

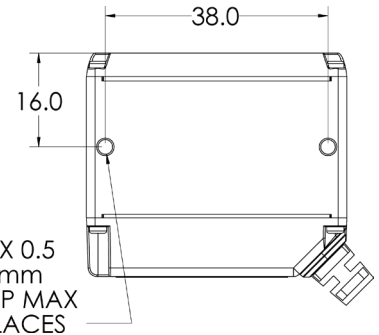
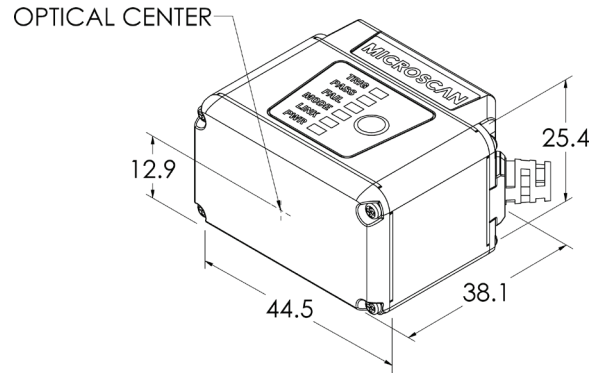
# MICROHAWK® MV-30

## SPECIFICATIONS AND OPTIONS



**Ultra-Compact**  
 Height: 25 mm (0.98")  
 Width: 45 mm (1.77")  
 Length: 38 mm (1.50")

Integrated LEDs



**Note:** Nominal dimensions in MM are shown. Typical tolerances apply.

### DIMENSIONS

**Height:** 25 mm (0.98")  
**Width:** 45 mm (1.77")  
**Length:** 38 mm (1.50")  
**Weight without Cable:** 46 g (1.62 oz.)

**ENCLOSURE:** IP54, Aluminum

### ENVIRONMENTAL

**Operating Temperature:** 0° to 45° C (32° to 113° F)  
**Storage Temperature:** -50° to 75° C (-58° to 167° F)  
**Humidity:** 5% to 95% (non-condensing)

### EMISSIONS

EN 55022:2010 Class A Limits

### ELECTRICAL

5 VDC ± 5%, 600 mA at 5 VDC (typ.)

### CONNECTOR

0.91 m Cable with High-Density 15-Pin D-Sub Socket

### COMMUNICATION

RS-232, USB 2.0 High Speed, Ethernet over USB/HID

### DISCRETE I/O

**2 in/3 out:** Trigger Input; New Master Input: 5-28 V rated (0.16 mA @ 5 VDC); Strobe Output; 2 General Purpose Outputs: 5V TTL-compatible, can sink 10 mA and source 10 mA

### ILLUMINATION

**Inner Red:** 4 LEDs, 625 nm nominal  
**Inner White:** 4 LEDs  
**Outer Red, White, Blue or IR:** 8 LEDs  
**Light Modes:** Inner or Outer; Off, On, Strobe, Power Strobe; Power Strobe for Outer LEDs only. Not available when running under USB power.  
**Operating Life:** 50,000 hours @ 25° C

### INDICATORS

TRIG, PASS, FAIL, MODE, LINK, PWR LEDs, 2 Target Pattern LEDs, 2 Inspection Passed Green Flash LEDs

### MEMORY

2 GB Non-Volatile Flash, 256 MB RAM

**SPEED:** 800 MHz

### SOFTWARE

AutoVISION Sensor, AutoVISION, Visionscape

**FTP IMAGE STORAGE:** Supported

### SENSOR OPTIONS

**WVGA (Mono):** CMOS 0.34 MP (752 x 480), 4.51 x 2.88 mm, 6 µm pixel size  
**SXGA (Mono):** CMOS 1.2 MP (1280 x 960), 4.80 x 3.60 mm, 3.75 µm pixel size  
**QSXGA (Color):** CMOS 5 MP (2592 x 1944), 4.536 x 3.402 mm, 1.75 µm pixel size

### SHUTTER

Global (WVGA, SXGA), Rolling (QSXGA)

### EXPOSURE

**WVGA:** 50 to 66,667 µs; **SXGA:** 66 to 58,825 µs; **QSXGA:** 66 to 66,667 µs

### OPTICS

**Fixed:** Standard Density (5.2 mm), High-Density (8.0 mm), UHD (16.0 mm)  
**Autofocus:** Standard Density (5.2 mm), High-Density (7.7 mm), UHD (16.0 mm)

