

## MS-2



### Compact Shape/Size

#### ACTUAL SIZE SHOWN

Height: 0.85" (21.6 mm)

Width: 1.75" (44.5 mm)

Length: 1.75" (44.5 mm)

Wide Scan Angle



### MS-2: At a Glance

- Scans/second: up to 220
- Read Range: 0.7 to 13.6" (17.7 to 345.4 mm)
- Low 5V Power Draw
- IP54 Enclosure
- Four Versions Available



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

For more information, visit [www.smallscanners.com](http://www.smallscanners.com).

## Ultra-Compact CCD Reader

The user-friendly MS-2 is a fully packaged CCD reader, offering easy integration and several configurations to meet a variety of needs. Advanced CCD technology is coupled with world-class algorithms to ensure easy and accurate decoding of small, damaged or poorly printed codes.

High performance and flexibility make the MS-2 the optimal embedded reader for reading difficult codes.

### Compact & Lightweight

The 1.75" (44.5 mm) square by 0.85" (21.6 mm) tall reader weighs less than 2 ounces (57 g) for easy mounting onto robotic equipment or into tight spaces.

### Versatility

Low and high density scan angle versions paired with standard and right angle packages allow flexible configuration for a wide range of applications.

### Visible Indicators

Illuminated LEDs on top of the reader provide visual confirmation of reader status.

### Reading Capabilities

The MS-2 can easily read the most difficult codes, and excels at reading on highly reflective surfaces.

### Application Examples

- Clinical instruments
- Bank ATMs
- Parking kiosks
- Point-of-sale terminals
- Robotics

### MS-2: Available Codes

Linear

All Standard



Stacked

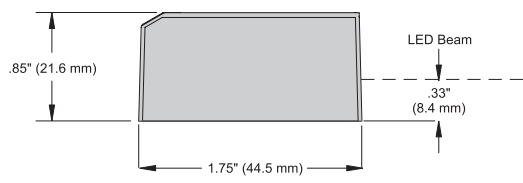
GS1 Databar (RSS)



