News Release

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August 29, 2019

Launch of New RICOH FL-CC3524-5MX Five Megapixel 35mm Focal Length FA Lens
- Stronger line-up with the addition of another S-Rank (Best Performance Class) High Performance Lens for 5 Megapixel Cameras -

On August 29, RICOH Industrial Solutions Inc. (President: Hiroshi Takemoto) is launching a new 35mm 5MX lens to expand the line-up of the three existing 2/3" 12, 16 and 25mm 5MX lenses for 5 megapixel cameras released in October 2018.

RICOH FL-CC3524-5MX

As well as the previous 12, 16 and 25mm lenses, which have been receiving good reviews, the new 35mm model uses JIIA (Japan Industrial Imaging Association) lens standards, that satisfy S Rank* (Best Performance Class) criteria, allowing the lenses to take high resolution, high contrast, sharp images over the entire sensor at all working distances.

This lens is developed for 2/3" 5 megapixel cameras, demand for which has dramatically increased in recent years. By providing a φ33mm compact design while still maintaining high resolution, there are now more options available for embedded designs. The introduction of a floating mechanism provides high resolution, high contrast performance over a wide range of imaging distances, from 0.1m to infinity. No matter the imaging distance, this lens will maintain a sharp picture with high performance over the entire area of the screen, meeting machine vision market needs for stable, high inspection/detection precision.

This highly versatile lens can be implemented in a wide variety of fields, from automotive & automotive parts to containers/packaging, security, infrastructure monitoring, and IoT applications.

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The lens provides a high resolution image right up to the periphery and has low distortion, making it ideal for various applications. Visually inspecting high density printed circuit boards, confirming hairline cracks and other surface defects on sheet metals, checking for missing pixels on LCD monitors, inspecting multiple aspects simultaneously such as the shape, colour and surface of food and pharmaceuticals for imperfections and in making detailed inspections of a wide range of objects. Furthermore, this new high-resolution lens can also be used as a visual sensor in any machine's vision system.

Lenses up to 2 Megapixels are currently dominant in the FA camera market. However, the market is transitioning to higher resolution lenses. By extending our line-up of high-performance 5 Megapixel lenses, we are now able to respond further to the diverse market requirements. Our goal is to continue developing new products and further expand our business in the FA lens market. RICOH's area scan lenses currently range from VGA to 12 Megapixel resolution, supporting sensors from 1/3" to 1.1".

* JIIA Technical Report LER-007: Recommended specifications for high definition camera lenses

- Applications (S-Rank): For applications requiring higher resolution over the entire image
- Evaluation Criteria (S-Rank): Resolving spatial frequency corresponding to the Nyquist frequency over the entire image

<Key Features of the New RICOH FL-CC3524-5MX >

1. Provides high resolution and high contrast images

Right from the center to the periphery, these lenses have a high resolution of over 147 lp/mm. Due to a minimal degradation of resolution right up to the periphery they produce sharp, high contrast images. Therefore, even images on the periphery can be suitable for measurement and inspection. These lenses use JIIA (Japan Industrial Imaging Association) high performance class/evaluation standards for high definition camera lenses, and satisfy S-Rank* (Best Performance Class) criteria. As entire field 5 Megapixel camera lenses, they capture high resolution, low distortion images not just from the center to the periphery but over the entire image measurement field.

2. Achieves low distortion

Optically designed to reduce distortion, which poses a problem in image measuring and recognition, these lenses keep TV distortion to less than 0.1% (Figure 1), making them ideal for capturing low distortion images over the entire image measurement field.