### FOCUS

**Fixed:** Factory Set to 50, 102, 190 or 300 mm (SD, HD); 64 or 400 mm (UHD)  
**Autofocus:** Software Adjustable 50 to 300 mm (SD, HD); 40 to 150 mm (UHD)

### FRAMES PER SECOND

**WVGA:** Up to 52; **SXGA:** Up to 40; **QSXGA:** Up to 5

### SYMBOLOGIES

**2D:** Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code  
**Stacked:** PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  
**Linear:** Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, POSTNET, Japanese Postal, Australia Post, Royal Mail, Intelligent Mail, KIX

### SAFETY AND QUALITY

FCC, CE, RoHS-Compliant

### QMS CERTIFICATION

www.microscan.com/quality

### PIN ASSIGNMENTS

#### High-Density 15-Pin D-Sub Socket

| Pin | Function    |
|-----|-------------|
| 1   | +5VDC       |
| 2   | TX232       |
| 3   | RX232       |
| 4   | GND         |
| 5   | D+          |
| 6   | N/C         |
| 7   | Output 1+   |
| 8   | Default+    |
| 9   | Trigger+    |
| 10  | D-          |
| 11  | Output 3+   |
| 12  | New Master+ |
| 13  | Chassis     |
| 14  | Output 2+   |
| 15  | Vbus        |

**Note:** Accessory cable required between 15-pin socket and host USB port.

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 Specifications are subject to change. For complete technical information, please see the User Manual.  
 Warranty - For current warranty information about this product, please visit [www.microscan.com/warranty](http://www.microscan.com/warranty).

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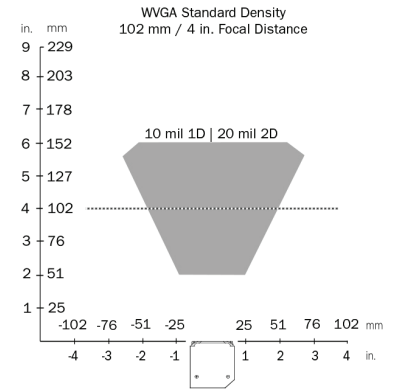
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# MICROHAWK® MV-30 FIELD OF VIEW AND READ RANGE CHARTS

## WVGA Sensor Fixed Focus Read Ranges

| Focus Distance |     | WVGA HIGH-DENSITY |     |                     |                     |         |                  | WVGA STANDARD DENSITY |     |                     |                     |         |                  |
|----------------|-----|-------------------|-----|---------------------|---------------------|---------|------------------|-----------------------|-----|---------------------|---------------------|---------|------------------|
|                |     | Field of View     |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size | Field of View         |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size |
| in.            | mm  | in.               | mm  | mil size            | Inside              | Outside | mil size         | in.                   | mm  | mil size            | Inside              | Outside | mil size         |
| 2.0            | 50  | 1.4               | 35  | 7.5                 | 43                  | 58      | 5                | 2.0                   | 50  | 10                  | 38                  | 65      | 7.5              |
| 2.5            | 64  | 1.5               | 38  | 7.5                 | 55                  | 73      | 5                | 2.2                   | 55  | 10                  | 49                  | 78      | 7.5              |
| 3.2            | 81  | 1.9               | 49  | 10                  | 65                  | 97      | 7.5              | 2.8                   | 70  | 15                  | 56                  | 106     | 10               |
| 4.0            | 102 | 2.6               | 65  | 10                  | 83                  | 121     | 10               | 3.7                   | 94  | 20                  | 52                  | 152     | 15               |
| 5.2            | 133 | 3.1               | 80  | 15                  | 90                  | 176     | 10               | 4.5                   | 115 | 20                  | 78                  | 187     | 15               |
| 7.5            | 190 | 4.5               | 114 | 20                  | 133                 | 246     | 15               | 6.5                   | 165 | 30                  | 128                 | 252     | 20               |
| 11.8           | 300 | 7.1               | 180 | 30                  | 179                 | 422     | 30               | 10.2                  | 260 | 40                  | 219                 | 381     | 30               |

