MS–4Xi

Ultra-Compact Ethernet Imager

The MS-4Xi features ultra-compact size and wide angle optics to provide the widest field of view available for reading any symbol at close range. Aggressive decoding is ensured through X-Mode technology, which reads direct part marks and damaged or difficult symbols with no configuration or setup required.

Easy setup and advanced decoding make the MS-4Xi the ideal imager for reliable reading in almost any automation environment.

MS–4Xi: At a Glance

- *Decodes/second: up to 10*
- *X-Mode Decoding Technology*
- *Integrated Ethernet Connectivity*
- *10 to 30 VDC*

ESP® Easy Setup Program: Single-point software provides quick and easy setup and configuration of all Microscan readers.

EZ Button: This performs reader setup and configuration with no computer required.

Visible Indicators: Include "good read" green flash, LEDs and symbol positioning tool.

For more information on this product, visit www.microscan.com.

X–Mode Technology
Our patented X-Mode technology provides easy setup and deployment of the MS-4Xi in any application. In addition to reliable decoding of damaged or difficult linear codes and 2D symbols, the MS-4Xi features advanced decode algorithms to read a wide range of direct part marks.

Compact & Lightweight
The MS-4Xi is the world's smallest high performance imager. Its small form allows flexible positioning in tight spaces. The lightweight and durable magnesium alloy case weighs less than 2 oz.

Mounting Flexibility
The compact size, right angle mirror option, and corner-exit cable of the MS-4Xi conserve cubic space to create the tightest fit possible within instrumentation and equipment.

Embedded Ethernet
Integrated Ethernet TCP/IP is included for industrial connectivity and high speed communication.

Wide Field of View
The MS-4Xi has an extremely wide field of view and reads linear codes or 2D symbols as close as 1" (25 mm).

Application Examples
Clinical Instruments
- Embedded barcode reading
- Sample tracking and vial reading

Medical Devices
- Dot peen or laser marks on products

Electronics
- Laser markings on printed circuits boards, flex circuits
- Sub-assembly tracking

Semiconductors
- Laser marks on packages and components

MS–4Xi: Available Codes

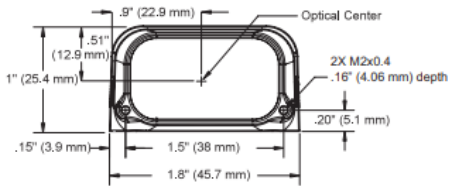
Linear	All Standard	Postal Codes			
Stacked	MicroPDF	PDF417	GS1 Databar		
2D	Data Matrix	QR	Micro QR	Aztec	

MICROSCAN®

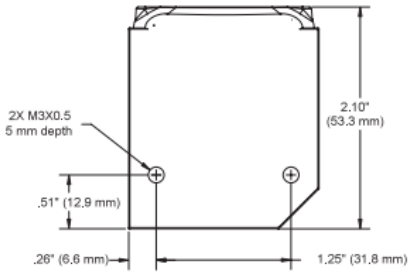
MS–4X Imager Specifications and Options

READ RANGES (GRAPHS AND TABLES)

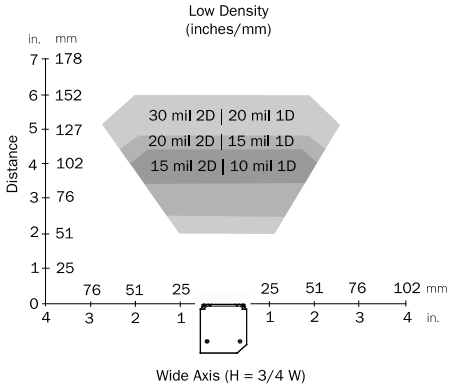
Front

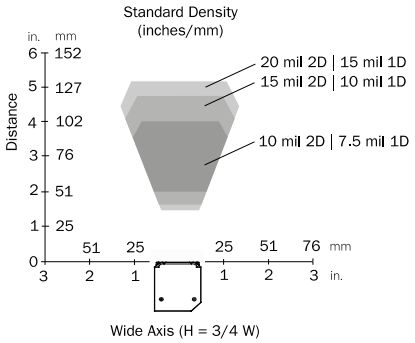


Base



Note: Nominal dimensions shown. Typical tolerances apply.





