Kowa

Quality of Light

Cameras Lenses

Camera and Lens Catalog

Kowa
Quality of Light

About Kowa Optronics

With over 75 years of expertise in optical technology, we deliver cutting-edge total vision systems, featuring high-performance lenses designed with our proprietary innovations. By meeting our customers' diverse needs for enhanced product quality, we drive efficiency and convenience across industries such as factory automation, logistics, and retail. Our end-to-end solutions help optimize performance and create lasting value for our customers.

Kowa's Key Markets

FACTORY AUTOMATION

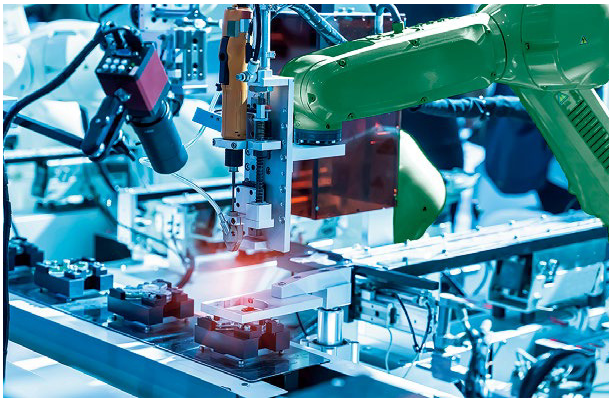
With a comprehensive lineup of high-precision lenses and ruggedized, environment-resistant cameras, we enhance the efficiency and reliability of production facilities and logistics warehouses across a wide range of industries, including semiconductors, automotive, metal processing, food, medical, plastics, ceramics, and film manufacturing.

INSPECTION

By integrating lenses, cameras, and lighting with our proprietary software, we reveal workpiece conditions that are invisible in raw images. This ensures precise and effective inspection in any environment.

ROBOT VISION

Integrating vision technology with robotics minimizes labor requirements while enhancing operational efficiency. A high-performance system utilizing 2D/3D cameras and AI-driven image processing significantly improves precision and reliability in automated tasks.



Industrial Lenses

Industrial Ruggedized Cameras

Image Processing and AI Software

Security Lenses and Cameras

Commercial Video Equipment

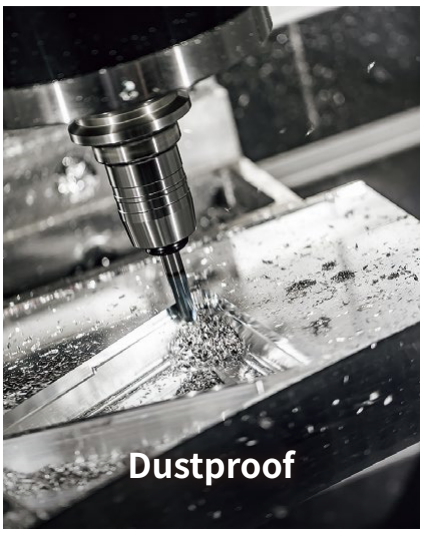
Spotting Scopes and Binoculars

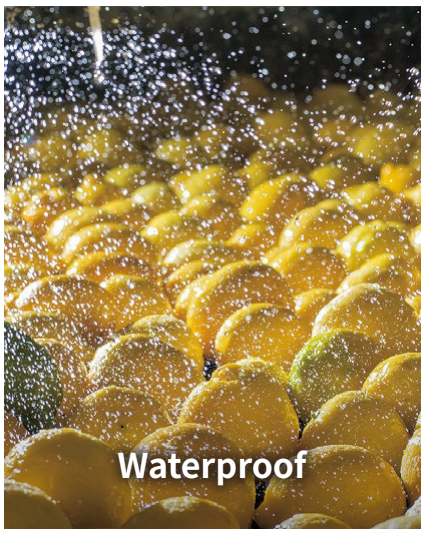
Observation Telescopes

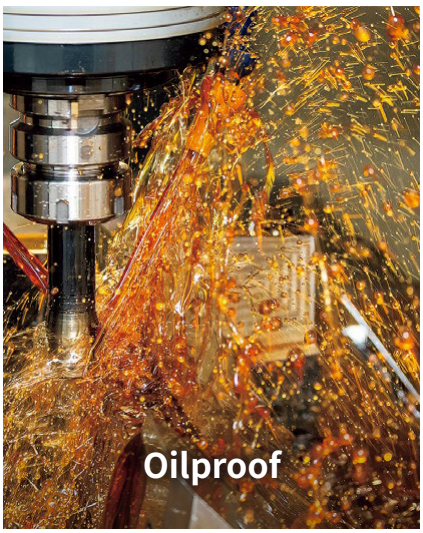
Lighting Equipment

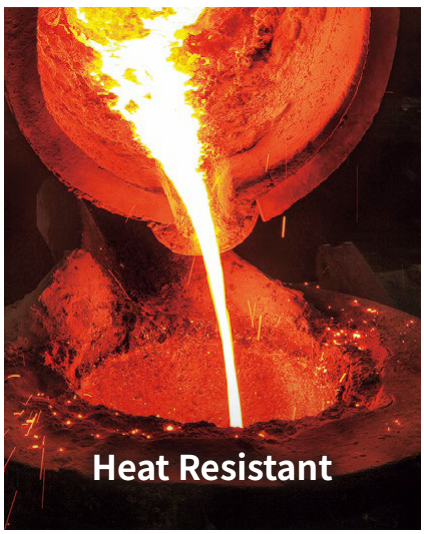
HARSH ENVIRONMENTS

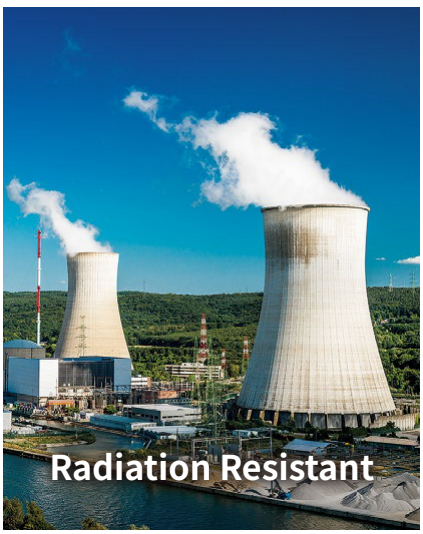
Guided by our concept of “Clear View, Anytime, Anywhere,” we provide ruggedized vision units engineered for harsh environments. Designed to withstand vibration, shock, impact, dust, water, and oil, these durable systems deliver reliable performance in any setting. With flexible configurations tailored to your specific needs, we ensure the optimal solution for your application.











Contents

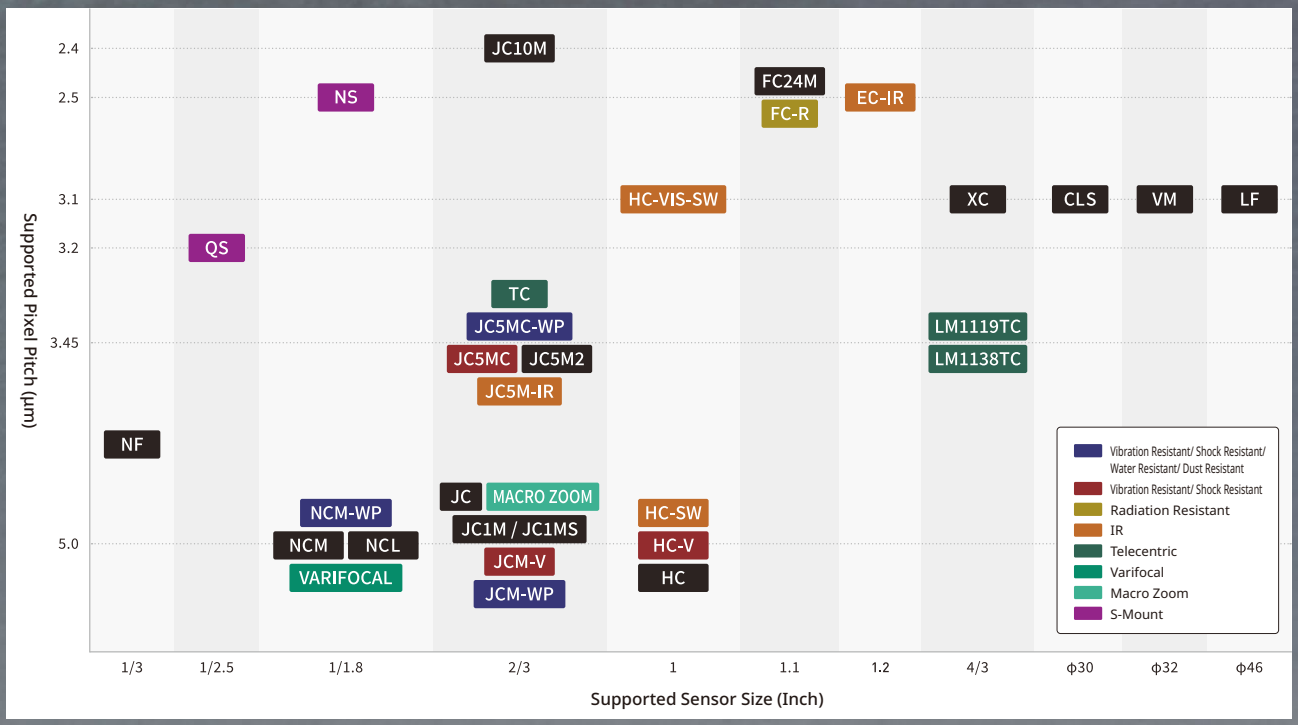
Camera Lineup Chart

Sensor Size Monochrome (MX) Sensor Size Color (CX)

Resolution (MP)		0.48		1.3	3	5	8	12	16	20	24
Pixel Size (µm)		4.8	5.3	5.3	3.45		2.74				
GigE Vision (Vibration Resistant, Shock Resistant)	KC48GC4	1/3	1/3								
	KC130GC4			1/1.8	1/1.8						
	KC300GC4				1/1.8	1/1.8					
	KC500GC4					2/3	2/3				
	KC800GC4						2/3	2/3			
	KC1200GC4							1/1.1	1/1.1		
Harsh Environment Resistant GigE Vision (Vibration Resistant, Shock Resistant, Water proof, Dust proof, Oil proof)	KC48GC3	1/3	1/3								
	KC130GC3			1/1.8	1/1.8						
	KC300GC3				1/1.8	1/1.8					
	KC500GC3					2/3	2/3				
	KC800GC3						2/3	2/3			
	KC1200GC3							1/1.1	1/1.1		
	KC1600GC3								1.1	1.1	
	KC2000GC3									1.1	1.1
	KC2400GC3										1.2 1.2
CoaXPress (Vibration Resistant, Shock Resistant)	KC48XS1	1/3.6									
	KC130XC2			1/1.8	1/1.8						
	KC300XC3				1/1.8	1/1.8					
	KC500XC3					2/3	2/3				

Environmetal Performance Icons (Vibration Resistant, Shock Resistant, Water proof, Dust proof, Oil proof)

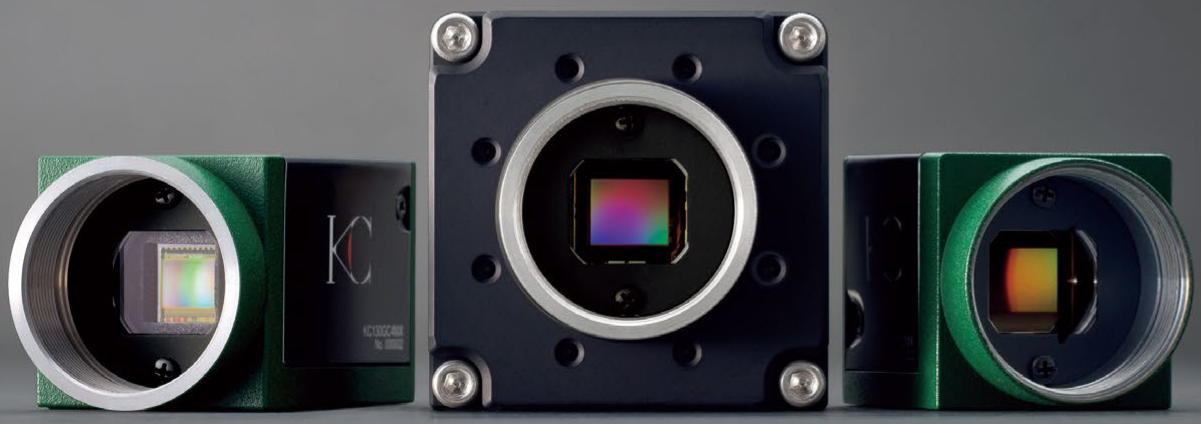
Lens Lineup Chart



* The product specifications and external appearance may be changed for improvement without prior notice.

Cameras

Our camera lineup supports GigE and CoaXPress interfaces,
featuring a ruggedized design for seamless performance in harsh environments.
Built to withstand extreme conditions, these durable cameras ensure reliable
operation in the most demanding industrial applications.



Ruggedized GigE Vision Series

- Product lineup ranging from 0.48MP to 12MP.
- Robust design with shock, vibration, and impact resistance for all models.
- Available as a complete unit with a bundled warranty, complemented by a selection of high-quality lenses.
- Comprehensive development, manufacturing, sales, and technical support by Kowa.

0.48MP Camera

Vibration Resistant | Shock Resistant

1.3MP Camera

Vibration Resistant | Shock Resistant

	GigE Vision 0.48MP Camera		GigE Vision 1.3MP Camera	
Model	KC48GC4MX	KC48GC4CX	KC130GC4MX	KC130GC4CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (RJ45)		GigE Vision (RJ45)	
Sensor	–		e2v EV76C560	
Sensor Format	1/3″		1/1.8″	
Resolution	0.48MP 800 (H) ×600 (V)		1.3MP 1280 (H) ×1024 (V)	
Pixel Size	5.3µm (H) ×5.3µm (V)		5.3µm (H) ×5.3µm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	101fps		60fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	4.5W or Less		4.5W or Less	
Housing Size	29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)		29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)	
Weight	Approx. 70g		Approx. 70g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–		–	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Recommended Lens Series	JC1MS / JCM-WP / JCM-V / JC1M		JC1MS / JCM-WP / JCM-V / JC1M / NCM	

3MP Camera

Vibration Resistant | Shock Resistant

5MP Camera

Vibration Resistant | Shock Resistant

	GigE Vision 3MP Camera		GigE Vision 5MP Camera	
Model	KC300GC4MX	KC300GC4CX	KC500GC4MX	KC500GC4CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (RJ45)		GigE Vision (RJ45)	
Sensor	SONY IMX265		SONY IMX264	
Sensor Format	1/1.8″		2/3″	
Resolution	3MP 2064 (H) ×1544 (V)		5MP 2448 (H) ×2048 (V)	
Pixel Size	3.45µm (H) ×3.45µm (V)		3.45µm (H) ×3.45µm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	36fps		23fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	4.5W or Less		4.5W or Less	
Housing Size	29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)		29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)	
Weight	Approx. 70g		Approx. 70g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–		–	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Recommended Lens Series	JC5M2 / JC1MS / JCM-WP / JCM-V / JC1M / NCM / JC5MC / JC5MC-WP		JC5MC / JC5MC-WP / JC5M2	

8MP Camera

Vibration Resistant | Shock Resistant

12MP Camera

Vibration Resistant | Shock Resistant

	GigE Vision 8MP Camera		GigE Vision 12MP Camera	
Model	KC800GC4MX	KC800GC4CX	KC1200GC4MX	KC1200GC4CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (RJ45)		GigE Vision (RJ45)	
Sensor	SONY IMX546		SONY IMX545	
Sensor Format	2/3″		1/1.1″	
Resolution	8MP 2856 (H) ×2848 (V)		12MP 4080 (H) ×3008 (V)	
Pixel Size	2.74µm (H) ×2.74µm (V)		2.74µm (H) ×2.74µm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	13fps		8fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	6W or Less		6W or Less	
Housing Size	29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)		29 (W) ×29 (H) ×42.9 (D) mm (Excluding Projections)	
Weight	Approx. 70g		Approx. 70g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–		–	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Recommended Lens Series	JC10M		FC24M / EC-IR / XC	

* The product specifications and external appearance may be changed for improvement without prior notice.
*1: Appropriate heat dissipation is required. Please contact us for more details. *2: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *3: Complies with MIL-STD-810H.

Ruggedized CoaXPress Series

- Product lineup ranging from 0.48MP to 5MP.
- Robust design with shock, vibration, and impact resistance for all models.
- Smallest and lightest S-mount cameras in the industry.
- High speed data transfer via a single coaxial cable.
- Available as a complete unit with a bundled warranty, complemented by a selection of high-quality lenses.
- Comprehensive development, manufacturing, sales, and technical support by Kowa.

0.48MP Camera

Vibration Resistant

Shock Resistant

CXP-2

	CoaXPress 0.48MP Camera
Model	KC48XS1MX
Monochrome/Color	Monochrome
Interface	CXP-2 (Micro BNC)
Sensor	onsemi PYTHON480
Sensor Format	1/3.6″
Resolution	0.48MP 800 (H) ×600 (V)
Pixel Size	4.8µm (H) ×4.8µm (V)
Shutter	Global Shutter
Frame Rate	100fps
Power Supply	PoCXP
Power Requirements	2W or Less
Housing Size	29 (W) ×19 (H) ×33 (D) mm (Excluding Projections)
Weight	Approx. 30g
Lens Mount	S-mount
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)
IP Rating	–
Vibration Resistance*3	10G
Shock Resistance*4	75G
Recommended Lens Series	QS / NS

1.3MP Camera

Vibration Resistant | Shock Resistant

CXP-2

	CoaXPress 1.3MP Camera	
Model	KC130XC2MX	KC130XC2CX
Monochrome/Color	Monochrome	Color
Interface	CXP-2 (BNC)	
Sensor	e2v EV76C560	
Sensor Format	1/1.8″	
Resolution	1.3MP 1280 (H) ×1024 (V)	
Pixel Size	5.3µm (H) ×5.3µm (V)	
Shutter	Global Shutter	
Frame Rate	60fps	
Power Supply	PoCXP	
Power Requirements	1.5W or Less	
Housing Size	29 (W) ×29 (H) ×37 (D) mm (Excluding Projections)	
Weight	Approx. 50g	
Lens Mount	C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–	
Vibration Resistance*3	10G	
Shock Resistance*4	75G	
Recommended Lens Series	JC1MS / JCM-WP / JCM-V / JC1M / NCM	

3MP Camera

Vibration Resistant | Shock Resistant

CXP-6

	CoaXPress 3MP Camera	
Model	KC300XC3MX	KC300XC3CX
Monochrome/Color	Monochrome	Color
Interface	CXP-6 (BNC)	
Sensor	SONY IMX252	
Sensor Format	1/1.8″	
Resolution	3MP 2064 (H) ×1544 (V)	
Pixel Size	3.45µm (H) ×3.45µm (V)	
Shutter	Global Shutter	
Frame Rate	149fps	
Power Supply	PoCXP	
Power Requirements	3.6W or Less	
Housing Size	29 (W) ×29 (H) ×37 (D) mm (Excluding Projections)	
Weight	Approx. 50g	
Lens Mount	C-mount	
Operating Temperature/Humidity	0°C～+35°C*2/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–	
Vibration Resistance*3	10G	
Shock Resistance*4	75G	
Recommended Lens Series	JC5M2 / JC1MS / JCM-WP / JCM-V / JC1M / NCM / JC5MC / JC5MC-WP	

5MP Camera

Vibration Resistant | Shock Resistant

CXP-6

	CoaXPress 5MP Camera	
Model	KC500XC3MX	KC500XC3CX
Monochrome/Color	Monochrome	Color
Interface	CXP-6 (BNC)	
Sensor	SONY IMX250	
Sensor Format	2/3″	
Resolution	5MP 2464 (H) ×2056 (V)	
Pixel Size	3.45µm (H) ×3.45µm (V)	
Shutter	Global Shutter	
Frame Rate	95fps	
Power Supply	PoCXP	
Power Requirements	3.6W or Less	
Housing Size	29 (W) ×29 (H) ×37 (D) mm (Excluding Projections)	
Weight	Approx. 50g	
Lens Mount	C-mount	
Operating Temperature/Humidity	0°C～+35°C*2/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	–	
Vibration Resistance*3	10G	
Shock Resistance*4	75G	
Recommended Lens Series	JC5MC / JC5MC-WP / JC5M2	

* The product specifications and external appearance may be changed for improvement without prior notice. *1: Appropriate heat dissipation is required. Please contact us for more details. *2: Please use in an environment where the housing surface temperature is 55°C or less. *3: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *4: Complies with MIL-STD-810H.

Ruggedized Harsh Environment Resistant

GigE Vision Series

- Product lineup ranging from 0.48MP to 24MP.
- Ruggedized design featuring vibration and impact resistance, along with dustproof, waterproof, and oilproof protection.
- IP67 rated protection without the need for additional housings when paired with our water-resistant lenses.
- Available as a complete unit with a bundled warranty, complemented by a selection of high-quality lenses.
- Comprehensive development, manufacturing, sales, and technical support by Kowa.

Vibration & Shock Resistant

Optimized for high-performance operation in environments subject to vibration and impact, such as manufacturing facilities and robot-assisted distribution warehouses.

Dustproof

Suitable for outdoor applications, drone operations, construction-related environments, and more.

Waterproof

Can be used in a wide range of situations, including food processing plants, clothing factories, and other moisture-prone settings.

Oilproof

Designed for manufacturing environments where exposure to oil mist and cutting oil is prevalent.

0.48MP Camera

Vibration Resistant / Shock Resistant / Water proof / Dust proof / Oil proof

1.3MP Camera

Vibration Resistant / Shock Resistant / Water proof / Dust proof / Oil proof

3MP Camera

Vibration Resistant / Shock Resistant / Water proof / Dust proof / Oil proof

	Harsh Environment Resistant GigE Vision 0.48MP Camera		Harsh Environment Resistant GigE Vision 1.3MP Camera		Harsh Environment Resistant GigE Vision 3MP Camera	
Model	KC48GC3MX	KC48GC3CX	KC130GC3MX	KC130GC3CX	KC300GC3MX	KC300GC3CX
Monochrome/Color	Monochrome	Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (M12 X-code)		GigE Vision (M12 X-code)		GigE Vision (M12 X-code)	
Sensor	–		e2v EV76C560		SONY IMX265	
Sensor Format	1/3″		1/1.8″		1/1.8″	
Resolution	0.48MP 800 (H) ×600 (V)		1.3MP 1280 (H) ×1024 (V)		3MP 2064 (H) ×1544 (V)	
Pixel Size	5.3µm (H) ×5.3µm (V)		5.3µm (H) ×5.3µm (V)		3.45µm (H) ×3.45µm (V)	
Shutter	Global Shutter		Global Shutter		Global Shutter	
Frame Rate	101fps		60fps		36fps	
Power Supply	PoE or DC24V		PoE or DC24V		PoE or DC24V	
Power Requirements	4.5W or Less		4.5W or Less		4.5W or Less	
Housing Size	45 (W) ×45 (H) ×30 (D) mm (Excluding Projections)		45 (W) ×45 (H) ×30 (D) mm (Excluding Projections)		45 (W) ×45 (H) ×30 (D) mm (Excluding Projections)	
Weight	Approx. 120g		Approx. 120g		Approx. 120g	
Lens Mount	C-mount		C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	IP67 Rated, Equivalent to IP69K		IP67 Rated, Equivalent to IP69K		IP67 Rated, Equivalent to IP69K	
Vibration Resistance*2	10G		10G		10G	
Shock Resistance*3	75G		75G		75G	
Oilproof*4	○		○		○	
Recommended Lens Series	JC1MS / JCM-WP/ JCM-V / JC1M		JC1MS / JCM-WP / JCM-V / JC1M / NCM		JC5M2 / JC1MS / JCM-WP / JCM-V / JC1M / NCM / JC5MC / JC5MC-WP	

5MP Camera

Vibration Resistant / Shock Resistant / Water proof / Dust proof / Oil proof

8MP Camera

Vibration Resistant / Shock Resistant / Water proof / Dust proof / Oil proof

	Harsh Environment Resistant GigE Vision 5MP Camera		Harsh Environment Resistant GigE Vision 8MP Camera	
Model	KC500GC3MX	KC500GC3CX	KC800GC3MX	KC800GC3CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (M12 X-code)		GigE Vision (M12 X-code)	
Sensor	SONY IMX264		SONY IMX546	
Sensor Format	2/3″		2/3″	
Resolution	5MP 2448 (H) ×2048 (V)		8MP 2856 (H) ×2848 (V)	
Pixel Size	3.45µm (H) ×3.45µm (V)		2.74µm (H) ×2.74µm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	23fps		13fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	4.5W or Less		6W or Less	
Housing Size	45 (W) ×45 (H) ×30 (D) mm (Excluding Projections)		45 (W) ×45 (H) ×38 (D) mm (Excluding Projections)	
Weight	Approx. 120g		Approx. 140g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	IP67 Rated, Equivalent to IP69K		IP67 Rated, Equivalent to IP69K	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Oilproof*4	○		○	
Recommended Lens Series	JC5MC / JC5MC-WP / JC5M2		JC10M	

* The product specifications and external appearance may be changed for improvement without prior notice. *1: Appropriate heat dissipation is required. Please contact us for more details. *2: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *3: Complies with MIL-STD-810H. *4: Conforms to our company standards.

12MP Camera

Vibration Resistant · Shock Resistant · Water proof · Dust proof · Oil proof

16MP Camera

Vibration Resistant · Shock Resistant · Water proof · Dust proof · Oil proof

	Harsh Environment Resistant GigE Vision 12MP Camera		Harsh Environment Resistant GigE Vision 16MP Camera	
Model	KC1200GC3MX	KC1200GC3CX	KC1600GC3MX	KC1600GC3CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (M12 X-code)		GigE Vision (M12 X-code)	
Sensor	SONY IMX545		SONY IMX542	
Sensor Format	1/1.1″		1.1″	
Resolution	12MP 4128 (H) ×3008 (V)		16MP 5328 (H) ×3040 (V)	
Pixel Size	2.74μm (H) ×2.74μm (V)		2.74μm (H) ×2.74μm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	8fps		6fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	6W or Less		6W or Less	
Housing Size	45 (W) ×45 (H) ×38 (D) mm (Excluding Projections)		45 (W) ×45 (H) ×38 (D) mm (Excluding Projections)	
Weight	Approx. 140g		Approx. 140g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	IP67 Rated, Equivalent to IP69K		IP67 Rated, Equivalent to IP69K	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Oilproof*4	○		○	
Recommended Lens Series	FC24M / EC-IR / XC		FC24M / EC-IR / XC	

20MP Camera

Vibration Resistant · Shock Resistant · Water proof · Dust proof · Oil proof

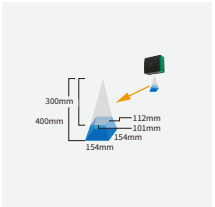
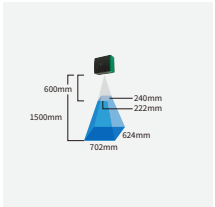
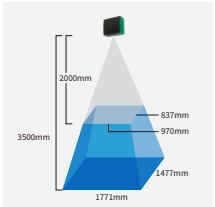
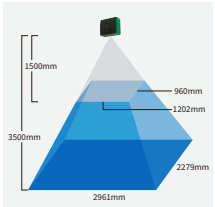
24MP Camera

Vibration Resistant · Shock Resistant · Water proof · Dust proof · Oil proof

	Harsh Environment Resistant GigE Vision 20MP Camera		Harsh Environment Resistant GigE Vision 24MP Camera	
Model	KC2000GC3MX	KC2000GC3CX	KC2400GC3MX	KC2400GC3CX
Monochrome/Color	Monochrome	Color	Monochrome	Color
Interface	GigE Vision (M12 X-code)		GigE Vision (M12 X-code)	
Sensor	SONY IMX541		SONY IMX540	
Sensor Format	1.1″		1.2″	
Resolution	20MP 4512 (H) ×4512 (V)		24MP 5328 (H) ×4608 (V)	
Pixel Size	2.74μm (H) ×2.74μm (V)		2.74μm (H) ×2.74μm (V)	
Shutter	Global Shutter		Global Shutter	
Frame Rate	5fps		4fps	
Power Supply	PoE or DC24V		PoE or DC24V	
Power Requirements	6W or Less		6W or Less	
Housing Size	45 (W) ×45 (H) ×38 (D) mm (Excluding Projections)		45 (W) ×45 (H) ×38 (D) mm (Excluding Projections)	
Weight	Approx. 140g		Approx. 140g	
Lens Mount	C-mount		C-mount	
Operating Temperature/Humidity	0°C～+45°C*1/20%～80%RH (No Condensation)		0°C～+45°C*1/20%～80%RH (No Condensation)	
Storage Temperature/Humidity	−30°C～+60°C/20%～90%RH (No Condensation)		−30°C～+60°C/20%～90%RH (No Condensation)	
IP Rating	IP67 Rated, Equivalent to IP69K		IP67 Rated, Equivalent to IP69K	
Vibration Resistance*2	10G		10G	
Shock Resistance*3	75G		75G	
Oilproof*4	○		○	
Recommended Lens Series	FC24M / EC-IR / XC		FC24M / EC-IR / XC	

* The product specifications and external appearance may be changed for improvement without prior notice. *1: Appropriate heat dissipation is required. Please contact us for more details. *2: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *3: Complies with MIL-STD-810H. *4: Conforms to our company standards.

3D Cameras

Type	Short Distance Type	Middle Distance Type	Long Distance Type	Long Distance and Wide Angle Type
Model	KC130GP103	KC130GP109	KC130GP125	KC130GP120
Monochrome/Color	Monochrome			
Interface	GigE Vision			
Output Image Size	1248×933 pixel			
Depth Range	300 mm / 400 mm	600 mm / 1500 mm	2000 mm / 3500 mm	1500 mm / 3500 mm
Field of View Size *1 (Horizontal x Vertical)	101×112 mm / 154×154 mm	222×240 mm / 702×624 mm	970×837 mm / 1771×1477 mm	1202×960 mm / 2961×2279 mm
Measurement time	50 ms or Less			
Power Supply	PoE			
Power Requirements	12.95 W			
Housing Size	142 (W) ×62.5 (H) ×121 (D) mm (Excluding Projections)			
Weight	Approx. 1.2kg			
Operating Temperature/Humidity	0°C ~ +45°C / 20% ~ 80%RH (No condensation)			
Storage Temperature/Humidity	–30°C ~ +60°C / 20% ~ 90%RH(No condensation)			
IP Rating	IP67 Equivalent			
Vibration Resistance*2	10 G			
Shock Resistance*3	75 G			
Imaging Range				

* The product specifications and external appearance may be changed for improvement without prior notice.
*1 Theoretical value *2: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *3: Complies with MIL-STD-810H.

Harsh Environment Resistant Series

Harsh Environment Resistant vision unit lineup

Harsh Environment Resistant GigE Vision Camera P.11 – 13

Rotary Wiper Vison Unit P.16

Harsh Environment Resistant IP Camera P.17 – 18

Radiation Resistant lens P.45 – 46

Rotary Wiper Vison Unit

Model	KC-RW1S
Size	50mm x 50mm x 31mm (excluding protrusions such as nozzles and one-touch joints)
Power	Compressed air (φ6 urethane hose joint)
Set pressure	0.05~0.1MPa
Air consumption	15～20ℓ/min
Supply air purity class	ISO8573-1:2010 [2:3:2]
IP Class *1	IPX7 (air supply, when rotating the swivel unit)
Storage temperature	-20℃～+60℃
Operating temperature	+10℃～45℃
Camera resolution *2	0.48MP, 1.3MP, 3MP (P.12) , Full HD IP Camera (P.18)
Lens focal length *3	f=2.7mm, 8mm, 12mm, 16mm, 25mm

*1 Not dustproof. *2 Please refer to the camera page for details on camera specifications. *3 Some lenses may not be compatible with certain cameras. Please refer to the field of view table at the end of the catalog for more information.

Achieves clear visibility even in harsh environments where water and oil are present. Suitable for applications such as monitoring machine processes inside industrial machinery where there are numerous blind spots. When used in combination with Kowa vision processors, it enables AI-driven analysis of cutting chip accumulation and can send alert notifications in case of machining defects.

Maintains a “clear view” even within machining equipment.

Without rotation mechanism.

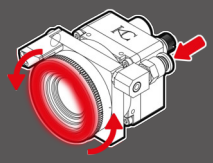
With rotation mechanism.

Effectively captures the interior of machining equipment, such as lathes, milling machines, and grinding machines, without attracting coolant or cutting chips.

PROTECTIVE LENS COATING

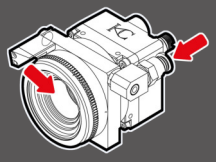
Sapphire glass with Kowa's special water repellent coating resists scratches and repels moisture, oil, and residue.

HIGH SPEED ROTATION

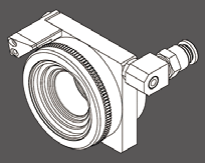


Air-powered rotary wiper clears residue and materials for a consistently clear view.

AIR INJECTION



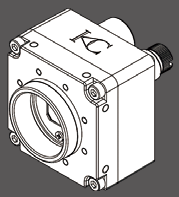
High-pressure air not only rotates the wiper but also assists in removing moisture and oil.



Housing Body (Rotating Unit)

Lens

Focal length options include 2.7mm, 8mm, 12mm, 16mm, and 25mm to suit various applications.



