

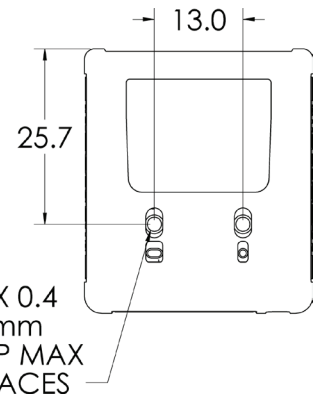
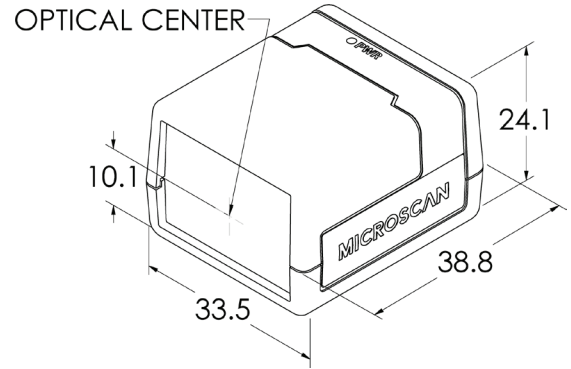
# MICROHAWK® MV-20

## 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

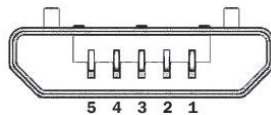
**SD, HD:** Factory Set to 50, 102, 190, or 300 mm  
**UHD:** Factory Set to 64 or 400 mm

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

©2018 Omron Microscan Systems, Inc. SP093C-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).



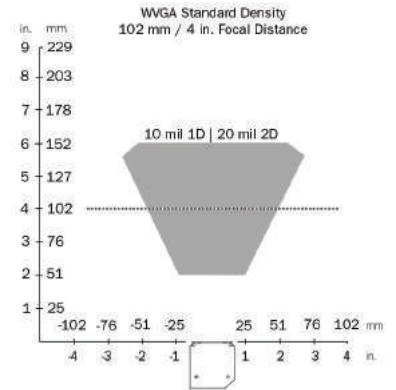
[www.microscan.com](http://www.microscan.com)

# MICROHAWK® 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

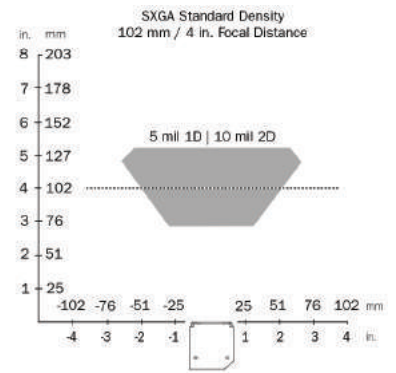
### Example Read Range:



## 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

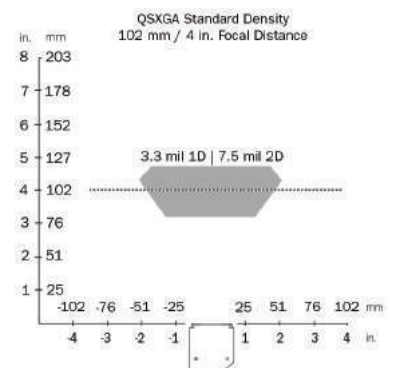
### Example Read Range:



## 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.