

# MVL-HF4028M-6MPE

## 1/1.8" 40mm 6MP FA LENS

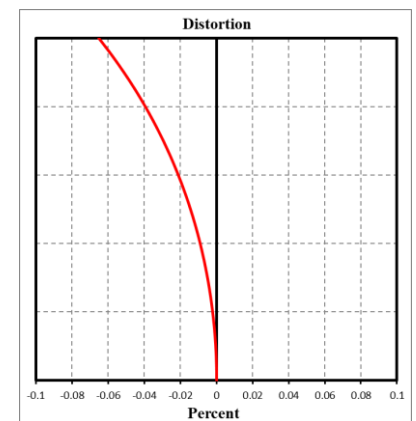
HF-E series FA Lens are optimized for machine vision light sources and sensor, with high resolution, excellent image quality, high transmittance and good stability. Featured with fixed focal length, manual aperture and compact size, it is suitable for machine vision industry applications and ideal for industrial cameras.



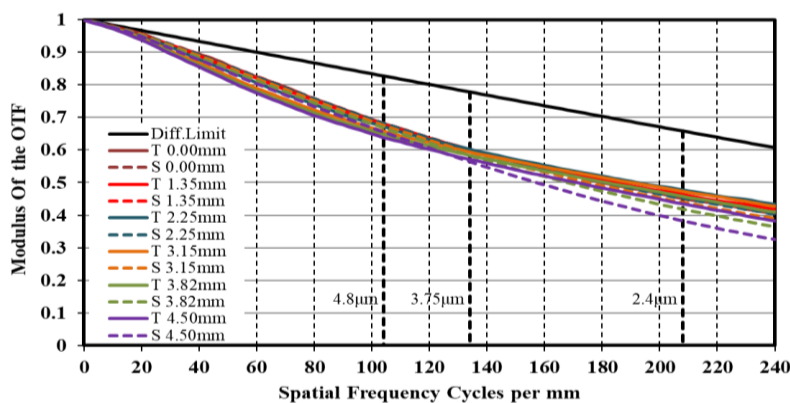
### Key Features

- High image clarity and contrast ratio
- Ultra-low distortion and higher relative illumination rate
- Good optical performance at ultra-short working distance
- Compact design, convenient for device integration

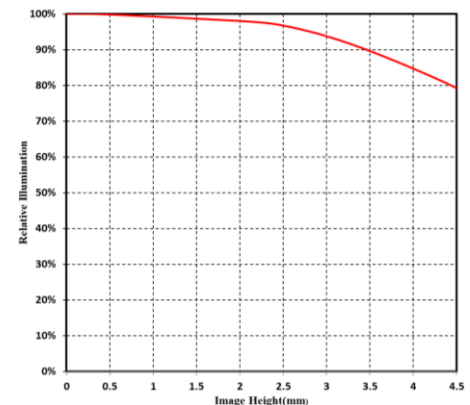
### Distortion



### MTF



### Relative Illumination



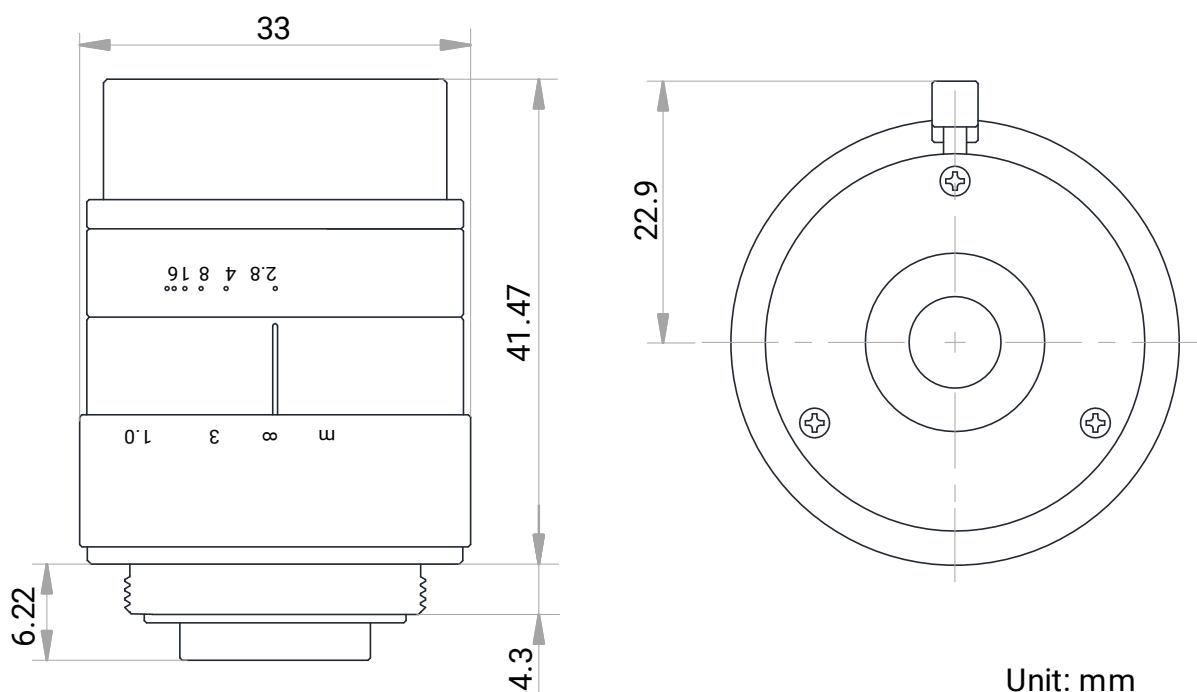
Note: The above curves are the simulate results based on F2.8,  $\beta=-0.0806$ , WD=500 mm.