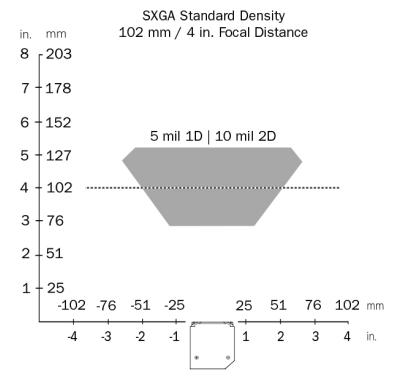
### Example Read Range:



## SXGA Sensor Fixed Focus Read Ranges

| Focus Distance |     | SXGA HIGH-DENSITY |     |                     |                     |         |                  | SXGA STANDARD DENSITY |     |                     |                     |         |                  |
|----------------|-----|-------------------|-----|---------------------|---------------------|---------|------------------|-----------------------|-----|---------------------|---------------------|---------|------------------|
|                |     | Field of View     |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size | Field of View         |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size |
| in.            | mm  | in.               | mm  | mil size            | Inside              | Outside | mil size         | in.                   | mm  | mil size            | Inside              | Outside | mil size         |
| 2.0            | 50  | 1.5               | 37  | 5                   | 47                  | 55      | 3.3              | 2.1                   | 53  | 7.5                 | 37                  | 64      | 5                |
| 2.5            | 64  | 1.6               | 41  | 5                   | 58                  | 70      | 3.3              | 2.3                   | 59  | 7.5                 | 49                  | 78      | 5                |
| 3.2            | 81  | 2.0               | 52  | 7.5                 | 70                  | 92      | 5                | 2.9                   | 75  | 7.5                 | 60                  | 102     | 7.5              |
| 4.0            | 102 | 2.7               | 69  | 7.5                 | 88                  | 116     | 5                | 3.9                   | 100 | 10                  | 74                  | 131     | 7.5              |
| 5.2            | 133 | 3.4               | 85  | 10                  | 107                 | 159     | 7.5              | 4.8                   | 123 | 10                  | 88                  | 161     | 10               |
| 7.5            | 190 | 4.8               | 122 | 15                  | 137                 | 243     | 10               | 6.9                   | 175 | 15                  | 115                 | 265     | 15               |
| 11.8           | 300 | 7.6               | 192 | 20                  | 185                 | 400     | 15               | 10.9                  | 277 | 20                  | 224                 | 427     | 20               |

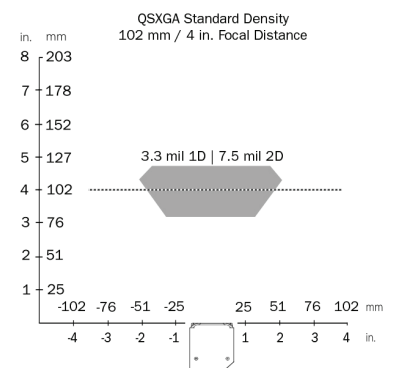
### Example Read Range:



## QXSGA Sensor Fixed Focus Read Ranges

| Focus Distance |     | QXSGA HIGH-DENSITY |     |                     |                     |         |                  | QXSGA STANDARD DENSITY |     |                     |                     |         |                  |
|----------------|-----|--------------------|-----|---------------------|---------------------|---------|------------------|------------------------|-----|---------------------|---------------------|---------|------------------|
|                |     | Field of View      |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size | Field of View          |     | Typical 2D Mil Size | Depth of Field (mm) |         | Min. 2D Mil Size |
| in.            | mm  | in.                | mm  | mil size            | Inside              | Outside | mil size         | in.                    | mm  | mil size            | Inside              | Outside | mil size         |
| 2.0            | 50  | 1.4                | 35  | 5                   | 46                  | 55      | 3.3              | 2.0                    | 51  | 5                   | 43                  | 59      | 3.3              |
| 2.5            | 64  | 1.5                | 39  | 5                   | 59                  | 68      | 3.3              | 2.2                    | 57  | 5                   | 55                  | 72      | 3.3              |
| 3.2            | 81  | 2.0                | 50  | 5                   | 74                  | 87      | 3.3              | 2.8                    | 72  | 5                   | 69                  | 92      | 5                |
| 4.0            | 102 | 2.6                | 66  | 5                   | 94                  | 110     | 3.3              | 3.8                    | 96  | 7.5                 | 80                  | 124     | 5                |
| 5.2            | 133 | 3.2                | 81  | 7.5                 | 112                 | 153     | 5                | 4.6                    | 117 | 7.5                 | 107                 | 159     | 7.5              |
| 7.5            | 190 | 4.6                | 116 | 10                  | 154                 | 227     | 7.5              | 6.6                    | 168 | 10                  | 150                 | 231     | 10               |
| 11.8           | 300 | 7.2                | 184 | 15                  | 227                 | 373     | 10               | 10.4                   | 265 | 15                  | 203                 | 397     | 15               |

