

October 24, 2018

## Two New RICOH FA Lenses with 12 and 16mm focal lengths - Stronger line-up with the addition of S-Rank (Best Performance Class) High Performance Lenses for 5 Megapixel Cameras -

On October 24, 2018 RICOH Industrial Solutions Inc. (President and CEO: Katsunori Nakata) proudly announces the introduction of two new 12 and 16mm high performance image processing lenses for 5 Megapixel cameras to complement its three current 2/3" 5 Megapixel lens range.

The new models use JIIA (Japan Industrial Imaging Association) lens standards and satisfy S-Rank\* (Best Performance Class) criteria. This allows the lenses to take high resolution, high contrast, sharp images over the entire sensor. The lenses provide a high resolution image right up to the periphery and have low distortion, making them ideal for 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, color and surface of food and pharmaceuticals for errors and in making detailed inspections of a wide range of objects. These lenses can also be used as visual sensors in any machine's vision system making them perfect for robot vision applications.

The new lenses feature a  $\phi 33$ mm compact design. Despite their 5 Megapixel high resolution, their size allows a high degree of freedom incorporating them into wide range of equipment positions.

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 with two high-performance 5 megapixel lenses, we are able to meet the diverse needs of our customers. Our goal is to continue developing new products and further expand our business in the FA lens market.

\* 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



FL-CC1218-5MX



FL-CC1618-5MX

### <Key Features of the New RICOH FL-CC1218-5MX and FL-CC1618-5MX>

#### 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%, making them ideal for capturing low distortion images over the entire image measurement field.

#### 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.

#### 4. $\phi$ 33mm compact design

The lenses have a  $\phi$ 33mm compact design ideal for installation with high performance equipment, enhancing production line working efficiency.

**<Specification of the New RICOH FL-CC1218-5MX and FL-CC1618-5MX>**

Model	FL-CC1218-5MX	FL-CC1618-5MX
Resolution	over 5 Mega-Pixel	←
Format size	2/3" format	←
Focal length	12mm	16mm
Maximum aperture ratio	1:1.8	←
Iris range	1.8~16	←
Mount	C	←
Horizontal angle of view	1/3" format	22.7°
	1/2" format	30.0°
	1/1.8" format	33.6°
	2/3" format	40.5°
Munimum object distance	0.1m	←
Back focal length	13.2mm	13.4mm
Filter size	30.5 P=0.5mm	←
Dimensions	Φ 33 × 47mm	Φ 33 × 47mm
Weight	85g	80g
Remarks	Focus & Iris lock screw	←

RICOH will continue to evolve its RICOH FA lenses to meet the diverse needs of its customers.

**| 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 2018, Ricoh Group had worldwide sales of 2,063 billion yen.

For further information, please visit [www.ricoh.com](http://www.ricoh.com)

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