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**HF-12M series 12 Megapixel, 2/3"**



**<Main features>**

**■ Advanced optical performance suitable for the top-of-the-range series**

- When the iris (aperture) is set at the orange F4 marker on the lens barrel, the HF-12M series delivers the resolving power greater than 2.1µm pixel pitch on a 2/3-inch sensor (equivalent to 12 megapixels)\*.
- The HF-12M series is capable of maintaining ultra-high definition with a 2.7 µm pixel pitch within the whole frame area. Each pixel with high optical performance enables stable checking of product dimensions and appearance.
- The HF-12M series bring out maximum performance of the image sensor with 3.45µm pixel pitch(IMX250).



**■ FUJINON lenses' unique "4D High Resolution" performance.**

General machine vision lenses share the issue of resolution degradation when the working distance or aperture is changed. The HF-12M features FUJINON lenses' unique "4D High Resolution" performance. It maintains a high level of consistent image sharpness at the center as well as around the edges, while mitigating resolution degradation that typically occurs when changing a working distance or aperture value. This enables the consistent delivery of high-resolution images under a wide variety of installation and shooting conditions.

**■ Ease of installation and high reliability**

- Despite being high-resolution lenses with 2.7µm pixel pitch, all the five models come in a compact form factor with the external dimension of just φ33mm. This allows installation flexibility even in manufacturing facilities with space constraints.
- General machine vision lenses use iris and focus locking screws with a head protruding out from the lens body, potentially causing interference within the machine vision system. The HF-12M series come with regular locking screws as well as headless compact screws, which can be countersunk into the lens body to minimize interference with the machine vision system, thereby increasing flexibility in system installation and design.
- The lenses are built with a metal barrel for durability and robustness.



**■ Industry-leading low distortion design of no more than 0.05%\***

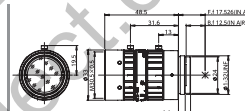
- The lenses' unique optical design minimizes troublesome distortion. In industrial applications requiring accuracy such as dimension measurement. The series boasts an industry-leading low distortion rate of no more than 0.05%\*.
- The aspherical glass\*3 mold lens enabled the smallest body and low distortion.

\*1: At the working distance of 50cm \*2: In the case of HF1618-12M \*3: Installed to HF818-12M and HF1218-12M

**Technology Supporting the "HF-12M Series"**

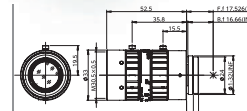
**High-precision glass mold aspherical lens technology –Achieving both miniaturization and low distortion–**

- In lens design, reducing the number of lenses and forming an image by abruptly bending light that enters the lens achieves miniaturization. Distortion cannot be controlled if the lenses are only composed of the commonly used spherical lenses. However, the aspherical lens can yield the same results of using multiple spherical lenses, enabling the control of distortion with far fewer lenses.
- Aspherical lenses require precision processing. Fujifilm can design and manufacture aspherical lens within its own group. The precision processing required in the design stage and its mass production is realized by accurate die machining technology.
- The HF-12M series realizes both miniaturization and low distortion by implementing the high-precision glass mold aspherical lenses.



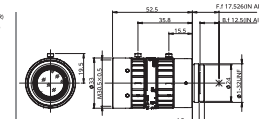
**HF818-12M**

Focal length [mm]	8
Iris range (F. no)	F1.8-F22
Angle of view	56.9°×43.9° (2/3")
Working Distance (*) [mm]	∞-100
Operation of focus	Manual
Operation of iris	Manual
Filter thread [mm]	M30.5 x 0.5
Mount	C-mount
Weight (approx.) [g]	95
Sensor size (max.)	2/3"
TV distortion [%]	-1.03
Dimension [mm]	φ33×48.5



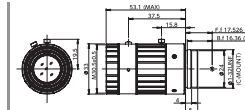
**HF1218-12M**

Focal length [mm]	12
Iris range (F. no)	F1.8-F22
Angle of view	39.3°×30.0° (2/3")
Working Distance (*) [mm]	∞-100
Operation of focus	Manual
Operation of iris	Manual
Filter thread [mm]	M30.5 x 0.5
Mount	C-mount
Weight (approx.) [g]	85
Sensor size (max.)	2/3"
TV distortion [%]	0.18
Dimension [mm]	φ33×52.5



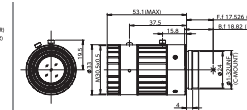
**HF1618-12M**

Focal length [mm]	16
Iris range (F. no)	F1.8-F22
Angle of view	30.8°×23.3° (2/3")
Working Distance (*) [mm]	∞-100
Operation of focus	Manual
Operation of iris	Manual
Filter thread [mm]	M30.5 x 0.5
Mount	C-mount
Weight (approx.) [g]	90
Sensor size (max.)	2/3"
TV distortion [%]	-0.03
Dimension [mm]	φ33×52.5



**HF2518-12M**

Focal length [mm]	25
Iris range (F. no)	F1.8-F22
Angle of view	20.0°×15.1° (2/3")
Working Distance (*) [mm]	∞-100
Operation of focus	Manual
Operation of iris	Manual
Filter thread [mm]	M30.5 x 0.5
Mount	C-mount
Weight (approx.) [g]	85
Sensor size (max.)	2/3"
TV distortion [%]	0.02
Dimension [mm]	φ33×53.1



**HF3520-12M**

Focal length [mm]	35
Iris range (F. no)	F2.0-F22
Angle of view	14.7°×11.0° (2/3")
Working Distance (*) [mm]	∞-200
Operation of focus	Manual
Operation of iris	Manual
Filter thread [mm]	M30.5 x 0.5
Mount	C-mount
Weight (approx.) [g]	85
Sensor size (max.)	2/3"
TV distortion [%]	0.01
Dimension [mm]	φ33×53.1