### Example Read Range:



## UHD Fixed Focus Read Ranges

| SXGA UHD - 64 MM |                     |         |               |       |
|------------------|---------------------|---------|---------------|-------|
| Min. 1D Element  | Depth of Field (mm) |         | Field of View |       |
|                  | Inside              | Outside | Hor.          | Vert. |
| 2                | 63.5                | 64.5    | 16.5          | 12.5  |
| 2.5              | 62.5                | 66      |               |       |
| 3                | 62.5                | 66      |               |       |
| 3.3              | 62.5                | 67      |               |       |

| SXGA UHD - 400 MM |                     |         |               |       |
|-------------------|---------------------|---------|---------------|-------|
| Min. 2D Element   | Depth of Field (mm) |         | Field of View |       |
|                   | Inside              | Outside | Hor.          | Vert. |
| 7.5               | 360                 | 415     | 114           | 86    |
| 10                | 351                 | 429     |               |       |
| 15                | 325                 | 451     |               |       |
| 20                | 309                 | 466     |               |       |
| 30                | 293                 | 512     |               |       |
| 40                | 303                 | 563     |               |       |

Note: Minimum 1D element is typically 1/2 the size of minimum 2D element. Example: 10 mil 2D = 5 mil 1D.

# MICROHAWK® MV-30 FIELD OF VIEW AND READ RANGE CHARTS

## WVGA Sensor Autofocus Read Ranges

| Object Distance Std Models |     | WVGA HIGH-DENSITY AUTOFOCUS |       |                        |       |
|----------------------------|-----|-----------------------------|-------|------------------------|-------|
|                            |     | Horizontal Field of View    |       | Vertical Field of View |       |
| in.                        | mm  | in.                         | mm    | in.                    | mm    |
| 2.0                        | 50  | 1.3                         | 33.5  | 0.8                    | 21.5  |
| 2.5                        | 64  | 1.7                         | 42.0  | 1.0                    | 26.5  |
| 3.2                        | 81  | 2.1                         | 52.5  | 1.3                    | 33.0  |
| 4.0                        | 102 | 2.6                         | 65.0  | 1.6                    | 41.0  |
| 5.2                        | 133 | 3.3                         | 84.5  | 2.1                    | 53.5  |
| 7.5                        | 190 | 4.7                         | 119.5 | 3.0                    | 75.0  |
| 11.8                       | 300 | 7.4                         | 187.0 | 4.6                    | 117.0 |

| Object Distance Std Models |     | WVGA STANDARD DENSITY AUTOFOCUS |       |                        |       |
|----------------------------|-----|---------------------------------|-------|------------------------|-------|
|                            |     | Horizontal Field of View        |       | Vertical Field of View |       |
| in.                        | mm  | in.                             | mm    | in.                    | mm    |
| 2.0                        | 50  | 2.1                             | 52.5  | 1.3                    | 34.0  |
| 2.5                        | 64  | 2.6                             | 65.5  | 1.6                    | 41.5  |
| 3.2                        | 81  | 3.2                             | 82.0  | 2.0                    | 51.0  |
| 4.0                        | 102 | 4.0                             | 102.0 | 2.5                    | 64.0  |
| 5.2                        | 133 | 5.2                             | 132.0 | 3.2                    | 82.0  |
| 7.5                        | 190 | 7.3                             | 185.0 | 4.5                    | 115.5 |
| 11.8                       | 300 | 11.3                            | 288.0 | 7.1                    | 180.0 |

| Symbol Size (mils) | WVGA High-Density Read Range Testings |     |         |     |
|--------------------|---------------------------------------|-----|---------|-----|
|                    | IE (mm)                               | PPE | OE (mm) | PPE |
| 3.3                | 50                                    | 1.9 | 53      | 1.8 |
| 5                  | 50                                    | 2.8 | 57      | 2.5 |
| 7.5                | 50                                    | 4.2 | 61      | 3.6 |
| 10                 | 50                                    | 5.6 | 64      | 4.6 |
| 15                 | 50                                    | 8.5 | 71      | 6.3 |