Camera

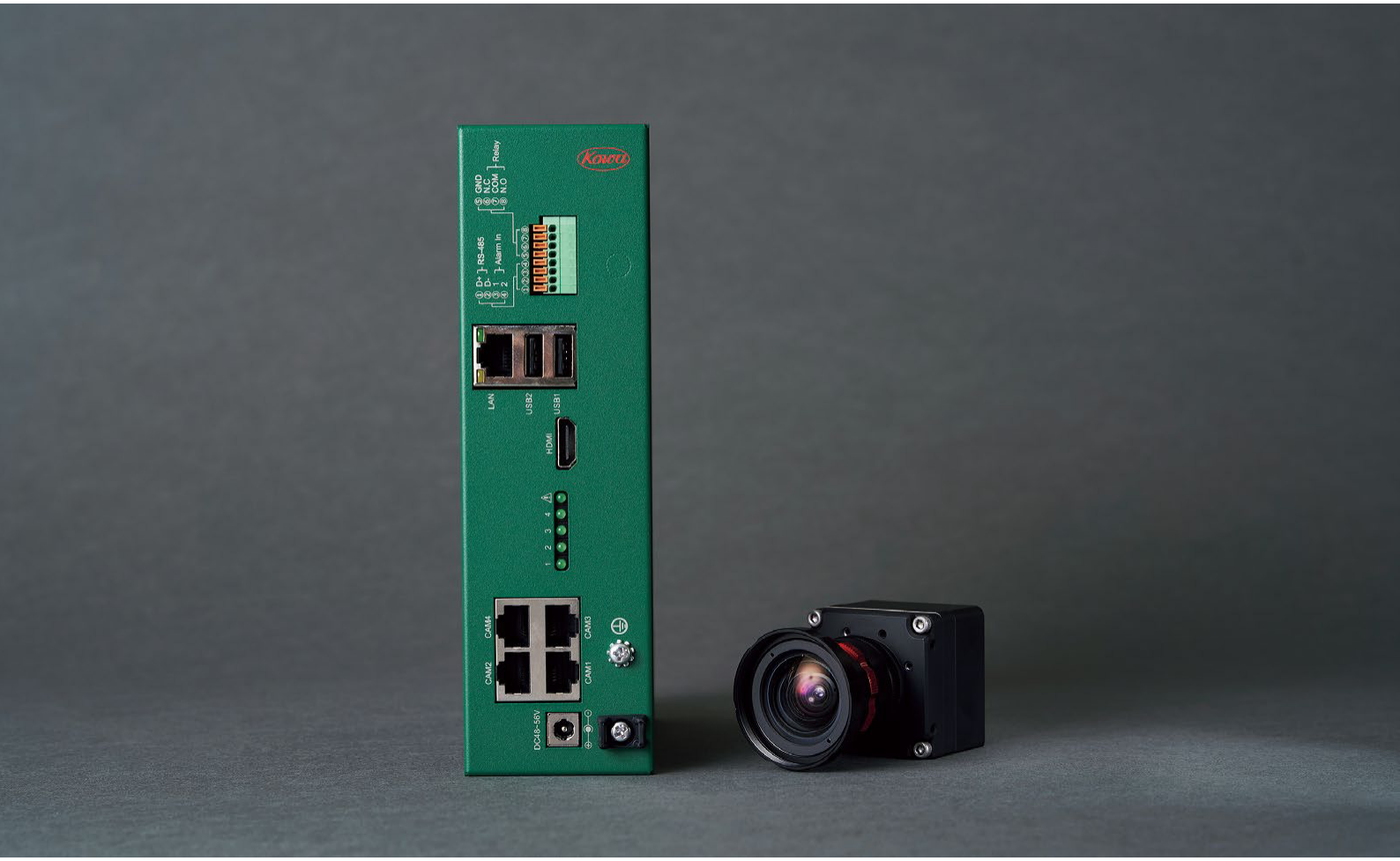
Resolution options for GigE cameras include 0.48MP, 1.3MP, and 3MP. For Kowa's IP cameras, 2MP resolution is available.

Angle of View Table		LM3NF f=2.7mm	LM8RW f=8mm	LM12RW f=12mm	LM16RW f=16mm	LM25RW f=25mm
Harsh Environment Resistant GigE Vision Camera	0.48MP GigE camera ・KC48GC3MX ・KC48GC3CX	89°×66°	29°×22°	20°×15°	15°×11°	9°×7°
	1.3MP GigE camera ・KC130GC3MX ・KC130GC3CX	—	45°×37°	31°×25°	23°×19°	15°×12°
	3MP GigE camera ・KC300GC3MX ・KC300GC3CX	—	47°×36°	33°×25°	25°×18°	16°×12°
Harsh Environment Resistant IP Camera	2MP IP Camera ・KC200NB1CX	116°×65°	38°×22°	26°×14°	19°×11°	12°×7°

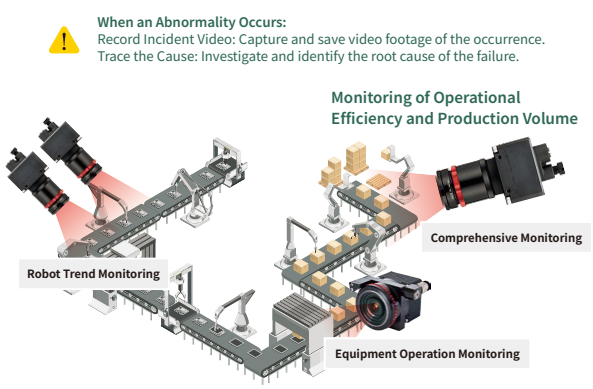
Field of view table P.83

* The product specifications and external appearance may be changed for improvement without prior notice.

Harsh Environment Resistant IP Cameras / Network Video Recorders(Factory Automation Monitoring)



From comprehensive monitoring to detailed operation monitoring within the equipment, we have achieved "Operational Status Visualization and Improved Efficiency."



Production Line Monitoring

When combined with an NVR, up to four devices can be connected simultaneously, enabling 1TB of recording capacity. It also supports recording both before and after abnormalities occur, ensuring comprehensive event capture.

Monitoring Inside Machining Equipment

Combining Kowa's ruggedized harsh environment resistant IP camera with an NVR enables remote monitoring of the warehouse, continuous recording, and recording when an abnormality occurs.

Harsh Environment Resistant IP Camera

Vibration Resistant
Shock Resistant
Water proof
Dust proof
Oil proof

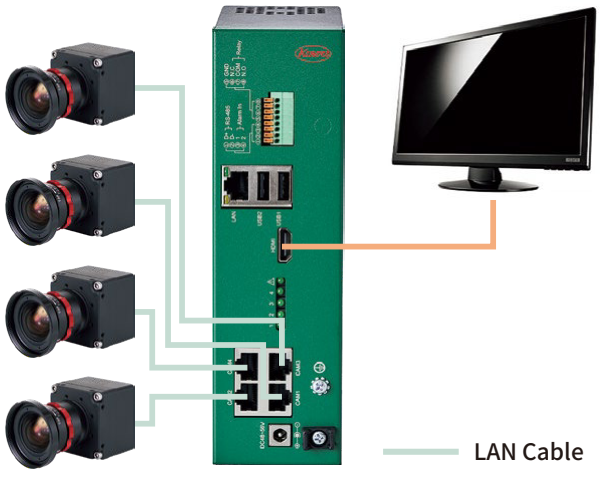
	2MP Harsh Environment Resistant IP Camera
Model	KC200NB1CX
Video Compression Method	H.264/H.264+/MJPEG
Sensor	1/2.8" SONY IMX307
Resolution	2MP 1920 (H) x 1080 (V)
Pixel Size	2.9μm
Shutter	Rolling Shutter
Power Supply	PoE or DC24V
Lens Mount	C-Mount (Can be converted to a CS-Mount by removing the mount adapter.)
Housing Size	45 (W) ×45 (H) ×38 (D) mm(Excluding projections)
Weight	Approx. 145g
Operating Temperature/Humidity	0°C～+50°C /20%～80%RH (No condensation)
Storage Temperature/Humidity	-30°C～+60°C /20%～90%RH (No condensation)
IP Rating	IP67 Equivalent
Vibration Resistance*1	10G
Shock Resistance*2	75G
Recommended Lens Series	JC1MS/JCM-WP/JCM-V/JCM/NCM

NVR (Network Video Recorder)

	Harsh Environment Resistant IP Camera NVR
Model	KC-VR1N
Recording Capacity	1TB (Built-in SSD)
Video Output	HDMI Output
Video Compression Method	MJPEG, H264, H264+
Backup	USB Memory
USB Port	USB2.0*2 port
Recording Method	Continuous recording, alarm recording, event recording, and motion recording.
Camera power supply	PoE compatible (IEEE802.3af)
Alarm Input	IO Input / Output Possible [Lighting Control, DI (Trigger)]
Power Supply	AC Adapter 100V (DC ＋ 48 ～ 56V) *Sold Separately
Housing Size	57 (W) ×195 (H) ×125 (D) mm (Excluding projections)
Weight	Approx. 1.1kg
Operating Temperature/Humidity	0°C～+45°C /20%～80%RH (No condensation)
Storage Temperature/Humidity	-30°C～+60°C /20%～90%RH (No condensation)

When combined with a vision unit featuring a rotation mechanism (KC-RW-1S) and a lens tube, it is suitable for use in environments with airborne water droplets or dust.

Configuration Diagram



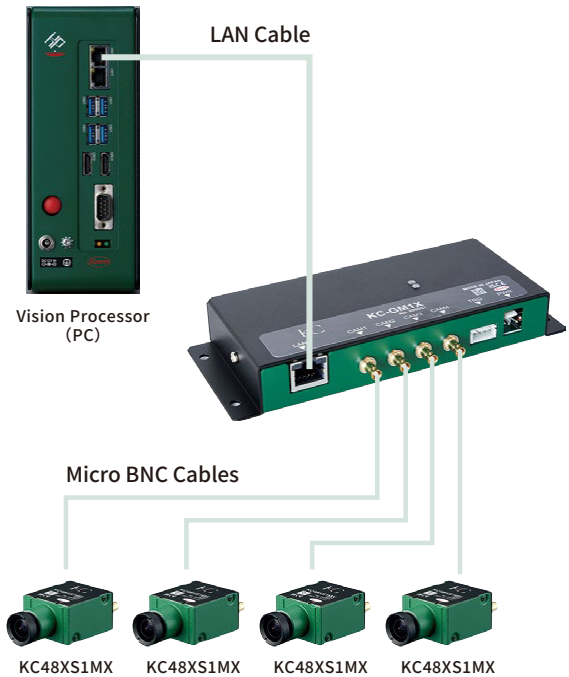
*Power supply via AC adapter is required.

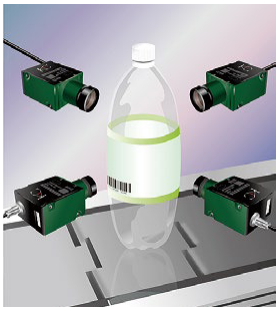
* The product specifications and external appearance may be changed for improvement without prior notice.
*1: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *2: Complies with MIL-STD-810H.

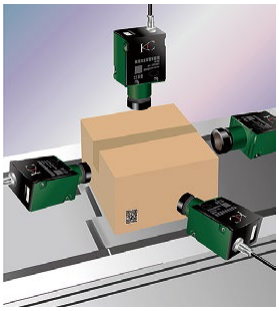
4ch CXP to GigE Multiplexer

When KC48XS1MX CXP cameras (See page 9) are connected, their signals are converted to the GigE interface, and a maximum of four camera images can be output at once.(4 inputs/1 output)

Connection Diagram







Model	KC-GM1X
Power Supply	DC24V
Input Interface	CXP (MicroBNC) × 4 supporting PoCXP
Output Interface	GigE Vision (RJ45 Connector)
Image Output Signal	1Gbps GigE Vision V2.0 Protocol (Depending on the settings, simultaneous imaging with up to four cameras is possible. In the case of simultaneous imaging with multiple cameras, the output is a single horizontal image arranged from the left in ascending order of camera channels.)
Power Requirements	58W or less (when connecting four camera units and four lighting units)
Operating Temperature/Humidity	0°C ~ +45°C / 20% ~ 80%RH (No condensation)
Storage Temperature/Humidity	-30°C ~ +60°C / 20% ~ 90%RH (No condensation)
Housing Size	161 (W) ×22.7 (H) ×64.5 (D) mm (Excluding projections)
Weight	Approx. 170g
Vibration Resistance*1	10G
Shock Resistance*2	75G
Supported Cameras	KC48XS1MX
Supported Lenses	S-Mount Series

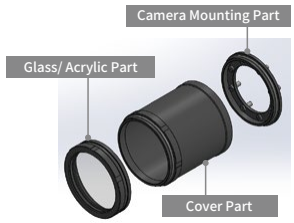
* The product specifications and external appearance may be changed for improvement without prior notice.
*1: Complies with IEC 60068-2-6 (JIS C 60068-2-6). *2: Complies with MIL-STD-810H.

Dustproof / Waterproof / Oil-Resistant Lens Tube

For use with the Harsh Environment Resistant GigE Vision Series

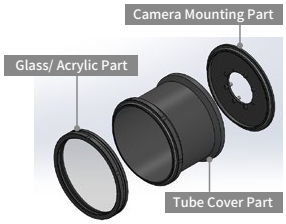
Two specialized covers are available to enhance the durability and functionality of Kowa lenses. When attached to non-water-resistant lenses, these covers elevate the assembly's protection to an IP67 waterproof rating, with the TC1 series achieving an IP69K rating. Beyond water resistance, these covers also bolster oil resistance. Additionally, they accommodate the installation of optical filters within the cover, allowing for further customization and protection.

TC1 Series



Categories	Model	Product Name	Size	Compatible Lens Series
Glass Parts	KC-TC1L1	Waterproof Glass Part	Φ45	
	KC-TC1L2	Waterproof and Oilproof Glass Part	Φ45	
	KC-TC1L3	Waterproof Acrylic Part	Φ45	
Cover Parts	KC-TC1A	Cover Part	Φ45×40mm	JC5MC, JC5MC-WP Series (8mm to 25mm)*1
	KC-TC1B	Cover Part	Φ45×56.5mm	JC1MS Series*2 / JCM-V, JCM-WP Series (8mm to 25mm) / JC5MC Series (35mm to 50mm)
	KC-TC1C	Cover Part	Φ45×70mm	JC1MS Series*2 (35mm, 75mm) / JCM-V, JCM-WP Series (35mm) / JC10M Series*2 (12mm to 25mm)
	KC-TC1D	Cover Part	Φ45×85.5mm	JC1MS Series*2 (50mm) / JCM-V, JCM-WP Series (50mm)
Camera Part	KC-TC1M	Camera Mounting Part	Φ45	
O-ring	KC-TC1P1	Waterproof O-ring	Φ45	
	KC-TC1P2	Waterproof and oilproof O-ring	Φ45	

TC2 Series



Categories	Model	Product Name	Size	Compatible Lens Series
Glass Parts	KC-TC2L1	Waterproof Glass Part	Φ79	
	KC-TC2L2	Waterproof and Oilproof Glass Part	Φ79	
	KC-TC2L3	Waterproof Acrylic Part	Φ79	
Cover Parts	KC-TC2A	Cover Part	Φ79×51mm	LM3NCM-WP, LM5JCM-WP
	KC-TC2B	Cover Part	Φ79×66mm	JC1MS Series (8mm to 35mm) / JC10M Series (12mm to 16mm)
	KC-TC2C	Cover Part	Φ79×72mm	JC10M Series (5mm to 8mm)
	KC-TC2D	Cover Part	Φ79×87mm	JC1MS Series (50mm, 75mm) / JC10M Series (35mm) / XC Series (35mm) / FC24M Series (8mm to 75mm)
	KC-TC2E	Cover Part	Φ79×97mm	JC1MS Series (100mm) / JC10M Series (50mm) / XC Series (12mm, 16mm, 50mm)
	KC-TC2F	Cover Part	Φ79×101mm	XC Series (25mm) / FC24M Series (100mm)
Camera Part	KC-TC2M	Camera mounting part	Φ79	
O-ring	KC-TC2P1	Waterproof O-ring	Φ79	
	KC-TC2P2	Waterproof and Oilproof O-ring	Φ79	

* The product specifications and external appearance may be changed for improvement without prior notice. *1 When using the LM25JC5MC-WP, please apply the spacer KC-TC1S3/S4 with the KC-TA1A. For further details, please contact our support team. *2 The thumb screws attached to the lens should be replaced with set screws for proper installation. * Choose the appropriate cover part length based on the lens to be attached. * Glass and acrylic parts are available in three specifications: waterproof, waterproof & oilproof, and waterproof acrylic. * O-rings and packing options include waterproof and waterproof & oilproof specifications.

Waterproof Ring-shaped Lighting

This ruggedized harsh environment resistant lighting is built to withstand even the most demanding conditions, offering exceptional vibration and impact resistance along with reliable dustproof and waterproof performance.

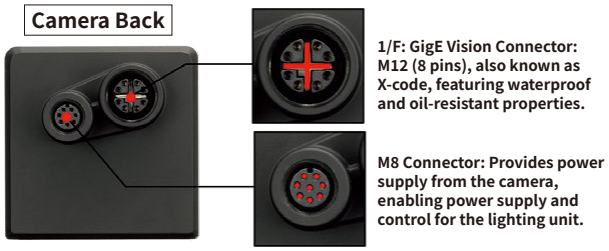
Specifically engineered to support seamless integration of the ruggedized harsh environment resistant GigE Vision series and lighting into a unified configuration.

Power can be supplied directly from the camera to the lighting.

Lighting functions, including constant illumination, strobe, brightness adjustment, and flash interval, can be controlled directly from the camera.

The compact 70mm diameter design allows for use even in tight or confined spaces.

In addition to its IP67 rated waterproof and dustproof performance, the durable housing is engineered to withstand vibration and shock from industrial robots, ensuring reliable operation in demanding environments.



1/F: GigE Vision Connector: M12 (8 pins), also known as X-code, featuring waterproof and oil-resistant properties.

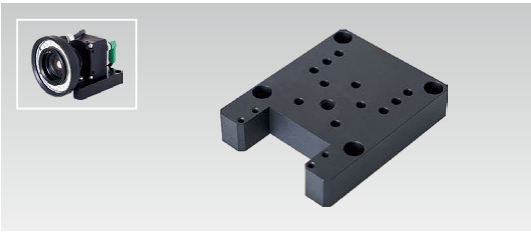
M8 Connector: Provides power supply from the camera, enabling power supply and control for the lighting unit.

Model	KC-RL1W	KC-RL1R
Product Name	Waterproof Ring-shaped Lighting (White)	Waterproof Ring-shaped Lighting (Red)
Input Voltage	24V	
Maximum Power Consumption	7W	
Control Method	PWM Control	
Interface	M8 8pin A-code	
Operating Temperature/ Humidity	0°C ~ +45°C*1 / 35% ~ 85%RH (No condensation)	
Storage Temperature/ Humidity	-20°C ~ +65°C / 20% ~ 85%RH (No condensation)	
Housing Size	Outer diameter 70mm x Depth 32mm (Excluding the cable)	
Weight	Approx. 100g	
Vibration Resistance	10G	
Shock Resistance	75G	
Dustproof and Waterproof	IP67	
Supported Camera Series	Harsh Environment Resistant GigE Vision	
Recommended Lens Series	JC5MC-WP Series JC5MC Series (8 mm, 12 mm, 16 mm, 25 mm) JCM-V, JCM-WP Series (8 mm, 12 mm, 16 mm)	

*1: Ensure proper heat dissipation from the housing. For more details, please contact Kowa. Additionally, ensure the FPGA temperature of adjacent cameras remains below 90°C.

Camera Tripod Adaptor

This adapter is designed to mount a Kowa camera to a 1/4-20 UNC screw, commonly used on tripods and other mounting equipment.



This adapter enables seamless integration of Kowa's waterproof LED lighting with the ruggedized harsh environment resistant GigE Vision series, providing a comprehensive, unified solution. It also includes compatibility with a 1/4-20 UNC screw, allowing easy attachment to tripods or similar equipment for convenient testing and evaluation.

Model	KC-TA1	KC-TA2
Product Name	Camera Tripod Adaptor	
Size	40mm×50mm×6mm	76.5mm×60mm×15mm
Screw Dimensions	1/4-20UNC	1/4-20UNC
Supported Camera Series	GigE Vision / Harsh Environment Resistant GigE Vision / CoaXPress / Harsh Environment Resistant IP Camera	Harsh Environment Resistant GigE Vision (0.48MP, 1.3MP, 5MP, 8MP) series, Harsh Environment Resistant IP camera

PoE Injector

Model	KP-TL-POE150S
Product Name	PoE Injector
Interface	GigE Vision (RJ45)
Classification	GigE Vision / Harsh Environment Resistant GigE Vision / Harsh Environment Resistant IP Camera Accessories
Housing Size	81mm×52mm×24mm
Weight	230g

Various Cables

Interface: GigE Vision

Category	Product Name	
GigE Vision Cables	RJ45-RJ45 Cable 5m	
	RJ45-RJ45 Cable 10m	
	RJ45-RJ45 Cable 20m	
	RJ45-RJ45 Cable 30m	
	RJ45-RJ45 Cable 40m	
	RJ45 to RJ45 Cable 1m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 3m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 5m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 10m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 20m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 30m with Single-end Locking Screws	
	RJ45 to RJ45 Cable 40m with Single-end Locking Screws	

Category	Product Name	
GigE Vision Cables	RJ45 to RJ45 L-type Cable 1m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 3m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 5m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 10m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 20m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 30m with Single-end Locking Screws	
	RJ45 to RJ45 L-type Cable 40m with Single-end Locking Screws	
Harsh Environment Resistant GigE Vision Cables	M12-RJ45 Cable 1m	
	M12-RJ45 Cable 2m	
	M12-RJ45 Cable 5m	
	M12-RJ45 Cable 10m	
	M12-RJ45 Cable 15m	
	M12-RJ45 Cable 20m	
	M8-No-connector Cable 5m	
	M8-No-connector Cable 10m	

Interface: CoaXPress

Category	Product Name	
CoaXPress Cables	Micro BNC to Micro BNC Cable 1m	
	Micro BNC to Micro BNC Cable 3m	
	Micro BNC to Micro BNC Cable 4m	
	Micro BNC to Micro BNC Cable 5m	
	Micro BNC to Micro BNC Cable 10m	

Category	Product Name	
CoaXPress Cables	BNC-MicroBNC Cable 1m	
	BNC-MicroBNC Cable 3m	
	BNC-MicroBNC Cable 5m	
	BNC-MicroBNC Cable 10m	
	BNC-BNC Cable 1m	
	BNC-BNC Cable 2m	
	BNC-BNC Cable 3m	
	BNC-BNC Cable 5m	
	BNC-BNC Cable 10m	

* The product specifications and external appearance may be changed for improvement without prior notice.

Lenses

A comprehensive product lineup built on decades of proven optical expertise, offering solutions from standard lenses to specialized options designed for a wide range of applications, including ultra-wide angle, super compact, and harsh environment resistant models.

Icons

WBMC	Wide-Band Multi-Coatings	EX-WBMC	EX Wide-Band Multi-Coatings	SWIR	SWIR Coatings	I R	Near Infrared (NIR)
LO-DIS	Low Distortion	FLOAT	Floating Mechanism Design	X D	Extra Low Dispersion		
RUGGED	Ruggedized Lens	WATER	Water Resistant	DUST	Dust Resistant		

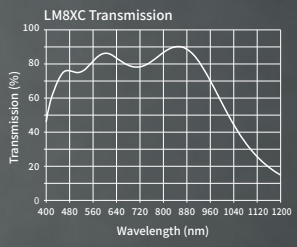
XC Lens Series

4/3″ | 20 MEGAPIXEL+ 3.1 µm

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

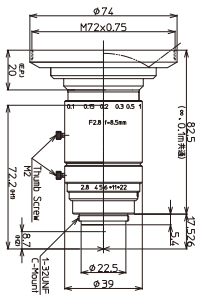
● Compatible ◇ Suitable * Incompatible

- 4/3″ format size (ϕ23mm) and 20MP resolution.
- High-precision aspherical lenses achieve both low distortion and high-resolution, delivering exceptional optical performance.
- The wide-band multi-coatings are engineered to maximize transmission in the near-infrared range.
- An 8.5mm focal length model with a horizontal angle of 93.5° has been added to this series lineup.
- Kowa's Floating Mechanism design is incorporated into all XC series models to effectively minimize aberrations from close object distances to infinity.



LM8XC

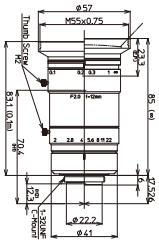
WBMC LO-DIS FLOAT XD



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″	93.5×77.1
	1.1″	78.2×62.7
	1″	72.9×57.9
	2/3″	53.8×41.6
Resolution (Center, Corner)		160lp/mm, 63lp/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

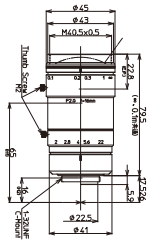
LM12XC

WBMC LO-DIS FLOAT XD



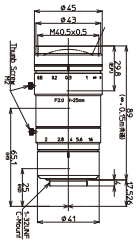
LM16XC

WBMC LO-DIS FLOAT XD



LM25XC

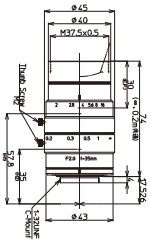
WBMC LO-DIS FLOAT XD



Model		LM12XC	LM16XC	LM25XC
Focal Length (mm)		12	16	25
Image Size (mm)		18.4×13.8 (Φ23)	18.4×13.8 (Φ23)	18.4×13.8 (Φ23)
Iris Range (F-Stop)		F2.0～F22	F2.0～F22	F2.0～F16
Focusing Range (m)		0.1～∞	0.1～∞	0.15～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		181.5 (H) ×135.5 (V)	134.6 (H) ×100.8 (V)	124.8 (H) ×93.0 (V)
Angle of View (Degrees)	4/3″	74.9×59.6	60.6×47.2	40.9×31.1
	1.1″	60.6×47.1	48.0×36.8	31.8×24.0
	1″	55.9×43.1	44.0×33.6	28.9×21.8
	2/3″	39.8×30.2	30.9×23.3	20.1×15.2
Resolution (Center, Corner)		160lp/mm, 80lp/mm	160lp/mm, 80lp/mm	160lp/mm, 80lp/mm
TV Distortion (%)		0.59	0.02	−0.57
Back Focus in Air (mm)		13.0	13.0	24.3
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M55×P0.75	M40.5×P0.5	M40.5×P0.5
Size (mm)		Φ57×85	Φ45×79.5	Φ45×89
Weight (g)		270	250	255
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

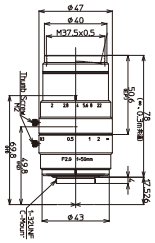
LM35XC

WBMC LO-DIS FLOAT



LM50XC

WBMC LO-DIS FLOAT



Model		LM35XC	LM50XC
Focal Length (mm)		35	50
Image Size (mm)		18.4×13.8 (Φ23)	18.4×13.8 (Φ23)
Iris Range (F-Stop)		F2.0～F16	F2.0～F22
Focusing Range (m)		0.2～∞	0.3～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		100.3 (H) ×75.3 (V)	100.2 (H) ×75.5 (V)
Angle of View (Degrees)	4/3″	29.6×22.4	20.6×15.7
	1.1″	22.8×17.2	16.0×12.0
	1″	20.8×15.6	14.6×11.0
	2/3″	14.3×10.8	10.1×7.6
Resolution (Center, Corner)		160lp/mm, 80lp/mm	160lp/mm, 80lp/mm
TV Distortion (%)		−0.17	0.8
Back Focus in Air (mm)		15.2	21.6
Mount		C-mount	C-mount
Filter Thread (mm)		M37.5×P0.5	M37.5×P0.5
Size (mm)		Φ45×74	Φ47×78
Weight (g)		210	235
Temperature Range		−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC1200GC4 P.8 KC1200GC3 / KC1600GC3 / KC2000GC3 / KC2400GC3 P.13

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

FC24M Lens Series

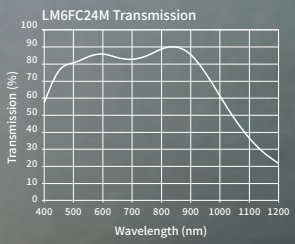
1.1″ | 24 MEGAPIXEL 2.5 µm

Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM6FC24M	–	–	●	●	●	●	●	●	●
LM8FC24M	–	–	●	●	●	●	●	●	●
LM12FC24M	–	◇	●	●	●	●	●	●	●
LM16FC24M	–	◇	●	●	●	●	●	●	●
LM25FC24M	–	◇	●	●	●	●	●	●	●
LM35FC24M	–	◇	●	●	●	●	●	●	●
LM50FC24M	–	◇	●	●	●	●	●	●	●
LM75FC24M	–	◇	●	●	●	●	●	●	●
LM100FC24M	–	◇	●	●	●	●	●	●	●

● Compatible ◇ Suitable * Incompatible

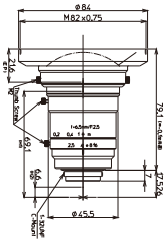
The 75mm and 100mm models support macro shooting at magnifications of up to 0.75x. When paired with a close-up ring, they deliver high-resolution imaging at 1x.

- 2.5µm lenses offering high detail and high-resolution performance.
- The wide-band multi-coatings are specifically engineered to minimize ghosting and flaring while optimizing transmission in the near-infrared range.
- Kowa's Floating Mechanism design is incorporated into all FC24M series models to effectively minimize aberrations from close object distances to infinity.
- 1.1″ format and 24MP resolution.



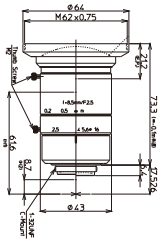
LM6FC24M

WBMC LO-DIS FLOAT XD



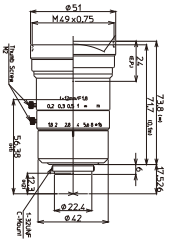
LM8FC24M

WBMC LO-DIS FLOAT XD



LM12FC24M

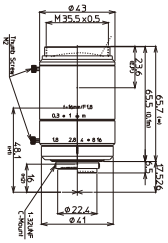
WBMC LO-DIS FLOAT XD



Model		LM6FC24M	LM8FC24M	LM12FC24M
Focal Length (mm)		6.5	8.5	12
Image Size (mm)		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	F2.5～F16	F1.8～F16
Focusing Range (m)		0.1～∞	0.1～∞	0.1～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		256 (H) ×190 (V)	184 (H) ×138 (V)	135 (H) ×101 (V)
Angle of View (Degrees)	1.1″	95.7×78.7	79.2×63.8	60.0×46.9
	1″	89.9×73.0	73.9×58.8	55.3×42.9
	2/3″	68.1×53.5	54.5×42.1	39.6×30.1
Resolution (Center, Corner)		200lp/mm, 100lp/mm	200lp/mm, 100lp/mm	200lp/mm, 100lp/mm
TV Distortion (%)		−1.51	0.55	0.26
Back Focus in Air (mm)		10.9	12.9	14.5
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M82×P0.75	M62×P0.75	M49×P0.75
Size (mm)		Φ84×79.1	Φ64×73.3	ϕ51×71.7 (Min.) / ϕ51×73.8 (Max.)
Weight (g)		300	230	260
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

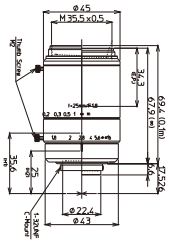
LM16FC24M

WBMC LO-DIS FLOAT XD



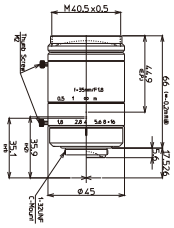
LM25FC24M

WBMC LO-DIS FLOAT XD



LM35FC24M

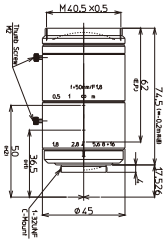
WBMC LO-DIS FLOAT



Model		LM16FC24M	LM25FC24M	LM35FC24M
Focal Length (mm)		16	25	35
Image Size (mm)		14.1×10.6 (Φ17.6)	14.1×10.6 (Φ17.6)	14.1×10.6 (Φ17.6)
Iris Range (F-Stop)		F1.8～F16	F1.8～F16	F1.8～F16
Focusing Range (m)		0.1～∞	0.1～∞	0.2～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		102 (H) ×77 (V)	64 (H) ×48 (V)	84 (H) ×63 (V)
Angle of View (Degrees)	1.1″	48.0×36.7	31.5×23.9	22.1×16.7
	1″	43.6×33.4	28.7×21.7	20.2×15.2
	2/3″	30.8×23.3	20.0×15.0	14.0×10.5
Resolution (Center, Corner)		200lp/mm, 100lp/mm	200lp/mm, 100lp/mm	200lp/mm, 100lp/mm
TV Distortion (%)		−0.4	−0.3	0.01
Back Focus in Air (mm)		11.9	13.3	15.5
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M35.5×P0.5	M35.5×P0.5	M40.5×P0.5
Size (mm)		ϕ43×65.5 (Min.) / ϕ43×65.7 (Max.)	Φ45×67.9 (Min.) / Φ45×69.4 (Max.)	Φ45×66
Weight (g)		200	220	205
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

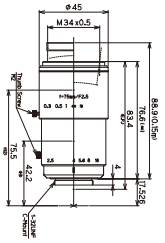
LM50FC24M

WBMC LO-DIS FLOAT XD



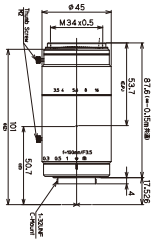
LM75FC24M

WBMC LO-DIS FLOAT XD



LM100FC24M

WBMC LO-DIS FLOAT XD



Model		LM50FC24M	LM75FC24M	LM100FC24M
Focal Length (mm)		50	75	100
Image Size (mm)		14.1×10.6 (Φ17.6)	14.1×10.6 (Φ17.6)	14.1×10.6 (Φ17.6)
Iris Range (F-Stop)		F1.8～F16	F2.5～F16	F3.5～F16
Focusing Range (m)		0.2～∞	0.15～∞	0.15～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		59 (H) ×44 (V)	21 (H) ×16 (V)	19 (H) ×14 (V)
Angle of View (Degrees)	1.1″	16.1×12.1	10.7×8.0	7.9×6.0
	1″	14.6×11.0	9.7×7.3	7.2×5.4
	2/3″	10.1×7.6	6.7×5.0	5.0×3.7
Resolution (Center, Corner)		200lp/mm, 100lp/mm	200lp/mm, 100lp/mm	200lp/mm, 100lp/mm
TV Distortion (%)		−0.03	0.16	0.26
Back Focus in Air (mm)		14.8	20.8	21.1
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M40.5×P0.5	M34.0×P0.5	M34.0×P0.5
Size (mm)		Φ45×74.5	ϕ45×76.6 (Min.) / ϕ45×88.9 (Max.)	Φ45×87.6
Weight (g)		205	225	260
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC1200GC4 P.8 KC1200GC3 / KC1600GC3 / KC2000GC3 / KC2400GC3 P.13

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HC Lens Series

1″ | 1 MEGAPIXEL+

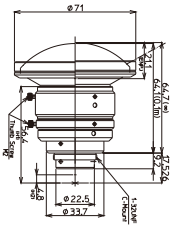
Model	Format Size (Inch)						
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8
LM4HC	–	–	–	●	●	●	●
LM6HC	–	–	–	●	●	●	●
LM8HC	–	–	–	●	●	●	●
LM12HC	–	–	◇	●	●	●	●
LM16HC	–	–	◇	●	●	●	●
LM25HC	–	◇	◇	●	●	●	●
LM35HC	–	◇	◇	●	●	●	●
LM50HC	–	–	◇	●	●	●	●
LM75HC	–	–	◇	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- An advanced optical design is utilized to deliver exceptional brightness and high performance.
- Corner light intensity has been significantly enhanced compared to lenses in the JC Series and similar models.
- A comprehensive range of focal lengths is offered to support the shift toward high-resolution imaging in machine vision applications.
- Supports image processing system optimization.
- Equipped with standard thumbscrews as the locking mechanism and precise numbered scales for improved focus and iris control.

