

# HF-XA-5M series, 2/3"-1.1"\*<sup>3</sup>, 3.45μm, 5MP

Maximum sensor size: 6mm/8mm=2/3", 12mm/16mm/25mm/35mm=1/1.2", 50mm=1.1"



## • Compact design

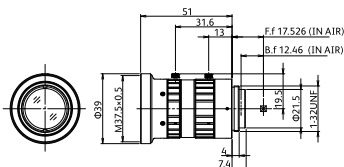


Anti Shock & Vibration

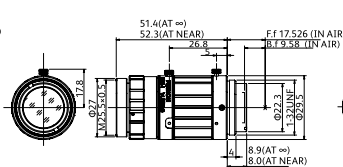
Anti Shock & Vibration

|                                     | HF6XA-5M     | HF8XA-5M     | HF12XA-5M     | HF16XA-5M     | HF25XA-5M     | HF35XA-5M     | HF50XA-5M    |
|-------------------------------------|--------------|--------------|---------------|---------------|---------------|---------------|--------------|
| Focal length [mm]                   | 6            | 8            | 12            | 16            | 25            | 35            | 50           |
| Iris range [F. no]                  | F1.9-F16     | F1.6-F16     | F1.6-F16      | F1.6-F16      | F1.6-F16      | F1.9-F16      | F2.4-F16     |
| Angle of view : 2/3"                | 74.7°×58.1°  | 58.4°×44.6°  | 40.1°×30.3°   | 31.4°×23.7°   | 20.0°×15.0°   | 14.2°×10.7°   | 10.4°×7.8°   |
| Working Distance* <sup>1</sup> [mm] | ∞-100        | ∞-100        | ∞-100         | ∞-100         | ∞-100         | ∞-200         | ∞-200        |
| Operation of focus                  | Manual       | Manual       | Manual        | Manual        | Manual        | Manual        | Manual       |
| Operation of iris                   | Manual       | Manual       | Manual        | Manual        | Manual        | Manual        | Manual       |
| Filter thread [mm]                  | M37.5×0.5    | M25.5×0.5    | M25.5×0.5     | M25.5×0.5     | M25.5×0.5     | M25.5×0.5     | M30.5×0.5    |
| Mount                               | C-mount      | C-mount      | C-mount       | C-mount       | C-mount       | C-mount       | C-mount      |
| Weight (approx.) [g]                | 100          | 79           | 79            | 71            | 72            | 60            | 95           |
| Sensor size (std.)* <sup>2</sup>    | 2/3"(3.45μm) | 2/3"(3.45μm) | 2/3"(3.45μm)  | 2/3"(3.45μm)  | 2/3"(3.45μm)  | 2/3"(3.45μm)  | 2/3"(3.45μm) |
| Sensor size (max.)* <sup>3</sup>    | 2/3"(3.45μm) | 2/3"(3.45μm) | 1/1.2"(4.5μm) | 1/1.2"(4.5μm) | 1/1.2"(4.5μm) | 1/1.2"(4.5μm) | 1.1"(4.5μm)  |
| TV distortion [%]                   | -2.88        | -1.99        | -1.26         | -0.60         | -0.07         | 0.10          | 0.01         |
| Dimension [mm]                      | ø39×51       | ø29.5×51.5   | ø29.5×51.5    | ø29.5×46      | ø29.5×46.5    | ø29.5×41.5    | ø33×66.5     |

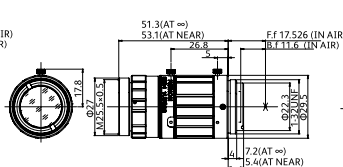
HF6XA-5M



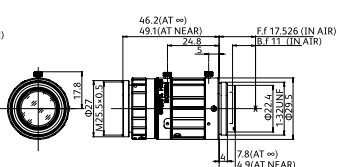
HF8XA-5M



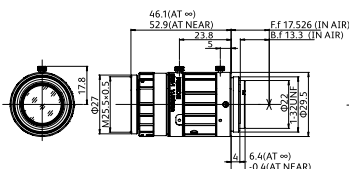
HF12XA-5M



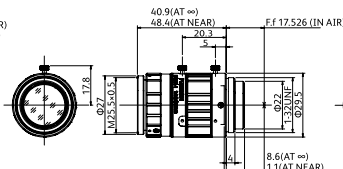
HF16XA-5M



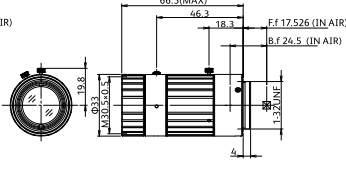
HF25XA-5M



HF35XA-5M



HF50XA-5M



\*1 From front of lens barrel. \*2 Sensor size(std.): Ideal size to maximize the target resolution.

