

RICOH

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2020-01-20

FL-CC0820-5MX: New RICOH FA Series FA Lens with 8mm Wide-Angle Focal Length

High-Resolution, High-Contrast images can be acquired over a Wider Area and at Closer Working Distances

The new lens expands the line-up of the four existing 2/3" 12, 16, 25 and 35mm 5MX lenses for 5 megapixel cameras released in 2018-2019.

The new model provides the widest angle of view of this series, whilst still providing high resolution images right up to the periphery. With the shortest focal length of the existing lineup, this lens has the ability to be incorporated into a narrow installation space and reduces the number of cameras in the system.

As well as the previous 12, 16, 25 and 35mm lenses, which have been receiving good reviews, the new 8mm model uses JIA (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. 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.

The lens provides a high resolution image right up to the periphery and has low distortion, making it ideal for a variety of applications. The market, that requires high levels of inspection and detection accuracy, is transitioning to higher resolution lenses.

Key Features of the New RICOH FL-CC0820-5MX

Reducing the number of cameras and saving installation space have been realised, by wide-angle lens design with a focal length of 8 mm. With the shortest focal length amongst the existing lineup and designed for inspection applications with installation limitations, it still achieves high resolution despite its wide field of view.

1. Reducing the number of cameras:

When installed at the same working distance, it is possible to obtain a wider field of view when compared to lenses with longer focal lengths. For example, with a 125mm working distance, the 8mm lens provides approximately 4 times the field of view (110 x 147mm) compared to a 16mm lens (58 x 78mm). (Figure 2)

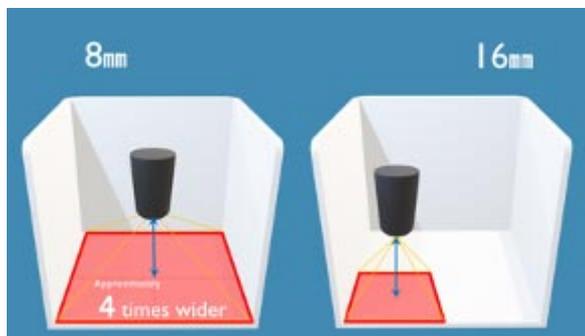


Figure 2: Reducing the number of cameras (Left: 8mm Lens / Right: 16mm Lens)

2. Saving installation space:

Shorten the working distance to objects by utilising a wide field of view. For example, if the application demands a field of view of 110 x 150mm, a 25mm lens requires a working distance of over 400mm, however, our 8mm lens can obtain the same field of view with only a 125mm working distance. (Figure 3)

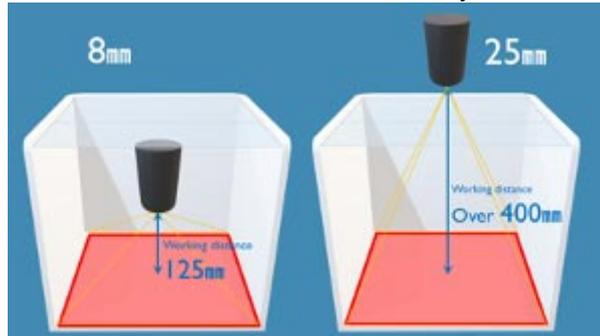


Figure 3: Saving installation space (Left: 8mm Lens / Right: 25mm Lens)

Specification of RICOH FL-CC0820-5MX

Model	FL-CC0820-5MX
Resolution	over 5 MP
Format Size	2/3" format
Focal length	8mm
Maximum aperture ratio	1:2.0
Iris range	2.0~16
Mount	C
Horizontal angle of view (1/3" format)	33.6°
Horizontal angle of view (1/2" format)	44.0°
Horizontal angle of view (1/1.8" format)	49.0°
Horizontal angle of view (2/3" format)	58.5°
Minimum object distance	0.1m
Back focal length	13.0mm

Model	FL-CC0820-5MX
Filter size	30.5 P=0.5mm
Dimensions	? 33 x 43mm
Weight	78g
Remarks	Focus & Iris lock skrew

Key Features of RICOH 5MX lenses

1. **Provides high resolution and high contrast images, contributing to high precision and stable image processing.**
2. **Low distortion reduces the burden of image processing by distortion correction.**
3. **?33mm compact design, enabling installation into various working environments.**

* JIA 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.

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