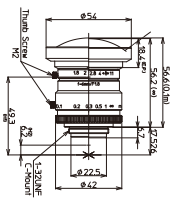
LM4HC

LO-DIS FLOAT XD



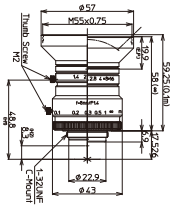
LM6HC

LO-DIS



LM8HC

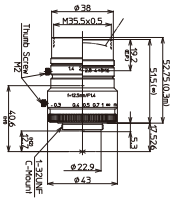
LO-DIS



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
	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″	112.2×95.4	96.8×79.4	79.4×63.0
	2/3″	90.0×72.2	74.1×58.0	58.3×44.7
	1/1.8″	77.4×60.8	62.6×48.2	48.5×36.9
Resolution (Center, Corner)		100lp/mm, 50lp/mm	100lp/mm, 80lp/mm	100lp/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)		ϕ71×64.1 (Min.) / ϕ71×64.7 (Max.)	ϕ54×56.2 (Min.) / ϕ54×56.6 (Max.)	ϕ57×58 (Min.) / ϕ57×59.25 (Max.)
Weight (g)		360	215	205
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

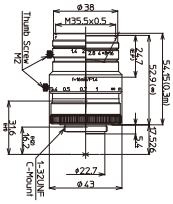
LM12HC

LO-DIS



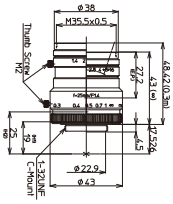
LM16HC

LO-DIS



LM25HC

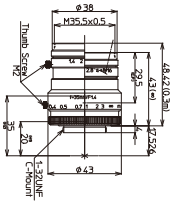
LO-DIS



Model		LM12HC	LM16HC	LM25HC
Focal Length (mm)		12.5	16	25
Image Size (mm)		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
Focusing Range (m)		0.3～∞	0.3～∞	0.3～∞
Control	Iris	Manual	Manual	Manual
	Focus	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)
Angle of View (Degrees)	1″	55.6×42.5	44.3×33.6	29.3×22.0
	2/3″	39.1×29.5	30.8×23.2	20.2×15.1
	1/1.8″	32.1×24.2	25.3×19.0	16.5×12.4
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−1.58	−1.0	−1.0
Back Focus in Air (mm)		12.6	12.6	16.5
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M35.5×P0.5	M35.5×P0.5	M35.5×P0.5
Size (mm)		ϕ43×51.5 (Min.) / ϕ43×52.75 (Max.)	ϕ43×52.9 (Min.) / ϕ43×54.15 (Max.)	ϕ43×43 (Min.) / ϕ43×48.42 (Max.)
Weight (g)		160	150	135
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

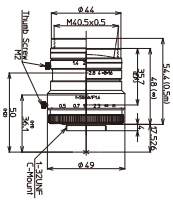
LM35HC

LO-DIS



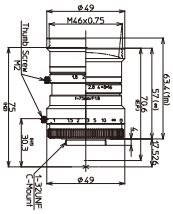
LM50HC

LO-DIS



LM75HC

LO-DIS



Model		LM35HC	LM50HC	LM75HC
Focal Length (mm)		35	50	75
Image Size (mm)		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	F1.8～F16
Focusing Range (m)		0.3～∞	0.5～∞	1.0～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		110.1 (H) ×82.0 (V)	121.8 (H) ×91.3 (V)	165.5 (H) ×123.9 (V)
Angle of View (Degrees)	1″	20.9×15.8	14.5×10.8	9.7×7.3
	2/3″	14.4×10.8	10.0×7.5	6.7×5.0
	1/1.8″	11.8×8.8	8.2×6.2	5.5×4.1
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.5	0.05	−0.2
Back Focus in Air (mm)		16.8	14.8	14.5
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M35.5×P0.5	M40.5×P0.5	M46×P0.75
Size (mm)		ϕ43×43 (Min.) / ϕ43×48.42 (Max.)	ϕ49×48 (Min.) / ϕ49×54.4 (Max.)	ϕ49×57 (Min.) / ϕ49×63.4 (Max.)
Weight (g)		135	210	195
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

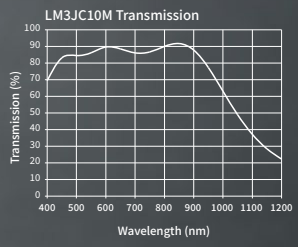
JC10M Lens Series

2/3" | 10 MEGAPIXEL 2.4 µm

Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3JC10M	–	–	–	–	◇	●	●	●	●
LM5JC10M	–	–	–	–	–	●	●	●	●
LM8JC10M	–	–	–	–	–	●	●	●	●
LM12JC10M	–	–	–	–	–	●	●	●	●
LM16JC10M	–	–	–	–	◇	●	●	●	●
LM25JC10M	–	–	–	–	◇	●	●	●	●
LM35JC10M	–	–	◇	◇	◇	●	●	●	●
LM50JC10M	–	–	–	–	◇	●	●	●	●

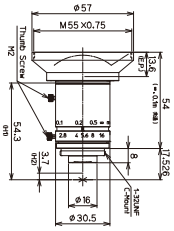
● Compatible ◇ Suitable * Incompatible

- To achieve high contrast and ultra-high resolution at 2.4µm, multiple specialized optical lens elements are employed to ensure exceptional image quality.
- Kowa's Floating Mechanism design is incorporated into all JC10M series models to effectively minimize aberrations from close object distances to infinity.
- High precision aspherical lenses provide both low distortion and superior resolution.
- The wide-band multi-coatings are specifically engineered to minimize ghosting and flaring while optimizing transmission in the near-infrared range.



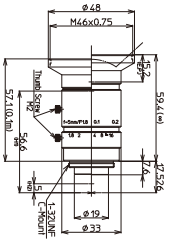
LM3JC10M

WBMC LO-DIS FLOAT XD



LM5JC10M

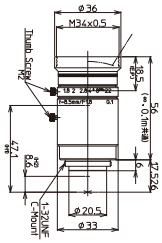
WBMC LO-DIS FLOAT XD



Model		LM3JC10M	LM5JC10M
Focal Length (mm)		3.7	5
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.8～F16	F1.8～F16
Focusing Range (m)		0.1～∞	0.1～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		278.7 (H) ×207.3 (V)	197.0 (H) ×147.0 (V)
Angle of View (Degrees)	2/3"	100.2×83.7	82.2×66.5
	1/1.8"	88.7×72.4	71.1×56.5
	1/2"	82.0×66.1	64.9×51.1
Resolution (Center, Corner)		200lp/mm, 125lp/mm	200lp/mm, 140lp/mm
TV Distortion (%)		−0.09	−0.33
Back Focus in Air (mm)		9.9	10.3
Mount		C-mount	C-mount
Filter Thread (mm)		M55×P0.75	M46×P0.75
Size (mm)		Φ57×54	ϕ48×57.01 (Min.) / ϕ48×59.4 (Max.)
Weight (g)		120	120
Temperature Range		−10°C～+50°C	−10°C～+50°C

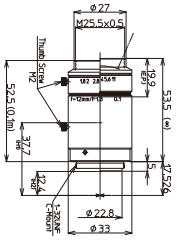
LM8JC10M

WBMC LO-DIS FLOAT XD



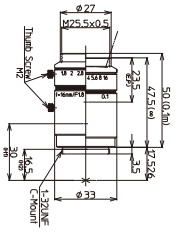
LM12JC10M

WBMC LO-DIS FLOAT XD



LM16JC10M

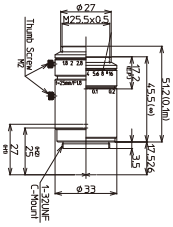
WBMC LO-DIS FLOAT



Model		LM8JC10M	LM12JC10M	LM16JC10M
Focal Length (mm)		8.5	12	16
Image Size (mm)		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
Focusing Range (m)		0.1～∞	0.1～∞	0.1～∞
Control	Iris	Manual	Manual	Manual
	Focus	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)
Angle of View (Degrees)	2/3"	54.0×41.9	39.1×29.8	30.0×22.7
	1/1.8"	45.3×34.8	32.4×24.6	24.7×18.6
	1/2"	40.8×31.2	28.9×21.9	22.0×16.6
Resolution (Center, Corner)		200lp/mm, 140lp/mm	200lp/mm, 140lp/mm	200lp/mm, 140lp/mm
TV Distortion (%)		0.31	−0.12	−0.2
Back Focus in Air (mm)		12.1	13.9	14.6
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M34×P0.5	M25.5×P0.5	M25.5×P0.5
Size (mm)		Φ36×56	ϕ33×52.5 (Min.) / ϕ33×53.5 (Max.)	ϕ33×47.5 (Min.) / ϕ33×50 (Max.)
Weight (g)		115	105	90
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

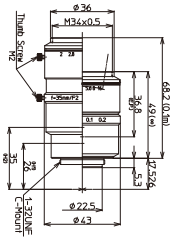
LM25JC10M

WBMC LO-DIS FLOAT



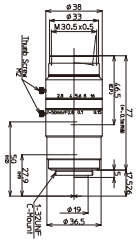
LM35JC10M

WBMC LO-DIS FLOAT



LM50JC10M

WBMC LO-DIS FLOAT XD



Model		LM25JC10M	LM35JC10M	LM50JC10M
Focal Length (mm)		25	35	50
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.8～F16	F2.0～F16	F2.8～F16
Focusing Range (m)		0.1～∞	0.1～∞	0.1～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		36.7 (H) ×27.5 (V)	23.4 (H) ×17.6 (V)	19.1 (H) ×14.3 (V)
Angle of View (Degrees)	2/3"	20.0×15.1	14.3×10.8	10.1×7.6
	1/1.8"	16.4×12.3	11.7×8.8	8.2×6.1
	1/2"	14.6×11.0	10.4×7.8	7.3×5.5
Resolution (Center, Corner)		200lp/mm, 140lp/mm	200lp/mm, 140lp/mm	200lp/mm, 140lp/mm
TV Distortion (%)		−0.09	0.05	−0.02
Back Focus in Air (mm)		17.9	14.2	12.8
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M25.5×P0.5	M34×P0.5	M30.5×P0.5
Size (mm)		ϕ33×45.5 (Min.) / ϕ33×51.2 (Max.)	ϕ43×49 (Min.) / ϕ43×68.2 (Max.)	Φ38×77
Weight (g)		95	160	170
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC800GC4 P.8 KC800GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC5M2 Lens Series

2/3″ | 5 MEGAPIXEL 3.45 µm

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

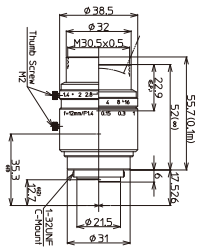
● Compatible ◇ Suitable * Incompatible

- Compared to our previous models, these lenses feature a more compact, lightweight design, enabling up to 60% greater light intake at a fully open aperture (F-Stop of 1.4)*.
- Kowa's Floating Mechanism design is incorporated into all JC5M2 series models to effectively minimize aberrations from close object distances to infinity.

* In the case of the LM12JC5M2 and LM16JC5M2 models.

LM12JC5M2

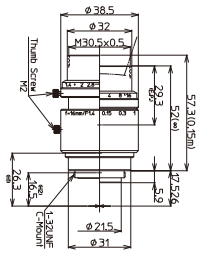
LO-DIS FLOAT



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
	Focus	Manual
Shooting Range at M.O.D. (mm)		81.4 (H) ×60.9 (V)
Angle of View (Degrees)	2/3″	38.4×29.2
	1/1.8″	31.7×24.0
	1/2″	28.4×21.4
Resolution (Center, Corner)		160lp/mm, 100lp/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 (Min.) / ϕ38.5×55.7 (Max.)
Weight (g)		130
Temperature Range		−10°C～+50°C

LM16JC5M2

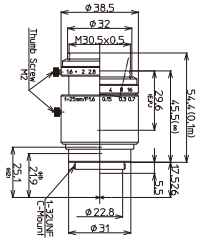
LO-DIS FLOAT



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
	Focus	Manual
Shooting Range at M.O.D. (mm)		64.6 (H) ×48.4 (V)
Angle of View (Degrees)	2/3"	29.9×22.7
	1/1.8"	24.7×18.6
	1/2"	22.0×16.6
Resolution (Center, Corner)		160lp/mm, 100lp/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 (Min.) / ϕ38.5×57.3 (Max.)
Weight (g)		125
Temperature Range		−10°C～+50°C

LM25JC5M2

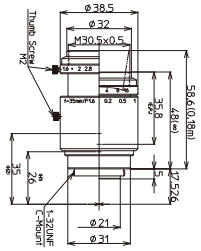
LO-DIS FLOAT



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
	Focus	Manual
Shooting Range at M.O.D. (mm)		35.1 (H) ×26.3 (V)
Angle of View (Degrees)	2/3"	19.9×15.0
	1/1.8"	16.4×12.3
	1/2"	14.6×10.9
Resolution (Center, Corner)		160lp/mm, 100lp/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 (Min.) / ϕ38.5×54.4 (Max.)
Weight (g)		115
Temperature Range		−10°C～+50°C

LM35JC5M2

LO-DIS FLOAT



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
	Focus	Manual
Shooting Range at M.O.D. (mm)		42.1 (H) ×31.6 (V)
Angle of View (Degrees)	2/3"	14.3×10.8
	1/1.8"	11.7×8.8
	1/2"	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 (Min.) / ϕ38.5×58.6 (Max.)
Weight (g)		120
Temperature Range		−10°C～+50°C

Supported Camera Series KC300GC4 / KC500GC4 P.8 KC300XC3 / KC500XC3 P.10 KC300GC3 / KC500GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC5MC Lens Series

2/3" | ULTRA COMPACT 5 MEGAPIXEL 3.45 µm

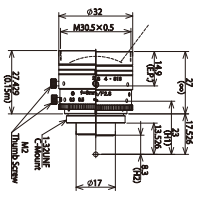
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8JC5MC	–	–	–	–	–	●	●	●	●
LM12JC5MC	–	–	–	–	–	●	●	●	●
LM16JC5MC	–	–	–	–	–	●	●	●	●
LM25JC5MC	–	–	–	–	–	●	●	●	●
LM35JC5MC	–	–	–	◇	◇	●	●	●	●
LM50JC5MC	–	–	–	–	◇	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Introducing the industry's smallest 2/3" 5MP lens series in the machine vision market, including the wide-angle 8mm LM8JC5M2 model with an ultra-compact total length of just 27.5mm.
- The physical size of these lenses has been reduced by approximately 50% compared to previous models in the JC5M2 series.
- 2/3" format size with 5MP resolution.
- Featuring a highly compact form factor and lightweight design.
- A click-stop iris adjustment mechanism is implemented.
- Shock and vibration resistant design.

LM8JC5MC

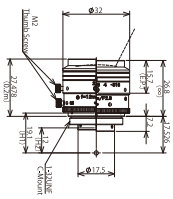
LO-DIS RUGGED



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
	Focus	Manual
Shooting Range at M.O.D. (mm)		178.0 (H) ×132.0 (V)
Angle of View (Degrees)	2/3"	57.6×44.4
	1/1.8"	48.1×36.7
	1/2"	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)		M30.5xP0.5
Size (mm)		ϕ32×27 (Min.) / ϕ32×27.429 (Max.)
Weight (g)		55
Temperature Range		−10°C~+50°C

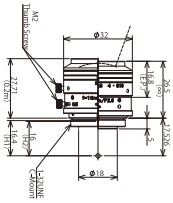
LM12JC5MC

LO-DIS RUGGED



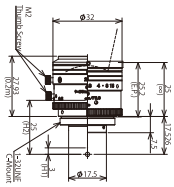
LM16JC5MC

LO-DIS RUGGED



LM25JC5MC

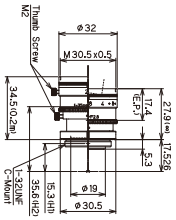
LO-DIS RUGGED



Model		LM12JC5MC	LM16JC5MC	LM25JC5MC
Focal Length (mm)		12	16	25
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	F2.8～F16	F2.8～F16
Focusing Range (m)		0.2～∞	0.2～∞	0.2～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		159.0 (H) ×118.0 (V)	117.0 (H) ×88.0 (V)	75.0 (H) ×56.0 (V)
Angle of View (Degrees)	2/3"	41.0×31.2	30.9×23.4	20.0×15.0
	1/1.8"	33.9×25.6	25.5×19.2	16.4×12.4
	1/2"	30.3×22.8	22.7×17.2	14.6×11.0
Resolution (Center, Corner)		160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm
TV Distortion (%)		−0.43	−0.09	0.06
Back Focus in Air (mm)		12.6	14.7	11.7
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		*1	*1	*1
Size (mm)		ϕ32×26.9 (Min.) / ϕ32×27.478 (Max.)	ϕ32×26.5 (Min.) / ϕ32×27.71 (Max.)	ϕ32×25 (Min.) / ϕ32×27.93 (Max.)
Weight (g)		55	55	55
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

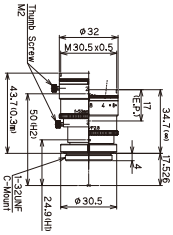
LM35JC5MC

LO-DIS RUGGED



LM50JC5MC

LO-DIS XD RUGGED



Model		LM35JC5MC	LM50JC5MC
Focal Length (mm)		35	50
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.8～F16	F2.8～F16
Focusing Range (m)		0.2～∞	0.3～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		48.0 (H) ×36.0 (V)	49.0 (H) ×37.0 (V)
Angle of View (Degrees)	2/3"	14.0×10.6	10.0×7.5
	1/1.8"	11.5×8.7	8.2×6.2
	1/2"	10.3×7.7	7.3×5.5
Resolution (Center, Corner)		160lp/mm, 125lp/mm	160lp/mm, 125lp/mm
TV Distortion (%)		−0.02	−0.01
Back Focus in Air (mm)		13.3	14.9
Mount		C-mount	C-mount
Filter Thread (mm)		M30.5×P0.5	M30.5×P0.5
Size (mm)		ϕ32×27.9 (Min.) / ϕ32×34.5 (Max.)	ϕ32×34.7 (Min.) / ϕ32×43.7 (Max.)
Weight (g)		50	60
Temperature Range		−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC300GC4 / KC500GC4 P.8 KC300XC3 / KC500XC3 P.10 KC300GC3 / KC500GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.
*1 A filter (M30.5 x P0.5) can be mounted to the front of the lens using a separately sold filter adapter (p.74).

NCM Lens Series

1/1.8″ | 2 MEGAPIXEL　　1/2″ | 2 MEGAPIXEL

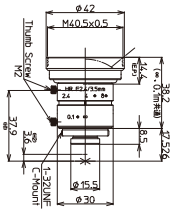
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3NC1M	–	–	–	–	–	–	●	●	●
LM6NCM	–	–	–	–	–	–	◇	●	●

● Compatible ◇ Suitable * Incompatible

- Featuring ultra-wide angles of view at small focal lengths with minimal distortion.
- Engineered to achieve 2MP resolution.
- A 3.5mm focal length model with an 89.0° horizontal angle of view has been added to the lineup.
- High precision aspherical lenses provide both low distortion and high resolution. (LM3NC1M)
- A compact optical design is employed to maintain high performance and exceptional quality.
- An addition of the corner light amount is realized.
  (Compared with JC Series)

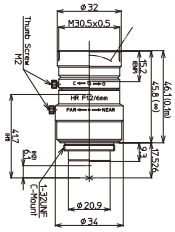
LM3NC1M

LO-DIS



LM6NCM

LO-DIS



Model		LM3NC1M	LM6NCM
Focal Length (mm)		3.5	6
Image Size (mm)		7.2×5.4 (Φ9)	6.4×4.8 (Φ8)
Iris Range (F-Stop)		F2.4～F14	F1.2～Close
Focusing Range (m)		0.1～∞	0.1～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		226.3 (H) ×171.4 (V)	122.2 (H) ×91.0 (V)
Angle of View (Degrees)	1/1.8″	89.0×73.8	–
	1/2″	82.4×66.9	56.2×43.5
	1/3″	66.9×52.7	43.5×33.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		0.4	−0.2
Back Focus in Air (mm)		9.7	8.2
Mount		C-mount	C-mount
Filter Thread (mm)		M40.5×P0.5	M30.5×P0.5
Size (mm)		Φ42×38.2	Φ34×45.8 (Min.) / Φ34×46.1 (Max.)
Weight (g)		85	100
Temperature Range		−10°C～+50°C	−10°C～+50°C

Supported Camera Series　KC48GC4 / KC130GC4 / KC300GC4 P.7-8　KC130XC2 / KC300XC3 P.10　KC48GC3 / KC130GC3 / KC300GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC1M Lens

2/3″ | 2 MEGAPIXEL

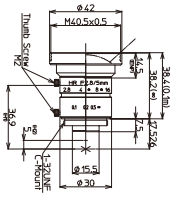
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JC1M	–	–	–	–	–	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Delivers an ultra-wide angle and small focal length with minimal distortion, making it ideal for precise data capture in image processing applications.
- Capable of achieving 2MP resolution.
- Meticulously crafted aspheric lenses are engineered to provide both low distortion and high resolution.
- A compact optical design is adopted to ensure superior performance and exceptional quality.

LM5JC1M

LO-DIS XD



Model		LM5JC1M
Focal Length (mm)		5
Image Size (mm)		8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.8∼F16
Focusing Range (m)		0.1∼∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		200.8 (H) ×150.8 (V)
Angle of View (Degrees)	2/3″	82.4×66.9
	1/1.8″	71.7×57.1
	1/2″	65.2×51.3
Resolution (Center, Corner)		100lp/mm, 80lp/mm
TV Distortion (%)		0.5
Back Focus in Air (mm)		10.0
Mount		C-mount
Filter Thread (mm)		M40.5×P0.5
Size (mm)		φ42×38.2 (Min.) / φ42×38.4 (Max.)
Weight (g)		84
Temperature Range		−10°C∼+50°C

Supported Camera Series KC48GC4 / KC130GC4 / KC300GC4 P.7-8 KC130XC2 / KC300XC3 P.10 KC48GC3 / KC130GC3 / KC300GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC1MS Lens Series

2/3" | 2 MEGAPIXEL

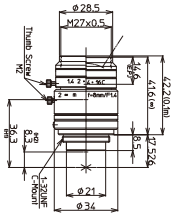
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8JC1MS	–	–	–	–	–	●	●	●	●
LM12JC1MS	–	–	–	–	–	●	●	●	●
LM16JC1MS	–	–	–	–	–	●	●	●	●
LM25JC1MS	–	–	–	–	–	●	●	●	●
LM35JC1MS	–	–	–	◇	◇	●	●	●	●
LM50JC1MS	–	◇	◇	◇	◇	●	●	●	●
LM75JC1MS	–	–	◇	◇	◇	●	●	●	●
LM100JC1MS	–	–	–	◇	◇	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- 2/3" format size (ϕ11mm) with 2MP resolution.
- Engineered for low distortion, making it ideal for accurate data capture in image processing.
- Incorporates an optical design optimized for exceptional brightness and high performance.
- Kowa's Floating Mechanism system is partially integrated into the optical design to support a broad range of applications.

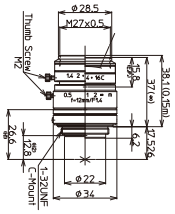
LM8JC1MS

LO-DIS XD



LM12JC1MS

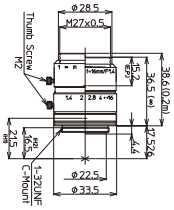
LO-DIS XD



Model		LM8JC1MS	LM12JC1MS
Focal Length (mm)		8	12
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4～Close	F1.4～Close
Focusing Range (m)		0.1～∞	0.15～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		120.3 (H) ×90.0 (V)	110.0 (H) ×82.5 (V)
Angle of View (Degrees)	2/3"	56.5×43.9	38.3×29.1
	1/1.8"	47.4×36.3	31.7×24.0
	1/2"	42.6×32.5	28.3×21.4
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.6	−0.07
Back Focus in Air (mm)		9.74	11.7
Mount		C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5
Size (mm)		ϕ34×41.6 (Min.) / ϕ34×42.2 (Max.)	ϕ34×37 (Min.) / ϕ34×38.1 (Max.)
Weight (g)		90	85
Temperature Range		−10°C～+50°C	−10°C～+50°C

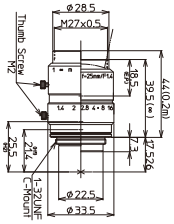
LM16JC1MS

LO-DIS FLOAT



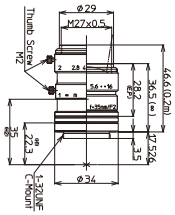
LM25JC1MS

LO-DIS FLOAT



LM35JC1MS

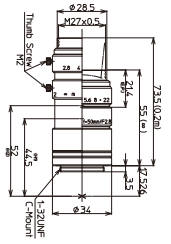
LO-DIS FLOAT



Model		LM16JC1MS	LM25JC1MS	LM35JC1MS
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～F16
Focusing Range (m)		0.2～∞	0.2～∞	0.2～∞
Control	Iris	Manual	Manual	Manual
	Focus	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)
Angle of View (Degrees)	2/3"	30.0×22.7	19.6×14.8	14.4×10.8
	1/1.8"	24.7×18.6	16.1×12.1	11.8×8.8
	1/2"	21.8×16.4	14.0×10.5	10.5×7.9
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.05	−0.04	−0.2
Back Focus in Air (mm)		13.1	11.7	20.1
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		Φ33.5×36.5 (Min.) / Φ33.5×38.6 (Max.)	ϕ33.5×39.5 (Min.) / ϕ33.5×44 (Max.)	ϕ34×36.5 (Min.) / ϕ34×46.6 (Max.)
Weight (g)		85	90	70
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

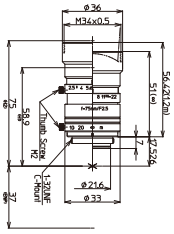
LM50JC1MS

LO-DIS FLOAT



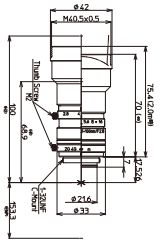
LM75JC1MS

LO-DIS



LM100JC1MS

LO-DIS



Model		LM50JC1MS	LM75JC1MS	LM100JC1MS
Focal Length (mm)		50	75	100
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.8～F22	F2.5～F22	F2.8～F32
Focusing Range (m)		0.2～∞	1.2～∞	2.0～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		29.3 (H) ×21.9 (V)	132.6 (H) ×99.6 (V)	168.8 (H) ×126.6 (V)
Angle of View (Degrees)	2/3"	9.6×7.2	6.7×5.0	5.0×3.8
	1/1.8"	7.9×5.9	5.5×4.1	4.1×3.1
	1/2"	7.0×5.2	4.9×3.7	3.7×2.8
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.03	−0.1	−0.05
Back Focus in Air (mm)		35.5	18.0	19.0
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M34×P0.5	M40.5×P0.5
Size (mm)		ϕ34×55 (Min.) / ϕ34×73.5 (Max.)	ϕ36×51 (Min.) / ϕ36×56.42 (Max.)	ϕ42×70 (Min.) / ϕ42×75.4 (Max.)
Weight (g)		95	105	145
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC48GC4 / KC130GC4 / KC300GC4 P.7-8 KC130XC2 / KC300XC3 P.10 KC48GC3 / KC130GC3 / KC300GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC Lens Series

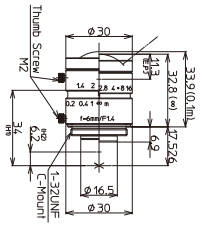
2/3″ | VGA+

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

● Compatible ◇ Suitable * Incompatible

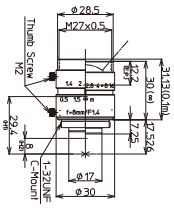
- Provides excellent cost-performance value.
- Compatible with format sizes up to 2/3″.
- Delivers bright images with a low F-Stop for enhanced clarity.

LM6JC



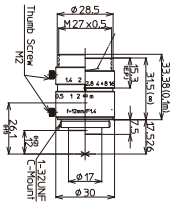
Model		LM6JC
Focal Length (mm)		6
Image Size (mm)		8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.1～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		190.6 (H) ×130.3 (V)
Angle of View (Degrees)	2/3″	81.9×61.2
	1/1.8″	66.9×50.1
	1/2″	59.4×44.5
Resolution (Center, Corner)		100lp/mm, 40lp/mm
TV Distortion (%)		−10.7
Back Focus in Air (mm)		11.3
Mount		C-mount
Filter Thread (mm)		–
Size (mm)		ϕ30×32.8 (Min.) / ϕ30×33.9 (Max.)
Weight (g)		65
Temperature Range		−10°C～+50°C

LM8JC



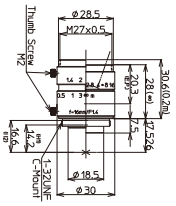
LM12JC

LO-DIS



LM16JC

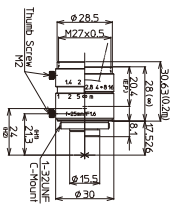
LO-DIS



Model		LM8JC	LM12JC	LM16JC
Focal Length (mm)		8	12	16
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	F1.4～F16
Focusing Range (m)		0.1～∞	0.1～∞	0.2～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		136.0 (H) ×96.1 (V)	81.1 (H) ×59.4 (V)	111.8 (H) ×82.6 (V)
Angle of View (Degrees)	2/3"	64.2×47.7	42.5×31.7	30.5×22.8
	1/1.8"	52.4×39.1	34.6×25.9	23.8×18.7
	1/2"	46.2×34.6	30.7×23.0	22.2×16.6
Resolution (Center, Corner)		100lp/mm, 40lp/mm	100lp/mm, 40lp/mm	100lp/mm, 40lp/mm
TV Distortion (%)		−6.2	−2.5	−1.5
Back Focus in Air (mm)		11.3	11.1	12.1
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		ϕ30×30 (Min.) / ϕ30×31.13 (Max.)	ϕ30×31.5 (Min.) / ϕ30×33.38 (Max.)	ϕ30×28 (Min.) / ϕ30×30.6 (Max.)
Weight (g)		60	60	55
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

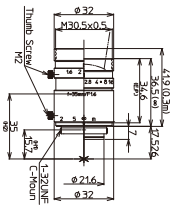
LM25JC

LO-DIS



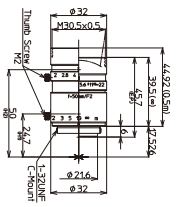
LM35JC

LO-DIS



LM50JC

LO-DIS



Model		LM25JC	LM35JC	LM50JC
Focal Length (mm)		25	35	50
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.6～F16	F1.6～F16	F2.0～F22
Focusing Range (m)		0.2～∞	0.3～∞	0.5～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		72.1 (H) ×53.7 (V)	76.0 (H) ×56.9 (V)	85.0 (H) ×63.6 (V)
Angle of View (Degrees)	2/3"	21.0×15.7	14.4×10.8	10.1×7.6
	1/1.8"	17.2×12.9	11.8×8.8	8.2×6.2
	1/2"	15.3×11.4	10.5×7.9	7.3×5.5
Resolution (Center, Corner)		100lp/mm, 40lp/mm	100lp/mm, 40lp/mm	100lp/mm, 40lp/mm
TV Distortion (%)		−0.6	−0.2	−0.1
Back Focus in Air (mm)		10.3	14.9	17.2
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M30.5×P0.5	M30.5×P0.5
Size (mm)		ϕ30×28 (Min.) / ϕ30×30.63 (Max.)	ϕ32×36.5 (Min.) / ϕ32×41.9 (Max.)	ϕ32×39.5 (Min.) / ϕ32×44.92 (Max.)
Weight (g)		55	85	90
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

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NCL Lens Series

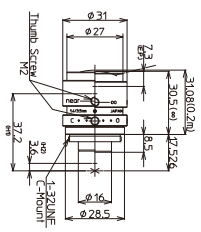
1/1.8″ | VGA+

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

● Compatible ◇ Suitable * Incompatible

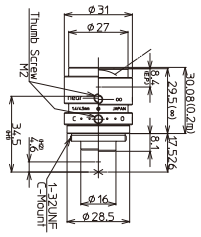
- Compatible with format sizes up to 1/1.8″.
- Compact and lightweight design.
- Offering wide angles of view, starting at a focal length of 3.5mm.
- Ideal for applications that require a wide field of view with smaller camera sensors.

