

## MICROHAWK® ID-40

### SPECIFICATIONS AND OPTIONS



WebLink Interface Onboard

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

Integrated LEDs

#### DIMENSIONS

**Height:** 25 mm (0.98")  
**Width:** 45 mm (1.77")  
**Length:** 45 mm (1.77")  
**Weight:** 68 g (2.40 oz.)

#### ENCLOSURE

IP-65/67, 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

4.75-30 VDC, 200 mV p-p max ripple, 150 mA at 24 VDC (typ.)

#### CONNECTOR

M12 12-Pin Power, M12 8-Pin Ethernet

#### PASSIVE POE

24 Volt Passive Power over Ethernet, Type B. Requires passive PoE power supply.

#### COMMUNICATION

RS-232, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O

#### DISCRETE I/O

**3 in/3 out:** Optoisolated Trigger and Input Common; New Master: Bi-directional, Optoisolated, 4.5-28 V rated (10 mA @ 28 VDC); Outputs (1, 2, 3): Bi-directional, Optoisolated, 1-28 V rated ( $I_{CE} < 100$  mA at 24 VDC, current limited by user)

#### ILLUMINATION

**High-Output LEDs:** Inner: 4 Red (625 nm), 4 White; Outer: 8 Red, White, Blue or IR  
**Operating Life:** 50,000 hours @ 25° C

#### INDICATORS

TRIG, PASS, FAIL, MODE, LINK, PWR LEDs, 2 Target Pattern LEDs; 2 Good Read Green Flash LEDs

#### SPEED

Standard (up to 10 FPS)  
 High-Speed (Max. Sensor FPS)

#### DECODER

Standard (High-Contrast 1D)  
 Plus (High-Contrast 1D/2D)  
 X-Mode (Poor or Damaged 1D/2D + DPM)

#### OPTICS

Standard Density, High-Density, UHD

#### SENSOR OPTIONS

**WVGA (Mono):** CMOS 0.34 MP (752 x 480)  
**SXGA (Mono):** CMOS 1.2 MP (1280 x 960)  
**QXSGA (Color):** CMOS 5 MP (2592 x 1944)

#### SHUTTER

Global (WVGA, SXGA), Rolling (QXSGA)

#### EXPOSURE TIME

50 - 100,000, Default: 2,500 µs

#### FOCUS

**Standard, HD:** Fixed (50-300 mm) or Autofocus  
**UHD:** Fixed (64 mm, 400 mm) or Autofocus

#### FRAMES PER SECOND

**WVGA:** Up to 60  
**SXGA:** Up to 42  
**QXSGA:** Up to 5

#### SYMBOLOGIES

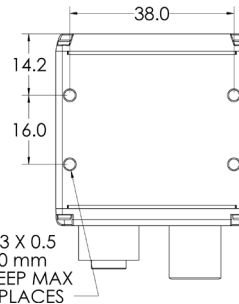
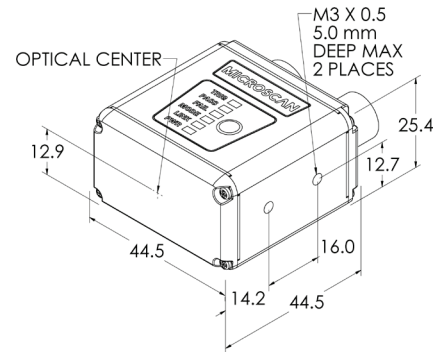
**2D:** Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code  
**Stacked:** PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  
**Linear:** Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacoode, PLANET, POSTNET, Japanese Postal, Australia Post, Royal Mail,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

#### SAFETY AND QUALITY

FCC, CE, UL, RoHS-Compliant

#### QMS CERTIFICATION

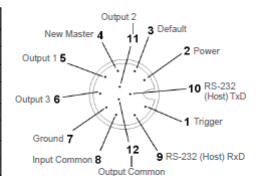
[www.microscan.com/quality](http://www.microscan.com/quality)



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

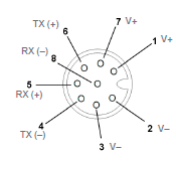
#### CONNECTOR A M12 12-Pin Plug:

| Pin | Function      |
|-----|---------------|
| 9   | Host RxD      |
| 10  | Host TxD      |
| 2   | Power         |
| 7   | Ground        |
| 1   | Trigger       |
| 8   | Input Common  |
| 3   | Default       |
| 4   | New Master    |
| 5   | Output 1      |
| 11  | Output 2      |
| 6   | Output 3      |
| 12  | Output Common |



#### CONNECTOR B M12 8-Pin Socket:

| Pin | Function   |
|-----|------------|
| 1   | Reserved   |
| 2   | Terminated |
| 3   | Reserved   |
| 4   | TX (-)     |
| 5   | RX (+)     |
| 6   | TX (-)     |
| 7   | Terminated |
| 8   | RX (-)     |



©2018 Omron Microscan Systems, Inc. SP092D-EN-0518  
 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).



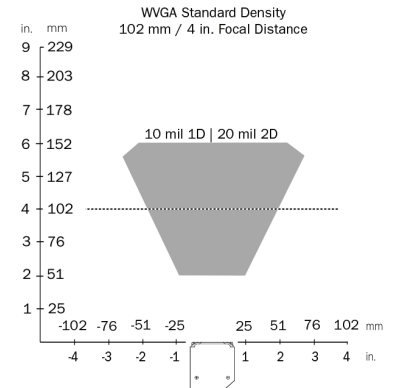
[www.microscan.com](http://www.microscan.com)

# MICROHAWK® ID-40 FIELD OF VIEW AND READ RANGE CHARTS

## WVGA Sensor 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  | 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               |

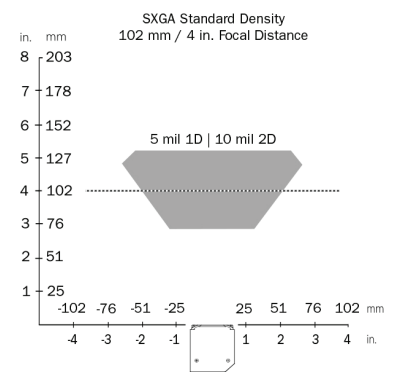
### Example Read Range:



## SXGA Sensor Fixed Focus

| 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               |

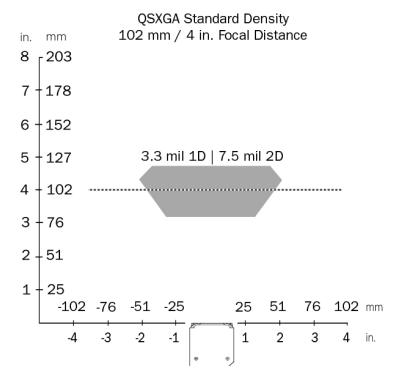
### Example Read Range:



## QXSGA Sensor Fixed Focus

| 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

| 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.

Omron Microscan and all product names and logos as noted are trademarks or registered trademarks of Omron Microscan Systems, Inc. All other trademarks are the property of their respective owners.

# MICROHAWK® ID-40 FIELD OF VIEW AND READ RANGE CHARTS

## 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) |
|                    | Inside                        | Outside | Autofocus       |
| 2                  | 10                            | 24      | 40 - 104        |
| 3.3                | 10                            | 36      | 40 - 146        |
| 5                  | 10                            | 39      | 40 - 150        |