| Symbol Size (mils) | WVGA Standard Density Read Range Testings |     |         |     |
|--------------------|---|-----|---------|-----|
|                    | IE (mm)                                   | PPE | OE (mm) | PPE |
| 5                  | 50  | 1.8 | 60      | 1.5 |
| 7.5                | 50  | 2.7 | 69      | 2   |
| 10                 | 50  | 3.6 | 77      | 2.5 |
| 15                 | 50  | 5   | 92      | 3.1 |
| 20                 | 50  | 7.2 | 99      | 4   |

| Object Distance Std Models |     | SXGA HIGH-DENSITY AUTOFOCUS |       |                        |       |
|----------------------------|-----|-----------------------------|-------|------------------------|-------|
|                            |     | Horizontal Field of View    |       | Vertical Field of View |       |
| in.                        | mm  | in.                         | mm    | in.                    | mm    |
| 2.0                        | 50  | 1.4                         | 36.5  | 1.1                    | 27.4  |
| 2.5                        | 64  | 1.8                         | 46.0  | 1.4                    | 34.5  |
| 3.2                        | 81  | 2.3                         | 57.2  | 1.7                    | 42.9  |
| 4.0                        | 102 | 2.8                         | 71.4  | 2.1                    | 53.6  |
| 5.2                        | 133 | 3.6                         | 90.5  | 2.7                    | 67.9  |
| 7.5                        | 190 | 5.0                         | 127.0 | 3.8                    | 95.3  |
| 11.8                       | 300 | 7.8                         | 198.4 | 5.9                    | 148.8 |

| Object Distance Std Models |     | SXGA STANDARD DENSITY AUTOFOCUS |       |                        |       |
|----------------------------|-----|---------------------------------|-------|------------------------|-------|
|                            |     | Horizontal Field of View        |       | Vertical Field of View |       |
| in.                        | mm  | in.                             | mm    | in.                    | mm    |
| 2.0                        | 50  | 2.3                             | 57.2  | 1.7                    | 42.9  |
| 2.5                        | 64  | 2.9                             | 73.0  | 2.2                    | 54.8  |
| 3.2                        | 81  | 3.5                             | 88.9  | 2.6                    | 66.7  |
| 4.0                        | 102 | 4.3                             | 109.5 | 3.2                    | 82.2  |
| 5.2                        | 133 | 5.6                             | 141.3 | 4.2                    | 106.0 |
| 7.5                        | 190 | 7.9                             | 200.0 | 5.9                    | 150.0 |
| 11.8                       | 300 | 12.4                            | 314.3 | 9.3                    | 235.7 |

| Symbol Size (mils) | SXGA High-Density Read Range Testings |      |         |     |
|--------------------|---------------------------------------|------|---------|-----|
|                    | IE (mm)                               | PPE  | OE (mm) | PPE |
| 3.3                | 50                                    | 3.0  | NA      | NA  |
| 5                  | 50                                    | 4.6  | 144     | 1.7 |
| 7.5                | 50                                    | 6.8  | 208     | 1.8 |
| 10                 | 50                                    | 9.2  | 291     | 1.7 |
| 15                 | 50                                    | 13.9 | 374     | 2   |

| Symbol Size (mils) | SXGA Standard Density Read Range Testings |      |         |     |
|--------------------|---|------|---------|-----|
|                    | IE (mm)                                   | PPE  | OE (mm) | PPE |
| 5                  | 50  | 2.7  | 94      | 1.6 |
| 7.5                | 50  | 4.4  | 143     | 1.7 |
| 10                 | 50  | 5.6  | 186     | 1.7 |
| 15                 | 50  | 8.7  | 282     | 1.7 |
| 20                 | 50  | 11.5 | 308     | 2.1 |

| SXGA UHD AUTOFOCUS |                               |         |                 |
|--------------------|-------------------------------|---------|-----------------|
| Min. 2D Element    | Horizontal Field of View (mm) |         | Read Range (mm) |
| mil size           | Inside                        | Outside | Autofocus       |
| 2                  | 10                            | 24      | 40 - 104        |
| 3.3                | 10                            | 36      | 40 - 146        |
| 5                  | 10                            | 39      | 40 - 150        |

