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)

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.

MS–2: At a Glance

- *Scans/second: up to 220*
- *Read Range: 0.8 to 12.8” (20 to 325 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.

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

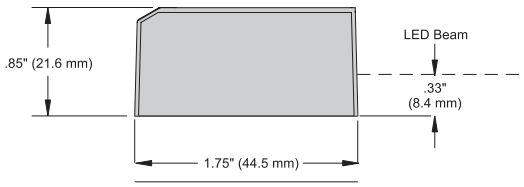
Linear — All Standard

Stacked — GS1 Databar

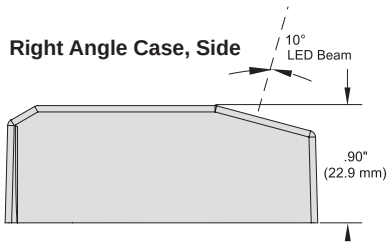
MICROSCAN®

MS–2 CCD Reader Specifications and Options

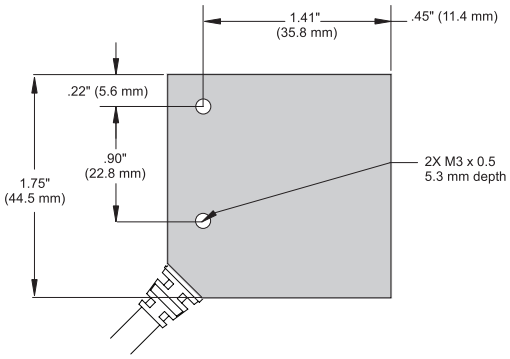
Standard Case, Side



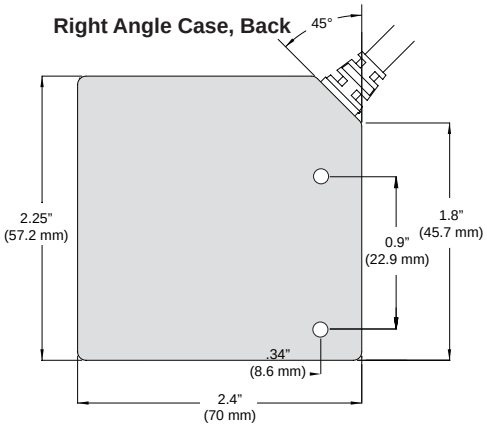
Right Angle Case, Side



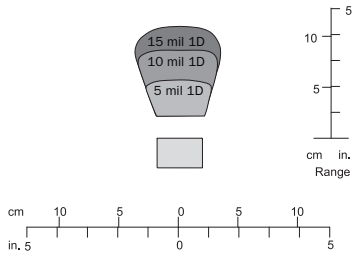
Standard Case, Back



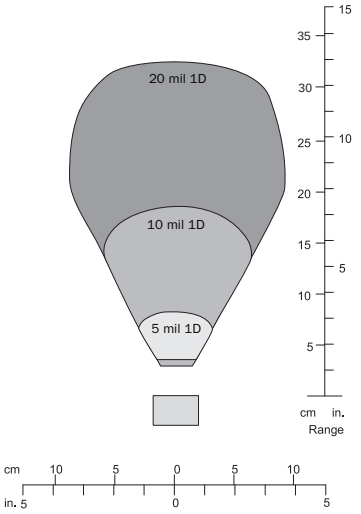
Right Angle Case, Back



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 3.3 mil (.084 mm) on Code 39
Depth of field: .8 to 12.8” (20 to 325 mm)
Bar code width: Up to 7” (178 mm) on 20 mil (0.5 mm) 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

ENVIRONMENTAL CHARACTERISTICS
Operating temperature: -20 to 50° C (-4 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
Shock: 2000G
Vibration: 50G r.m.s

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.)
Start Up Time: 175 ms

DISCRETE I/O
Trigger Inputs: 4.7 to 24V rated (0µA @ 5V, –600 µA @ 0V)

WARNING
LED LIGHT
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 1M LED PRODUCT
Light Output: 648cd Wavelength: 464, 518, 635 nm
IEC 60825-1:1993+A1:1997+A2:2001

READ RANGES

Narrow-Bar	Read Range	Scan Width
HIGH DENSITY		
.005” (.127 mm)	.9 to 2.1” (23 to 53 mm)	2.0” (51 mm) @ 1.7” (43 mm)
.010” (.254 mm)	.8 to 3.3” (20 to 84 mm)	2.5” (64 mm) @ 2.9” (74 mm)
.015” (.38 mm)	.8 to 4.3” (20 to 109 mm)	3.0” (76 mm) @ 3.5” (84 mm)
LOW DENSITY		
.005” (.127 mm)	1.4 to 3.3” (36 to 84 mm)	2.4” (61 mm) @ 2.8” (71 mm)
.010” (.254 mm)	1.3 to 7.4” (30 to 188 mm)	4.2” (107 mm) @ 5.8” (147 mm)
.020” (.508 mm)	1.3 to 12.8” (30 to 325 mm)	7.0” (178 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

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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