LM4NCL



Model		LM4NCL
Focal Length (mm)		3.5
Image Size (mm)		7.2×5.4 (Φ9)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.2～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		679.9 (H) ×389.3 (V)
Angle of View (Degrees)	1/1.8″	117.7×86.7
	1/2″	103.6×76.7
	1/3″	76.7×57.7
Resolution (Center, Corner)		100lp/mm, 40lp/mm
TV Distortion (%)		−28.0
Back Focus in Air (mm)		8.9
Mount		C-mount
Filter Thread (mm)		–
Size (mm)		ϕ31×30.5 (Min.) / ϕ31×31.08 (Max.)
Weight (g)		60
Temperature Range		−10°C～+50°C

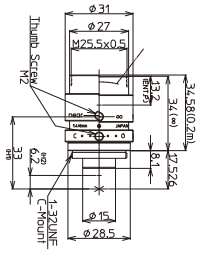
LM5NCL



Model		LM5NCL
Focal Length (mm)		4.5
Image Size (mm)		7.2×5.4 (Φ9)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.2～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		405.3 (H) ×273.8 (V)
Angle of View (Degrees)	1/1.8"	88.8×66.9
	1/2"	79.0×59.4
	1/3"	59.4×45.1
Resolution (Center, Corner)		100lp/mm, 40lp/mm
TV Distortion (%)		−17.5
Back Focus in Air (mm)		10.0
Mount		C-mount
Filter Thread (mm)		–
Size (mm)		ϕ31×29.5 (Min.) / ϕ31×30.08 (Max.)
Weight (g)		55
Temperature Range		−10°C～+50°C

LM6NCL

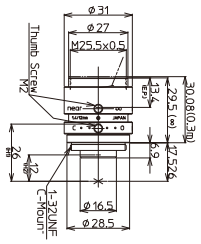
LO-DIS



Model		LM6NCL
Focal Length (mm)		6
Image Size (mm)		7.2×5.4 (Φ9)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.2～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		255.8 (H) ×188.7 (V)
Angle of View (Degrees)	1/1.8"	62.7×48.4
	1/2"	57.3×44.0
	1/3"	44.0×33.7
Resolution (Center, Corner)		100lp/mm, 40lp/mm
TV Distortion (%)		−1.0
Back Focus in Air (mm)		9.5
Mount		C-mount
Filter Thread (mm)		M25.5×P0.5
Size (mm)		ϕ31×34 (Min.) / ϕ31×34.58 (Max.)
Weight (g)		60
Temperature Range		−10°C～+50°C

LM12NCL

LO-DIS



Model		LM12NCL
Focal Length (mm)		12
Image Size (mm)		7.2×5.4 (Φ9)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.3～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		189.9 (H) ×140.0 (V)
Angle of View (Degrees)	1/1.8"	34.6×25.9
	1/2"	30.7×23.0
	1/3"	23.0×17.2
Resolution (Center, Corner)		100lp/mm, 40lp/mm
TV Distortion (%)		−0.8
Back Focus in Air (mm)		11.1
Mount		C-mount
Filter Thread (mm)		M25.5×P0.5
Size (mm)		ϕ31×29.5 (Min.) / ϕ31×30.08 (Max.)
Weight (g)		55
Temperature Range		−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

Radiation Resistant Lens Series

1.1" | WATER AND DUST RADIATION RESISTANCE 24 MEGAPIXEL 2.5 µm
2/3" | RADIATION RESISTANCE ZOOM LENS

Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM15FC-R	–	◇	●	●	●	●	●	●	●
LMZ1166M3-R	–	–	–	–	–	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Fixed focal length lens.
- Radiation resistant glass is utilized to prevent colorization (anti-browning) in radiation prone environments.
- Ideal for long-term use in radiation related facilities and/or in outer space.
- Mechanical design engineered for superior water resistance and dustproof protection.
- A two-way reversible nut is employed for precise focus adjustment.

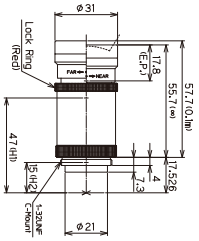
Standard lens showing browning after being subjected to gamma rays.

As shown in the figure on the left, lenses irradiated by radiation experience significant colorization, blocking nearly all visible-range light. The LM15FC-R, utilizing radiation resistant glass, minimizes this colorization, enabling long-term use in radiation exposed environments.

LM15FC-R

Build to order products

WATER DUST

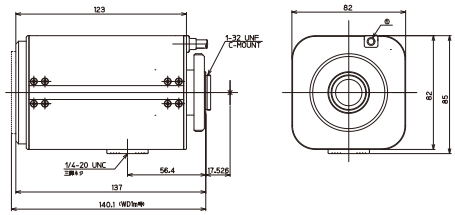


Model		LM15FC-R
Focal Length (mm)		15
Image Size (mm)		14.1×10.6 (Φ17.6)
Iris Range (F-Stop)		F2.8/F4/F6/F10
Focusing Range (m)		0.1~∞
Control	Iris	–
	Focus	Manual
Shooting Range at M.O.D. (mm)		108 (H) ×80 (V)
Angle of View (Degrees)	1.1"	52.3×39.8
	1"	47.7×36.1
	2/3"	33.1×25.0
Resolution (Center, Corner)		200lp/mm, 125lp/mm
TV Distortion (%)		−2.12
Back Focus in Air (mm)		16.3
Mount		C-mount
Size (mm)		ϕ31×55.7 (Min.) / ϕ31×57.7 (Max.)
Weight (g)		70
Temperature Range		−10°C~+50°C

- Zoom lens.
- Radiation resistant glass is utilized to prevent colorization (anti-browning) in radiation prone environments.
- Ideal for long-term use in radiation related facilities and/or in outer space.

LMZ1166M3-R

Build to order products



Model		LMZ1166M3-R
Focal Length (mm)		11 - 66
Image Size (mm)		Φ12.2
Iris Range (F-Stop)		F2.8～Close
Focusing Range (m)		1.0～∞
Control	Iris	Motorized
	Focus	Motorized
	Zoom	Motorized
Angle of View (Degrees)	2/3"	WIDE 45.9×34.8 / TELE 7.7×5.8
	1/2"	WIDE 33.8×25.5 / TELE 5.7×4.3
TV Distortion (%)		-
Back Focus in Air (mm)		15.5
Mount		C-mount
Size (mm)		82×85×140.1
Weight (g)		1200
Temperature Range		−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.
* Radiation resistant lenses are subject to export regulations. Please contact your local sales office for more details.

HC-V Lens Series

1″ | RUGGEDIZED 1 MEGAPIXEL+

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

● Compatible ◇ Suitable * Incompatible

Based on the HC series optical design, these high-resolution lenses are perfect for large formats and deliver superior vibration and shock resistance.

- 1″ format size (ϕ16mm) with 2MP resolution.
- Patented mechanical design, engineered for superior vibration and impact resistance.
- Fixed, interchangeable iris plates are employed for added flexibility.
- A two-way reversible nut is used for precise focus adjustment.
- Applying adhesive to the lens barrel and elements significantly enhances vibration and shock resistance.

1. Fixed Iris Design with Interchangeable Aperture Plates

Instead of standard iris blades, interchangeable aperture plates are used to set the F-Stop. With F1.4 preinstalled in the lens, the F-Stop can be changed to F2.8, F4, or F8 using three additional aperture plates included.

2. Focus Adjustment

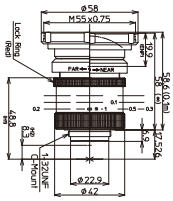
A two-way reversible nut is used for focus adjustment. The nut on the mount side of the barrel is loosened to adjust the focus, and the focus is secured by tightening the red nut.

3. Adhesive-mounted Glass

Glass elements are securely bonded to the lens barrel with adhesive, enhancing reliability, stability, and shock and vibration resistance.

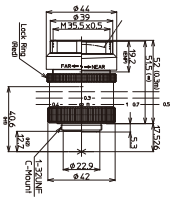
LM8HC-V

LO-DIS RUGGED



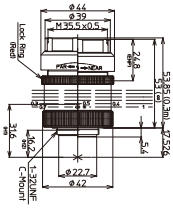
LM12HC-V

LO-DIS RUGGED



LM16HC-V

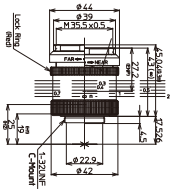
LO-DIS RUGGED



Model		LM8HC-V	LM12HC-V	LM16HC-V
Focal Length (mm)		8	12.5	16
Image Size (mm)		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
Focusing Range (m)		0.1～∞	0.3～∞	0.3～∞
Control	Iris	–	–	–
	Focus	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)
Angle of View (Degrees)	1″	79.7×63.0	55.6×42.5	44.3×33.6
	2/3″	58.3×44.7	39.1×29.5	30.8×23.2
	1/1.8″	48.5×36.9	32.1×24.2	25.3×19.0
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−1.2	−1.58	−1.0
Back Focus in Air (mm)		11.2	12.6	12.6
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M55×P0.75	M35.5×P0.5	M35.5×P0.5
Size (mm)		ϕ58×58 (Min.) / ϕ58×58.6 (Max.)	ϕ44×51.5 (Min.) / ϕ44×52 (Max.)	ϕ44×53 (Min.) / ϕ44×53.85 (Max.)
Weight (g)		183	130	120
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

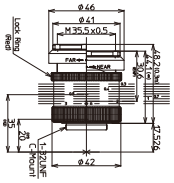
LM25HC-V

LO-DIS RUGGED



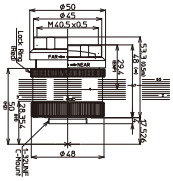
LM35HC-V

LO-DIS RUGGED



LM50HC-V

LO-DIS RUGGED



Model		LM25HC-V	LM35HC-V	LM50HC-V
Focal Length (mm)		25	35	50
Image Size (mm)		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
Focusing Range (m)		0.3～∞	0.3～∞	0.5～∞
Control	Iris	–	–	–
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		160.7 (H) ×119.2 (V)	110.1 (H) ×82.0 (V)	121.8 (H) ×91.3 (V)
Angle of View (Degrees)	1″	29.3×22.0	20.9×15.8	14.5×10.8
	2/3″	20.2×15.1	14.4×10.8	10.0×7.5
	1/1.8″	16.5×12.4	11.8×8.8	8.2×6.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−1.0	−0.5	0.05
Back Focus in Air (mm)		16.5	16.8	14.8
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M35.5×P0.5	M35.5×P0.5	M40.5×P0.5
Size (mm)		ϕ44×43 (Min.) / ϕ44×45.04 (Max.)	ϕ46×44.1 (Min.) / ϕ46×48.2 (Max.)	ϕ50×48 (Min.) / ϕ50×53.3 (Max.)
Weight (g)		104	133	170
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC5MC-WP Lens Series

2/3″ | RUGGEDIZED WATER AND DUST RESISTANCE ULTRA COMPACT
5 MEGAPIXEL 3.45µm

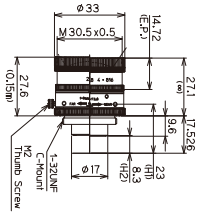
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM8JC5MC-WP	–	–	–	–	–	●	●	●	●
LM12JC5MC-WP	–	–	–	–	–	●	●	●	●
LM16JC5MC-WP	–	–	–	–	–	●	●	●	●
LM25JC5MC-WP	–	–	–	–	–	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- This ruggedized, harsh environment resistant series is based on the optical design of the JC5MC series, the smallest and lightest compact lenses in the industry.
- In addition to vibration and impact resistance, waterproof and dustproof protection have been integrated.
- Compatible with 2/3” format size and 5MP high-resolution sensors.
- When combined with Kowa’s waterproof ring-type light, it forms one of the smallest vision units in the industry.

LM8JC5MC-WP

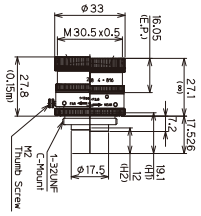
LO-DIS RUGGED WATER DUST



Model		LM8JC5MC-WP
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
	Focus	Manual
Shooting Range at M.O.D. (mm)		178.0 (H) ×132.1 (V)
Angle of View (Degrees)	2/3″	57.6×44.4
	1/1.8″	48.1×36.7
	1/2″	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)		ϕ33×27.1 (Min.) / ϕ33×27.6 (Max.)
Weight (g)		52
Temperature Range		−10°C～+50°C

LM12JC5MC-WP

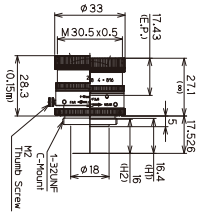
LO-DIS RUGGED WATER DUST



Model		LM12JC5MC-WP
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
	Focus	Manual
Shooting Range at M.O.D. (mm)		159.0 (H) ×118.1 (V)
Angle of View (Degrees)	2/3"	41.0×31.2
	1/1.8"	33.9×25.6
	1/2"	30.3×22.8
Resolution (Center, Corner)		160lp/mm, 100lp/mm
TV Distortion (%)		-0.43
Back Focus in Air (mm)		12.6
Mount		C-mount
Filter Thread (mm)		M30.5×P0.5
Size (mm)		ϕ33×27.1 (Min.) / ϕ33×27.8 (Max.)
Weight (g)		52
Temperature Range		−10°C～+50°C

LM16JC5MC-WP

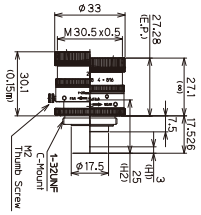
LO-DIS RUGGED WATER DUST



Model		LM16JC5MC-WP
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
	Focus	Manual
Shooting Range at M.O.D. (mm)		117.0 (H) ×88.1 (V)
Angle of View (Degrees)	2/3"	30.9×23.4
	1/1.8"	25.5×19.2
	1/2"	22.7×17.2
Resolution (Center, Corner)		160lp/mm, 100lp/mm
TV Distortion (%)		-0.09
Back Focus in Air (mm)		14.7
Mount		C-mount
Filter Thread (mm)		M30.5×P0.5
Size (mm)		ϕ33×27.1 (Min.) / ϕ33×28.3 (Max.)
Weight (g)		50
Temperature Range		−10°C～+50°C

LM25JC5MC-WP

LO-DIS RUGGED WATER DUST



Model		LM25JC5MC-WP
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
	Focus	Manual
Shooting Range at M.O.D. (mm)		75.0 (H) ×56.1 (V)
Angle of View (Degrees)	2/3"	20.0×15.0
	1/1.8"	16.4×12.4
	1/2"	14.6×11.0
Resolution (Center, Corner)		160lp/mm, 100lp/mm
TV Distortion (%)		0.06
Back Focus in Air (mm)		11.7
Mount		C-mount
Filter Thread (mm)		M30.5×P0.5
Size (mm)		ϕ33×27.1 (Min.) / ϕ33×30.1 (Max.)
Weight (g)		51
Temperature Range		−10°C～+50°C

Supported Camera Series KC300GC4 / KC500GC4 P.8 KC300XC3 / KC500XC3 P.10 KC300GC3 / KC500GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JCM-V Lens Series

2/3" | RUGGEDIZED 2 MEGAPIXEL

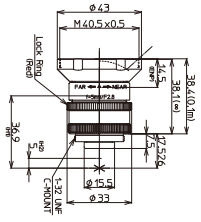
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM5JCM-V	–	–	–	–	–	●	●	●	●
LM8JCM-V	–	–	–	–	–	●	●	●	●
LM12JCM-V	–	–	–	–	–	●	●	●	●
LM16JCM-V	–	–	–	–	–	●	●	●	●
LM25JCM-V	–	–	–	–	–	●	●	●	●
LM35JCM-V	–	–	–	◇	◇	●	●	●	●
LM50JCM-V	–	◇	◇	◇	◇	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- 2/3" format size (ϕ11mm) with 2MP resolution.
- Patented mechanical design, engineered for superior vibration and impact resistance.
- Fixed, interchangeable aperture plates are employed for added flexibility.
- A two-way reversible nut is used for precise focus adjustment.
- Applying adhesive to the lens barrel and elements significantly enhances vibration and shock resistance.

LM5JCM-V

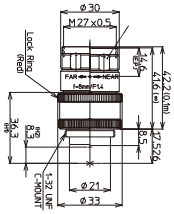
LO-DIS XD RUGGED



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	–
	Focus	Manual
Shooting Range at M.O.D. (mm)		200.8 (H) ×150.8 (V)
Angle of View (Degrees)	2/3"	82.4×66.9
	1/1.8"	71.7×57.1
	1/2"	65.2×51.3
Resolution (Center, Corner)		100lp/mm, 80lp/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 (Min.) / ϕ43×38.1 (Max.)
Weight (g)		73
Temperature Range		−10°C~+50°C

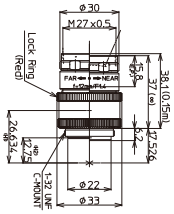
LM8JCM-V

LO-DIS XD RUGGED



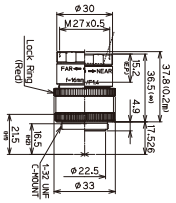
LM12JCM-V

LO-DIS XD RUGGED



LM16JCM-V

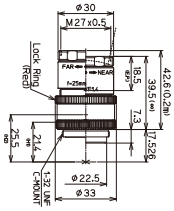
LO-DIS RUGGED



Model		LM8JCM-V	LM12JCM-V	LM16JCM-V
Focal Length (mm)		8	12	16
Image Size (mm)		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
Focusing Range (m)		0.1～∞	0.15～∞	0.2～∞
Control	Iris	–	–	–
	Focus	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)
Angle of View (Degrees)	2/3"	56.5×43.9	38.3×29.1	30.0×22.7
	1/1.8"	47.4×36.3	31.7×24.0	24.7×18.6
	1/2"	42.6×32.5	28.3×21.4	21.8×16.4
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.6	−0.07	−0.05
Back Focus in Air (mm)		9.74	11.7	13.1
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		ϕ33×41.6 (Min.) / ϕ33×42.2 (Max.)	ϕ33×37 (Min.) / ϕ33×38.1 (Max.)	ϕ33×36.5 (Min.) / ϕ33×37.8 (Max.)
Weight (g)		88	75	76.5
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

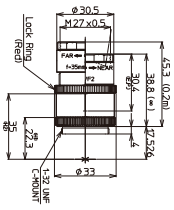
LM25JCM-V

LO-DIS RUGGED



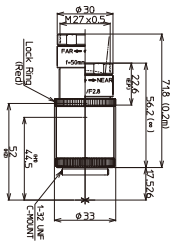
LM35JCM-V

LO-DIS RUGGED



LM50JCM-V

LO-DIS RUGGED



Model		LM25JCM-V	LM35JCM-V	LM50JCM-V
Focal Length (mm)		25	35	50
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4 / F4 / F8 / F16	F2 / F4 / F8 / F16	F2.8 / F4 / F8 / F16
Focusing Range (m)		0.2～∞	0.2～∞	0.2～∞
Control	Iris	–	–	–
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		71.1 (H) ×53.3 (V)	47.9 (H) ×35.8 (V)	29.3 (H) ×21.9 (V)
Angle of View (Degrees)	2/3"	19.6×14.8	14.4×10.8	9.6×7.2
	1/1.8"	16.1×12.1	11.8×8.8	7.9×5.9
	1/2"	14.0×10.5	10.5×7.9	7.0×5.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.04	−0.2	−0.03
Back Focus in Air (mm)		11.7	20.1	35.5
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		ϕ33×39.5 (Min.) / ϕ33×42.6 (Max.)	ϕ33×38.8 (Min.) / ϕ33×45.3 (Max.)	ϕ33×56.2 (Min.) / ϕ33×71.8 (Max.)
Weight (g)		83	72.5	85
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC48GC4 / KC130GC4 / KC300GC4 P.7-8 KC130XC2 / KC300XC3 P.10 KC48GC3 / KC130GC3 / KC300GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

NCM-WP/JCM-WP Lens Series

1/1.8" | RUGGEDIZED WATER AND DUST RESISTANCE 2 MEGAPIXEL
2/3" | RUGGEDIZED WATER AND DUST RESISTANCE 2 MEGAPIXEL

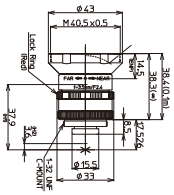
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3NCM-WP	–	–	–	–	–	–	●	●	●
LM5JCM-WP	–	–	–	–	–	●	●	●	●
LM8JCM-WP	–	–	–	–	–	●	●	●	●
LM12JCM-WP	–	–	–	–	–	●	●	●	●
LM16JCM-WP	–	–	–	–	–	●	●	●	●
LM25JCM-WP	–	–	–	–	–	●	●	●	●
LM35JCM-WP	–	–	–	◇	◇	●	●	●	●
LM50JCM-WP	–	◇	◇	◇	◇	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Patented mechanical design, engineered for superior vibration and impact resistance.
- Offers exceptional water resistance and dustproof protection.
- Special coatings enhance water repellency and cleaning efficiency of the front lens surface.
- Fixed, interchangeable aperture plates are employed for added flexibility.
- A two-way reversible nut is used for precise focus adjustment.
- Applying adhesive to the lens barrel and elements significantly enhances vibration and shock resistance.

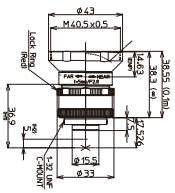
LM3NCM-WP

LO-DIS RUGGED WATER DUST



LM5JCM-WP

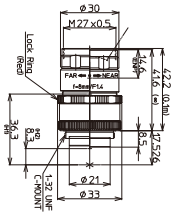
LO-DIS XD RUGGED WATER DUST



Model		LM3NCM-WP	LM5JCM-WP
Focal Length (mm)		3.5	5
Image Size (mm)		7.2×5.4 (Φ9)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.4 / F4 / F5.6 / F8	F2.8 / F4 / F5.6 / F8
Focusing Range (m)		0.1~∞	0.1~∞
Control	Iris	–	–
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		226.3 (H) ×171.4 (V)	200.8 (H) ×150.8 (V)
Angle of View (Degrees)	2/3"	89.0×73.8	82.4×66.9
	1/1.8"	82.4×66.9	71.7×57.1
	1/2"	66.9×52.7	65.2×51.3
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		0.4	0.5
Back Focus in Air (mm)		10.0	10.2
Mount		C-mount	C-mount
Filter Thread (mm)		M40.5×P0.5	M40.5×P0.5
Size (mm)		ϕ43×38.3 (Min.) / ϕ43×38.4 (Max.)	ϕ43×38.3 (Min.) / ϕ43×38.55 (Max.)
Weight (g)		80	75
Temperature Range		−10°C~+50°C	−10°C~+50°C

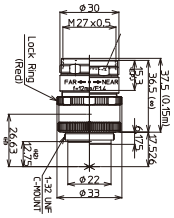
LM8JCM-WP

LO-DIS XD RUGGED WATER DUST



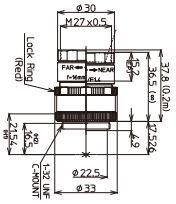
LM12JCM-WP

LO-DIS XD RUGGED WATER DUST



LM16JCM-WP

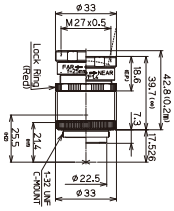
LO-DIS RUGGED WATER DUST



Model		LM8JCM-WP	LM12JCM-WP	LM16JCM-WP
Focal Length (mm)		8	12	16
Image Size (mm)		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
Focusing Range (m)		0.1～∞	0.15～∞	0.2～∞
Control	Iris	–	–	–
	Focus	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)
Angle of View (Degrees)	2/3"	56.5×43.9	38.3×29.1	30.0×22.7
	1/1.8"	47.4×36.3	31.7×24.0	24.7×18.6
	1/2"	42.6×32.5	28.3×21.4	21.8×16.4
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.6	−0.07	−0.05
Back Focus in Air (mm)		9.74	11.7	13.1
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		ϕ33×41.6 (Min.) / ϕ33×42.2 (Max.)	ϕ33×36.5 (Min.) / ϕ33×37.5 (Max.)	ϕ33×36.5 (Min.) / ϕ33×37.8 (Max.)
Weight (g)		85	75	75
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

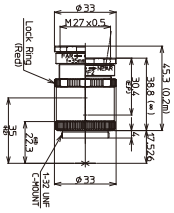
LM25JCM-WP

LO-DIS RUGGED WATER DUST



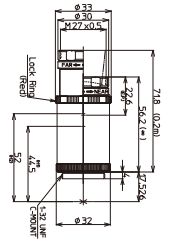
LM35JCM-WP

LO-DIS RUGGED WATER DUST



LM50JCM-WP

LO-DIS RUGGED WATER DUST



Model		LM25JCM-WP	LM35JCM-WP	LM50JCM-WP
Focal Length (mm)		25	35	50
Image Size (mm)		8.8×6.6 (Φ11)	8.8×6.6 (Φ11)	8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4 / F4 / F8 / F16	F2 / F4 / F8 / F16	F2.8 / F4 / F8 / F16
Focusing Range (m)		0.2～∞	0.2～∞	0.2～∞
Control	Iris	–	–	–
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		71.1 (H) ×53.3 (V)	47.9 (H) ×35.8 (V)	29.3 (H) ×21.9 (V)
Angle of View (Degrees)	2/3"	19.6×14.8	14.4×10.8	9.6×7.2
	1/1.8"	16.1×12.1	11.8×8.8	7.9×5.9
	1/2"	14.0×10.5	10.5×7.9	7.0×5.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−0.04	−0.2	−0.03
Back Focus in Air (mm)		11.7	19.9	35.4
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M27×P0.5	M27×P0.5
Size (mm)		ϕ33×39.7 (Min.) / ϕ33×42.8 (Max.)	ϕ33×38.8 (Min.) / ϕ33×45.3 (Max.)	ϕ33×56.2 (Min.) / ϕ33×71.8 (Max.)
Weight (g)		83	65	85
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

Supported Camera Series KC48GC4 / KC130GC4 / KC300GC4 P.7-8 KC130XC2 / KC300XC3 P.10 KC48GC3 / KC130GC3 / KC300GC3 P.12

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

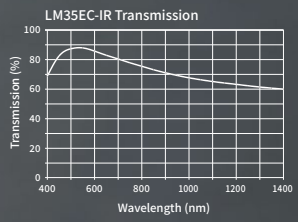
EC-IR Lens Series

1.2″ | IR-CORRECTED (VIS-NIR) 28 MEGAPIXEL 2.5 µm

Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM16EC-IR	–	●	●	●	●	●	●	●	●
LM25EC-IR	–	●	●	●	●	●	●	●	●
LM35EC-IR	–	●	●	●	●	●	●	●	●
LM50EC-IR	–	●	●	●	●	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Compatible with format sizes up to 1.2″.
- Capable of resolving pixel sizes as small as 2.5µm.
- Supports a wide range of high-resolution sensors, including the IMX530 / IMX540 (1.2″ 24MP) and IMX183 (1″ 20MP).
- IR-corrected design eliminates focus shift when transitioning between visible and near-infrared (NIR) wavelengths.
- Features fixed, interchangeable aperture plates.
- A two-way reversible nut is used for precise focus adjustment.
- The series includes four models with focal lengths of 16mm, 25mm, 35mm, and 50mm.



*In the case of LM35EC-IR

Fixed Iris

Instead of standard iris blades, interchangeable aperture plates are used to set the F-Stop. With F2.4 preinstalled in the lens, the F-Stop can be adjusted to F2.8, F4, F5.6, or F8 using four additional aperture plates included.

Estimated Working Distance

Near type	0.5~2m
Far type	2m~INF

* When using the LM16EC-IR with a working distance of 0.5m to 2m, remove the “Far” specific spacer and use it as the “Near” type.

IR-Corrected Design Eliminates Focus Shift

Standard Lens Designed for Visible Light

Visible Light

Near Infrared Light (NIR)

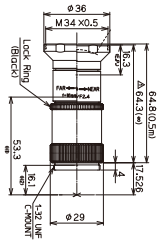
IR-Corrected Lens

Visible Light

Near Infrared Light (NIR)

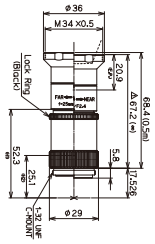
LM16EC-IR

IR XD LO-DIS



LM25EC-IR

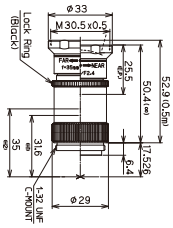
IR XD LO-DIS



Model		LM16EC-IR	LM25EC-IR
Focal Length (mm)		16	25
Image Size (mm)		15.4mm×11.5mm (ϕ19.2)	15.4mm×11.5mm (ϕ19.2)
Iris Range (F-Stop)		F2.4 / F2.8 / F4 / F5.6 / F8	F2.4 / F2.8 / F4 / F5.6 / F8
Focusing Range (m)		0.5～∞	0.5～∞
Control	Iris	–	–
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		501 (H) ×371 (V)	315 (H) ×233 (V)
Angle of View (Degrees)	1.2″	52.4×40.0	34.9×26.1
	1.1″	48.4×37.0	32.0×24.1
	1″	44.3×33.7	29.1×21.9
Resolution (Center, Corner)		200lp/mm, 125lp/mm	200lp/mm,125lp/mm
TV Distortion (%)		-0.6	-1.00
Back Focus in Air (mm)		19.57	15.6
Mount		C-mount	C-mount
Filter Thread (mm)		M34×0.5	M34×0.5
Size (mm)		Φ36.0×64.3 (Min.) / Φ36.0×64.8 (Max.)	Φ36.0×67.2 (Min.) / Φ36.0×68.4 (Max.)
Weight (g)		95	90
Temperature Range		-10°C～+50°C	-10°C～+50°C

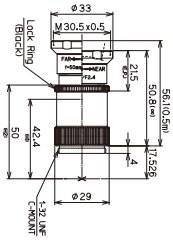
LM35EC-IR

IR XD LO-DIS



LM50EC-IR

IR XD LO-DIS



Model		LM35EC-IR	LM50EC-IR
Focal Length (mm)		35	50
Image Size (mm)		15.4mm×11.5mm (ϕ19.2)	15.4mm×11.5mm (ϕ19.2)
Iris Range (F-Stop)		F2.4 / F2.8 / F4 / F5.6 / F8	F2.4 / F2.8 / F4 / F5.6 / F8
Focusing Range (m)		0.5～∞	0.5～∞
Control	Iris	–	–
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		222 (H) ×165 (V)	147 (H) ×109 (V)
Angle of View (Degrees)	1.2″	25.0×18.7	17.5×13.1
	1.1″	22.9×17.3	16.1×12.1
	1″	20.8×15.7	14.6×11.0
Resolution (Center, Corner)		200lp/mm, 125lp/mm	200lp/mm, 125lp/mm
TV Distortion (%)		-0.30	0.02
Back Focus in Air (mm)		14.72	17.94
Mount		C-mount	C-mount
Filter Thread (mm)		M30.5×0.5	M30.5×0.5
Size (mm)		Φ33.0×50.4 (Min.) / Φ33.0×52.9 (Max.)	Φ33.0×50.8 (Min.) / Φ33.0×56.1 (Max.)
Weight (g)		80	70
Temperature Range		-10°C～+50°C	-10°C～+50°C

Supported Camera Series KC1200GC4 P.8 KC1200GC3 / KC1600GC3 / KC2000GC3 / KC2400GC3 P.13

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

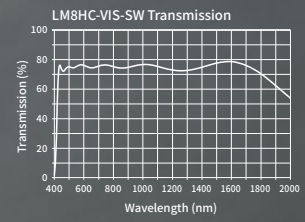
HC-VIS-SW Lens Series

1″ | IR-CORRECTED (VIS-SW) 12 MEGAPIXEL 3.1 µm

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

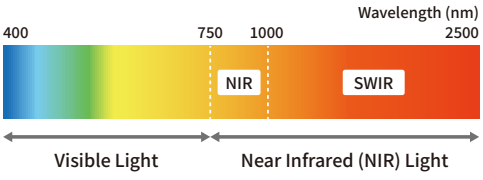
● Compatible ◇ Suitable * Incompatible

- 1″ format size with 12MP resolution (3.1µm).
- IR-corrected design eliminates focus shift across 450nm to 2,000nm wavelength range.
- Special extra-low dispersion (XD) glass is utilized to dramatically reduce chromatic aberration, delivering exceptional image clarity and color accuracy.
- Kowa's Floating Mechanism design is incorporated into all HC-VIS-SW series models to effectively minimize aberrations from close object distances to infinity.
- Low distortion ensures precise identification of materials or defects.
- Features Kowa's EX Wide-Band Multi-Coatings, which enhance lens performance across a broad spectrum of wavelengths.