Narrow-bar-width		Field of View (width)*	Read Range
1D	**2D**	**(maximum)**	
Standard Density			
.0075" (0.19 mm)	.010" (0.25 mm)	2.4" (61 mm)	2 to 4.0" (51 mm to 102 mm)
.010" (0.25 mm)	.015" (0.38 mm)	2.6" (66 mm)	1.7 to 4.7" (43 mm to 119 mm)
.015" (0.38 mm)	.020" (0.51 mm)	2.8" (71 mm)	1.4 to 5.2" (36 mm to 132 mm)
Low Density			
.010" (0.25 mm)	.015" (0.38 mm)	4.2" (107 mm)	3.5 to 4.5" (89 mm to 114 mm)
.015" (0.38 mm)	.020" (0.51 mm)	4.5" (114 mm)	2.7 to 5.0" (69 mm to 127 mm)
.020" (0.51 mm)	.030" (0.76 mm)	5.5" (140 mm)	2.0 to 6.0" (51 mm to 152 mm)

*Height is 75% of width.
Note: Specifications subject to change.

MECHANICAL
Height: 1" (25.4 mm) **Width:** 1.80" (45.7 mm)
Depth: 2.10" (53.3 mm) **Weight:** 3.2 oz. (91 g)

ENVIRONMENTAL
Enclosure: IP54 (category 2)
Operating Temperature: 0° to 40° C (32° to 104° F)
Storage Temperature: -30° to 75° C (-58° to 167° F)
Humidity: up to 90% (non-condensing)

CE MARK
General Immunity for Light Industry:
EN 55024: 1998 ITE Immunity Standard
Radiated and Conducted Emissions of ITE Equipment: EN 55022:98 ITE Disturbances

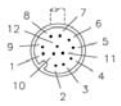
LIGHT SOURCE
Type: High output LEDs

LIGHT COLLECTION OPTIONS
Progressive scan, square pixel.
Software adjustable shutter speed, electronic shutter
VGA: 640 by 480

SYMBOLOGY TYPES
2D Symbologies: Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code
Stacked Symbologies: PDF417, Micro PDF417, GS1 Databar (Composite & Stacked)
Linear Barcodes: Code 39, Code 128, BC 412, I2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, PostNet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX

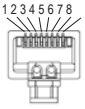
READ PARAMETERS
Pitch: ±30° **Skew:** ±30° **Tilt:** 360°
Decode Rate: up to 10 decodes per second

PIN ASSIGNMENTS
M12 12-Pin Plug:



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

RJ45 Plug:



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

CONNECTOR
Dual Cable: 6 ft. industrial Ethernet cable with RJ45 plug; and 3 ft. cable with M12 plug

INDICATORS
LEDs: Read Performance, Power, Read Status
Green Flash: Good read
Blue LED: Symbol locator
Beeper: Good read, match/mismatch, noread, serial command confirmation, on/off

COMMUNICATION INTERFACE
Interfaces: RS-232 and Ethernet

ELECTRICAL
Power: 10-30 VDC, 200 mV p-p max. ripple, 132 mA @ 24 VDC (typ.)

DISCRETE I/O
Trigger Input, New Master: Bi-directional, optoisolated, 4.5-28V rated (10 mA at 28 VDC)
Outputs (1, 2, 3): Bi-directional, optoisolated, 1-28V rated, (Ice <100 mA at 24 VDC, current limited by user)

SAFETY CERTIFICATIONS DESIGNED FOR
FCC, UL/cUL, CE, CB, Class A

ROHS/WEEE COMPLIANT

ISO CERTIFICATION
Certified ISO 9001:2008 Quality Management System

Read Range and other performance data is determined using high quality Grade A symbols per ISO/IEC 15415 and ISO/IEC 15416 in a 25° C environment. For application-specific Read Range results, testing should be performed with symbols used in the actual application. Microscan Applications Engineering is available to assist with evaluations. Results may vary depending on symbol quality. **Warranty:** One year limited warranty on parts and labor. Free extended 3 year warranty upon online product registration.

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