\*3 Sensor size(max.): Adaptable sensor size varies depending on the model. Please check the amount of light and resolution on the edges pertaining to your particular application.

# HF-XA-5M series

## HF6XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |        |        |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|--------|--------|-------|-------|-------|
|                       |                       |                     | 2/3"               |        | 1/2"   |       | 1/3"  |       |
|                       |                       |                     | H                  | V      | H      | V     | H     | V     |
| 1000                  | 0.006x                | -                   | 1548.2             | 1126.4 | 1089.5 | 802.1 | 802.1 | 594.9 |
| 950                   | 0.006x                | -                   | 1471.8             | 1070.9 | 1035.7 | 762.5 | 762.5 | 565.6 |
| 900                   | 0.007x                | -                   | 1395.5             | 1015.3 | 982.0  | 722.9 | 722.9 | 536.3 |
| 850                   | 0.007x                | -                   | 1319.1             | 959.8  | 928.3  | 683.4 | 683.4 | 506.9 |
| 800                   | 0.008x                | -                   | 1242.8             | 904.2  | 874.6  | 643.8 | 643.8 | 477.6 |
| 750                   | 0.008x                | -                   | 1166.5             | 848.7  | 820.8  | 604.3 | 604.3 | 448.2 |
| 700                   | 0.009x                | -                   | 1090.1             | 793.1  | 767.1  | 564.7 | 564.7 | 418.9 |
| 650                   | 0.009x                | -                   | 1013.8             | 737.6  | 713.4  | 525.2 | 525.2 | 389.6 |
| 600                   | 0.010x                | -                   | 937.4              | 682.0  | 659.6  | 485.6 | 485.6 | 360.2 |
| 550                   | 0.011x                | -                   | 861.1              | 626.5  | 605.9  | 446.1 | 446.1 | 330.9 |
| 500                   | 0.012x                | -                   | 784.8              | 570.9  | 552.2  | 406.5 | 406.5 | 301.5 |
| 450                   | 0.013x                | -                   | 708.4              | 515.4  | 498.5  | 367.0 | 367.0 | 272.2 |
| 400                   | 0.015x                | -                   | 632.1              | 459.8  | 444.7  | 327.4 | 327.4 | 242.9 |
| 350                   | 0.017x                | -                   | 555.7              | 404.3  | 391.0  | 287.8 | 287.8 | 213.5 |
| 300                   | 0.020x                | -                   | 479.4              | 348.7  | 337.3  | 248.3 | 248.3 | 184.2 |
| 250                   | 0.024x                | -                   | 403.0              | 293.2  | 283.5  | 208.7 | 208.7 | 154.8 |
| 200                   | 0.029x                | -                   | 326.7              | 237.6  | 229.8  | 169.2 | 169.2 | 125.5 |
| 150                   | 0.038x                | -                   | 250.4              | 182.1  | 176.1  | 129.6 | 129.6 | 96.2  |
| 100                   | 0.055x                | -                   | 174.0              | 126.5  | 122.4  | 90.1  | 90.1  | 66.8  |

## HF8XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|-------|
|                       |                       |                     | 2/3"               |       | 1/2"  |       | 1/3"  |       |
|                       |                       |                     | H                  | V     | H     | V     | H     | V     |
| 1000                  | 0.008x                | -                   | 1130.4             | 830.5 | 803.9 | 595.5 | 595.5 | 443.3 |
| 950                   | 0.009x                | -                   | 1074.6             | 789.5 | 764.2 | 566.1 | 566.1 | 421.4 |
| 900                   | 0.009x                | -                   | 1018.8             | 748.5 | 724.5 | 536.6 | 536.6 | 399.5 |
| 850                   | 0.010x                | -                   | 962.9              | 707.4 | 684.8 | 507.2 | 507.2 | 377.6 |
| 800                   | 0.010x                | -                   | 907.1              | 666.4 | 645.1 | 477.8 | 477.8 | 355.7 |
| 750                   | 0.011x                | -                   | 851.2              | 625.4 | 605.4 | 448.4 | 448.4 | 333.8 |
| 700                   | 0.012x                | -                   | 795.4              | 584.3 | 565.7 | 419.0 | 419.0 | 311.9 |
| 650                   | 0.013x                | -                   | 739.6              | 543.3 | 525.9 | 389.6 | 389.6 | 290.0 |
| 600                   | 0.014x                | -                   | 683.7              | 502.3 | 486.2 | 360.1 | 360.1 | 268.1 |
| 550                   | 0.015x                | -                   | 627.9              | 461.3 | 446.5 | 330.7 | 330.7 | 246.2 |
| 500                   | 0.016x                | -                   | 572.0              | 420.2 | 406.8 | 301.3 | 301.3 | 224.3 |
| 450                   | 0.018x                | -                   | 516.2              | 379.2 | 367.1 | 271.9 | 271.9 | 202.4 |
| 400                   | 0.020x                | -                   | 460.3              | 338.2 | 327.4 | 242.5 | 242.5 | 180.5 |
| 350                   | 0.023x                | -                   | 404.5              | 297.1 | 287.6 | 213.0 | 213.0 | 158.6 |
| 300                   | 0.027x                | -                   | 348.7              | 256.1 | 247.9 | 183.6 | 183.6 | 136.7 |
| 250                   | 0.032x                | -                   | 292.8              | 215.1 | 208.2 | 154.2 | 154.2 | 114.8 |
| 200                   | 0.039x                | -                   | 237.0              | 174.1 | 168.5 | 124.8 | 124.8 | 92.9  |
| 150                   | 0.051x                | -                   | 181.1              | 133.0 | 128.8 | 95.4  | 95.4  | 71.0  |
| 100                   | 0.074x                | -                   | 125.3              | 92.0  | 89.1  | 66.0  | 66.0  | 49.1  |