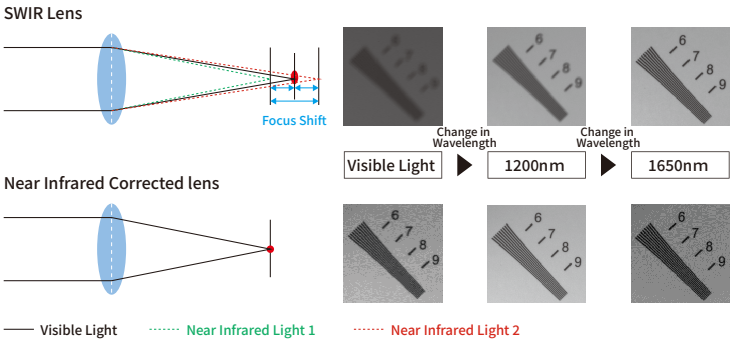
Near Infrared (NIR) Corrected Lens

A key characteristic of near infrared (NIR) corrected lenses is their ability to capture clear images while maintaining sharp focus, even when wavelengths transition between visible light and NIR light.
Unlike standard lenses that experience focus shift due to refractive index variations caused by wavelength changes, Kowa's NIR corrected lenses are engineered with specially manufactured extra low dispersion (XD) glass. This optical technology ensures exceptional image quality and precise focus across a broad wavelength range, providing reliable performance for high-precision imaging applications.



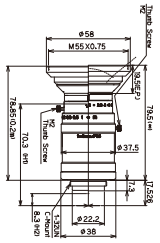
Example of Focus Shift

* Focuses at 1,650nm



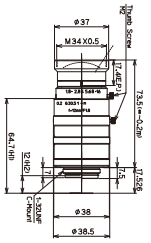
LM8HC-VIS-SW

EX-WBMC LO-DIS FLOAT XD



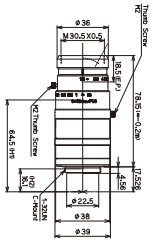
LM12HC-VIS-SW

EX-WBMC LO-DIS FLOAT XD



LM16HC-VIS-SW

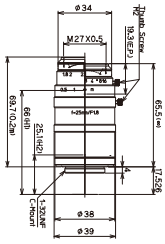
EX-WBMC LO-DIS FLOAT XD



Model		LM8HC-VIS-SW	LM12HC-VIS-SW	LM16HC-VIS-SW
Focal Length (mm)		8	12	16
Image Size (mm)		12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)
Iris Range (F-Stop)		F1.8～F16	F1.8～F16	F1.8～F16
Focusing Range (m)		0.2～∞	0.2～∞	0.2～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		387.0 (H) ×272.0 (V)	237.0 (H) ×175.0 (V)	174.0 (H) ×129.0 (V)
Angle of View (Degrees)	1"	81.3×63.5	58.0×44.5	44.2×33.6
	2/3"	58.7×44.8	41.0×31.1	31.0×23.3
	1/1.8"	48.6×36.9	33.8×25.5	25.4×19.1
Resolution (Center, Corner)		160lp/mm, 80lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm
TV Distortion (%)		−3.1	−1.6	−0.81
Back Focus in Air (mm)		11.1	11.1	15.0
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M55×P0.75	M34×P0.5	M30.5×P0.5
Size (mm)		ϕ58×78.85 (Min.) / ϕ58×79.5 (Max.)	Φ38.5×73.5	Φ39×78.15
Weight (g)		210	175	190
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

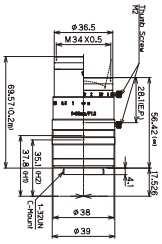
LM25HC-VIS-SW

EX-WBMC LO-DIS FLOAT XD



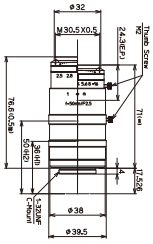
LM35HC-VIS-SW

EX-WBMC LO-DIS FLOAT XD



LM50HC-VIS-SW

EX-WBMC LO-DIS FLOAT XD



Model		LM25HC-VIS-SW	LM35HC-VIS-SW	LM50HC-VIS-SW
Focal Length (mm)		25	35	50
Image Size (mm)		12.8×9.6 (Φ16)	12.8×9.6 (Φ16)	12.8×9.6 (Φ16)
Iris Range (F-Stop)		F1.8～F16	F1.8～F16	F2.5～F16
Focusing Range (m)		0.2～∞	0.2～∞	0.5～∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		109.0 (H) ×81.0 (V)	68.0 (H) ×51.0 (V)	127.0 (H) ×95.0 (V)
Angle of View (Degrees)	1"	29.2×22.0	20.4×15.4	14.6×11.0
	2/3"	20.2×15.0	14.0×10.6	10.0×7.6
	1/1.8"	16.5×12.3	11.5×8.6	8.2×6.2
Resolution (Center, Corner)		160lp/mm, 100lp/mm	160lp/mm, 100lp/mm	160lp/mm, 100lp/mm
TV Distortion (%)		−0.97	−0.37	−0.11
Back Focus in Air (mm)		24.5	16.4	34.9
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M27×P0.5	M34×P0.5	M30.5×P0.5
Size (mm)		ϕ39×65.5 (Min.) / ϕ39×69.7 (Max.)	ϕ39×56.42 (Min.) / ϕ39×69.57 (Max.)	ϕ39.5×71 (Min.) / ϕ39.5×76.6 (Max.)
Weight (g)		160	150	155
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

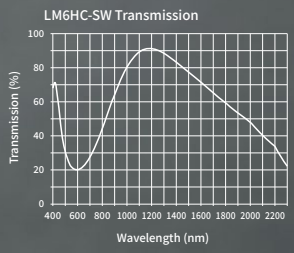
HC-SW Lens Series

1″ | SWIR 1MEGAPIXEL+

Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM6HC-SW	–	–	–	●	●	●	●	●	●
LM8HC-SW	–	–	–	●	●	●	●	●	●
LM12HC-SW	–	–	◇	●	●	●	●	●	●
LM16HC-SW	–	–	◇	●	●	●	●	●	●
LM25HC-SW	–	◇	◇	●	●	●	●	●	●
LM35HC-SW	–	◇	◇	●	●	●	●	●	●
LM50HC-SW	–	–	◇	●	●	●	●	●	●

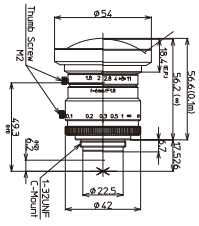
● Compatible ◇ Suitable * Incompatible

- The HC-SW lens series, built with a 1″ format size, are optimized with specialized SWIR coatings that delivers outstanding transmission across the short-wavelength infrared (SWIR) range. Kowa's advanced coating technology ensures superior image clarity, precision, and reliability, making these lenses the perfect choice for high-accuracy imaging applications where performance in the SWIR spectrum is essential.
- The recent addition of a wide-angle 6mm model expands the lineup, offering greater versatility to address a broad range of imaging applications.
- A well-rounded lineup of 7 models with focal lengths ranging from 6mm to 50mm.
- Offering exceptional value, this cost-effective lens series is designed to produce consistent and accurate results in a variety of applications.



LM6HC-SW

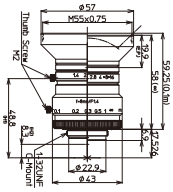
SWIR LO-DIS



Model		LM6HC-SW
Focal Length (mm)		6
Image Size (mm)		12.8×9.6 (Φ16)
Iris Range (F-Stop)		F1.8～F11
Focusing Range (m)		0.1～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		267.4 (H) ×196.3 (V)
Angle of View (Degrees)	1″	96.8×79.4
	2/3″	74.1×58.0
	1/1.8″	62.6×48.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm
TV Distortion (%)		−0.2
Back Focus in Air (mm)		11.1
Mount		C-mount
Filter Thread (mm)		–
Size (mm)		ϕ54×56.2 (Min.) / ϕ54×56.6 (Max.)
Weight (g)		215
Temperature Range		−10°C～+50°C

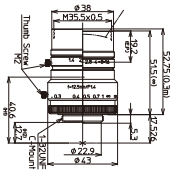
LM8HC-SW

SWIR LO-DIS



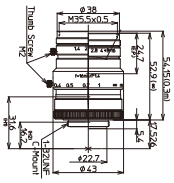
LM12HC-SW

SWIR LO-DIS



LM16HC-SW

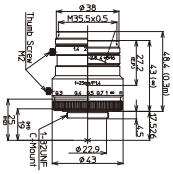
SWIR LO-DIS



Model		LM8HC-SW	LM12HC-SW	LM16HC-SW
Focal Length (mm)		8	12.5	16
Image Size (mm)		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
Focusing Range (m)		0.1~∞	0.3~∞	0.3~∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		196.0 (H) ×143.2 (V)	330.6 (H) ×243.5 (V)	251.5 (H) ×186.2 (V)
Angle of View (Degrees)	1"	79.4×63.0	55.6×42.5	44.3×33.6
	2/3"	58.3×44.7	39.1×29.5	30.8×23.2
	1/1.8"	48.5×36.9	32.1×24.2	25.3×19.0
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−1.2	−1.58	−1.0
Back Focus in Air (mm)		11.2	12.6	12.6
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M55×P0.75	M35.5×P0.5	M35.5×P0.5
Size (mm)		ϕ57×58 (Min.) / ϕ57×59.25 (Max.)	ϕ43×51.5 (Min.) / ϕ43×52.75 (Max.)	ϕ43×52.9 (Min.) / ϕ43×54.15 (Max.)
Weight (g)		205	160	150
Temperature Range		−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

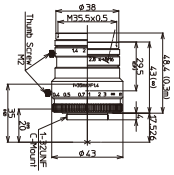
LM25HC-SW

SWIR LO-DIS



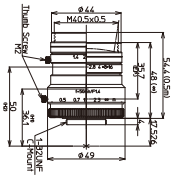
LM35HC-SW

SWIR LO-DIS



LM50HC-SW

SWIR LO-DIS



Model		LM25HC-SW	LM35HC-SW	LM50HC-SW
Focal Length (mm)		25	35	50
Image Size (mm)		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
Focusing Range (m)		0.3~∞	0.3~∞	0.5~∞
Control	Iris	Manual	Manual	Manual
	Focus	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		160.7 (H) ×119.2 (V)	110.1 (H) ×82.0 (V)	121.8 (H) ×91.3 (V)
Angle of View (Degrees)	1"	29.3×22.0	20.9×15.8	14.5×10.8
	2/3"	20.2×15.1	14.4×10.8	10.0×7.5
	1/1.8"	16.5×12.4	11.8×8.8	8.2×6.2
Resolution (Center, Corner)		100lp/mm, 80lp/mm	100lp/mm, 80lp/mm	100lp/mm, 80lp/mm
TV Distortion (%)		−1.0	−0.5	0.05
Back Focus in Air (mm)		16.5	16.8	14.8
Mount		C-mount	C-mount	C-mount
Filter Thread (mm)		M35.5×P0.5	M35.5×P0.5	M40.5×P0.5
Size (mm)		ϕ43×43 (Min.) / ϕ43×48.4 (Max.)	ϕ43×43 (Min.) / ϕ43×48.4 (Max.)	ϕ49×48 (Min.) / ϕ49×54.4 (Max.)
Weight (g)		135	135	210
Temperature Range		−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

JC5M-IR Lens Series

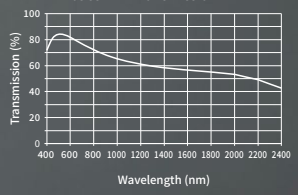
2/3″ | IR-CORRECTED (VIS-NIR) 5 MEGAPIXEL 3.45 µm

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

● Compatible ◇ Suitable * Incompatible

- 2/3″ format size and 5MP resolution.
- IR-Corrected design eliminates focus shift when transitioning between visible and near-infrared (NIR) wavelengths.
- Suitable for a wide range of applications, from factory automation to intelligent traffic solutions (ITS).
- Bright optical design with an F-Stop of F1.4 at maximum aperture.
  * The maximum aperture F-Stop for the LM35JC5M-IR model is F2.0.

LM16JC5M-IR Transmission



IR-Corrected Design Eliminates Focus Shift

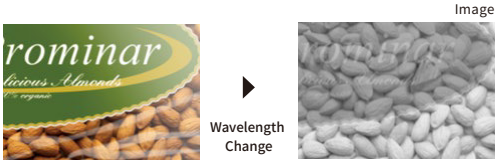
Normal Lens for Use in Visible Light

Visible Light Illumination — Near Infrared (NIR) Illumination

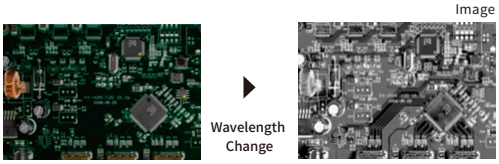
IR-Corrected Lens with No Focus Shift

Visible Light Illumination — Near Infrared (NIR) Illumination

Application Example



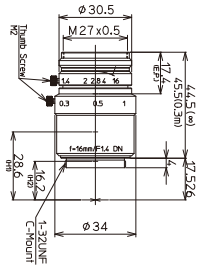
Visible Light Illumination — Near Infrared (NIR) Illumination



Visible Light Illumination — Near Infrared (NIR) Illumination

LM16JC5M-IR

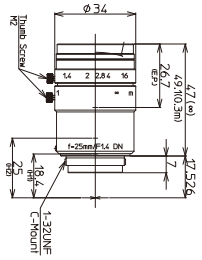
IR LO-DIS XD



Model		LM16JC5M-IR
Focal Length (mm)		16
Image Size (mm)		8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.3～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		171.4 (H) ×127.4 (V)
Angle of View (Degrees)	2/3"	30.9×23.2
	1/1.8"	25.4×19.0
	1/2"	22.6×16.9
Resolution (Center, Corner)		120lp/mm, 80lp/mm
TV Distortion (%)		−0.8
Back Focus in Air (mm)		14.7
Mount		C-mount
Filter Thread (mm)		M27×P0.5
Size (mm)		φ34×44.5 (Min.) / φ34×45.5 (Max.)
Weight (g)		100
Temperature Range		−10°C～+50°C

LM25JC5M-IR

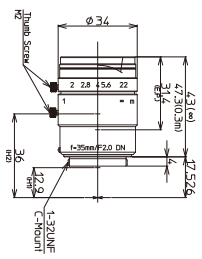
IR LO-DIS XD



Model		LM25JC5M-IR
Focal Length (mm)		25
Image Size (mm)		8.8×6.6 (Φ11)
Iris Range (F-Stop)		F1.4～F16
Focusing Range (m)		0.3～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		113.3 (H) ×84.5 (V)
Angle of View (Degrees)	2/3"	20.1×15.1
	1/1.8"	16.5×12.4
	1/2"	14.6×11.0
Resolution (Center, Corner)		120lp/mm, 80lp/mm
TV Distortion (%)		−0.3
Back Focus in Air (mm)		12.0
Mount		C-mount
Filter Thread (mm)		M30.5×P0.5
Size (mm)		φ34×47 (Min.) / φ34×49.1 (Max.)
Weight (g)		110
Temperature Range		−10°C～+50°C

LM35JC5M-IR

IR LO-DIS XD



Model		LM35JC5M-IR
Focal Length (mm)		35
Image Size (mm)		8.8×6.6 (Φ11)
Iris Range (F-Stop)		F2.0～F22
Focusing Range (m)		0.3～∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		75.8 (H) ×56.6 (V)
Angle of View (Degrees)	2/3"	13.9×10.5
	1/1.8"	11.4×8.3
	1/2"	10.2×7.6
Resolution (Center, Corner)		120lp/mm, 80lp/mm
TV Distortion (%)		−0.3
Back Focus in Air (mm)		19.2
Mount		C-mount
Filter Thread (mm)		M30.5×P0.5
Size (mm)		φ34×43 (Min.) / φ34×47.3 (Max.)
Weight (g)		100
Temperature Range		−10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

TC Lens Series

4/3″ | TELECENTRIC 21 MEGAPIXEL 3.45 µm

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

● Compatible ◇ Suitable * Incompatible

4/3″ 21MP Macro Zoom Telecentric Lens Series
- Telecentric lens with variable magnification.
- 21MP resolution.
- Can be used as a macro lens with a variable magnification between 0.5x and 1.0x.

4/3″ 21MP Macro Telecentric Lens Series
- Telecentric lens with a fixed magnification.
- 21MP resolution.
- Can be used as a macro lens with a magnification of 2.0x (fixed).

2/3″ 5MP+ Telecentric Lens Series
- Intuitive lens selection based on pixel size.
- Optical magnification range is fully adjustable.
- Optimized optical magnification for 5MP sensor resolution.
- Low distortion design of 0.02% or less.
- Ensures consistent high contrast from center to edge for optimal image clarity.

Telecentric Optical Systems: Precision Imaging for Accurate Measurements

Telecentric optical systems are distinguished by their ability to maintain consistent magnification during focus adjustments, enabling direct imaging of objects from the front (see Fig. 1). This characteristic makes them particularly suitable for high-precision dimensional measurements, especially when exact positioning is required.
In these systems, the chief ray, which is the central light ray from a point on the object entering the lens, runs parallel to the optical axis. By setting the aperture at the image-side focal point, the chief ray on the object side becomes parallel to the optical axis. Consequently, when the object's position shifts along the optical axis, the image may blur, but the magnification remains unchanged.

Fig. 1

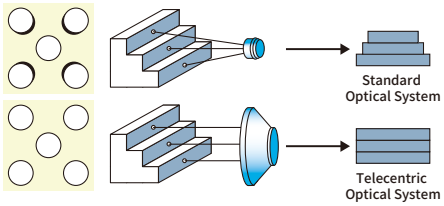
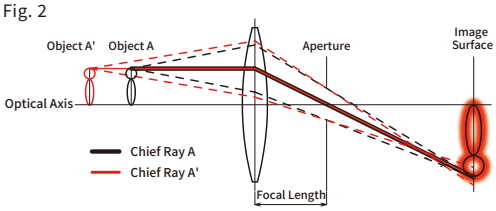


Fig. 2



Application Examples

-Surface inspection of silicon wafers.
-Inspection of dirt on prisms and glass circuit boards.
-Reading in 2D codes.
-Inspection of FPD image defects.
-Hole pitch measurement.

4/3" macro zoom 21MP

LM1119TC

LO-DIS XD

4/3" macro 21MP

LM1138TC

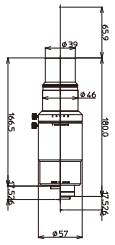
LO-DIS XD

Model		LM1119TC		LM1138TC
Magnification Range		0.5〜1.0×		2.0×
Image Size (mm)		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″	36.8×27.6	18.4×13.8	9.20×6.90
	1″	25.6×19.2	12.8×9.6	6.40×4.8
	2/3″	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

2/3" telecentric 5MP plus

LM1120TC

LO-DIS XD

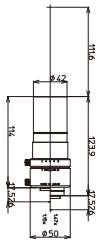


LM1121TC

LO-DIS XD

LM1122TC

LO-DIS XD

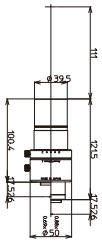


Model		LM1120TC			LM1121TC			LM1122TC		
Magnification Range		3.45～4.4×			1.725～2.2×			1.15～1.47×		
Image Size (mm)		8.8×6.6 (Φ11)			8.8×6.6 (Φ11)			8.8×6.6 (Φ11)		
Shooting Magnification		3.45×	4.0×	4.4×	1.725×	2.0×	2.2×	1.15×	1.3×	1.47×
Objective N.A.		0.2	0.2	0.2	0.131	0.131	0.131	0.101	0.101	0.101
W.D.(mm)		65.9	65.9	65.9	114.8	111.4	109.4	111.6	111.6	111.6
Shooting Range (mm)	2/3"	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
	1/1.8"	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
	1/2"	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
TV Distortion (%)		0.015	0.003	−0.002	0.011	0.004	0.001	−0.015	−0.001	0.011
Back Focus in Air (mm)		17.1	24.5	30	55.8	67.7	76.3	18.7	23.6	29.8
Mount		C-mount			C-mount			C-mount		
Resolution		120lp/mm			120lp/mm			120lp/mm		
Size (mm)		Φ57×180.0			Φ48×147.5			Φ50×123.9		
Weight (g)		645			420			330		
Temperature Range		−10°C～+50°C			−10°C～+50°C			−10°C～+50°C		

2/3" telecentric 5MP plus

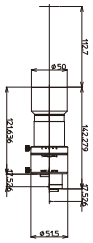
LM1123TC

LO-DIS XD



LM1125TC

LO-DIS XD



Model		LM1123TC			LM1125TC		
Magnification Range		0.69～0.88×			0.346～0.44×		
Image Size (mm)		8.8×6.6 (Φ11)			8.8×6.6 (Φ11)		
Shooting Magnification		0.69×	0.8×	0.88×	0.346×	0.4×	0.44×
Objective N.A.		0.07	0.07	0.07	0.04	0.04	0.04
W.D.(mm)		111.0	111.0	111.0	112.7	112.7	112.7
Shooting Range (mm)	2/3"	12.7×9.6	11.0×8.2	10.0×7.5	25.4×19.1	22.0×16.5	20.0×15.0
	1/1.8"	10.4×7.8	9.0×6.7	8.2×6.1	20.9×15.7	18.1×13.6	16.5×12.3
	1/2"	9.3×7.0	8.0×6.0	7.3×5.5	18.6×13.9	16.1×12.1	14.6×11.0
TV Distortion (%)		−0.001	−0.009	0.005	0.02	−0.009	0.01
Back Focus in Air (mm)		34	28.8	25.3	17.6	17	16.5
Mount		C-mount			C-mount		
Resolution		120lp/mm			120lp/mm		
Size (mm)		Φ50×121.5			Φ51.5×142.3		
Weight (g)		290			420		
Temperature Range		−10°C～+50°C			−10°C～+50°C		

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Varifocal Lens Series

1/1.8″ | VARIFOCAL 1 MEGAPIXEL
1/2″ | VARIFOCAL 1 MEGAPIXEL

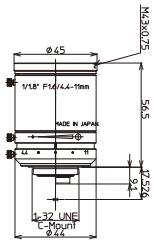
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LMVZ4411	–	–	–	–	–	–	●	●	●
LMVZ990-IR	–	–	–	–	–	–	–	●	●

● Compatible ◇ Suitable * Incompatible

- Supports 1/1.8″ and 1/2″ format sizes.
- Adjustable angle of view to match application needs.
- Engineered for versatility and ideal for both security and factory automation (FA) applications.

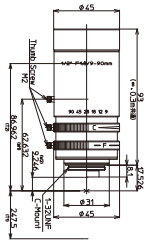
LMVZ4411

LO-DIS



LMVZ990-IR

LO-DIS XD IR



Model		LMVZ4411	LMVZ990-IR
Focal Length (mm)		4.4～11 (2.5×)	9～90 (10×)
Image Size (mm)		7.2×5.4 (Φ9)	6.4×4.8 (Φ8)
Iris Range (F-Stop)		F1.6～F16	F1.8～F16
Focusing Range (m)		0.3～∞	0.3～∞
Control	Iris	Manual	Manual
	Focus	Manual	Manual
Shooting Range at M.O.D. (mm)		W507.5×379.0 / T211.4×159.0	W252.7×182.5 / T94.4×70.8
Angle of View (Degrees)	1/1.8″	W76.6×61.2 / T36.7×28.0	–
	1/2″	W70.1×55.5 / T32.9×25.0	W41.1×30.3 / T4.2×3.1
	1/3″	W55.5×43.0 / T25.0×18.9	W30.3×22.6 / T3.1×2.4
TV Distortion (%)		W–0.2 / T0.4	W–4.3 / T0.3
Back Focus in Air (mm)		W8.8 / T14.5	W15.4 / T11.7
Mount		C-mount	C-mount
Filter Thread (mm)		M43×P0.75	M43×P0.75
Size (mm)		Φ45×56.5	Φ45×93
Weight (g)		125	194
Temperature Range		–10°C～+50°C	–10°C～+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.
* For orders and inquiries, please reach out to your nearest sales office.

NF Lens Series

1/3″ | NF-MOUNT LENS 1 MEGAPIXEL+

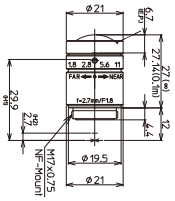
Model	Format Size (Inch)								
	4/3	1.2	1.1	1	1/1.2	2/3	1/1.8	1/2	1/3
LM3NF	–	–	–	–	–	–	–	–	●
LM5NF	–	–	–	–	–	–	–	–	●
LM9NF	–	–	–	–	–	–	–	◇	●

● Compatible ◇ Suitable * Incompatible

- Developed as a high-performance optical solution for 1/3″ megapixel NF-Mount cameras, these lenses deliver excellent image quality in a lightweight and compact form.
- Produces uniform brightness and resolution from the image center to the corners.
- Offers a significantly lighter design (30g) and a more compact form factor (ϕ21mm outer diameter)* compared to conventional C-Mount lenses.**
- Features low distortion for accurate imaging.

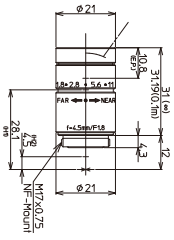
*LM3NF **LM3NF, LM5NF

LM3NF



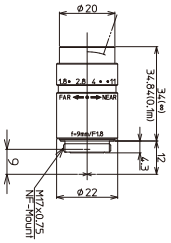
LM5NF

LO-DIS



LM9NF

LO-DIS



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
	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″		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 (Min.) / Φ21×27.14 (Max.)	Φ21×31 (Min.) / Φ21×31.19 (Max.)	Φ22×34 (Min.) / Φ22×34.84 (Max.)
Weight (g)		30	35	40
Temperature Range		−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

VM Lens Series

2″ | 50 MEGAPIXEL 3.1 µm

Model	Format Size (Inch)							
	2 (Φ32)	APS-C	4/3	1.2	1.1	1	1/1.2	1/3
LM18VM42 LM18VM35	●	●	●	●	●	●	●	●
LM25VM42 LM25VM35	●	●	●	●	●	●	●	●
LM35VM42 LM35VM35	●	●	●	●	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Large image size of ϕ32mm.
- Optical performance designed to support sensors up to 50 megapixels.
- High-resolution lenses compatible with 8K imaging and ultra-high-pixel cameras.
- Optimized for APS-C sensors.
- Features an innovative mechanism that prevents thumb screws from loosening or falling off during use.
- Available in both M42-Mount and TFL-Mount.
- The flange back distance can be adjusted using optional accessories.
- Kowa's Floating Mechanism design is incorporated into all VM series models to effectively minimize aberrations from close object distances to infinity.
- Wide-band multi-coatings are specifically engineered to minimize ghosting and flaring while optimizing transmission in the near-infrared range.

Optional

Optional mount adapters
allow for flange back adjustment.

Standard: M42-mount
17.526mm

Series	Model	Flange Back (mm)	Mount
VM42	FB-1600VM	16	M42-mount
	FB-1148VM	11.48	M42-mount
	FB-1000VM	10	M42-mount
	FB-1200VM	12	M42-mount
	FB-0656VM	6.56	M42-mount
	FB-1750VM	17.5	TFL-II-mount

* Mount adapters are not compatible with VM35 series lenses.

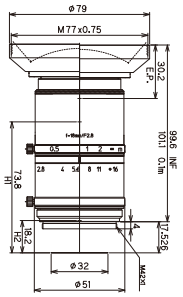
Equipped with a specialized retention mechanism that prevents thumb screws from loosening or falling out.

In conventional industrial lenses, thumb screws may loosen and fall off during use, particularly when exposed to shock and vibration. To prevent this, a newly developed mechanism has been engineered, utilizing a dedicated locking screw for switching. This innovative design securely holds the thumb screws in place while still allowing for easy removal and attachment by simply sliding the switching mechanism.

Applications | -Line Scan & Area Scan -FPD Inspections -Aerial Photography -Sports and Action Imaging -Drones

LM18VM42 / LM18VM35

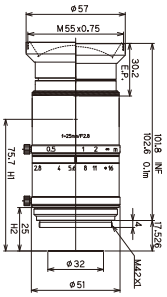
WBMC LO-DIS FLOAT XD



Model		LM18VM42	LM18VM35
Focal Length (mm)		18	
Image Size (mm)		25.6×19.2 (Φ32.0)	
Iris Range (F-Stop)		F2.8～F16	
Focusing Range (m)		0.1～∞	
Control	Iris	Manual	
	Focus	Manual	
Shooting Range at M.O.D. (mm)		172 (H) ×128 (V)	
Angle of View (Degrees)	2″	70.5×56.1	
	APS-C	63.4×49.7	
	4/3″	54.1×41.8	
Resolution (Center, Corner)		160lp/mm, 100lp/mm	
TV Distortion (%)		1.25	
Back Focus in Air (mm)		15.5	
Flange Back in Air (mm)		17.526	
Mount		M42-mount (M42×1)	TFL-mount (M35×0.75)
Filter Thread (mm)		M77×P0.75	
Size (mm)		φ79×99.6 (Min.) / φ79×101.1 (Max.)	
Weight (g)		460	
Temperature Range		−10°C～+50°C	

LM25VM42 / LM25VM35

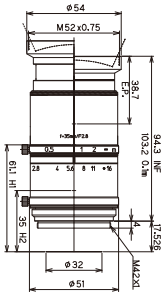
WBMC LO-DIS FLOAT XD



Model		LM25VM42	LM25VM35
Focal Length (mm)		25	
Image Size (mm)		25.6×19.2 (Φ32.0)	
Iris Range (F-Stop)		F2.8～F16	
Focusing Range (m)		0.1～∞	
Control	Iris	Manual	
	Focus	Manual	
Shooting Range at M.O.D. (mm)		125 (H) ×93 (V)	
Angle of View (Degrees)	2″	54.0×42.0	
	APS-C	48.0×37.0	
	4/3″	40.4×30.9	
Resolution (Center, Corner)		160lp/mm, 100lp/mm	
TV Distortion (%)		0.59	
Back Focus in Air (mm)		20.3	
Flange Back in Air (mm)		17.526	
Mount		M42-mount (M42×1)	TFL-mount (M35×0.75)
Filter Thread (mm)		M55×P0.75	
Size (mm)		φ57×101.8 (Min.) / φ57×102.6 (Max.)	
Weight (g)		400	
Temperature Range		−10°C～+50°C	

LM35VM42 / LM35VM35

WBMC LO-DIS FLOAT XD



Model		LM35VM42	LM35VM35
Focal Length (mm)		35	
Image Size (mm)		25.6×19.2 (Φ32.0)	
Iris Range (F-Stop)		F2.8～F16	
Focusing Range (m)		0.1～∞	
Control	Iris	Manual	
	Focus	Manual	
Shooting Range at M.O.D. (mm)		76 (H) ×57 (V)	
Angle of View (Degrees)	2″	40.2×30.7	
	APS-C	35.4×26.9	
	4/3″	29.5×22.3	
Resolution (Center, Corner)		160lp/mm, 100lp/mm	
TV Distortion (%)		0.12	
Back Focus in Air (mm)		19.5	
Flange Back in Air (mm)		17.526	
Mount		M42-mount (M42×1)	TFL-mount (M35×0.75)
Filter Thread (mm)		M52×P0.75	
Size (mm)		φ54×94.3 (Min.) / φ54×103.2 (Max.)	
Weight (g)		375	
Temperature Range		−10°C～+50°C	

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LF Lens Series

Φ46 | LINE SCAN 4K

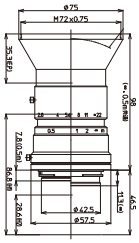
Model	Format Size (Inch)							
	57.0	51.0	46.0	38.0	35.0	30.0	23.0	18.0
LM28LF	–	–	●	●	●	●	●	●
LM35LF	–	◇	●	●	●	●	●	●
LM50LF	–	◇	●	●	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Large image size of ϕ46mm.
- Low distortion
- Close-range imaging is possible at working distances as short as 0.26 m, measured from the front lens tip to the object surface. Applicable only for the LM35LF and LM50LF models.
- Available in two mount types: Nikon F-Mount and TFL II-Mount

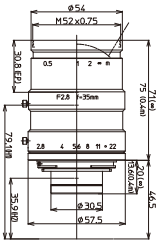
LM28LF

LO-DIS XD



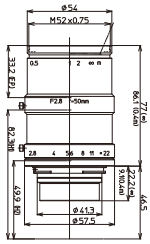
LM35LF

LO-DIS XD



LM50LF

LO-DIS XD



Model		LM28LF	LM28LF-48	LM35LF	LM35LF-48	LM50LF	LM50LF-48
Focal Length (mm)		28		35		50	
Image Size (mm)		36×24 (Φ46)		36×24 (Φ46)		36×24 (Φ46)	
Iris Range (F-Stop)		F2.8～F22		F2.8～F22		F2.8～F22	
Focusing Range (m)		0.5～∞		0.4～∞		0.4～∞	
Control	Iris	Manual		Manual		Manual	
	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 (Degrees)	Full size	64.6×45.8		53.7×37.2		39.7×27.1	
	4/3"	35.8×27.2		28.9×21.8		20.9×15.7	
	1"	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	
Back Focus in Air (mm)		38.5	38.5	34.6	34.6	37.7	37.7
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 (Min.) / ϕ57.5×75 (Max.)	ϕ55×100 (Min.) / ϕ55×104 (Max.)	ϕ57.5×77 (Min.) / ϕ57.5×86.1 (Max.)	ϕ57.5×106
Weight (g)		500		430		470	
Temperature Range		−10°C～+50°C		−10°C～+50°C		−10°C～+50°C	

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CLS Lens Series

Φ30 | LINE SCAN (3CMOS)

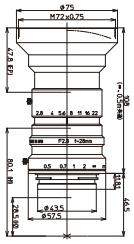
Model	Format Size (Inch)							
	57.0	51.0	46.0	38.0	35.0	30.0	23.0	18.0
LM28CLS	–	–	–	–	–	●	●	●
LM35CLS	–	–	–	–	–	●	●	●
LM50CLS	–	–	–	–	◇	●	●	●

● Compatible ◇ Suitable * Incompatible

- Lenses designed for use with industrial line scan cameras featuring a three-sensor, three-dichroic prism configuration.
- Supports line sensor lengths up to 30mm.
- Engineered to take full advantage of the imaging precision of three-sensor, three-dichroic prism line scan systems.
- Compatible with Nikon F-Mount for direct use with existing systems.