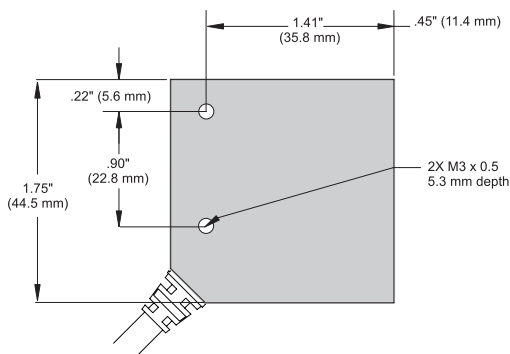
# MICROSCAN®

# MS-2 CCD Reader Specifications and Options

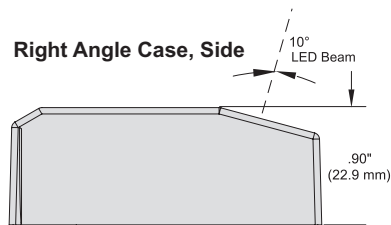
Standard Case, Side



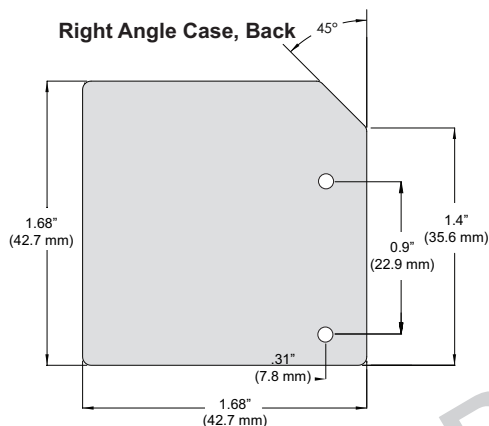
Standard Case, Back



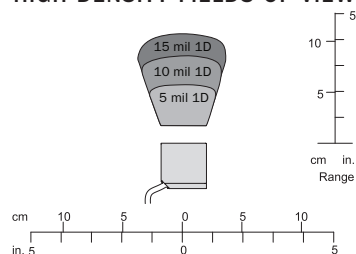
Right Angle Case, Side



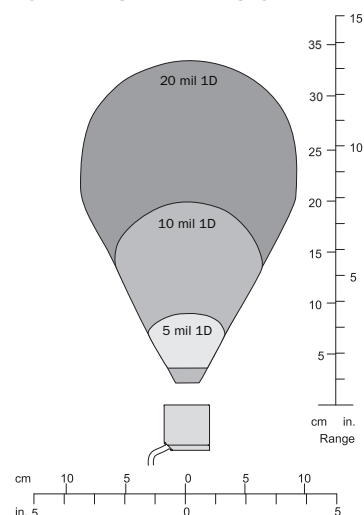
Right Angle Case, Back



HIGH DENSITY FIELDS OF VIEW



LOW DENSITY FIELDS OF VIEW



## MECHANICAL

**Height:** 0.85" (21.6 mm)

**Width:** 1.75" (44.5 mm)

**Length:** 1.75" (44.5 mm)

**Weight:** 2 oz. (57 g)

## DESIGN

**Flash memory sensor:**

CCD linear image sensor

**Optics:** 660 nm visible LED

Bright and sharp scan line

## SCANNING PERFORMANCE

**Scan rate:** 220 scans/sec

**Min. X dimension:** Down to 0.05 mm (2mil) on Code 39

**Depth of field:** 0 to 345 mm (13.6")

**Bar code width:** Up to 114 mm (4.5") on 0.25 mm (10 mil) resolution code

## COMMUNICATION

**Interface:** RS-232

## CABLE AND CONNECTOR

**Type:** 3-ft cable terminated with a 15-pin HD D-sub socket connector

## SYMBOLOGIES

UPC (E&A), EAN, Code 39, Code 128,

UCC EAN 128, Interleaved, Industrial and

Standard 2 of 5, Codabar, Code 93, MSI,

Plessey, GS1 Databar (RSS)

## ENVIRONMENTAL CHARACTERISTICS

**Operating temperature:** 0 to 50° C

32 to 122° F)

**Storage temperature:** -20 to 60° C

(-4 to 140° F)

**Relative humidity:**

20% to 85% (non-condensing)

**Ambient light:** Works in any lighting conditions, from 0 to 70,000 lux

## HOST CONNECTOR/PIN ASSIGNMENTS

### 15-PIN HD D-SUB SOCKET CONNECTOR

Pin No.	Decoded Operation	In/Out
1	VCC	In
2	TXD	Out
3	RXD	In
4	GND	
5	N/C	
6	RTS	Out
7	N/C	
8	FW Ground	In
9	Trigger	In
10	CTS	In
11	N/C	
12	N/C	
13	Chassis GND	
14	N/C	
15	N/C	

## CE MARK

**Immunity designed for:**

EN 55-24:1998 ITE Immunity Standard

**Radiated and conducted emissions**

**designed for:**

EN 55022:98 ITE disturbances class A

## ELECTRICAL

**Power:** 5V +/-5%, 300 mV p-p max ripple, 150 mA @ 5 VDC (typ.)

## DISCRETE I/O

**Trigger Inputs:** 4.7 to 24V rated

(0µA @ 5V, -600 µA @ 0V)



## READ RANGES

Narrow-Bar	Read Range	Scan Width
<b>HIGH DENSITY</b>		
.005" (.127 mm)	.7 to 2.1" (18 to 53 mm)	2.1" (53 mm) @ 1.7" (43 mm)
.010" (.254 mm)	.7 to 3.3" (18 to 84 mm)	2.7" (69 mm) @ 2.9" (74 mm)
.015" (.38 mm)	1 to 4.3" (25 to 109 mm)	3.2" (81 mm) @ 3.5" (84 mm)
<b>LOW DENSITY</b>		
.005" (.127 mm)	1.3 to 3.3" (33 to 84 mm)	2.7" (69 mm) @ 2.8" (71 mm)
.010" (.254 mm)	1.6 to 7.4" (41 to 188 mm)	4.5" (114 mm) @ 5.8" (147 mm)
.020" (.508 mm)	2.8 to 13.6" (71 to 345 mm)	7.2" (183 mm) @ 10.8" (274 mm)

## SAFETY CERTIFICATIONS DESIGNED FOR

FCC, UL/cUL, CE



ISO 9001:2000  
Certified QMS

## ROHS/WEEE COMPLIANT

## ISO CERTIFICATION

Issued by TÜV USA Inc, Member of TÜV NORD Group, Cert No. 06-1080

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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. Extended warranty available.

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