## HF12XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|-------|
|                       |                       |                     | 1/1.2"             |       | 2/3"  |       | 1/2"  |       |
|                       |                       |                     | H                  | V     | H     | V     | H     | V     |
| 1000                  | 0.012x                | -                   | 913.0              | 673.6 | 740.5 | 548.9 | 531.8 | 396.2 |
| 950                   | 0.013x                | -                   | 868.0              | 640.4 | 704.0 | 521.9 | 505.6 | 376.7 |
| 900                   | 0.014x                | -                   | 823.0              | 607.2 | 667.5 | 494.8 | 479.4 | 357.2 |
| 850                   | 0.014x                | -                   | 778.0              | 574.0 | 631.0 | 467.8 | 453.2 | 337.7 |
| 800                   | 0.015x                | -                   | 733.0              | 540.8 | 594.5 | 440.7 | 427.0 | 318.1 |
| 750                   | 0.016x                | -                   | 688.0              | 507.6 | 558.0 | 413.7 | 400.8 | 298.6 |
| 700                   | 0.017x                | -                   | 643.1              | 474.5 | 521.6 | 386.6 | 374.6 | 279.1 |
| 650                   | 0.019x                | -                   | 598.1              | 441.3 | 485.1 | 359.6 | 348.3 | 259.6 |
| 600                   | 0.020x                | -                   | 553.1              | 408.1 | 448.6 | 332.5 | 322.1 | 240.0 |
| 550                   | 0.022x                | -                   | 508.1              | 374.9 | 412.1 | 305.5 | 295.9 | 220.5 |
| 500                   | 0.024x                | -                   | 463.1              | 341.7 | 375.6 | 278.4 | 269.7 | 201.0 |
| 450                   | 0.027x                | -                   | 418.2              | 308.5 | 339.1 | 251.4 | 243.5 | 181.5 |
| 400                   | 0.030x                | -                   | 373.2              | 275.3 | 302.6 | 224.3 | 217.3 | 161.9 |
| 350                   | 0.034x                | -                   | 328.2              | 242.1 | 266.2 | 197.3 | 191.1 | 142.4 |
| 300                   | 0.039x                | -                   | 283.2              | 208.9 | 229.7 | 170.2 | 164.9 | 122.9 |
| 250                   | 0.047x                | -                   | 238.2              | 175.7 | 193.2 | 143.2 | 138.7 | 103.4 |
| 200                   | 0.058x                | -                   | 193.2              | 142.5 | 156.7 | 116.1 | 112.5 | 83.8  |
| 150                   | 0.075x                | -                   | 148.3              | 109.3 | 120.2 | 89.1  | 86.3  | 64.3  |
| 100                   | 0.108x                | -                   | 103.3              | 76.1  | 83.7  | 62.0  | 60.1  | 44.8  |

