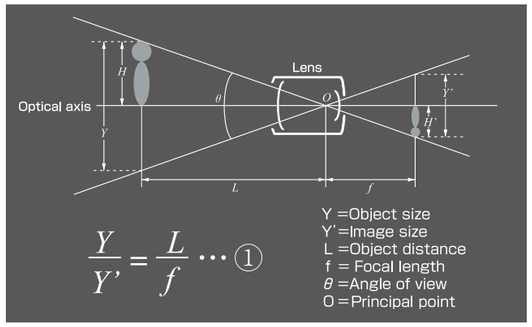
Y′=8.8mm(See image size chart), L=300mm, Y=100mm
f = 300*8.8/100
f=26.4mm.
The most appropriate lens is f=25mm lens, which is close but not greater than the 26.4 derived from the calculation.
Lenses with shorter focal lengths than the given number can capture an object in its entirety.

■Quick selection - How to calculate the angle of view

Ex) A 1/2″ camera is used to shoot an object 300mm away. The focal length of the lens is 16mm. Use the picture below and image size chart to substitute for f, L, and Y1 (H or V accordingly). Then to calculate the angle of view, use the formula Y= L*Y′/f.

Width- Y′=6.4mm (Horizontal), f=16mm, L=300mm
Y= 300*6.4/16
Y= 120mm
Vertical-Y′=4.8mm (Vertical), f=16mm, L=300mm
Y=300*4.8/16
Y=90mm
Thus in order to capture the object in its entirety, the maximum dimensions of an object at a distance of 300mm is 120mm wide and 90mm height.

〈Characteristics of lenses are described below〉

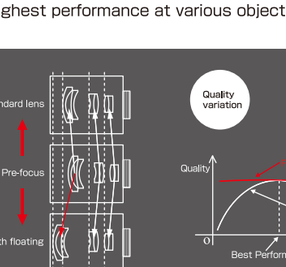


Object size····· Field range which can be captured by the image sensor
Image size ····· See description
Object distance Distance from the lens to the object
Focal length····· Distance from the pricipal point to the focus point
Angle of view····· This angle represents a shooting range in degrees. The shorter a focal length is, the bigger an angle of view is.
Principal point ··· Optical center of the lens

■Image size

Image size represents size of camera sensor

Camera	Hor.(mm)	Ver.(mm)	Dia.(mm)
1/4 inch	3.6	2.7	4.5
1/3 inch	4.8	3.6	6
1/2 inch	6.4	4.8	8
1/1.8 inch	7.2	5.4	9
2/3 inch	8.8	6.6	11
1 inch	12.8	9.6	16
1.1 inch	14.1	10.6	17.6
4/3 inch	18.4	13.8	23



■F-number

The F-number represents the amount of light that passes through a lens. As the F-number decreases, the amount of light that passes through the lens increases. The F-number affects the depth of field as mentioned below.

■Depth of field

Depth of field is the range of distance, in front of and behind a subject that appears in focus. If the depth of field is deep, an object will appear to be in focus even if it moves slightly back and forth.

The characteristics of depth of field (comparing lenses with the same specifications)
●Increasing the F-number (darker) increases the depth.
●Shortening the focal length increases the depth.
●Lengthening the object distance increases the depth.

■Floating Mechanism system

The floating mechanism system is effective in preventing malfunction and increasing the life of the lens. It is also called the close distance aberration compensation mechanism.
In standard CCTV lenses, the whole or a part of the lens moves when focusing. However, moving one lens element and not the entire lens system changes the direction of the light rays and decreases the optical performance.
However, lenses with the floating mechanism system can vary the distance between the lens elements. This enables the lens to achieve the highest performance at various objective distances.

Processing technology

Lens processing facility

Kowa has the facility to manufacture any optical device with the requested specifications.

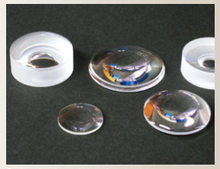
Examples of optical devices

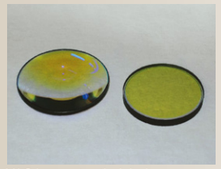
- **Parabolic mirrors**
- **Plastic molded lenses**
- **Germanium lenses**
- **Special filters**
- **Aspherical Lenses**

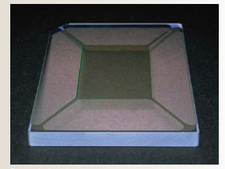

Coating machine


Aspherical lens processing machine

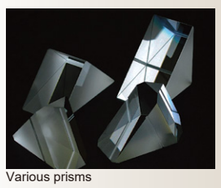

Ultra-precision processing machine

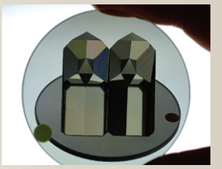

Spherical and Aspherical lenses


YAG laser cut optical devices


Special mirrors

Design & Development


Various prisms


Optical devices with special coatings

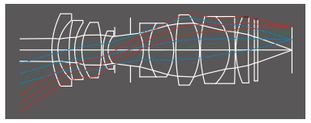

Ultra-precision optical devices

OEM Product Design

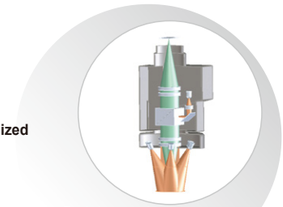
Kowa has the ability to create an OEM customized optical system, which includes the optical, mechanical, electrical and software design. We will provide you the best solution for every customer who requires high-end customized products.

Example of Customized Optics

- **Optics for Medical X-ray diagnostics**
- **Optics for Semiconductor instruments**
- **Optics for laser scanning applications**
- **Optics for surveillance applications**
- **Optics for printing applications**



Kowa will provide suggestions about the customized optics based on the flow chart below.



Meeting and quotation	Designing phase	Prototype and production phase
Meeting with customer	Optical designing	Parts arrangement
Define specification	Provide design results	Assembly and adjustment
Optical simulation	Mechanical and electrical designing	Provide prototype
Provide simulation results	Provide a complete product design	Final evaluation
Quotation		Production