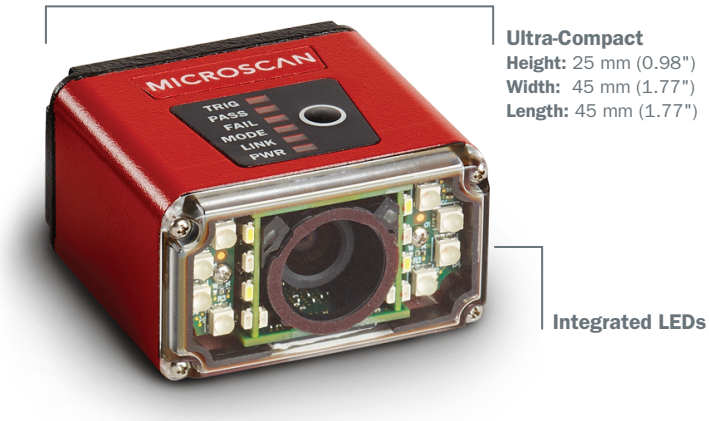
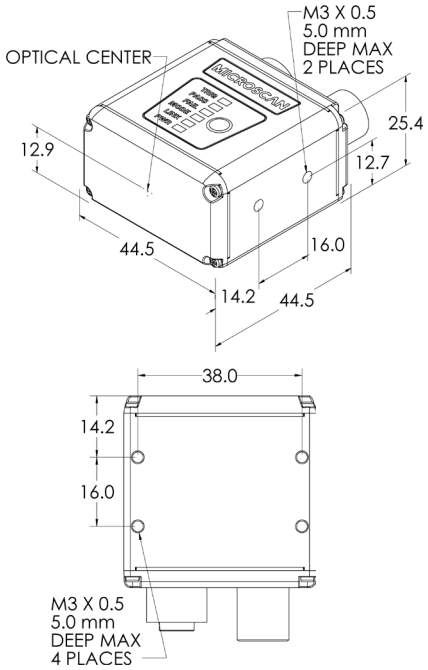
MICROHAWK® MV-40

SPECIFICATIONS AND OPTIONS





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

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
2 in/3 out: Optoisolated Trigger Input; New Master Input: Bi-directional, Optoisolated, 1-28 V rated (10 mA @ 28 VDC); Strobe Output, 2 General Purpose Outputs: Bi-directional, Optoisolated, 1-28 V rated (I_{CE} < 100 mA @ 24 VDC, current limited by user)

ILLUMINATION
Inner Red: 4 LEDs, 625 nm nominal
Inner White: 4 LEDs
Outer Red, White, Blur or IR: 8 LEDs
Light Modes: Inner or Outer; Off, On, Strobe, Power Strobe; Power Strobe for Outer LEDs only
Operating Life: 50,000 hours @ 25° C

SPEED: 800 MHz

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

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

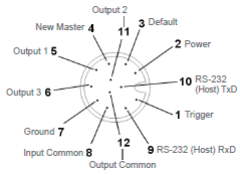
SYMBOLOGIES
2D: Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code
Stacked: PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)
Linear: Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, POSTNET, Japanese Postal, Australia Post, Royal Mail, Intelligent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

SAFETY AND QUALITY
FCC, CE, UL, RoHS-Compliant

QMS CERTIFICATION
www.microscan.com/quality

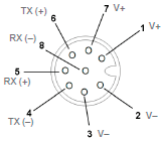
CONNECTOR A
M12 12-Pin Plug:

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	V+
2	V–
3	V–
4	TX (–)
5	RX (+)
6	TX (+)
7	V+
8	RX (–)



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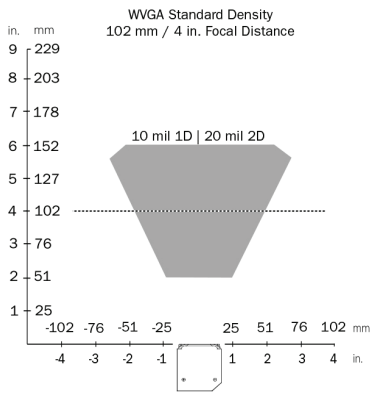
MicroHAWK® MV–40 Field of View and Read Range Charts

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	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

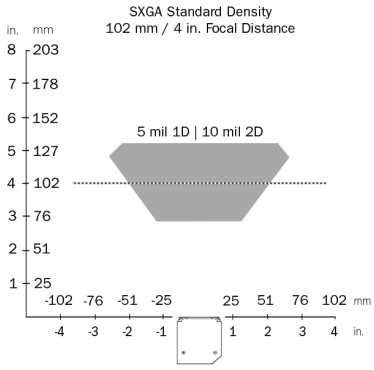
Example Read Range



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	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

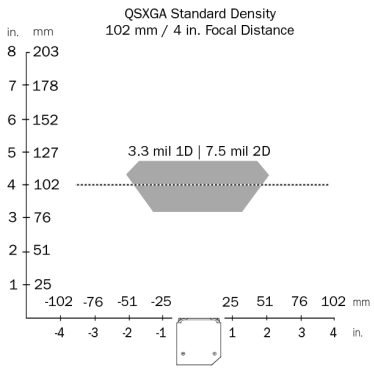
Example Read Range



QSXGA High-Density and Standard Density Fixed Focus

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
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–40 Field of View and Read Range Charts

WVGA High-Density and Standard Density Autofocus

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

SXGA High-Density and Standard Density Autofocus

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

SXGA Ultra-High-Density Autofocus

Object Distance Std Models		SXGA UHD AUTOFOCUS			
		Horizontal Field of View		Vertical Field of View	
in.	mm	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