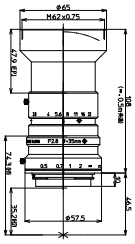
LM28CLS

LO-DIS XD



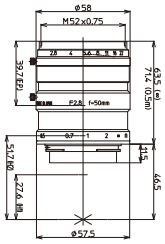
LM35CLS

LO-DIS XD



LM50CLS

LO-DIS XD



Model		LM28CLS	LM35CLS	LM50CLS
Focal Length (mm)		28	35	50
Image Size (mm)		Φ30	Φ30	Φ30
Iris Range (F-Stop)		F2.8～F22	F2.8～F22	F2.8～F22
Focusing Range (m)		0.5～∞	0.5～∞	0.5～∞
Control	Iris	Manual	Manual	Manual
	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
Back Focus in Air (mm)		37.2	36.9	35.6
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 (Min.) / Φ58×71.4 (Max.)
Weight (g)		482	480	358
Temperature Range		−10°C～+50°C	−10°C～+50°C	−10°C～+50°C

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S-Mount Lens Series

1/2.5" | S-MOUNT LENS 2 MEGAPIXEL+ 3.2 µm

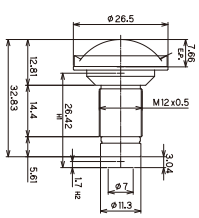
Model	Format Size (Inch)							
	1	1/1.2	2/3	1/1.8	1/2	1/2.5	1/2.8	1/3
LM1.7QS25	–	–	–	–	–	●	●	●
LM1.7QS40	–	–	–	–	–	●	●	●
LM1.7QS56	–	–	–	–	–	●	●	●
LM3QS28	–	–	–	–	–	●	●	●
LM3QS40	–	–	–	–	–	●	●	●
LM3QS56	–	–	–	–	–	●	●	●
LM5NS21	–	–	–	●	●	●	●	●
LM5NS28	–	–	–	●	●	●	●	●
LM5NS40	–	–	–	●	●	●	●	●
LM5NS56	–	–	–	●	●	●	●	●

● Compatible ◇ Suitable * Incompatible

- Super-wide-angle lenses.
- Low distortion
- An optional IR cut filter or lock ring can be attached.

LM1.7QS

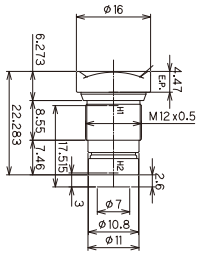
LO-DIS XD



Model		LM1.7QS25	LM1.7QS40	LM1.7QS56
Focal Length (mm)		1.7		
Image Size (mm)		5.70×4.28 (Φ7)		
Iris Range (F-Stop)		F2.5	F4	F5.6
Focusing Range (m)		0.1~∞		
Angle of View (Degrees)	1/2.5"	118.1 (H) ×102.8 (V)		
	1/2.8"	115.1 (H) ×89.1 (V)		
	1/3"	109.1 (H) ×93.0 (V)		
Resolution (Center, Corner)		160lp/mm, 100lp/mm		
TV Distortion (%)		-0.32		
Back Focus in Air (mm)		4.0		
Mount		S-mount (M12×P0.5)		
Size (mm)		Φ26.5×32.83		
Weight (g)		18		
Temperature Range		−10°C~+50°C		

LM3QS

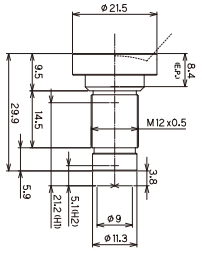
LO-DIS XD



Model		LM3QS28	LM3QS40	LM3QS56
Focal Length (mm)		3		
Image Size (mm)		5.70×4.28 (Φ7)		
Iris Range (F-Stop)		F2.8	F4	F5.6
Focusing Range (m)		0.1∼∞		
Angle of View (Degrees)	1/2.5"	86.7 (H) ×70.6 (V)		
	1/2.8"	83.3 (H) ×58.2 (V)		
	1/3"	76.9 (H) ×61.6 (V)		
Resolution (Center, Corner)		160lp/mm, 125lp/mm		
TV Distortion (%)		0.02		
Back Focus in Air (mm)		3.9		
Mount		S-mount (M12×P0.5)		
Size (mm)		Φ16×22.3		
Weight (g)		6		
Temperature Range		−10°C∼+50°C		

LM5NS

LO-DIS



Model		LM5NS21	LM5NS28	LM5NS40	LM5NS56
Focal Length (mm)		5			
Image Size (mm)		7.2×5.4 (φ9)			
Iris Range (F-Stop)		F2.1	F2.8	F4	F5.6
Focusing Range (m)		0.1∼∞			
Angle of View (Degrees)	1/1.8"	72.4×57.0			
	1/2"	65.9×51.3			
	1/2.5"	59.8×46.2			
Resolution (Center, Corner)		200lp/mm, 100lp/mm			
TV Distortion (%)		-0.51			
Back Focus in Air (mm)		5.8			
Mount		S-mount (M12×P0.5)			
Size (mm)		Φ21.5×29.9			
Weight (g)		12			
Temperature Range		-10°C∼+50°C			

Supported Camera Series KC48XS1 P.7

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SC Lens Series

Model		LM12SC	LM16SC	LM25SC	LM35SC	LM50SC
Focal Length (mm)		12	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)
Iris Range (F-Stop)		F1.8~F16	F1.8~F16	F1.8~F16	F2.0~F16	F2.0~F16
Focusing Range (m)		0.1~∞	0.1~∞	0.15~∞	0.2~∞	0.3~∞
Control	Iris	Manual	Manual	Manual	Manual	Manual
	Focus	Manual	Manual	Manual	Manual	Manual
Shooting Range at M.O.D. (mm)		125.5 (H) ×93.5 (V)	93.5 (H) ×69.9 (V)	86.1 (H) ×64.4 (V)	69.9 (H) ×52.4 (V)	70.1 (H) ×52.7 (V)
Angle of View (Degrees)	1"	55.9×43.1	44.0×33.6	28.9×21.8	20.8×15.6	14.6×11.0
	2/3"	39.8×30.2	30.9×23.3	20.1×15.2	14.3×10.8	10.1×7.6
	1/1.8"	32.9×24.9	25.5×19.2	16.5×12.4	11.7×8.8	8.3×6.2
Resolution (Center, Corner)		160lp/mm, 120lp/mm	160lp/mm, 120lp/mm	160lp/mm, 120lp/mm	160lp/mm, 120lp/mm	160lp/mm, 120lp/mm
TV Distortion (%)		−0.55	0.02	−0.34	0.02	0.30
Back Focus in Air (mm)		13.0	13.0	24.3	15.2	21.6
Mount		C-mount	C-mount	C-mount	C-mount	C-mount
Filter Thread (mm)		M40.5×P0.5	M34×P0.5	M34×P0.5	M34×P0.5	M34×P0.5
Size (mm)		ϕ48×82 (Min.) / ϕ43×84 (Max.)	Φ43×80.0	Φ43×89.0	Φ43×74.0	Φ43×78.5
Weight (g)		255	240	245	200	210
Temperature Range		−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C	−10°C~+50°C

JC3M2 Lens Series

Model		LM8JC3M2	LM12JC3M2	LM16JC3M2	LM25JC3M2	LM35JC3M2	LM50JC3M2
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~Close	F1.4~Close	F1.4~F16	F1.4~F16	F2.0~F16	F2.8~F22
Focusing Range (m)		0.1~∞	0.15~∞	0.2~∞	0.2~∞	0.2~∞	0.2~∞
Control	Iris	Manual	Manual	Manual	Manual	Manual	Manual
	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"	56.5×43.9	38.3×29.1	30.0×22.7	19.6×14.8	14.4×10.8	9.6×7.2
	1/1.8"	47.4×36.3	31.7×24.0	24.7×18.6	16.1×12.1	11.8×8.8	7.9×5.9
	1/2"	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)		ϕ34×41.6 (Min.) / ϕ34×42.2 (Max.)	ϕ34×37 (Min.) / ϕ34×38.1 (Max.)	ϕ33.5×36.5 (Min.) / ϕ33.5×38.6 (Max.)	ϕ33.5×39.5 (Min.) / ϕ33.5×44 (Max.)	ϕ34×36.5 (Min.) / ϕ34×46.6 (Max.)	ϕ34×55 (Min.) / ϕ34×73.5 (Max.)
Weight (g)		90	85	85	90	70	95
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

HC-IR Lens Series

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
	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"	14.4×10.8	12.2×9.2
	2/3"	9.9×7.5	8.4×6.3
	1/1.8"	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	M37.5×P0.5
Size (mm)		ϕ50×48.9 (Min.) / ϕ50×51.46 (Max.)	Φ49.2×54.6
Weight (g)		180	200
Temperature Range		−10°C~+50°C	−10°C~+50°C

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LM50-IR

Model		LM50-IR
Focal Length (mm)		50
Image Size (mm)		36×24 (Φ43.3)
Iris Range (F-Stop)		F1.9~F16
Focusing Range (m)		0.5~∞
Control	Iris	Manual
	Focus	Manual
Shooting Range at M.O.D. (mm)		366.9 (H) ×242.9 (V)
Angle of View (Degrees)	Full size	40.2×27.2
	4/3"	21.0×15.8
	1"	14.6×11.0
Resolution (Center, Corner)		100lp/mm, 50lp/mm
TV Distortion (%)		−0.5
Back Focus in Air (mm)		34.6
Mount		Nikon F-mount
Filter Thread (mm)		M52×P0.75
Size (mm)		Φ58.5×105.2
Weight (g)		605
Temperature Range		−10°C~+50°C

LMZ45T3 * Please contact regional sales office to order.

Model		LMZ45T3			
Magnification		inf ~1.1×			
Zoom magnification		6×			
Image Size(mm)		8.8×6.6 (Φ11)			
Close up lens		3Dpt.un-installed		3Dpt.installed	
Shooting Magnification		Inf ~0.72×		0.053~1.1×	
W.D (mm)		Inf~M.O.D=185		WD=330~115	
Iris Range (F-Stop)		F2.5~Close			
TV Distortion (%)		−0.3		−0.1	
Control	Iris	Manual			
	Focus	Manual			
	Zoom	Manual			
Shooting Range (mm)	2/3"	inf wide	27.3×20.5°	WD=310 wide	165.4×123.8
		inf tele	4.7×3.5°	WD=310 tele	28.3×21.3
		WD=310 wide	67.0×50.1	WD=150 wide	43.8×32.8
		WD=310 tele	11.7×9.0	WD=150 tele	7.6×5.9
	1/2"	inf wide	19.9×14.9°	WD=310 wide	120.0×89.8
		inf tele	3.4×2.6°	WD=310 tele	20.7×15.6
		WD=310 wide	48.6×36.5	WD=150 wide	31.8×23.8
		WD=310 tele	8.7×6.6	WD=150 tele	5.7×4.3
	1/3"	inf wide	14.9×11.2°	WD=310 wide	89.8×67.4
		inf tele	2.6×2.0°	WD=310 tele	15.6×11.7
		WD=310 wide	36.5×27.3	WD=150 wide	23.8×17.9
		WD=310 tele	6.6×5.0	WD=150 tele	4.3×3.3
Mount		C-mount			
Filter Thread (mm)		M52×P0.75			
Size (mm)		Φ62×171.7			
Weight (g)		595			
Temperature Range		−10° C ~+50° C			

Close Up Rings

Model	Specification
KW-EXT1	1mm
KW-EXT5	5mm
KW-EXT10	10mm
KW-EXT20	20mm
LMZ4S (Set of 4 Close Up Rings)	1mm, 5mm, 10mm, 20mm

1 mm 5 mm 10 mm 20 mm

Filter Holders

Attaching a filter holder enables the use of M30.5 x P0.5 filters with JC5MC Series lenses in 12mm, 16mm, and 25mm focal lengths.

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

Mount Adaptors

Mount adapters allow flange back adjustment for VM42 Series lenses with 18mm, 25mm, and 35mm focal lengths.

Model	Flange Back (mm)	Mount Adaptors
FB-1600VM	16	M42-mount
FB-1148VM	11.48	M42-mount
FB-1000VM	10	M42-mount
FB-1200VM	12	M42-mount
FB-0656VM	6.56	M42-mount
FB-1750VM	17.5	TFL-II-mount

XC Lens Series

LM8XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.008	2153.1	1614.2	1497.5	1121.8	1027.0	770.7
950	0.009	2047.0	1534.6	1423.8	1066.6	976.4	732.7
900	0.009	1940.6	1454.9	1349.8	1011.2	925.6	694.6
850	0.010	1834.3	1375.2	1275.8	955.8	874.9	656.6
800	0.011	1727.9	1295.4	1201.8	900.4	824.2	618.5
750	0.011	1621.5	1215.7	1127.9	845.0	773.5	580.5
700	0.012	1515.1	1136.0	1053.9	789.6	722.8	542.5
650	0.013	1408.7	1056.2	979.9	734.2	672.1	504.4
600	0.014	1302.3	976.5	906.0	678.8	621.4	466.4
550	0.015	1195.9	896.7	832.0	623.4	570.7	428.3
500	0.017	1089.3	816.8	757.9	567.9	519.9	390.2
450	0.019	983.2	737.3	684.1	512.6	469.3	352.2
400	0.021	876.8	657.5	610.1	457.2	418.6	314.2
350	0.024	770.7	578.0	536.3	401.9	367.9	276.2
300	0.028	663.8	497.9	462.0	346.3	317.1	238.0
250	0.033	557.7	418.4	388.2	291.0	266.5	200.1
200	0.041	451.2	338.5	314.1	235.6	215.7	162.0
150	0.053	344.9	258.8	240.2	180.2	165.0	123.9
100	0.077	238.4	179.1	166.4	124.9	114.5	85.9

LM12XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.012	1562.6	1168.7	1082.6	806.5	737.2	551.2
950	0.013	1485.8	1111.3	1029.5	766.9	701.0	524.2
900	0.013	1409.1	1053.9	976.3	727.3	664.8	497.1
850	0.014	1332.4	996.5	923.1	687.7	628.6	470.0
800	0.015	1255.7	939.1	870.0	648.1	592.4	443.0
750	0.016	1179.0	881.7	816.8	608.5	556.2	415.9
700	0.017	1102.2	824.3	763.6	568.9	520.0	388.8
650	0.018	1025.5	766.9	710.4	529.2	483.8	361.8
600	0.020	948.8	709.5	657.3	489.6	447.6	334.7
550	0.022	872.1	652.1	604.1	450.0	411.4	307.6
500	0.024	795.3	594.7	550.9	410.4	375.2	280.6
450	0.026	718.6	537.3	497.8	370.8	339.0	253.5
400	0.029	641.9	479.9	444.6	331.2	302.8	226.4
350	0.033	565.1	422.5	391.4	291.6	266.5	199.3
300	0.039	488.4	365.1	338.2	252.0	230.3	172.2
250	0.046	411.7	307.7	285.1	212.4	194.1	145.2
200	0.056	334.6	250.0	231.6	172.6	157.8	118.0
150	0.073	258.0	192.8	178.6	133.1	121.6	91.0
100	0.104	181.5	135.5	125.5	93.5	85.6	63.9

LM16XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.016	1187.5	887.7	822.8	614.7	562.3	421.4
950	0.017	1129.0	844.0	782.3	584.4	534.7	400.6
900	0.017	1070.5	800.3	741.8	554.2	507.0	379.9
850	0.018	1012.1	756.6	701.3	523.9	479.3	359.2
800	0.020	953.5	712.8	660.7	493.6	451.6	338.4
750	0.021	895.2	669.2	620.3	463.4	424.0	317.7
700	0.022	836.7	625.5	579.8	433.2	396.3	296.9
650	0.024	778.2	581.8	539.3	402.9	368.6	276.2
600	0.026	719.8	538.1	498.8	372.7	341.0	255.5
550	0.028	661.3	494.4	458.3	342.4	313.3	234.8
500	0.031	602.8	450.7	417.8	312.2	285.6	214.0
450	0.034	544.3	407.0	377.3	281.9	257.9	193.3
400	0.038	485.9	363.3	336.8	251.7	230.3	172.6
350	0.044	427.4	319.6	296.3	221.4	202.6	151.8
300	0.051	368.9	275.9	255.8	191.1	174.9	131.1
250	0.060	310.5	232.3	215.3	160.9	147.2	110.4
200	0.074	252.0	188.5	174.8	130.6	119.5	89.6
150	0.096	193.4	144.7	134.2	100.3	91.8	68.8
100	0.138	134.6	100.8	93.5	69.9	64.0	48.0

LM25XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.025	759.0	566.0	524.7	392.4	359.2	269.4
950	0.026	721.7	538.2	498.9	373.1	341.5	256.1
900	0.027	684.4	510.4	473.1	353.9	323.8	242.9
850	0.029	647.1	482.5	447.3	334.6	306.2	229.7
800	0.031	609.8	454.7	421.5	315.3	288.5	216.4
750	0.033	572.5	426.9	395.8	296.0	270.9	203.2
700	0.035	535.2	399.1	370.0	276.7	253.2	189.9
650	0.037	497.9	371.3	344.2	257.4	235.6	176.7
600	0.041	460.6	343.4	318.4	238.1	217.9	163.4
550	0.044	423.3	315.6	292.6	218.8	200.2	150.2
500	0.048	386.0	287.8	266.8	199.5	182.6	136.9
450	0.054	348.7	259.9	241.0	180.2	164.9	123.7
400	0.060	311.3	232.1	215.2	160.9	147.2	110.4
350	0.068	274.0	204.3	189.3	141.6	129.6	97.2
300	0.079	236.7	176.4	163.5	122.3	111.9	83.9
250	0.094	199.3	148.5	137.7	102.9	94.2	70.7
200	0.115	161.9	120.6	111.8	83.6	76.5	57.4
150	0.150	124.8	93.0	86.1	64.4	59.0	44.2

LM35XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.035	523.5	392.3	364.0	272.9	249.9	187.6
950	0.037	497.1	372.6	345.7	259.2	237.3	178.2
900	0.039	470.7	352.8	327.4	245.4	224.7	168.7
850	0.042	444.3	333.0	309.0	231.7	212.1	159.3
800	0.044	417.9	313.3	290.7	217.9	199.5	149.8
750	0.047	391.5	293.5	272.3	204.2	186.9	140.4
700	0.051	365.2	273.7	254.0	190.4	174.4	130.9
650	0.054	338.7	253.9	235.6	176.7	161.8	121.5
600	0.059	312.3	234.1	217.3	162.9	149.2	112.0
550	0.064	285.9	214.4	198.9	149.2	136.6	102.6
500	0.071	259.5	194.6	180.6	135.4	124.0	93.1
450	0.079	233.0	174.8	162.2	121.6	111.4	83.6
400	0.089	206.6	154.9	143.8	107.8	98.8	74.2
350	0.102	180.1	135.1	125.4	94.1	86.1	64.9
300	0.120	153.6	115.3	107.0	80.3	73.5	55.2
250	0.145	127.1	95.4	88.5	66.4	60.8	45.7
200	0.183	100.3	75.3	69.9	52.4	48.1	36.1

LM50XC

WD (mm)	Magnification	Field of View (mm) 4/3″ H	4/3″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.051	354.7	267.7	248.7	187.1	171.4	128.9
950	0.054	336.5	252.5	236.0	177.5	162.6	122.3
900	0.057	318.3	240.3	223.2	167.9	153.8	115.7
850	0.060	300.1	226.5	210.5	158.3	145.1	109.1
800	0.064	281.9	212.8	197.7	148.7	136.3	102.5
750	0.069	263.7	199.1	184.9	139.1	127.5	95.9
700	0.074	245.6	185.3	172.2	129.5	118.7	89.2
650	0.080	227.3	171.6	159.4	119.9	109.9	82.6
600	0.087	209.1	157.8	146.6	110.3	101.1	76.0
550	0.095	190.9	144.1	133.8	100.7	92.2	69.4
500	0.105	172.7	130.3	121.0	91.0	83.4	62.7
450	0.118	154.4	116.5	108.2	81.4	74.6	56.1
400	0.134	136.1	102.6	95.4	71.7	65.7	49.4
350	0.154	117.7	88.8	82.5	62.0	56.8	42.7
300	0.181	100.2	75.5	70.1	52.7	48.4	36.3

FC24M Lens Series

LM6FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM8FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM12FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM16FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM25FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM35FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM50FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ 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

LM75FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.078	179.6	135.2	163.1	122.5	112.3	84.3
950	0.083	170.3	128.2	154.6	116.2	106.5	80.0
900	0.087	160.9	121.2	146.2	109.8	100.7	75.6
850	0.093	151.6	114.2	137.7	103.4	94.9	71.2
800	0.099	142.3	107.2	129.3	97.1	89.0	66.8
750	0.106	133.0	100.2	120.8	90.8	83.2	62.5
700	0.114	123.7	93.2	112.4	84.4	77.4	58.1
650	0.123	114.4	86.1	103.9	78.0	71.6	53.7
600	0.134	105.1	79.1	95.4	71.7	65.7	49.4
550	0.147	95.8	72.1	87.0	65.4	59.9	45.0
500	0.163	86.5	65.1	78.5	59.0	54.1	40.6
450	0.182	77.1	58.1	70.1	52.6	48.3	36.2
400	0.207	67.8	51.1	61.6	46.3	42.5	31.9
350	0.240	58.5	44.1	53.2	40.0	36.6	27.5
300	0.285	49.2	37.1	44.7	33.6	30.8	23.1
250	0.352	39.9	30.1	36.3	27.3	25.0	18.8
200	0.459	30.6	23.1	27.8	20.9	19.2	14.4
150	0.659	21.3	16.1	19.4	14.5	13.3	10.0

LM100FC24M

WD (mm)	Magnification	Field of View (mm) 1.1″ H	1.1″ V	1″ H	1″ V	2/3″ H	2/3″ V
1000	0.101	138.6	104.5	126.0	94.7	86.9	65.2
950	0.106	131.7	99.3	119.7	90.0	82.5	61.9
900	0.112	124.7	94.0	113.3	85.2	78.1	58.7
850	0.119	117.8	88.8	107.0	80.5	73.8	55.4
800	0.126	110.8	83.5	100.7	75.7	69.4	52.1
750	0.135	103.8	78.3	94.4	70.9	65.1	48.8
700	0.145	96.9	73.0	88.0	66.2	60.7	45.6
650	0.156	89.9	67.8	81.7	61.4	56.3	42.3
600	0.169	82.9	62.5	75.3	56.6	51.9	39.0
550	0.185	75.9	57.2	69.0	51.9	47.6	35.7
500	0.203	68.9	51.9	62.6	47.1	43.2	32.4
450	0.226	61.9	46.6	56.2	42.3	38.8	29.1
400	0.256	54.9	41.3	49.8	37.5	34.4	25.8
350	0.293	47.8	36.0	43.4	32.6	29.9	22.5
300	0.345	40.7	30.7	37.0	27.8	25.5	19.1
250	0.419	33.5	25.2	30.4	22.9	21.0	15.8
200	0.535	26.2	19.8	23.8	17.9	16.4	12.3
150	0.749	18.7	14.1	17.0	12.8	11.7	8.8

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

HC Lens Series

LM4HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.005	3047.6	2250.8	2046.3	1492.1	1641.0	1201.2
950	0.005	2899.6	2141.5	1946.9	1419.6	1561.3	1142.9
900	0.005	2750.6	2031.4	1846.8	1346.6	1481.0	1084.1
850	0.006	2602.3	1921.8	1747.2	1274.0	1401.2	1025.6
800	0.006	2453.5	1811.8	1647.1	1201.0	1320.9	966.9
750	0.006	2304.7	1701.7	1547.0	1128.0	1240.6	908.1
700	0.007	2155.8	1591.7	1447.0	1055.1	1160.4	849.4
650	0.007	2007.0	1481.6	1346.9	982.1	1080.1	790.6
600	0.008	1858.2	1371.6	1246.9	909.1	999.9	731.9
550	0.008	1709.3	1261.6	1146.8	836.2	919.6	673.1
500	0.009	1560.5	1151.5	1046.8	763.2	839.4	614.4
450	0.010	1411.7	1041.5	946.7	690.2	759.1	555.6
400	0.011	1262.8	931.4	846.6	617.2	678.9	496.9
350	0.013	1114.0	821.4	746.6	544.3	598.6	438.2
300	0.015	965.2	711.3	646.5	471.3	518.4	379.4
250	0.018	816.4	601.3	546.5	398.3	438.1	320.7
200	0.022	667.6	491.3	446.4	325.4	357.9	261.9
150	0.028	518.8	381.3	346.4	252.4	277.6	203.2
100	0.039	375.6	272.1	246.6	178.8	196.8	143.6

LM6HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.006	2296.0	1691.7	1538.9	1128.0	1238.3	912.1
950	0.006	2183.3	1608.7	1463.3	1072.6	1177.5	867.3
900	0.007	2070.6	1525.6	1387.8	1017.2	1116.7	822.5
850	0.007	1957.9	1442.5	1312.2	961.8	1055.9	777.7
800	0.008	1845.2	1359.4	1236.6	906.4	995.1	732.9
750	0.008	1732.5	1276.3	1161.0	851.0	934.2	688.1
700	0.009	1619.8	1193.3	1085.4	795.6	873.4	643.3
650	0.009	1507.1	1110.2	1009.9	740.2	812.6	598.5
600	0.010	1394.4	1027.1	934.3	684.8	751.8	553.7
550	0.011	1281.7	944.0	858.7	629.4	691.0	508.9
500	0.012	1169.0	860.9	783.1	574.0	630.2	464.1
450	0.013	1056.3	777.9	707.6	518.6	569.3	419.3
400	0.015	943.6	694.8	632.0	463.2	508.5	374.5
350	0.017	830.9	611.7	556.4	407.8	447.7	329.8
300	0.020	718.2	528.6	480.8	352.4	386.9	285.0
250	0.023	605.5	445.5	405.2	297.0	326.1	240.2
200	0.028	492.8	362.5	329.7	241.6	265.2	195.4
150	0.037	380.1	279.4	254.1	186.2	204.4	150.6
100	0.052	267.4	196.3	178.7	130.9	143.7	105.9

LM8HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.008	1698.6	1245.6	1134.2	835.9	916.0	678.3
950	0.009	1615.1	1184.4	1078.5	794.8	871.0	644.9
900	0.009	1531.7	1123.1	1022.7	753.7	825.9	611.5
850	0.010	1448.2	1061.9	966.9	712.6	780.9	578.2
800	0.010	1364.7	1000.6	911.1	671.4	735.8	544.8
750	0.011	1281.3	939.4	855.4	630.3	690.8	511.5
700	0.012	1197.8	878.1	799.6	589.2	645.7	478.1
650	0.012	1114.3	816.9	743.8	548.1	600.7	444.7
600	0.013	1030.9	755.6	688.0	507.0	555.6	411.4
550	0.015	947.4	694.4	632.3	465.9	510.6	378.0
500	0.016	863.9	633.2	576.5	424.8	465.5	344.7
450	0.018	780.5	571.9	520.7	383.7	420.5	311.3
400	0.020	697.0	510.7	464.9	342.6	375.4	278.0
350	0.023	613.5	449.4	409.2	301.5	330.4	244.6
300	0.026	530.1	388.2	353.4	260.4	285.3	211.2
250	0.031	446.6	326.9	297.6	219.2	240.3	177.9
200	0.038	363.1	265.7	241.8	178.1	195.2	144.5
150	0.050	279.7	204.4	186.1	137.0	150.2	111.2
100	0.071	196.0	143.2	130.4	96.0	105.2	77.9

LM12HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.013	1068.7	787.5	718.9	533.9	583.9	435.0
950	0.013	1016.0	748.6	683.5	507.6	555.1	413.5
900	0.014	963.3	709.8	648.0	481.3	526.3	392.1
850	0.015	910.6	670.9	612.5	454.9	497.5	370.6
800	0.016	857.9	632.1	577.1	428.6	468.7	349.1
750	0.017	805.2	593.3	541.6	402.3	439.9	327.7
700	0.018	752.5	554.4	506.2	375.9	411.1	306.2
650	0.019	699.8	515.6	470.7	349.6	382.3	284.8
600	0.021	647.0	476.7	435.2	323.2	353.5	263.3
550	0.023	594.4	437.9	399.8	296.9	324.7	241.9
500	0.025	541.6	399.1	364.3	270.6	295.9	220.4
450	0.027	489.0	360.2	328.9	244.3	267.1	199.0
400	0.031	436.2	321.3	293.4	217.9	238.3	177.5
350	0.035	383.4	282.5	257.9	191.5	209.4	156.0
300	0.041	330.6	243.5	222.4	165.2	180.6	134.6

LM16HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.016	821.0	608.6	556.4	414.5	453.0	338.1
950	0.017	780.4	578.4	528.8	394.0	430.5	321.4
900	0.018	739.7	548.3	501.2	373.4	408.0	304.6
850	0.019	699.0	518.1	473.6	352.8	385.6	287.8
800	0.020	658.3	487.9	446.0	332.3	363.1	271.1
750	0.021	617.6	457.8	418.5	311.8	340.7	254.3
700	0.023	577.0	427.6	390.9	291.2	318.2	237.5
650	0.025	536.3	397.4	363.3	270.6	295.7	220.8
600	0.027	495.6	367.2	335.7	250.1	273.3	204.0
550	0.029	454.9	337.1	308.1	229.5	250.8	187.2
500	0.032	414.2	306.9	280.6	209.0	228.4	170.5
450	0.035	373.6	276.8	253.0	188.4	205.9	153.7
400	0.040	332.9	246.6	225.4	167.9	183.5	137.0
350	0.045	292.2	216.4	197.8	147.4	161.0	120.2
300	0.053	251.5	186.2	170.3	126.8	138.6	103.4

LM25HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.025	527.1	391.4	358.1	267.3	291.9	218.3
950	0.026	500.9	372.0	340.3	254.0	277.4	207.4
900	0.028	474.8	352.5	322.5	240.8	262.9	196.6
850	0.029	448.6	333.1	304.7	227.5	248.4	185.8
800	0.031	422.5	313.7	286.9	214.2	233.9	174.9
750	0.033	396.3	294.2	269.2	200.9	219.4	164.1
700	0.035	370.2	274.8	251.4	187.6	204.9	153.2
650	0.038	344.0	255.4	233.6	174.4	190.4	142.4
600	0.041	317.9	235.9	215.8	161.1	175.9	131.5
550	0.045	291.7	216.5	198.0	147.8	161.4	120.7
500	0.049	265.6	197.1	180.3	134.5	146.9	109.8
450	0.055	239.4	177.6	162.5	121.3	132.4	99.0
400	0.062	213.2	158.2	144.7	108.0	117.9	88.1
350	0.070	187.1	138.7	126.9	94.7	103.4	77.3
300	0.082	160.7	119.2	109.1	81.4	88.9	66.5

LM35HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.035	368.6	275.0	251.9	188.5	205.7	154.1
950	0.037	350.2	261.3	239.3	179.1	195.5	146.4
900	0.039	331.8	247.5	226.7	169.6	185.2	138.7
850	0.041	313.3	233.8	214.1	160.2	174.9	131.0
800	0.044	294.9	220.0	201.5	150.8	164.5	123.2
750	0.047	276.5	206.2	188.8	141.3	154.2	115.5
700	0.050	258.0	192.5	176.2	131.9	143.9	107.8
650	0.054	239.5	178.6	163.6	122.4	133.6	100.0
600	0.059	221.1	164.9	151.0	113.0	123.3	92.3
550	0.064	202.7	151.1	138.4	103.5	113.0	84.6
500	0.071	184.2	137.3	125.8	94.1	102.7	76.9
450	0.078	165.8	123.5	113.1	84.6	92.4	69.2
400	0.088	147.3	109.7	100.5	75.1	82.0	61.4
350	0.101	128.8	95.9	87.8	65.7	71.7	53.7
300	0.118	110.1	82.0	75.2	56.2	61.4	46.0

LM50HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
1000	0.051	249.4	187.2	171.6	128.8	140.5	105.4
950	0.054	236.7	177.6	162.8	122.2	133.3	100.0
900	0.057	224.0	168.0	154.1	115.6	126.1	94.6
850	0.061	211.3	158.5	145.3	109.0	118.9	89.2
800	0.065	198.5	148.9	136.5	102.4	111.7	83.8
750	0.069	185.8	139.3	127.7	95.8	104.5	78.4
700	0.074	173.0	129.7	118.9	89.2	97.3	73.0
650	0.080	160.2	120.1	110.1	82.6	90.1	67.6
600	0.087	147.5	110.5	101.3	76.0	82.9	62.2
550	0.095	134.8	101.0	92.6	69.4	75.7	56.8
500	0.105	121.8	91.3	83.8	62.9	68.6	51.4

LM75HC

WD (mm)	Magnification	Field of View (mm) 1" H	1" V	2/3" H	2/3" V	1/1.8" H	1/1.8" V
2000	0.038	334.7	251.3	230.4	172.9	188.6	141.5
1900	0.040	317.8	238.5	218.7	164.2	179.0	134.4
1800	0.042	300.8	225.8	207.0	155.4	169.5	127.1
1700	0.045	283.9	213.1	195.3	146.6	159.9	120.0
1600	0.048	267.0	200.3	183.6	137.8	150.3	112.8
1500	0.051	250.0	187.6	172.0	129.0	140.7	105.6
1400	0.055	233.1	174.8	160.3	120.2	131.2	98.4
1300	0.059	216.2	162.1	148.6	111.5	121.6	91.2
1200	0.064	199.3	149.4	136.9	102.7	112.0	84.0
1100	0.070	182.4	136.7	125.3	93.9	102.5	76.9
1000	0.078	165.5	123.9	113.6	85.2	92.9	69.7