## HF16XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|-------|
|                       |                       |                     | 1/1.2"             |       | 2/3"  |       | 1/2"  |       |
|                       |                       |                     | H                  | V     | H     | V     | H     | V     |
| 1000                  | 0.016x                | -                   | 701.9              | 522.1 | 572.8 | 427.0 | 413.9 | 309.3 |
| 950                   | 0.016x                | -                   | 667.5              | 496.5 | 544.7 | 406.0 | 393.6 | 294.2 |
| 900                   | 0.017x                | -                   | 633.1              | 470.9 | 516.6 | 385.1 | 373.2 | 279.0 |
| 850                   | 0.018x                | -                   | 598.7              | 445.3 | 488.4 | 364.1 | 352.9 | 263.8 |
| 800                   | 0.019x                | -                   | 564.2              | 419.7 | 460.3 | 343.2 | 332.6 | 248.6 |
| 750                   | 0.021x                | -                   | 529.8              | 394.0 | 432.2 | 322.2 | 312.3 | 233.4 |
| 700                   | 0.022x                | -                   | 495.4              | 368.4 | 404.1 | 301.3 | 292.0 | 218.2 |
| 650                   | 0.024x                | -                   | 461.0              | 342.8 | 376.0 | 280.3 | 271.7 | 203.0 |
| 600                   | 0.026x                | -                   | 426.5              | 317.2 | 347.9 | 259.3 | 251.4 | 187.9 |
| 550                   | 0.028x                | -                   | 392.1              | 291.5 | 319.8 | 238.4 | 231.0 | 172.7 |
| 500                   | 0.031x                | -                   | 357.7              | 265.9 | 291.7 | 217.4 | 210.7 | 157.5 |
| 450                   | 0.034x                | -                   | 323.3              | 240.3 | 263.6 | 196.5 | 190.4 | 142.3 |
| 400                   | 0.038x                | -                   | 288.8              | 214.7 | 235.5 | 175.5 | 170.1 | 127.1 |
| 350                   | 0.043x                | -                   | 254.4              | 189.1 | 207.4 | 154.6 | 149.8 | 111.9 |
| 300                   | 0.050x                | -                   | 220.0              | 163.4 | 179.3 | 133.6 | 129.5 | 96.7  |
| 250                   | 0.059x                | -                   | 185.6              | 137.8 | 151.2 | 112.6 | 109.2 | 81.6  |
| 200                   | 0.073x                | -                   | 151.1              | 112.2 | 123.1 | 91.7  | 88.9  | 66.4  |
| 150                   | 0.094x                | -                   | 116.7              | 86.6  | 95.0  | 70.7  | 68.5  | 51.2  |
| 100                   | 0.134x                | -                   | 82.3               | 60.9  | 66.9  | 49.8  | 48.2  | 36.0  |

## HF25XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|-------|
|                       |                       |                     | 1/1.2"             |       | 2/3"  |       | 1/2"  |       |
|                       |                       |                     | H                  | V     | H     | V     | H     | V     |
| 1000                  | 0.025x                | -                   | 436.0              | 326.6 | 357.6 | 267.9 | 259.8 | 194.7 |
| 950                   | 0.026x                | -                   | 414.6              | 310.5 | 340.0 | 254.7 | 247.0 | 185.1 |
| 900                   | 0.027x                | -                   | 393.1              | 294.4 | 322.4 | 241.5 | 234.2 | 175.5 |
| 850                   | 0.029x                | -                   | 371.7              | 278.4 | 304.8 | 228.4 | 221.4 | 166.0 |
| 800                   | 0.031x                | -                   | 350.3              | 262.3 | 287.2 | 215.2 | 208.6 | 156.4 |
| 750                   | 0.033x                | -                   | 328.8              | 246.2 | 269.6 | 202.0 | 195.9 | 146.8 |
| 700                   | 0.035x                | -                   | 307.4              | 230.2 | 252.0 | 188.8 | 183.1 | 137.2 |
| 650                   | 0.038x                | -                   | 285.9              | 214.1 | 234.5 | 175.6 | 170.3 | 127.6 |
| 600                   | 0.041x                | -                   | 264.5              | 198.1 | 216.9 | 162.5 | 157.5 | 118.1 |
| 550                   | 0.044x                | -                   | 243.1              | 182.0 | 199.3 | 149.3 | 144.7 | 108.5 |
| 500                   | 0.049x                | -                   | 221.6              | 165.9 | 181.7 | 136.1 | 132.0 | 98.9  |
| 450                   | 0.054x                | -                   | 200.2              | 149.9 | 164.1 | 122.9 | 119.2 | 89.3  |
| 400                   | 0.060x                | -                   | 178.8              | 133.8 | 146.5 | 109.7 | 106.4 | 79.7  |
| 350                   | 0.068x                | -                   | 157.3              | 117.7 | 128.9 | 96.6  | 93.6  | 70.2  |
| 300                   | 0.079x                | -                   | 135.9              | 101.7 | 111.4 | 83.4  | 80.8  | 60.6  |
| 250                   | 0.094x                | -                   | 114.4              | 85.6  | 93.8  | 70.2  | 68.1  | 51.0  |
| 200                   | 0.116x                | -                   | 93.0               | 69.5  | 76.2  | 57.0  | 55.3  | 41.4  |
| 150                   | 0.151x                | -                   | 71.5               | 53.5  | 58.6  | 43.8  | 42.5  | 31.8  |
| 100                   | 0.216x                | -                   | 50.1               | 37.4  | 41.0  | 30.7  | 29.7  | 22.3  |