## Specification

| Parameter               | Model                                                            | MVL-HF4028M-6MPE |
|-------------------------|------------------------------------------------------------------|------------------|
|                         | Fixed focal length, Manual iris, 6MP, FA Lens                    |                  |
| Performance             |                                                                  |                  |
| Focal length            | 40 mm                                                            |                  |
| F-number                | F2.8 to F16                                                      |                  |
| Image size              | Ø9 mm (1/1.8")                                                   |                  |
| Distortion              | −0.024%                                                          |                  |
| Minimum object distance | 0.25 m                                                           |                  |
| Field of view           | D (8.96 mm): 12.78°<br>H (7.38 mm): 10.53°<br>V (4.92 mm): 7.04° |                  |
| Mechanical              |                                                                  |                  |
| Iris control            | Manual                                                           |                  |
| Focus control           | Manual                                                           |                  |
| Filter thread           | M27 × P0.5                                                       |                  |
| Mount                   | C-mount                                                          |                  |
| Flange back length      | 17.526 mm                                                        |                  |
| Dimension               | Ø33 mm × 41.5 mm (Ø1.3" x 1.6")                                  |                  |
| Weight                  | 67.1 g (0.1 lb.)                                                 |                  |
| Temperature             | −10 °C to 50 °C (14 °F to 122 °F)                                |                  |
| General                 |                                                                  |                  |
| Certification           | RoHS 2.0                                                         |                  |

## Dimension



Field of View

| Extension (mm) | Working Distance (mm) |      | Magnification | Field of View (mm) |           |           |           |
|----------------|-----------------------|------|---------------|--------------------|-----------|-----------|-----------|
|                |                       |      |               | 1/1.8"             |           | 1/2"      |           |
|                |                       |      |               | H(7.38mm)          | H(4.92mm) | H(6.22mm) | V(4.67mm) |
| 20             | near                  | 78   | -0.569        | 13.00              | 8.66      | 10.95     | 8.22      |
|                | far                   | 148  | -0.310        | 23.90              | 15.90     | 20.12     | 15.09     |
| 10             | near                  | 98   | -0.431        | 17.17              | 11.43     | 14.46     | 10.85     |
|                | far                   | 226  | -0.207        | 35.73              | 23.79     | 30.09     | 22.58     |
| 5              | near                  | 138  | -0.293        | 25.28              | 16.84     | 21.30     | 15.98     |
|                | far                   | 460  | -0.104        | 71.21              | 47.48     | 60.02     | 45.07     |
| 2              | near                  | 187  | -0.209        | 35.34              | 23.54     | 29.77     | 22.35     |
|                | far                   | 1162 | -0.041        | 177.84             | 118.68    | 149.97    | 112.66    |
| 1              | near                  | 214  | -0.181        | 40.76              | 27.16     | 34.35     | 25.78     |
|                | far                   | 2337 | -0.021        | 356.09             | 237.72    | 300.34    | 225.67    |
| 0              |                       | 250  | -0.153        | 48.15              | 32.08     | 40.57     | 30.45     |
|                |                       | 300  | -0.129        | 57.16              | 38.09     | 48.16     | 36.15     |
|                |                       | 350  | -0.112        | 65.97              | 43.96     | 55.59     | 41.73     |
|                |                       | 400  | -0.099        | 74.63              | 49.74     | 62.89     | 47.21     |
|                |                       | 450  | -0.089        | 83.18              | 55.43     | 70.09     | 52.62     |
|                |                       | 500  | -0.081        | 91.63              | 61.07     | 77.22     | 57.97     |
|                |                       | 550  | -0.074        | 100.00             | 66.66     | 84.28     | 63.27     |
|                |                       | 600  | -0.068        | 108.31             | 72.20     | 91.28     | 68.53     |
|                |                       | 650  | -0.063        | 116.56             | 77.71     | 98.24     | 73.76     |
|                |                       | 700  | -0.059        | 124.77             | 83.18     | 105.16    | 78.96     |
|                |                       | 800  | -0.052        | 141.06             | 94.05     | 118.90    | 89.27     |
|                |                       | 900  | -0.047        | 157.22             | 104.84    | 132.52    | 99.51     |
|                |                       | 1000 | -0.043        | 173.27             | 115.55    | 146.06    | 109.69    |



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