JC5MC/JC5MC-WP Lens Series

LM8JC5MC/LM8JC5MC-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.008	1113.2	824.7	902.9	670.2	798.8	593.8
900	0.009	1003.3	743.2	813.7	603.9	719.9	535.1
800	0.010	893.3	661.7	724.5	537.7	640.9	476.4
700	0.012	783.4	580.2	635.3	471.4	562.0	417.7
600	0.014	673.5	498.7	546.0	405.2	483.0	359.0
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/LM12JC5MC-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.012	756.7	564.1	616.4	460.0	546.7	408.3
900	0.013	682.0	508.3	555.5	414.5	492.6	367.9
800	0.015	607.2	452.6	494.6	369.1	438.6	327.5
700	0.017	532.5	396.8	433.7	323.6	384.6	287.2
600	0.020	457.8	341.1	372.8	278.1	330.6	246.8
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/LM16JC5MC-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.016	559.6	419.0	457.4	342.6	406.2	304.4
900	0.018	504.4	377.6	412.2	308.6	366.2	274.2
800	0.020	449.0	336.2	367.0	274.8	326.0	244.2
700	0.022	393.8	294.8	321.8	241.0	285.8	214.0
600	0.026	338.4	253.4	276.6	207.0	245.6	184.0
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/LM25JC5MC-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.025	356.8	267.6	291.8	219.0	259.4	194.6
900	0.027	321.6	241.2	263.2	197.4	233.8	175.4
800	0.031	286.4	214.8	234.4	175.8	208.2	156.2
700	0.035	251.4	188.4	205.6	154.2	182.8	137.0
600	0.041	216.2	162.0	176.8	132.6	157.2	117.8
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

LM35JC5MC

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.036	245.4	184.2	200.9	150.8	178.6	134.0
900	0.040	220.8	165.7	180.7	135.6	160.7	120.6
800	0.045	196.2	147.2	160.5	120.5	142.7	107.1
700	0.051	171.5	128.7	140.4	105.3	124.8	93.6
600	0.060	146.9	110.2	120.2	90.2	106.8	80.1
500	0.072	122.2	91.7	100.0	75.0	88.9	66.7
450	0.080	109.9	82.4	89.9	67.4	79.9	59.9
400	0.090	97.6	73.2	79.8	59.9	71.0	53.2
350	0.103	85.3	63.9	69.7	52.3	62.0	46.5
300	0.121	73.0	54.7	59.7	44.7	53.0	39.7
250	0.146	60.6	45.4	49.6	37.1	44.0	33.0
200	0.183	48.3	36.2	39.5	29.6	35.1	26.3

LM50JC5MC

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.051	171.9	129.0	140.7	105.6	125.1	93.8
900	0.057	154.3	115.8	126.3	94.8	112.3	84.2
800	0.064	136.8	102.6	111.9	84.0	99.5	74.6
700	0.074	119.2	89.4	97.5	73.2	86.7	65.0
600	0.087	101.6	76.2	83.2	62.4	73.9	55.4
500	0.105	84.1	63.0	68.8	51.6	61.1	45.8
450	0.117	75.3	56.4	61.6	46.2	54.7	41.0
400	0.133	66.5	49.9	54.4	40.8	48.3	36.3
350	0.153	57.7	43.3	47.2	35.4	41.9	31.5
300	0.180	48.9	36.7	40.0	30.0	35.5	26.7

NCM/NCM-WP/JC1M/JC1MS/JCM-V/JCM-WP Lens series

LM3NC1M/LM3NCM-WP

WD (mm)	Magnification	Field of View (mm)					
		1/1.8″		1/2″		1/3″	
		H	V	H	V	H	V
1000	0.004	2003.1	1513.4	1786.2	1347.7	1347.7	1011.6
900	0.004	1805.7	1364.1	1610.1	1214.8	1214.8	911.8
800	0.005	1608.2	1214.9	1434.0	1081.8	1081.8	812.0
700	0.005	1410.8	1065.6	1257.9	948.9	948.9	712.2
600	0.006	1213.3	916.4	1081.8	816.0	816.0	612.3
500	0.007	1015.9	767.1	905.7	683.0	683.0	512.5
450	0.008	917.2	692.5	817.6	616.5	616.5	462.6
400	0.009	818.5	617.8	729.5	550.1	550.1	412.7
350	0.010	719.7	543.2	641.5	483.6	483.6	362.8
300	0.012	621.0	468.6	553.4	417.1	417.1	312.9
250	0.014	522.3	394.0	465.4	350.7	350.7	263.0
200	0.017	423.6	319.3	377.3	284.2	284.2	213.1
150	0.022	324.9	244.7	289.3	217.7	217.7	163.2
100	0.032	226.1	170.1	201.2	151.2	151.2	113.3

LM6NCM

WD (mm)	Magnification	Field of View (mm)					
		1/1.8″		1/2″		1/3″	
		H	V	H	V	H	V
1000	0.006	–	–	1081.4	808.4	808.4	603.3
900	0.007	–	–	974.9	728.7	728.7	543.8
800	0.008	–	–	868.3	649.0	649.0	484.3
700	0.009	–	–	761.7	569.3	569.3	424.8
600	0.010	–	–	655.1	489.5	489.5	365.3
500	0.012	–	–	548.6	409.8	409.8	305.8
450	0.013	–	–	495.3	370.0	370.0	276.0
400	0.015	–	–	442.0	330.1	330.1	246.2
350	0.017	–	–	388.7	290.2	290.2	216.5
300	0.020	–	–	335.4	250.4	250.4	186.7
250	0.023	–	–	282.1	210.5	210.5	157.0
200	0.029	–	–	228.8	170.7	170.7	127.2
150	0.037	–	–	175.6	130.8	130.8	97.5
100	0.054	–	–	122.3	90.9	90.9	67.7

LM5JC1M/LM5JCM-V/LM5JCM-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.005	1781.3	1345.0	1465.0	1102.1	1304.7	979.5
900	0.006	1605.7	1212.3	1320.5	993.3	1176.0	882.8
800	0.006	1430.1	1079.6	1176.0	884.5	1047.3	786.1
700	0.007	1254.5	946.9	1031.5	775.8	918.5	689.5
600	0.008	1078.8	814.2	887.0	667.0	789.8	592.8
500	0.010	903.2	681.5	742.5	558.3	661.1	496.1
450	0.011	815.4	615.2	670.2	503.9	596.7	447.8
400	0.012	727.6	548.8	598.0	449.5	532.4	399.4
350	0.014	639.8	482.5	525.7	395.1	468.0	351.1
300	0.016	552.0	416.1	453.4	340.7	403.6	302.8
250	0.019	464.2	349.8	381.2	286.4	339.3	254.4
200	0.024	376.3	283.4	308.9	232.0	274.9	206.1
150	0.031	288.5	217.1	236.7	177.6	210.5	157.7
100	0.044	200.7	150.7	164.4	123.2	146.2	109.4

LM8JC1MS/LM8JCM-V/LM8JCM-WP

WD (mm)	Magnification	Field of View (mm)					
		2/3″		1/1.8″		1/2″	
		H	V	H	V	H	V
1000	0.008	1083.6	813.6	888.1	664.1	788.7	589.4
950	0.009	1030.1	773.4	844.2	631.3	749.7	560.3
900	0.009	976.5	733.2	800.3	598.4	710.7	531.2
850	0.010	923.0	693.0	756.5	565.6	671.8	502.0
800	0.010	869.5	652.8	712.6	532.8	632.8	472.9
750	0.011	816.0	612.6	668.7	500.0	593.8	443.8
700	0.012	762.5	572.4	624.8	467.2	554.9	414.6
650	0.013	709.0	532.2	581.0	434.4	515.9	385.5
600	0.014	655.5	492.0	537.1	401.5	476.9	356.4
550	0.015	601.9	451.8	493.2	368.7	437.9	327.3
500	0.016	548.4	411.6	449.3	335.9	399.0	298.1
450	0.018	494.9	371.4	405.5	303.1	360.0	269.0
400	0.020	441.4	331.2	361.6	270.3	321.0	239.9
350	0.023	387.9	291.0	317.7	237.5	282.1	210.7
300	0.027	334.4	250.8	273.8	204.6	243.1	181.6
250	0.032	280.9	210.6	230.0	171.8	204.1	152.5
200	0.039	227.4	170.4	186.1	139.0	165.2	123.3
150	0.051	173.8	130.2	142.2	106.2	126.2	94.2
100	0.075	120.3	90.0	98.3	73.4	87.2	65.1

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

LM12JC1MS/LM12JCM-V/LM12JCM-WP

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.013	702.2	525.7	573.9	429.5	509.7	381.5
950	0.013	667.4	499.7	545.5	408.3	484.5	362.6
900	0.014	632.7	473.7	517.1	387.0	459.3	343.8
850	0.015	598.0	447.7	488.7	365.8	434.0	324.9
800	0.016	563.3	421.7	460.3	344.5	408.8	306.0
750	0.017	528.5	395.7	432.0	323.3	383.6	287.1
700	0.018	493.8	369.7	403.6	302.0	358.4	268.2
650	0.019	459.1	343.7	375.2	280.8	333.2	249.4
600	0.021	424.3	317.7	346.8	259.5	308.0	230.5
550	0.023	389.6	291.7	318.4	238.3	282.7	211.6
500	0.025	354.9	265.6	290.0	217.0	257.5	192.7
450	0.028	320.2	239.6	261.6	195.7	232.3	173.9
400	0.031	285.4	213.6	233.2	174.5	207.1	155.0
350	0.035	250.7	187.6	204.8	153.2	181.9	136.1
300	0.041	216.0	161.6	176.4	132.0	156.7	117.2
250	0.049	181.3	135.6	148.0	110.7	131.4	98.3
200	0.061	146.5	109.6	119.7	89.5	106.2	79.5
150	0.080	111.8	83.6	91.3	68.2	81.0	60.6

LM16JC1MS/LM16JCM-V/LM16JCM-WP

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.016	541.1	405.1	442.2	331.1	392.8	294.1
950	0.017	514.2	385.0	420.3	314.7	373.3	279.6
900	0.018	487.4	365.0	398.4	298.3	353.8	265.0
850	0.019	460.6	344.9	376.4	281.9	334.4	250.4
800	0.020	433.8	324.8	354.5	265.5	314.9	235.8
750	0.022	407.0	304.7	332.6	249.1	295.5	221.3
700	0.023	380.2	284.7	310.7	232.7	276.0	206.7
650	0.025	353.4	264.6	288.8	216.2	256.5	192.1
600	0.027	326.6	244.5	266.9	199.8	237.1	177.5
550	0.030	299.8	224.5	245.0	183.4	217.6	163.0
500	0.032	273.0	204.4	223.1	167.0	198.2	148.4
450	0.036	246.2	184.3	201.2	150.7	178.7	133.8
400	0.040	219.4	164.3	179.3	134.3	159.3	119.3
350	0.046	192.7	144.2	157.4	117.9	139.8	104.7
300	0.053	165.9	124.2	135.6	101.5	120.4	90.2
250	0.064	139.2	104.2	113.7	85.1	101.0	75.6
200	0.079	112.5	84.2	91.9	68.8	81.6	61.1

LM25JC1MS/LM25JCM-V/LM25CM-WP

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.025	346.3	259.7	283.4	212.5	251.9	188.9
950	0.027	329.1	246.8	269.3	201.9	239.3	179.5
900	0.028	311.9	233.9	255.1	191.3	226.8	170.1
850	0.030	294.6	220.9	241.0	180.7	214.2	160.6
800	0.032	277.4	208.0	226.9	170.2	201.7	151.2
750	0.034	260.2	195.1	212.8	159.6	189.2	141.8
700	0.036	242.9	182.2	198.7	149.0	176.6	132.4
650	0.039	225.7	169.2	184.6	138.4	164.1	123.0
600	0.042	208.5	156.3	170.5	127.9	151.6	113.7
550	0.046	191.3	143.4	156.5	117.3	139.1	104.3
500	0.051	174.0	130.5	142.4	106.7	126.5	94.9
450	0.056	156.8	117.6	128.3	96.2	114.0	85.5
400	0.063	139.6	104.7	114.2	85.6	101.5	76.1
350	0.072	122.5	91.8	100.2	75.1	89.0	66.7
300	0.084	105.3	78.9	86.1	64.5	76.5	57.4
250	0.100	88.1	66.0	72.0	54.0	64.0	48.0
200	0.125	70.8	53.1	57.9	43.4	51.5	38.6

LM35JC1MS/LM35JCM-V/LM35JCM-WP

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.035	249.2	186.6	203.6	152.6	180.9	135.6
950	0.037	236.6	177.2	193.3	144.9	171.8	128.7
900	0.039	224.0	167.7	183.0	137.1	162.6	121.9
850	0.042	211.4	158.3	172.7	129.4	153.5	115.0
800	0.044	198.8	148.9	162.4	121.7	144.3	108.2
750	0.047	186.2	139.4	152.1	114.0	135.2	101.3
700	0.051	173.6	130.0	141.9	106.3	126.0	94.4
650	0.055	161.0	120.6	131.6	98.6	116.9	87.6
600	0.060	148.4	111.1	121.3	90.9	107.8	80.7
550	0.065	135.8	101.7	111.0	83.2	98.6	73.9
500	0.072	123.3	92.3	100.7	75.5	89.5	67.1
450	0.080	110.7	82.9	90.5	67.8	80.4	60.2
400	0.090	98.2	73.5	80.2	60.1	71.3	53.4
350	0.103	85.6	64.1	70.0	52.4	62.2	46.6
300	0.121	73.1	54.7	59.7	44.7	53.1	39.8
250	0.146	60.6	45.4	49.5	37.1	44.0	33.0
200	0.184	48.2	36.1	39.4	29.5	35.0	26.2

LM50JC1MS/LM50JCM-V/LM50JCM-WP

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.054	164.3	123.2	134.4	100.8	119.5	89.6
950	0.057	155.8	116.9	127.5	95.6	113.3	85.0
900	0.060	147.4	110.5	120.6	90.4	107.2	80.4
850	0.063	138.9	104.2	113.6	85.2	101.0	75.8
800	0.068	130.4	97.8	106.7	80.0	94.9	71.1
750	0.072	122.0	91.5	99.8	74.8	88.7	66.5
700	0.078	113.5	85.1	92.9	69.7	82.6	61.9
650	0.084	105.1	78.8	86.0	64.5	76.4	57.3
600	0.091	96.6	72.5	79.1	59.3	70.3	52.7
550	0.100	88.2	66.1	72.1	54.1	64.1	48.1
500	0.110	79.7	59.8	65.2	48.9	58.0	43.5
450	0.124	71.3	53.5	58.3	43.7	51.8	38.9
400	0.140	62.9	47.1	51.4	38.6	45.7	34.3
350	0.162	54.4	40.8	44.5	33.4	39.6	29.7
300	0.191	46.0	34.5	37.6	28.2	33.5	25.1
250	0.234	37.6	28.2	30.8	23.1	27.4	20.5
200	0.301	29.3	21.9	23.9	18.0	21.3	16.0

LM75JC1MS

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
2000	0.039	226.1	169.8	185.2	139.0	164.7	123.6
1900	0.041	214.4	161.0	175.6	131.8	156.2	117.2
1800	0.043	202.7	152.3	166.0	124.6	147.7	110.8
1700	0.046	191.1	143.5	156.5	117.5	139.2	104.4
1600	0.049	179.4	134.7	146.9	110.3	130.6	98.0
1500	0.052	167.7	125.9	137.3	103.1	122.1	91.7
1400	0.056	156.0	117.2	127.8	95.9	113.6	85.3
1300	0.061	144.4	108.4	118.2	88.7	105.1	78.9
1200	0.066	132.7	99.6	108.6	81.5	96.6	72.5

LM100JC1MS

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
3000	0.034	257.0	192.6	210.1	157.5	186.7	140.0
2900	0.036	248.2	186.0	202.9	152.1	180.3	135.2
2800	0.037	239.3	179.4	195.7	146.7	173.9	130.4
2700	0.038	230.5	172.8	188.5	141.3	167.5	125.6
2600	0.040	221.7	166.2	181.3	135.9	161.1	120.8
2500	0.041	212.9	159.6	174.1	130.5	154.7	116.0
2400	0.043	204.1	153.0	166.9	125.1	148.3	111.2
2300	0.045	195.3	146.4	159.7	119.7	141.9	106.4
2200	0.047	186.5	139.8	152.5	114.3	135.5	101.6
2100	0.050	177.7	133.2	145.3	108.9	129.1	96.8
2000	0.052	168.9	126.6	138.1	103.5	122.7	92.0

JC10M Lens Series

LM3JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.004	2433.0	1822.3	1989.3	1488.5	1766.6	1322.1
950	0.004	2313.5	1732.7	1891.5	1415.3	1679.7	1257.1
900	0.004	2194.1	1643.1	1793.8	1342.1	1592.9	1192.0
850	0.004	2074.6	1553.6	1696.0	1268.9	1506.1	1127.0
800	0.005	1955.1	1464.0	1598.2	1195.7	1419.2	1062.0
750	0.005	1835.6	1374.4	1500.5	1122.5	1332.4	997.0
700	0.005	1716.1	1284.8	1402.7	1049.3	1245.6	932.0
650	0.006	1596.6	1195.3	1305.0	976.1	1158.7	866.9
600	0.006	1477.1	1105.7	1207.2	902.9	1071.9	801.9
550	0.007	1357.6	1016.1	1109.5	829.8	985.0	736.9
500	0.007	1238.2	926.6	1011.7	756.6	898.2	671.9
450	0.008	1118.7	837.0	913.9	683.4	811.4	606.9
400	0.009	999.2	747.4	816.2	610.2	724.5	541.8
350	0.010	879.7	657.9	718.4	537.0	637.7	476.8
300	0.012	760.2	568.3	620.7	463.8	550.9	411.8
250	0.014	640.8	478.7	522.9	390.6	464.0	346.8
200	0.017	521.3	389.2	425.2	317.4	377.2	281.8
150	0.022	401.8	299.6	327.4	244.3	290.4	216.8
100	0.032	282.4	210.1	229.7	171.1	203.6	151.7

LM5JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.005	1773.6	1330.1	1450.3	1090.1	1290.1	969.9
950	0.005	1686.3	1264.6	1378.9	1036.4	1226.5	922.1
900	0.006	1599.0	1199.1	1307.4	982.7	1163.0	874.3
850	0.006	1511.7	1133.5	1236.0	928.9	1099.4	826.5
800	0.006	1424.4	1068.0	1164.6	875.2	1035.9	778.7
750	0.007	1337.1	1002.5	1093.2	821.5	972.3	730.9
700	0.007	1249.8	937.0	1021.7	767.8	908.8	683.1
650	0.008	1162.5	871.5	950.3	714.1	845.2	635.3
600	0.008	1075.2	806.0	878.9	660.4	781.7	587.5
550	0.009	987.9	740.4	807.5	606.7	718.1	539.7
500	0.010	900.6	674.9	736.0	552.9	654.6	491.9
450	0.011	813.3	609.4	664.6	499.2	591.0	444.1
400	0.012	725.9	543.9	593.2	445.5	527.5	396.3
350	0.014	638.6	478.3	521.7	391.8	463.9	348.5
300	0.016	551.3	412.8	450.3	338.1	400.3	300.7
250	0.019	463.9	347.3	378.8	284.3	336.8	252.9
200	0.023	376.6	281.7	307.4	230.6	273.2	205.1
150	0.031	289.2	216.2	235.9	176.9	209.6	157.3
100	0.044	201.7	150.5	164.3	123.0	145.9	109.3

LM8JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.008	1052.3	791.0	862.6	647.4	767.1	575.5
950	0.009	1000.6	752.2	820.3	615.6	729.4	547.3
900	0.009	949.8	713.9	778.6	584.3	692.3	519.4
850	0.010	898.9	675.6	736.8	553.0	655.2	491.6
800	0.010	848.2	637.5	695.2	521.8	618.2	463.8
750	0.001	797.1	599.1	653.3	490.3	580.9	435.8
700	0.012	746.2	560.8	611.6	458.9	543.8	408.0
650	0.013	695.2	522.4	569.7	427.5	506.6	380.0
600	0.014	644.3	484.1	528.0	396.2	469.5	352.2
550	0.015	593.3	445.7	486.2	364.8	432.3	324.2
500	0.016	542.7	407.7	444.7	333.6	395.4	296.6
450	0.018	491.9	369.5	403.0	302.3	358.3	268.7
400	0.020	440.7	331.0	361.1	270.8	321.0	240.7
350	0.023	389.8	292.7	319.3	239.5	283.8	212.8
300	0.026	338.9	254.4	277.5	208.1	246.7	184.9
250	0.031	288.0	216.1	235.8	176.7	209.5	157.1
200	0.037	237.0	177.7	194.0	145.3	172.3	129.1
150	0.048	186.1	139.4	152.2	113.9	135.2	101.2
100	0.066	135.4	101.3	110.6	82.7	98.2	73.4

LM12JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.016	546.3	408.9	446.3	334.2	396.4	296.9
950	0.017	519.5	388.8	424.4	317.8	377.0	282.3
900	0.018	492.7	368.7	402.5	301.4	357.5	267.7
850	0.019	465.9	348.7	380.6	285.0	338.0	253.2
800	0.020	439.1	328.6	358.7	268.6	318.6	238.6
750	0.022	412.3	308.5	336.8	252.2	299.1	224.0
700	0.023	385.4	288.5	314.9	235.7	279.7	209.4
650	0.025	358.6	268.4	292.9	219.3	260.2	194.9
600	0.027	331.8	248.3	271.0	202.9	240.7	180.3
550	0.029	305.0	228.2	249.1	186.5	221.3	165.7
500	0.032	278.1	208.1	227.2	170.1	201.8	151.1
450	0.035	251.3	188.1	205.3	153.7	182.3	136.6
400	0.039	224.5	168.0	183.4	137.3	162.9	122.0
350	0.045	197.7	147.9	161.5	120.9	143.4	107.4
300	0.052	170.9	127.8	139.6	104.5	123.9	92.8
250	0.062	144.0	107.8	117.6	88.1	104.5	78.2
200	0.076	117.2	87.7	95.7	71.7	85.0	63.7
150	0.098	90.4	67.6	73.8	55.3	65.6	49.1
100	0.107	83.4	62.3	68.0	50.9	60.3	45.1

LM16JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.016	546.3	408.9	446.3	334.2	396.4	296.9
950	0.017	519.5	388.8	424.4	317.8	377.0	282.3
900	0.018	492.7	368.7	402.5	301.4	357.5	267.7
850	0.019	465.9	348.7	380.6	285.0	338.0	253.2
800	0.020	439.1	328.6	358.7	268.6	318.6	238.6
750	0.022	412.3	308.5	336.8	252.2	299.1	224.0
700	0.023	385.4	288.5	314.9	235.7	279.7	209.4
650	0.025	358.6	268.4	292.9	219.3	260.2	194.9
600	0.027	331.8	248.3	271.0	202.9	240.7	180.3
550	0.029	305.0	228.2	249.1	186.5	221.3	165.7
500	0.032	278.1	208.1	227.2	170.1	201.8	151.1
450	0.035	251.3	188.1	205.3	153.7	182.3	136.6
400	0.039	224.5	168.0	183.4	137.3	162.9	122.0
350	0.045	197.7	147.9	161.5	120.9	143.4	107.4
300	0.052	170.9	127.8	139.6	104.5	123.9	92.8
250	0.062	144.0	107.8	117.6	88.1	104.5	78.2
200	0.076	117.2	87.7	95.7	71.7	85.0	63.7
150	0.098	90.4	67.6	73.8	55.3	65.6	49.1
100	0.139	61.1	45.7	49.9	37.3	46.3	33.1

LM25JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.025	356.4	267.1	291.4	218.4	259.0	194.1
950	0.026	338.8	253.9	277.0	207.6	246.2	184.5
900	0.028	321.2	240.7	262.6	196.8	233.4	174.9
850	0.029	303.5	227.4	248.2	186.0	220.5	165.3
800	0.031	285.9	214.2	233.8	175.2	207.7	155.7
750	0.033	268.2	201.0	219.3	164.4	194.9	146.1
700	0.035	250.6	187.8	204.9	153.6	182.1	136.5
650	0.038	233.0	174.6	190.5	142.8	169.3	126.9
600	0.041	215.3	161.4	176.1	132.0	156.5	117.3
550	0.045	197.7	148.2	161.7	121.2	143.7	107.7
500	0.049	180.1	134.9	147.2	110.4	130.8	98.1
450	0.054	162.4	121.7	132.8	99.5	118.0	88.5
400	0.061	144.8	108.5	118.4	88.7	105.2	78.9
350	0.069	127.2	95.3	104.0	77.9	92.4	69.3
300	0.081	109.5	82.1	89.6	67.1	79.6	59.7
250	0.096	91.9	68.9	75.1	56.3	66.8	50.0
200	0.119	74.3	55.6	60.7	45.5	53.9	40.4
150	0.156	56.6	42.4	46.3	34.7	41.1	30.8
100	0.226	39.0	29.2	31.9	23.9	28.3	21.2

LM35JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.035	249.3	187.1	204.0	153.1	181.4	136.1
950	0.037	236.8	177.6	193.8	145.3	172.2	129.2
900	0.039	224.2	168.2	183.5	137.6	163.1	122.3
850	0.042	211.6	158.8	173.2	129.9	154.0	115.5
800	0.044	199.1	149.3	162.9	122.2	144.8	108.6
750	0.047	186.5	139.9	152.6	114.5	135.7	101.8
700	0.051	173.9	130.5	142.3	106.8	126.5	94.9
650	0.055	161.4	121.0	132.0	99.0	117.4	88.0
600	0.059	148.8	111.6	121.7	91.3	108.2	81.2
550	0.065	136.2	102.2	111.5	83.6	99.1	74.3
500	0.071	123.7	92.7	101.2	75.9	89.9	67.5
450	0.079	111.1	83.3	90.9	68.2	80.8	60.6
400	0.089	98.5	73.9	80.6	60.5	71.7	53.7
350	0.102	86.0	64.5	70.4	52.8	62.5	46.9
300	0.120	73.5	55.1	60.2	45.1	53.5	40.1
250	0.144	61.1	45.8	50.0	37.5	44.4	33.3
200	0.180	48.9	36.6	40.0	30.0	35.5	26.6
150	0.239	36.9	27.6	30.2	22.6	26.8	20.1
100	0.349	25.3	19.0	20.7	15.5	18.4	13.8

LM50JC10M

WD (mm)	Magnification	Field of View (mm) 2/3" H	2/3" V	1/1.8" H	1/1.8" V	1/2" H	1/2" V
1000	0.048	182.9	137.2	149.7	112.3	133.0	99.8
950	0.051	174.0	130.6	142.4	106.8	126.6	95.0
900	0.053	165.2	123.9	135.2	101.4	120.2	90.1
850	0.056	156.3	117.3	127.9	96.0	113.7	85.3
800	0.060	147.5	110.6	120.7	90.5	107.3	80.5
750	0.063	138.6	104.0	113.4	85.1	100.9	75.6
700	0.068	129.7	97.3	106.2	79.7	94.4	70.8
650	0.073	120.9	90.7	98.9	74.2	87.9	66.0
600	0.079	112.0	84.0	91.7	68.8	81.5	61.1
550	0.085	103.1	77.3	84.4	63.3	75.0	56.3
500	0.093	94.2	70.7	77.1	57.8	68.5	51.4
450	0.103	85.2	64.0	69.8	52.3	62.0	46.5
400	0.115	76.3	57.2	62.4	46.8	55.5	41.6
350	0.131	67.3	50.5	55.1	41.3	48.9	36.7
300	0.151	58.2	43.7	47.6	35.7	42.4	31.8
250	0.179	49.1	36.8	40.2	30.1	35.7	26.8
200	0.221	39.8	29.9	32.6	24.4	29.0	21.7
150	0.290	30.3	22.7	24.8	18.6	22.0	16.5
100	0.459	19.2	14.4	15.7	11.8	13.9	10.4

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

EC-IR Lens Series

LM16EC-IR

WD (mm)	Magnification	Field of View (mm) 1.2″ H 15.4	1.2″ V 11.5	1.1″ H 14.1	1.1″ V 10.6	1″ H 12.8	1″ V 9.6
20000	0.001	19701.4	14572.2	17987.0	13399.6	16275.5	12103.8
10000	0.002	9855.3	7289.6	8997.8	6703.0	8141.6	6054.8
9000	0.002	8870.7	6561.3	8098.8	6033.3	7328.2	5449.9
8000	0.002	7886.1	5833.1	7199.9	5363.7	6514.8	4845.0
7000	0.002	6901.5	5104.8	6301.0	4694.0	5701.5	4240.1
6000	0.003	5916.9	4376.5	5402.1	4024.4	4888.1	3635.2
5000	0.003	4932.3	3648.3	4503.1	3354.7	4074.7	3030.3
4000	0.004	3947.7	2920.0	3604.2	2685.0	3261.3	2425.4
3000	0.005	2963.1	2191.7	2705.3	2015.4	2447.9	1820.5
2000	0.008	1978.5	1463.5	1806.4	1345.7	1634.5	1215.6
1900	0.008	1880.1	1390.6	1716.5	1278.8	1553.2	1155.1
1800	0.009	1781.6	1317.8	1626.6	1211.8	1471.8	1094.6
1700	0.009	1683.1	1245.0	1536.7	1144.8	1390.5	1034.1
1600	0.010	1584.7	1172.2	1446.8	1077.9	1309.2	973.6
1500	0.011	1486.2	1099.3	1356.9	1010.9	1227.8	913.2
1400	0.011	1387.7	1026.5	1267.0	943.9	1146.5	852.7
1300	0.012	1289.3	953.7	1177.1	877.0	1065.1	792.2
1200	0.013	1190.8	880.9	1087.2	810.0	983.8	731.7
1100	0.015	1092.4	808.0	997.3	743.0	902.5	671.2
1000	0.016	993.9	735.2	907.4	676.1	821.1	610.7
900	0.018	895.4	662.4	817.5	609.1	739.8	550.2
800	0.020	797.0	589.6	727.7	542.1	658.4	489.7
700	0.023	698.5	516.7	637.8	475.2	577.1	429.2
600	0.026	600.1	443.9	547.9	408.2	495.8	368.7
500	0.032	501.0	371.0	458.0	341.0	414.0	308.0

LM25EC-IR

WD (mm)	Magnification	Field of View (mm) 1.2″ H 15.4	1.2″ V 11.5	1.1″ H 14.1	1.1″ V 10.6	1″ H 12.8	1″ V 9.6
20000	0.0013	12565.6	9288.6	11462.6	8545.0	10370.6	7723.5
10000	0.0025	6283.1	4644.7	5731.7	4272.9	5185.7	3862.1
9000	0.0028	5654.9	4180.3	5158.6	3845.7	4667.2	3476.0
8000	0.0031	5026.7	3715.9	4585.5	3418.5	4148.7	3089.8
7000	0.0036	4398.4	3251.5	4012.4	2991.2	3630.2	2703.7
6000	0.0042	3770.2	2787.1	3439.3	2564.0	3111.7	2317.5
5000	0.005	3141.9	2322.7	2866.2	2136.8	2593.2	1931.4
4000	0.0063	2513.7	1858.3	2293.1	1709.6	2074.7	1545.3
3000	0.0084	1885.4	1393.9	1720.0	1282.4	1556.3	1159.1
2000	0.0125	1257.2	929.6	1146.9	855.2	1037.8	773.0
1900	0.0132	1194.4	883.1	1089.6	812.5	985.9	734.4
1800	0.0139	1131.6	836.7	1032.3	769.7	934.1	695.8
1700	0.0148	1068.7	790.2	975.0	727.0	882.2	657.1
1600	0.0157	1005.9	743.8	917.7	684.3	830.4	618.5
1500	0.0167	943.1	697.4	860.4	641.6	778.5	579.9
1400	0.0179	880.3	650.9	803.1	598.8	726.7	541.3
1300	0.0193	817.4	604.5	745.8	556.1	674.8	502.7
1200	0.0209	754.6	558.0	688.5	513.4	623.0	464.1
1100	0.0228	691.8	511.6	631.2	470.7	571.1	425.5
1000	0.0251	629.0	465.2	573.9	428.0	519.3	386.8
900	0.0278	566.1	418.7	516.5	385.2	467.4	348.2
800	0.0313	503.3	372.3	459.2	342.5	415.6	309.6
700	0.0358	440.5	325.8	401.9	299.8	363.7	271.0
600	0.0417	377.7	279.4	344.6	257.1	311.9	232.4
500	0.05	315.0	233.0	287.0	214.0	260.0	194.0

LM35EC-IR

WD (mm)	Magnification	Field of View (mm) 1.2″ H 15.4	1.2″ V 11.5	1.1″ H 14.1	1.1″ V 10.6	1″ H 12.8	1″ V 9.6
20000	0.0018	8878.4	6603.7	8118.0	6081.8	7359.7	5503.1
10000	0.0035	4439.4	3301.8	4059.1	3040.8	3679.9	2751.5
9000	0.0039	3995.5	2971.7	3653.2	2736.8	3311.9	2476.4
8000	0.0044	3551.6	2641.5	3247.3	2432.7	2943.9	2201.2
7000	0.005	3107.7	2311.3	2841.4	2128.6	2575.9	1926.0
6000	0.0058	2663.8	1981.1	2435.5	1824.5	2208.0	1650.9
5000	0.007	2219.9	1650.9	2029.6	1520.4	1840.0	1375.7
4000	0.0088	1775.9	1320.7	1623.7	1216.3	1472.0	1100.6
3000	0.0117	1332.0	990.5	1217.8	912.2	1104.0	825.4
2000	0.0175	888.1	660.3	811.9	608.1	736.0	550.2
1900	0.0185	843.7	627.3	771.4	577.7	699.2	522.7
1800	0.0195	799.3	594.3	730.8	547.3	662.4	495.2
1700	0.0206	754.9	561.3	690.2	516.9	625.6	467.7
1600	0.0219	710.6	528.3	649.6	486.5	588.8	440.2
1500	0.0234	666.2	495.3	609.0	456.1	552.0	412.6
1400	0.0251	621.8	462.2	568.4	425.7	515.2	385.1
1300	0.027	577.4	429.2	527.8	395.3	478.4	357.6
1200	0.0292	533.0	396.2	487.2	364.8	441.6	330.1
1100	0.0319	488.6	363.2	446.6	334.4	404.8	302.6
1000	0.035	444.2	330.2	406.0	304.0	368.0	275.1
900	0.039	399.8	297.1	365.4	273.6	331.2	247.6
800	0.044	355.4	264.1	324.9	243.2	294.4	220.0
700	0.050	311.0	231.1	284.3	212.8	257.6	192.5
600	0.059	266.6	198.1	243.7	182.4	220.8	165.0
500	0.070	222.0	165.0	203.0	152.0	184.0	137.0

LM50EC-IR

WD (mm)	Magnification	Field of View (mm) 1.2″ H 15.4	1.2″ V 11.5	1.1″ H 14.1	1.1″ V 10.6	1″ H 12.8	1″ V 9.6
20000	0.003	6157.4	4598.6	5637.9	4238.8	5118.3	3839.0
10000	0.005	3075.0	2296.4	2815.4	2116.7	2555.9	1917.0
9000	0.006	2766.7	2066.1	2533.2	1904.5	2299.7	1724.8
8000	0.006	2458.5	1835.9	2250.9	1692.2	2043.4	1532.6
7000	0.007	2150.2	1605.7	1968.7	1480.0	1787.2	1340.4
6000	0.008	1842.0	1375.5	1686.5	1267.8	1531.0	1148.2
5000	0.010	1533.7	1145.2	1404.2	1055.6	1274.7	956.0
4000	0.013	1225.5	915.0	1122.0	843.4	1018.5	763.8
3000	0.017	917.2	684.8	839.7	631.2	762.3	571.6
2000	0.025	609.0	454.6	557.5	419.0	506.0	379.4
1900	0.027	578.1	431.6	529.2	397.8	480.4	360.2
1800	0.028	547.3	408.5	501.0	376.5	454.8	341.0
1700	0.030	516.5	385.5	472.8	355.3	429.1	321.8
1600	0.032	485.6	362.5	444.6	334.1	403.5	302.5
1500	0.034	454.8	339.5	416.3	312.9	377.9	283.3
1400	0.036	424.0	316.4	388.1	291.6	352.3	264.1
1300	0.039	393.2	293.4	359.9	270.4	326.6	244.9
1200	0.043	362.3	270.4	331.7	249.2	301.0	225.7
1100	0.047	331.5	247.4	303.4	228.0	275.4	206.4
1000	0.051	300.7	224.3	275.2	206.8	249.8	187.2
900	0.057	269.8	201.3	247.0	185.5	224.1	168.0
800	0.065	239.0	178.3	218.7	164.3	198.5	148.8
700	0.074	208.2	155.3	190.5	143.1	172.9	129.6
600	0.087	177.3	132.2	162.3	121.9	147.2	110.3
500	0.106	147.0	109.0	134.0	101.0	122.0	91.0

* The specifications described above are the design values. * The product specifications and external appearance may be changed for improvement without prior notice.

