# Machine Vision Camera Lens

**FUJINON CF-ZA-1S series**

**3.45μm**

**1.0" ~ 1.1"**

**Best for IMX253 / 255**

**Compact**

**Diameter 39mm**

<table>
<thead>
<tr>
<th>Focal length (mm)</th>
<th>CF12ZA-1S</th>
<th>CF16ZA-1S</th>
<th>CF25ZA-1S</th>
<th>CF35ZA-1S</th>
<th>CF50ZA-1S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iris range (F, no)</td>
<td>8mm</td>
<td>12mm</td>
<td>16mm</td>
<td>25mm</td>
<td>35mm</td>
</tr>
<tr>
<td>Angle of view</td>
<td>85.7° x 67.5°</td>
<td>62.5° x 47.8°</td>
<td>47.3° x 36.1°</td>
<td>32.9° x 24.8°</td>
<td>23.0° x 17.3°</td>
</tr>
<tr>
<td>Working Distance**</td>
<td>-0.1m</td>
<td></td>
<td></td>
<td></td>
<td>-0.2m</td>
</tr>
<tr>
<td>Filter thread (mm)</td>
<td>M52 x 0.75</td>
<td>M37.5 x 0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mount</td>
<td>C-mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (approx.) (g)</td>
<td>180</td>
<td>170</td>
<td>165</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>Sensor size (max.)</td>
<td>1.1&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief Ray Angle(°)</td>
<td>4.5</td>
<td>4.9</td>
<td>2.7</td>
<td>4.5</td>
<td>4.8</td>
</tr>
<tr>
<td>TV distortion [%]</td>
<td>-4.81</td>
<td>-2.82</td>
<td>-0.80</td>
<td>-0.83</td>
<td>-0.32</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>Ø54 x 67</td>
<td>Ø39 x 67.6</td>
<td>Ø39 x 67.3</td>
<td>Ø39 x 68</td>
<td>Ø39 x 68</td>
</tr>
</tbody>
</table>

*1 max: 2.5μm pixel pitch

For more information, please check the special website. [Fujinon machine vision](http://mvlens.fujifilm.com/en/)


*2 From front of lens barrel

Note: You can download the specification sheet and the drawing data.
CF-ZA-1S Main Function

Function 1 4D High Resolution
 Maintain the high resolution from center to corner even when the working distance and F-value are changed.

4D High Resolution

D : Vertical / Horizontal of screen (Center to Corner)
4D : Working Distance
4D : FNo

FUJINON 4D High Resolution Corresponds to every installation environment.

Function 2 HRI (High Relative Illumination) Optical Design

- This lens achieves a high relative illumination of 90% or more.
- Achieves a high relative illumination of 80% or more. (Final image through CMOS sensor) That was achieved by making the CRA (Chief Ray Angle) less than 5 degrees from our original optical design.
- CH-ZA series are bright lenses from the center to the corner. Therefore, correction of the peripheral light intensity is unnecessary in all applications. Moreover, it prevents false recognition of noise caused by electronic correction. They are ideal for efficient and reliable inspection applications.

Darker edge lens

Brighter edge lens

30% 80%

Function 3 Anti Shock & Vibration

- Less than 10um optical axis shift under 10G shock.
- By passing IEC 60068-2-6 test, the resolution is maintained.
- "Focus" and "Iris" can be adjusted even though the lenses still meet the Anti Shock and Vibration requirements.

Function 4 Individual Quality Control

The FUJINON lens factory has developed its own inspection system and quantify lens performance. Each lens is given a serial number and its performance is recorded for individual quality control.

Detail information for Anti Shock & Vibration.
Please check the special website.