

## 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

#### 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  $\pm$  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  $\mu$ m pixel size  
SXGA (Mono): CMOS 1.2 MP (1280 x 960), 4.80 x 3.60 mm, 3.75  $\mu$ m pixel size  
QXSGA (Color): CMOS 5 MP (2592 x 1944), 4.536 x 3.402 mm, 1.75  $\mu$ m pixel size

#### SHUTTER

Global (WVGA, SXGA), Rolling (QXSGA)

#### EXPOSURE

WVGA: 50 to 66,667  $\mu$ s; SXGA: 66 to 58,825  $\mu$ s;  
QXSGA: 66 to 66,667  $\mu$ s

#### 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;  
QXSGA: 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

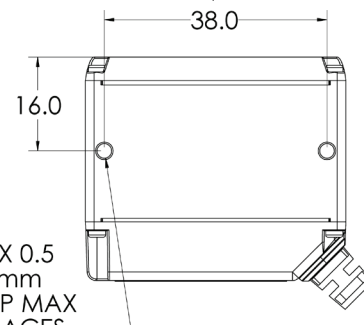
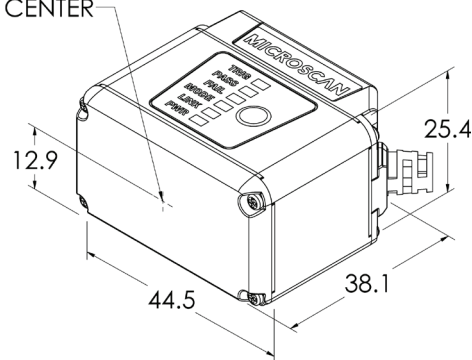
#### SAFETY AND QUALITY

FCC, CE, RoHS-Compliant

#### QMS CERTIFICATION

[www.microscan.com/quality](http://www.microscan.com/quality)

#### OPTICAL CENTER



M3 X 0.5  
5.0 mm  
DEEP MAX  
2 PLACES

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

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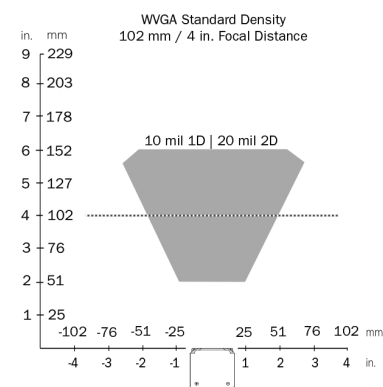
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# MICROHAWK® MV-30 FIELD OF VIEW AND READ RANGE CHARTS

## WVGA High-Density and Standard Density Fixed Focus

| 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  | 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              |
| 4.0            | 102 | 2.6               | 65  | 10                  | 83                  | 121     | 10               | 3.7                   | 94  | 20                  | 52                  | 152     | 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               |

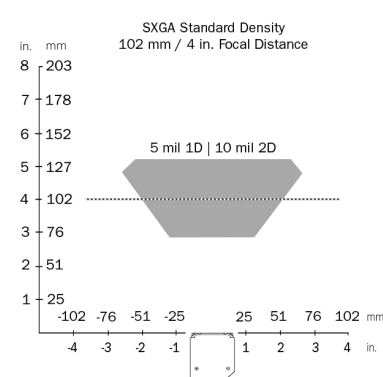
## Example Read Range



## SXGA High-Density and Standard Density Fixed Focus

| 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  | 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                |
| 4.0            | 102 | 2.7               | 69  | 7.5                 | 88                  | 116     | 5                | 3.9                   | 100 | 10                  | 74                  | 131     | 7.5              |
| 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               |

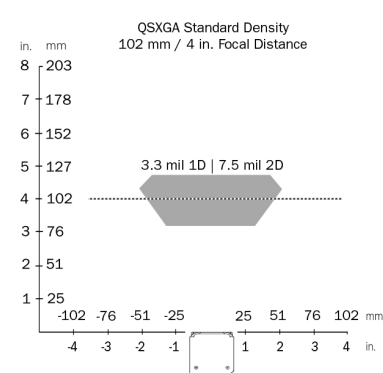
## Example Read Range



## QXSGA High-Density and Standard Density Fixed Focus

| 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  | 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              |
| 4.0            | 102 | 2.6                | 66  | 5                   | 94                  | 110     | 3.3              | 3.8                    | 96  | 7.5                 | 80                  | 124     | 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



## SXGA Ultra-High-Density Fixed Focus

| SXGA UHD - 64 MM |                     |         |               |       |
|------------------|---------------------|---------|---------------|-------|
| Min. 1D Element  | Depth of Field (mm) |         | Field of View |       |
| mil size         | 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 |       |
| mil size          | 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 High-Density and Standard Density Autofocus

| Object Distance<br>Std Models |     | WVGA HIGH-DENSITY AUTOFOCUS |       |                        |       |
|-------------------------------|-----|-----------------------------|-------|------------------------|-------|
|                               |     | Horizontal Field of View    |       | Vertical Field of View |       |
|                               |     | 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<br>Std Models |     | WVGA STANDARD DENSITY AUTOFOCUS |       |                        |       |
|-------------------------------|-----|---------------------------------|-------|------------------------|-------|
|                               |     | Horizontal Field of View        |       | Vertical Field of View |       |
|                               |     | 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 |

## SXGA High-Density and Standard Density Autofocus

| Object Distance<br>Std Models |     | SXGA HIGH-DENSITY AUTOFOCUS |       |                        |       |
|-------------------------------|-----|-----------------------------|-------|------------------------|-------|
|                               |     | Horizontal Field of View    |       | Vertical Field of View |       |
|                               |     | 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<br>Std Models |     | SXGA STANDARD DENSITY AUTOFOCUS |       |                        |       |
|-------------------------------|-----|---------------------------------|-------|------------------------|-------|
|                               |     | Horizontal Field of View        |       | Vertical Field of View |       |
|                               |     | 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 |

## SXGA Ultra-High-Density Autofocus

| Object Distance<br>Std Models |     | SXGA UHD AUTOFOCUS       |    |                        |    |
|-------------------------------|-----|--------------------------|----|------------------------|----|
|                               |     | Horizontal Field of View |    | Vertical Field of View |    |
|                               |     | in.                      | mm | in.                    | mm |
| 2.0                           | 50  | 0.6                      | 14 | 0.5                    | 12 |
| 4.0                           | 102 | 1.2                      | 30 | 1.0                    | 24 |
| 7.5                           | 190 | 2.2                      | 56 | 1.7                    | 43 |
| 11.8                          | 300 | 3.5                      | 88 | 2.6                    | 66 |