XC Series | 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×

FC24M Series | Model	LM6FC24M	LM8FC24M	LM12FC24M	LM16FC24M	LM25FC24M	LM35FC24M	LM50FC24M	LM75FC24M	LM100FC24M
(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×	150mm/0.66×	150mm/0.75×
(1mm Ring) M.O.D./Magnification	–	28mm/0.19×	50mm/0.18×	64mm/0.20×	82mm/0.26×	170mm/0.20×	184mm/0.26×	148mm/0.67×	148mm/0.76×
(5mm Ring) M.O.D./Magnification	–	–	–	20mm/0.45×	45mm/0.41×	106mm/0.31×	140mm/0.35×	139mm/0.73×	142mm/0.82×
(10mm Ring) M.O.D./Magnification	–	–	–	–	25mm/0.61×	71mm/0.46×	108mm/0.46×	131mm/0.79×	135mm/0.88×
(20mm Ring) M.O.D./Magnification	–	–	–	–	–	42mm/0.75×	76mm/0.68×	117mm/0.93×	124mm/1.02×

HC Series | 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×

JC10M Series | Model	LM3JC10M	LM5JC10M	LM8JC10M	LM12JC10M	LM16JC10M	LM25JC10M	LM35JC10M	LM50JC10M
(Non) M.O.D./Magnification	100mm/0.03×	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×

JC5M2 Series | 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×

JC5MC Series | Model	LM8JC5MC	LM12JC5MC	LM16JC5MC	LM25JC5MC	LM35JC5MC	LM50JC5MC
(Non) M.O.D./Magnification	150mm/0.05×	200mm/0.06×	200mm/0.08×	200mm/0.12×	200mm/0.183×	300mm/0.180×
(1mm Ring) M.O.D./Magnification	35mm/0.18×	75mm/0.13×	105mm/0.14×	145mm/0.16×	174mm/0.211×	272mm/0.201×
(5mm Ring) M.O.D./Magnification	–	–	–	66mm/0.32×	115mm/0.325×	201mm/0.280×
(10mm Ring) M.O.D./Magnification	–	–	–	–	82mm/0.465×	154mm/0.381×
(20mm Ring) M.O.D./Magnification	–	–	–	–	53mm/0.748×	109mm/0.579×

JC5MC-WP Series | Model	LM8JC5MC-WP	LM12JC5MC-WP	LM16JC5MC-WP	LM25JC5MC-WP
(Non) M.O.D./Magnification	150mm/0.05×	200mm/0.06×	200mm/0.08×	200mm/0.12×
(1mm Ring) M.O.D./Magnification	35mm/0.19×	75mm/0.14×	105mm/0.15×	145mm/0.16×
(5mm Ring) M.O.D./Magnification	–	–	–	66mm/0.33×
(10mm Ring) M.O.D./Magnification	–	–	–	–
(20mm Ring) M.O.D./Magnification	–	–	–	–

JC1MS Series | Model	LM8JC1MS	LM12JC1MS	LM16JC1MS	LM25JC1MS	LM35JC1MS	LM50JC1MS	LM75JC1MS	LM100JC1MS
(Non) M.O.D./Magnification	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×

JC Series | 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×

NCL Series | 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×

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Harsh Environment Resistant GigE Vision 0.48MP Camera

KC48GC3MX / KC48GC3CX

WD (mm)	LM3NF f=2.7mm		LM8RW f=8mm		LM12RW f=12mm		LM16RW f=16mm		LM25RW f=25mm	
	H	V	H	V	H	V	H	V	H	V
3500	6990	4611	1855	1391	1237	928	928	696	594	445
3000	5993	3953	1590	1193	1060	795	795	596	509	382
2500	4996	3296	1325	994	883	663	663	497	424	318
2000	4000	2638	1060	795	707	530	530	398	339	254
1800	3601	2375	954	716	636	477	477	358	305	229
1600	3202	2112	848	636	565	424	424	318	271	204
1400	2803	1849	742	557	495	371	371	278	237	178
1200	2404	1586	636	477	424	318	318	239	204	153
1000	2006	1323	530	398	353	265	265	199	170	127
950	1906	1257	504	378	336	252	252	189	161	121
900	1806	1192	477	358	318	239	239	179	153	114
850	1707	1126	451	338	300	225	225	169	144	108
800	1607	1060	424	318	283	212	212	159	136	102
750	1507	994	398	298	265	199	199	149	127	95
700	1408	929	371	278	247	186	186	139	119	89
650	1308	863	345	258	230	172	172	129	110	83
600	1208	797	318	239	212	159	159	119	102	76
550	1108	731	292	219	194	146	146	109	93	70
500	1009	666	265	199	177	133	133	99	85	64
450	909	600	239	179	159	119	119	89	76	57
400	809	534	212	159	141	106	106	80	68	51
350	710	468	186	139	124	93	93	70	59	45
300	610	403	159	119	106	80	80	60	51	38
250	510	337	133	99	88	66	66	50	42	32
200	411	271	106	80	71	53	53	40	34	25

Harsh Environment Resistant GigE Vision 1.3MP Camera

KC130GC3MX / KC130GC3CX

WD (mm)	LM3NF f=2.7mm		LM8RW f=8mm		LM12RW f=12mm		LM16RW f=16mm		LM25RW f=25mm	
	H	V	H	V	H	V	H	V	H	V
3500	-	-	2968	2374	1979	1583	1484	1187	950	760
3000	-	-	2544	2035	1696	1357	1272	1018	814	651
2500	-	-	2120	1696	1413	1131	1060	848	678	543
2000	-	-	1696	1357	1131	905	848	678	543	434
1800	-	-	1526	1221	1018	814	763	611	488	391
1600	-	-	1357	1085	905	724	678	543	434	347
1400	-	-	1187	950	791	633	594	475	380	304
1200	-	-	1018	814	678	543	509	407	326	260
1000	-	-	848	678	565	452	424	339	271	217
950	-	-	806	644	537	430	403	322	258	206
900	-	-	763	611	509	407	382	305	244	195
850	-	-	721	577	481	384	360	288	231	185
800	-	-	678	543	452	362	339	271	217	174
750	-	-	636	509	424	339	318	254	204	163
700	-	-	594	475	396	317	297	237	190	152
650	-	-	551	441	367	294	276	220	176	141
600	-	-	509	407	339	271	254	204	163	130
550	-	-	466	373	311	249	233	187	149	119
500	-	-	424	339	283	226	212	170	136	109
450	-	-	382	305	254	204	191	153	122	98
400	-	-	339	271	226	181	170	136	109	87
350	-	-	297	237	198	158	148	119	95	76
300	-	-	254	204	170	136	127	102	81	65
250	-	-	212	170	141	113	106	85	68	54
200	-	-	170	136	113	90	85	68	54	43

Harsh Environment Resistant GigE Vision 3MP GigE camera

KC300GC3MX / KC300GC3CX

WD (mm)	LM3NF f=2.7mm		LM8RW f=8mm		LM12RW f=12mm		LM16RW f=16mm		LM25RW f=25mm	
	H	V	H	V	H	V	H	V	H	V
3500	-	-	3115	2331	2077	1554	1558	1165	997	746
3000	-	-	2670	1998	1780	1332	1335	999	855	639
2500	-	-	2225	1665	1484	1110	1113	832	712	533
2000	-	-	1780	1332	1187	888	890	666	570	426
1800	-	-	1602	1199	1068	799	801	599	513	384
1600	-	-	1424	1065	949	710	712	533	456	341
1400	-	-	1246	932	831	621	623	466	399	298
1200	-	-	1068	799	712	533	534	400	342	256
1000	-	-	890	666	593	444	445	333	285	213
950	-	-	846	633	564	422	423	316	271	202
900	-	-	801	599	534	400	401	300	256	192
850	-	-	757	566	504	377	378	283	242	181
800	-	-	712	533	475	355	356	266	228	170
750	-	-	668	499	445	333	334	250	214	160
700	-	-	623	466	415	311	312	233	199	149
650	-	-	579	433	386	289	289	216	185	139
600	-	-	534	400	356	266	267	200	171	128
550	-	-	490	366	326	244	245	183	157	117
500	-	-	445	333	297	222	223	166	142	107
450	-	-	401	300	267	200	200	150	128	96
400	-	-	356	266	237	178	178	133	114	85
350	-	-	312	233	208	155	156	117	100	75
300	-	-	267	200	178	133	134	100	85	64
250	-	-	223	166	148	111	111	83	71	53
200	-	-	178	133	119	89	89	67	57	43

Harsh Environment Resistant IP Vision 2MP Camera

KC200NB1CX

WD (mm)	LM3NF f=2.7mm		LM8RW f=8mm		LM12RW f=12mm		LM16RW f=16mm		LM25RW f=25mm	
	H	V	H	V	H	V	H	V	H	V
3500	11418	4523	2436	1370	1624	914	1218	685	780	438
3000	9790	3878	2088	1175	1392	783	1044	587	668	376
2500	8161	3233	1740	979	1160	653	870	489	557	313
2000	6532	2588	1392	783	928	522	696	392	445	251
1800	5881	2330	1253	705	835	470	626	352	401	226
1600	5229	2072	1114	626	742	418	557	313	356	200
1400	4578	1814	974	548	650	365	487	274	312	175
1200	3927	1556	835	470	557	313	418	235	267	150
1000	3275	1298	696	392	464	261	348	196	223	125
950	3112	1233	661	372	441	248	331	186	212	119
900	2949	1169	626	352	418	235	313	176	200	113
850	2787	1104	592	333	394	222	296	166	189	106
800	2624	1040	557	313	371	209	278	157	178	100
750	2461	975	522	294	348	196	261	147	167	94
700	2298	911	487	274	325	183	244	137	156	88
650	2135	846	452	254	302	170	226	127	145	81
600	1972	782	418	235	278	157	209	117	134	75
550	1809	717	383	215	255	144	191	108	122	69
500	1647	653	348	196	232	131	174	98	111	63
450	1484	588	313	176	209	117	157	88	100	56
400	1321	524	278	157	186	104	139	78	89	50
350	1158	459	244	137	162	91	122	69	78	44
300	995	395	209	117	139	78	104	59	67	38
250	832	330	174	98	116	65	87	49	56	31
200	669	266	139	78	93	52	70	39	45	25

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Custom Design

Partner with us to create the ideal camera and lens solution.

Kowa Customized Cameras and Lenses

We offer comprehensive services covering everything from design and prototyping to production, performance evaluation, and quality assurance.

We accept orders to design and manufacture a wide range of optical systems tailored to customer needs. Our capabilities extend beyond optics, offering complete system solutions that integrate mechanical, electrical, and software components. By working closely with our customers, we actively propose enhancements to improve technical performance and address cost-related challenges.

Examples of Technical Development		
	- Optical systems for image processing	- Optical systems for laser scanning
	- Optical systems for 3D measurement	- Optical systems for semiconductor manufacturing equipment
	- Optical systems with built-in lighting	- Temperature-resistant and vibration-resistant optical systems
	- Optical systems for surveillance	- Ultra-high resolution optical systems
	- Optical systems for robot vision	

Specializing in Semi-Custom to Fully Customized Solutions

- Reducing system size and achieving a compact form factor through seamless integration of camera and lens.
- Ability to change lens coatings based on performance or environmental demands.
- Support for telecentric lens customization, including magnification, W.D., and mount types.
- Flexible optical design and form factor optimization through cohesive lens-prism integration.
- Custom motorized focus solutions supported.
- Engineering expertise available for integrating systems into protective enclosures.
- Provision of integrated units with built-in lighting and image processing.

Tailored customization proposals available based on customer specifications.

Manufacturing Process Flow Chart

Planning and Evaluation Phase

Inquiry
↓
Client Consultation for Preliminary Specifications
↓
Engineering Design
↓
Customer Meeting for Specification Review
↓
Quotation for Prototyping and Mass Production

▶

Prototyping Phase

Order Placement
↓
Parts Procurement / Assembly / Evaluation
↓
Prototype Delivery
↓
Customer Meeting for Mass Production Planning

▶

Mass Production Phase

Order Placement
↓
Parts Procurement / Assembly / Evaluation
↓
Supply Mass Production Products

Comparison Table for Cameras and Lenses

Ruggedized GigE Vision Series

Camera Model / Described on Page		Lens Model	
0.48MP Camera KC48GC4MX / KC48GC4CX	P.7	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
1.3MP Camera KC130GC4MX / KC130GC4CX	P.7	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
3MP Camera KC300GC4MX / KC300GC4CX	P.8	LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33
		LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
		LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
5MP Camera KC500GC4MX / KC500GC4CX	P.8	LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
		LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33
8MP Camera KC800GC4MX / KC800GC4CX	P.8	LM3JC10M / LM5JC10M / LM8JC10M / LM12JC10M / LM16JC10M / LM25JC10M / LM35JC10M / LM50JC10M	P.31
12MP Camera KC1200GC4MX / KC1200GC4CX	P.8	LM6FC24M / LM8FC24M / LM12FC24M / LM16FC24M / LM25FC24M / LM35FC24M / LM50FC24M / LM75FC24M / LM100FC24M	P.27
		LM16EC-IR/LM25EC-IR/LM35EC-IR/LM50EC-IR	P.55
		LM8XC / LM12XC / LM16XC / LM25XC / LM35XC / LM50XC	P.25

Ruggedized CoaXPress Camera Series

Camera Model / Described on Page		Lens Model	
0.48MP Camera KC48XS1MX	P.9	LM1.7QS25 / LM1.7QS40 / LM1.7QS56 / LM3QS28 / LM3QS40 / LM3QS56	P.71
		LM5NS21 / LM5NS28 / LM5NS40 / LM5NS56	P.71
1.3MP Camera KC130XC2MX / KC130XC2CX	P.10	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
3MP Camera KC300XC3MX / KC300XC3CX	P.10	LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33
		LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
		LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
5MP Camera KC500XC3MX / KC500XC3CX	P.10	LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
		LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33

Harsh Environment Resistant GigE Vision Series

Camera Model / Described on Page		Lens Model	
0.48MP Camera KC48GC3MX / KC48GC3CX	P.12	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
1.3MP Camera KC130GC3MX / KC130GC3CX	P.12	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
3MP Camera KC300GC3MX / KC300GC3CX	P.12	LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33
		LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37
		LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
5MP Camera KC500GC3MX / KC500GC3CX	P.12	LM8JC5MC / LM12JC5MC / LM16JC5MC / LM25JC5MC / LM35JC5MC / LM50JC5MC	P.35
		LM8JC5MC-WP / LM12JC5MC-WP / LM16JC5MC-WP / LM25JC5MC-WP	P.49
		LM12JC5M2 / LM16JC5M2 / LM25JC5M2 / LM35JC5M2	P.33
8MP Camera KC800GC3MX / KC800GC3CX	P.12	LM3JC10M / LM5JC10M / LM8JC10M / LM12JC10M / LM16JC10M / LM25JC10M / LM35JC10M / LM50JC10M	P.31
12MP Camera KC1200GC3MX / KC1200GC3CX	P.13	LM6FC24M / LM8FC24M / LM12FC24M / LM16FC24M / LM25FC24M / LM35FC24M / LM50FC24M / LM75FC24M / LM100FC24M	P.27
		LM16EC-IR / LM25EC-IR / LM35EC-IR / LM50EC-IR	P.55
		LM8XC / LM12XC / LM16XC / LM25XC / LM35XC / LM50XC	P.25
16MP Camera KC1600GC3MX / KC1600GC3CX	P.13	LM6FC24M / LM8FC24M / LM12FC24M / LM16FC24M / LM25FC24M / LM35FC24M / LM50FC24M / LM75FC24M / LM100FC24M	P.27
		LM16EC-IR / LM25EC-IR / LM35EC-IR / LM50EC-IR	P.55
		LM8XC / LM12XC / LM16XC / LM25XC / LM35XC / LM50XC	P.25
20MP Camera KC2000GC3MX / KC2000GC3CX	P.13	LM6FC24M / LM8FC24M / LM12FC24M / LM16FC24M / LM25FC24M / LM35FC24M / LM50FC24M / LM75FC24M / LM100FC24M	P.27
		LM16EC-IR / LM25EC-IR / LM35EC-IR / LM50EC-IR	P.55
		LM8XC / LM12XC / LM16XC / LM25XC / LM35XC / LM50XC	P.25
24MP Camera KC2400GC3MX / KC2400GC3CX	P.13	LM6FC24M / LM8FC24M / LM12FC24M / LM16FC24M / LM25FC24M / LM35FC24M / LM50FC24M / LM75FC24M / LM100FC24M	P.27
		LM16EC-IR / LM25EC-IR / LM35EC-IR / LM50EC-IR	P.55
		LM8XC / LM12XC / LM16XC / LM25XC / LM35XC / LM50XC	P.25

Harsh Environment Resistant IP camera

Camera Model / Described on Page		Lens Model	
2MP camera KC200NB1CX	P.18	LM8JC1MS / LM12JC1MS / LM16JC1MS / LM25JC1MS / LM35JC1MS / LM50JC1MS / LM75JC1MS / LM100JC1MS	P.39
		LM5JCM-WP / LM8JCM-WP / LM12JCM-WP / LM16JCM-WP / LM25JCM-WP / LM35JCM-WP / LM50JCM-WP	P.53
		LM5JCM-V / LM8JCM-V / LM12JCM-V / LM16JCM-V / LM25JCM-V / LM35JCM-V / LM50JCM-V	P.51
		LM5JC1M	P.38
		LM3NC1M / LM6NCM	P.37

Fundamentals of Cameras and Lenses

Cameras and lenses are critical components for image processing inspections.
Image processing typically follows four stages:
① Imaging ② Transfer ③ Processing ④ Output
Cameras and lenses are directly involved in the first step (Imaging).
Although stage ③ (Processing) often receives the most focus, its effectiveness depends on capturing precise and stable images. Selecting the optimal camera and lens for the object and environment is the most effective way to ensure successful inspection results.

① Imaging Cameras, Lenses and Lighting
② Transfer Cables
③ Processing Software
④ Output External Devices

Our Cameras

Color and Monochrome

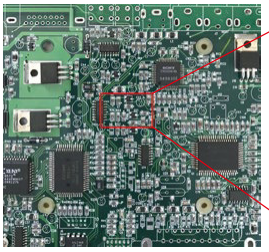
Color cameras are ideal when inspections require judgments based on color information, while monochrome cameras are recommended when color is not a determining factor.
In general, monochrome cameras offer higher sensitivity compared to color cameras. They also provide advantages in terms of faster shutter speeds and greater flexibility in adjusting depth of field.

Color

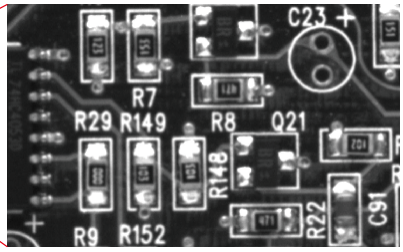
Monochrome

Resolution

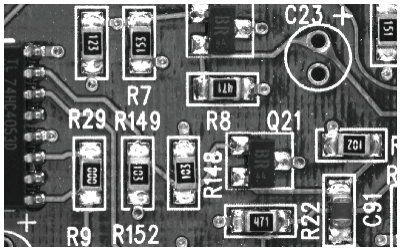
Image sensors are built into cameras, and they determine the camera's resolution.
Higher-resolution cameras enable more detailed and precise inspections, making them suitable for applications that require fine image analysis.



Actual Photograph



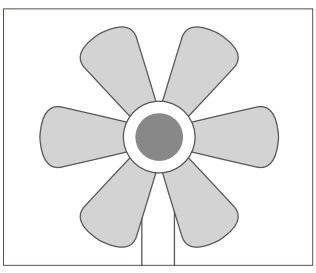
Low Resolution Image



High Resolution Image

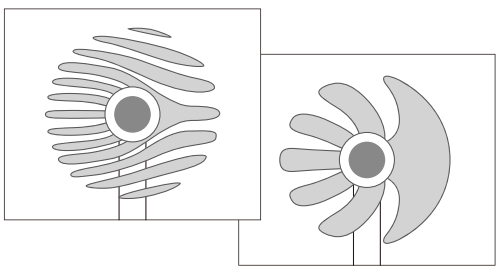
Shutter Systems

There are two main types of image sensors: global shutter and rolling shutter.
In a rolling shutter system, the image is captured line by line in sequence, resulting in slight differences in exposure timing across the frame. When imaging moving objects, this can cause distortion, commonly known as the rolling shutter effect.
By contrast, a global shutter system exposes the entire image simultaneously, eliminating this type of distortion. For accurate imaging of moving objects, the use of a global shutter is essential.



Global Shutter

Makes it possible to capture moving objects as if they are not in motion.



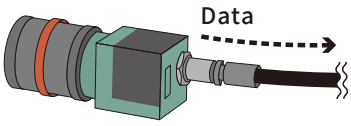
Rolling Shutter

Distortion may occur when imaging moving objects.

Frame Rate

fps = frames per second

The frame rate refers to the number of images a camera can output per unit of time and is typically expressed in frames per second (fps).
A higher fps value means shorter data transmission time and enables the camera to capture more images within a brief period. This is especially beneficial for continuously imaging fast-moving objects.
In addition, faster output times per frame allow image processing to begin sooner, helping to reduce overall cycle time in inspection systems.

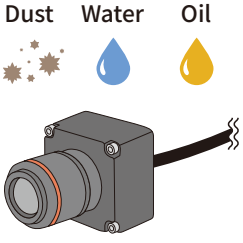


Industrial Camera Interfaces

When selecting a camera, the interface is one of the most critical factors to consider. Industrial camera interfaces connect the camera to a computer and transfer captured image data to the image processing system.
Higher-resolution image sensors produce larger data volumes per frame. As a result, cameras with high frame rates require interfaces that offer sufficient bandwidth to handle fast, large-volume data transfers.
Commonly used industrial interfaces include GigE, CoaXPress, USB 3.0, and Camera Link. Each interface varies in terms of data transfer speed, number of connectable cameras, and maximum cable length. In addition to the application's purpose, it is also important to consider the installation environment when selecting the appropriate interface.

Dustproof and Waterproof

Dustproof and waterproof protection is essential in environments where equipment is exposed to water or fine dust, such as particles from paper or fabric.
Our products are designed based on IP67 standards, ensuring reliable protection against dust and water. Oil-resistant models are also available for use in harsh industrial settings.
Some cameras and lenses are built with integrated dustproof and waterproof features, while others achieve environmental protection through the use of dedicated housings, allowing flexibility based on the application.



*The IP code stands for "International Protection" and is an international standard that defines levels of protection against the ingress of dust and water.

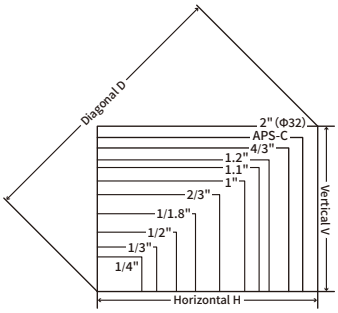
Our Lenses

Image Size

Image size varies across lens series and refers to the area of the image that passes through the lens and can be captured.
As long as the lens's image size is equal to or larger than the camera's sensor size (see figure at right), the lens is compatible and can be used effectively.

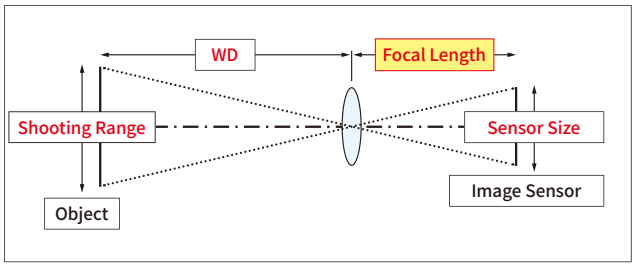
Image Sensor Size

Camera	Horizontal H (mm)	Vertical V (mm)	Diagonal D (mm)
1/4"	3.6	2.7	4.5
1/3"	4.8	3.6	6
1/2"	6.4	4.8	8
1/1.8"	7.2	5.4	9
2/3"	8.8	6.6	11
1"	12.8	9.6	16
1.1"	14.1	10.6	17.6
1.2"	15.4	11.5	19.2
4/3"	18.4	13.8	23
APS-C	22.3	16.7	27.9
2(Φ32)"	25.6	19.2	32



Focal Length

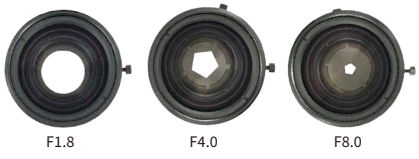
The imaging area is determined by the focal length, the sensor size, and the working distance (W.D.), which is the distance from the front of the lens to the object.
As shown in the figure at the right, the focal length is the distance from the lens to the image sensor. A shorter focal length results in a wider field of view, while a longer focal length provides a more magnified view of the object.
To achieve optimal imaging results, it is important to select a lens with a focal length that matches both the object size and the required working distance.



F-Stop (Aperture)

The brightness of a lens is indicated by its F-Stop, calculated by dividing the focal length by the effective diameter of the lens. This value can be adjusted using the aperture.
Lenses with smaller F-Stops (brighter lenses) allow more light to pass through, enabling faster shutter speeds. On the other hand, larger F-Stops (darker lenses) increase the depth of field, allowing a wider range of the image to remain in focus.

F-Stop (Aperture Value) = The size of the opening through which light passes through a lens.



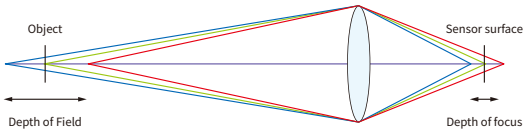
A large amount of light enters the lens.
Increase the aperture size.

Only a small amount of light enters the lens.
Decrease the aperture size.

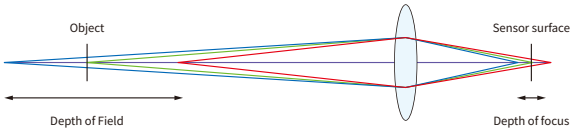
The F-Stop follows a standard sequence: 1.4, 2, 2.8, 4, 5.6, and so on. Each step in this sequence corresponds to halving or doubling the amount of light that reaches the sensor. This is because the F-Stop is based on the aperture diameter, and when the radius of the aperture is reduced by a factor of $1/\sqrt{2}$, the area through which light enters becomes half. As a result, the light intensity is also halved.

Depth of Field

Depth of field refers to the range within which the image remains in acceptable focus. It is influenced by three main factors: F-Stop, working distance (W.D.), and focal length. The depth of field increases when the F-Stop is raised, the working distance is extended, or the focal length is shortened. Adjusting these parameters allows for better control over what portions of the image appear sharp.

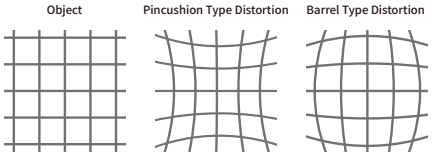


When the lens aperture is stopped down.



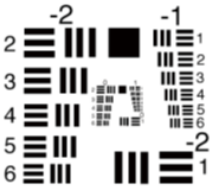
Distortion

Distortion is a phenomenon where the captured image appears warped or deformed. When distortion is present, the shape of the imaged object may differ from its actual shape, leading to inaccuracies in position or dimensional information during inspections or image processing. For this reason, low-distortion lenses are essential in applications that require high precision, as they maintain accurate image geometry and ensure reliable measurement results.



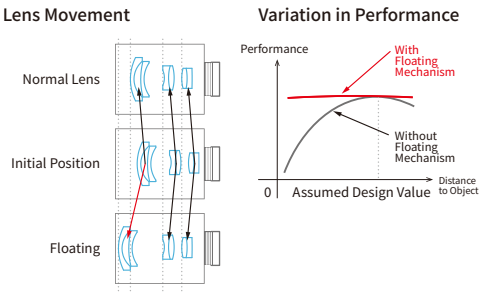
Resolving Power

Resolving power refers to the lens's ability to reproduce the fine details and edges of an object clearly. It is typically measured using black and white striped patterns, and is expressed as the number of line pairs that can be distinguished within a 1 mm width. This value is indicated in lp/mm (line pairs per millimeter), where a higher number represents greater detail resolution.



Floating Mechanism Design

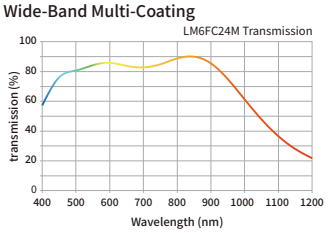
Floating mechanisms, also known as close-range aberration compensating mechanisms, are effective in minimizing performance degradation across varying working distances.
In conventional lenses, all lens elements move together when adjusting focus. This often results in a decline in optical performance depending on the working distance.
In contrast, lenses equipped with floating mechanisms divide internal lens elements into multiple groups. These groups move independently, allowing the lens to maintain optimal performance across a range of working distances. As a result, floating mechanisms enable lenses to deliver consistently high image quality, even during close-range imaging.



Lens Coatings

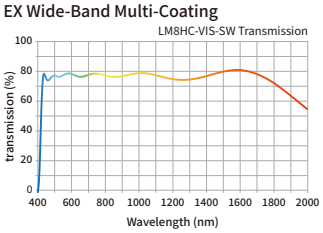
-High light transmission from visible to near-infrared (NIR) wavelengths.
-Can be used in a wide range of applications.

Wide-Band Multi-Coating



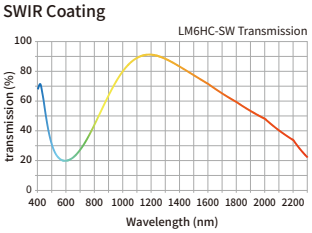
-High transmission from the visible range to short wavelength infrared (SWIR).
-A wide range of wavelength bands.

EX Wide-Band Multi-Coating

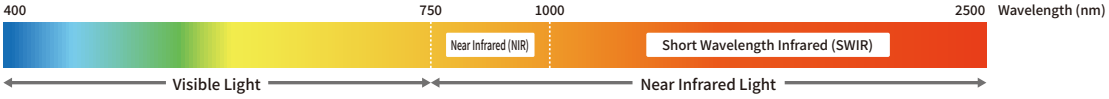


-Coatings optimized for high transmission in the short wavelength infrared (SWIR) range.

SWIR Coating



For each lens series, coatings are optimized to suit the specific needs of various wavelength bands, ensuring they are ideally suited for a wide range of applications.



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