

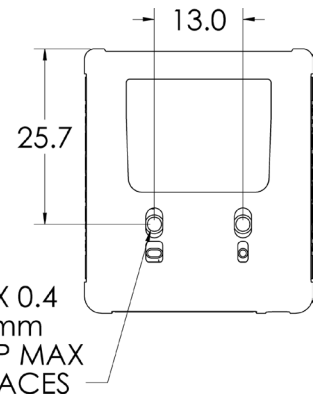
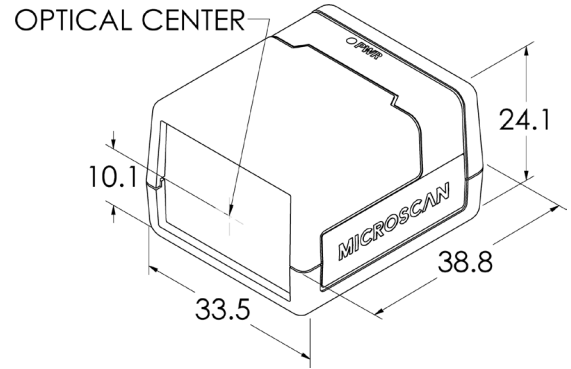
MICROHAWK® MV-20

SPECIFICATIONS AND OPTIONS



Ultra-Compact
Height: 24 mm (0.94")
Width: 34 mm (1.34")
Length: 39 mm (1.54")

Integrated LEDs



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

DIMENSIONS

Height: 24 mm (0.94")
Width: 34 mm (1.34")
Length: 39 mm (1.54")
Weight: 26 g (0.92 oz.)

ENCLOSURE

IP40, Plastic

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%, 350 mA at 5 VDC (typ.)

CONNECTOR

Micro-B USB

COMMUNICATION

USB 2.0 High Speed, Ethernet over USB/HID

ILLUMINATION

Inner Red: 4 LEDs, 625 nm nominal
Inner White: 4 LEDs
Light Modes: Off, On, Strobe
Operating Life: 50,000 hours @ 25° C

INDICATORS

Power LED, 2 Target Pattern LEDs, 2 Inspection Passed Green Flash LEDs

SPEED

400 MHz

MEMORY

2 GB Non-Volatile Flash, 256 MB RAM

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

EXPOSURE TIME

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

SHUTTER

Global (WVGA, SXGA), Rolling (QSXGA)

OPTICS

Standard Density (5.2 mm), High-Density (8.0 mm), UHD (16.0 mm)

FOCUS

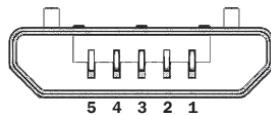
SD, HD: Factory Set to 50, 102, 190, or 300 mm
UHD: Factory Set to 64 or 400 mm

FRAMES PER SECOND

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

PIN ASSIGNMENTS

Micro-B USB Socket



| No. | Function |
|-----|-----------|
| 1 | Vbus (5V) |
| 2 | D- |
| 3 | D+ |
| 4 | NC |
| 5 | Ground |

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, UL, RoHS-Compliant

QMS CERTIFICATION

www.microscan.com/quality

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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.

OMRON
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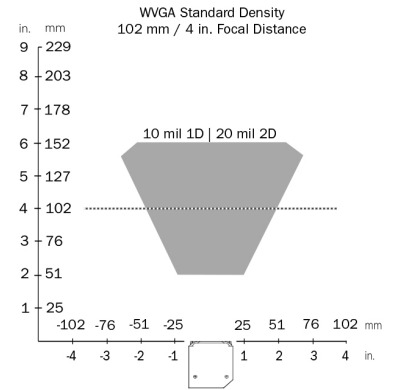
www.microscan.com

MICROHAWK® MV-20 FIELD OF VIEW AND READ RANGE CHARTS

WVGA Sensor 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 |

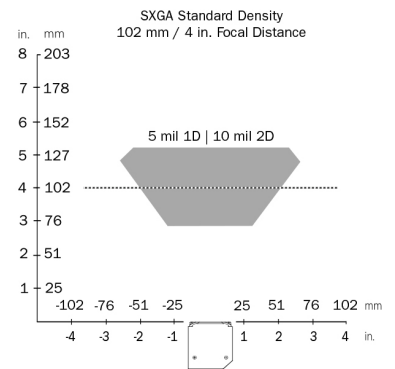
Example Read Range:



SXGA Sensor 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 |

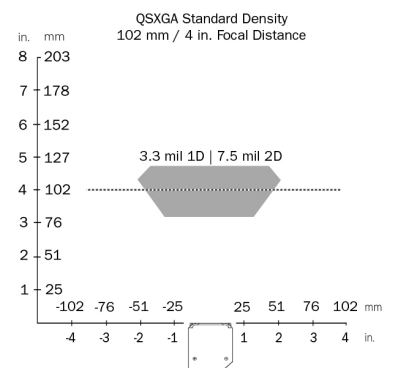
Example Read Range:



QSXGA Sensor Read Ranges

| Focus Distance | | QSXGA HIGH-DENSITY | | | | | | QSXGA 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 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.