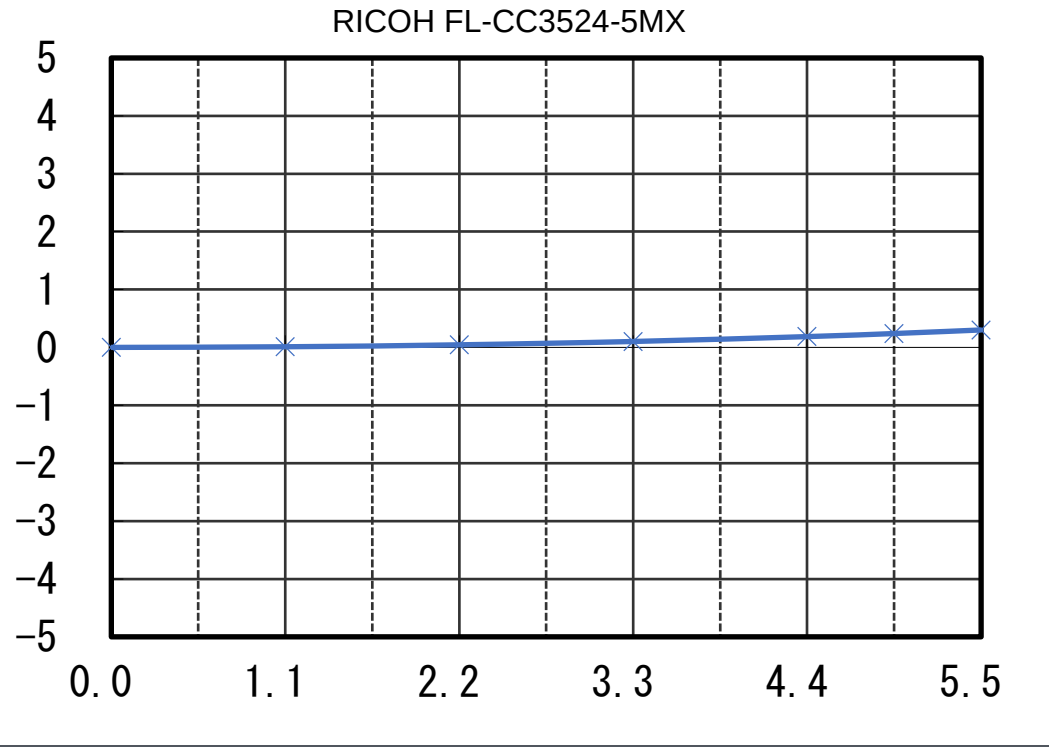

Figure 1: Distortion

3. Floating focusing mechanism

The use of a floating mechanism in their focusing systems allows them to capture low-distortion, high resolution images at all distances, from infinity right down to their minimum object distance, demonstrating maximum performance at any magnification (Figure 2).

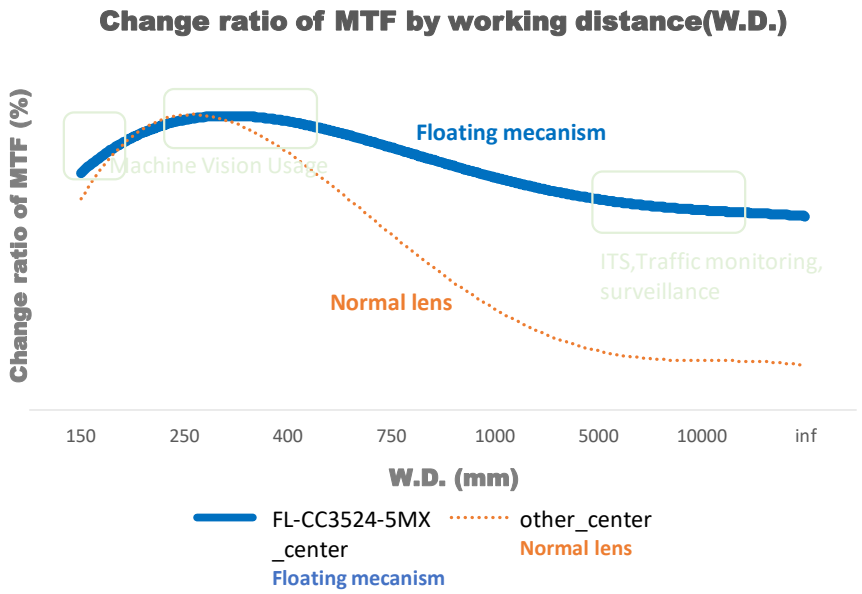

Figure 2:Change ratio of MTF by working distance(W.D.)

4. φ33mm compact design

The lenses have a φ33mm compact design ideal for installation with high performance equipment, enhancing production line working efficiency.

＜Specification of the New RICOH FL-CC3524-5MX＞

Model		FL-CC3524-5MX
Resolution		Over 5 Mega-Pixel
Format Size		2/3” format
Focal Length		35 ㎜
Maximum Aperture Ratio		1:2.4
Iris Range		2.4～16
Mount		C
Horizontal Angle of View	1/3" format	7.8°
	1/2" format	10.4°
	1/1.8” format	11.7°
	2/3” format	14.3°
Minimum Object Distance		0.1m
Back Focal Length		14.3mm
Filter Size		30.5 P=0.5mm
Dimensions		φ33 × 65.5mm
Weight		100g

About Ricoh

Ricoh is empowering digital workplaces using innovative technologies and services enabling individuals to work smarter. For more than 80 years, Ricoh has been driving innovation and is a leading provider of document management solutions, IT services, commercial and industrial printing, digital cameras, and industrial systems.

Headquartered in Tokyo, Ricoh Group operates in approximately 200 countries and regions. In the financial year ended March 2019, Ricoh Group had worldwide sales of 2,013 billion yen (approx. 18.1 billion USD).

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