## HF35XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |       |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|-------|
|                       |                       |                     | 1/1.2"             |       | 2/3"  |       | 1/2"  |       |
|                       |                       |                     | H                  | V     | H     | V     | H     | V     |
| 1000                  | 0.035x                | -                   | 304.5              | 228.5 | 250.1 | 187.6 | 182.0 | 136.5 |
| 950                   | 0.037x                | -                   | 289.3              | 217.1 | 237.6 | 178.3 | 172.9 | 129.7 |
| 900                   | 0.039x                | -                   | 274.1              | 205.7 | 225.1 | 168.9 | 163.8 | 122.9 |
| 850                   | 0.041x                | -                   | 258.9              | 194.3 | 212.6 | 159.5 | 154.7 | 116.0 |
| 800                   | 0.044x                | -                   | 243.7              | 182.8 | 200.1 | 150.1 | 145.6 | 109.2 |
| 750                   | 0.047x                | -                   | 228.4              | 171.4 | 187.6 | 140.8 | 136.5 | 102.4 |
| 700                   | 0.050x                | -                   | 213.2              | 160.0 | 175.1 | 131.4 | 127.4 | 95.6  |
| 650                   | 0.054x                | -                   | 198.0              | 148.6 | 162.6 | 122.0 | 118.3 | 88.7  |
| 600                   | 0.059x                | -                   | 182.8              | 137.2 | 150.1 | 112.6 | 109.2 | 81.9  |
| 550                   | 0.064x                | -                   | 167.6              | 125.7 | 137.6 | 103.2 | 100.1 | 75.1  |
| 500                   | 0.070x                | -                   | 152.4              | 114.3 | 125.1 | 93.9  | 91.0  | 68.3  |
| 450                   | 0.078x                | -                   | 137.2              | 102.9 | 112.6 | 84.5  | 81.9  | 61.4  |
| 400                   | 0.088x                | -                   | 122.0              | 91.5  | 100.1 | 75.1  | 72.8  | 54.6  |
| 350                   | 0.100x                | -                   | 106.8              | 80.1  | 87.6  | 65.7  | 63.7  | 47.8  |
| 300                   | 0.117x                | -                   | 91.5               | 68.6  | 75.1  | 56.3  | 54.6  | 41.0  |
| 250                   | 0.141x                | -                   | 76.3               | 57.2  | 62.6  | 47.0  | 45.5  | 34.1  |
| 200                   | 0.176x                | -                   | 61.1               | 45.8  | 50.1  | 37.6  | 36.4  | 27.3  |
| 150                   | 0.234x                | 5                   | 45.9               | 34.4  | 37.6  | 28.2  | 27.3  | 20.5  |
| 100                   | 0.352x                | 10                  | 30.6               | 22.9  | 25.1  | 18.8  | 18.2  | 13.7  |

## HF50XA-5M

| Working Distance [mm] | Optical Magnification | Extension Tube [mm] | Field of View [mm] |       |       |       |       |      |
|-----------------------|-----------------------|---------------------|--------------------|-------|-------|-------|-------|------|
|                       |                       |                     | 1.1"               |       | 2/3"  |       | 1/2"  |      |
|                       |                       |                     | H                  | V     | H     | V     | H     | V    |
| 1000                  | 0.048x                | -                   | 293.1              | 219.7 | 183.1 | 137.3 | 133.1 | 99.8 |
| 950                   | 0.051x                | -                   | 278.6              | 208.9 | 174.0 | 130.5 | 126.5 | 94.9 |
| 900                   | 0.053x                | -                   | 264.1              | 198.0 | 164.9 | 123.7 | 119.9 | 89.9 |
| 850                   | 0.056x                | -                   | 249.6              | 187.1 | 155.9 | 116.9 | 113.3 | 85.0 |
| 800                   | 0.060x                | -                   | 235.1              | 176.2 | 146.8 | 110.1 | 106.7 | 80.0 |
| 750                   | 0.064x                | -                   | 220.6              | 165.3 | 137.7 | 103.3 | 100.1 | 75.1 |
| 700                   | 0.068x                | -</                 |                    |       |       |       |       |      |