

**The MS-3 CCD excels at reading difficult symbols and is offered in Microscan's smallest scanner size.**

At up to 270 decodes per second, the **MS-3 CCD** offers the best read performance in its class of embedded compact CCD readers. Advanced CCD technology coupled with proprietary algorithms makes reading small, damaged, or poorly printed symbols routine. The ultra-compact size and wide read angle allow for flexible mounting and positioning when embedded into OEM instruments.

The **MS-3 CCD** reader is in the mid-range of Microscan's MS-3 trio that also includes the **MS-3 Laser** scanner and **MS-3 Engine**. All three are well suited for any embedded bar code application where size, performance and budget savings are core factors.

## MS-3 CCD

## ULTRA-COMPACT BAR CODE SCANNER

### Compact Size

The 1.75" (44.5 mm) square by .85" (21.6 mm) tall scanner weighs only 2 ounces (57 g), for easy mounting onto robotic equipment or into tight spaces.

### Scan Speed

With a scan speed of up to 270 decodes per second, the MS-3 CCD is one of the fastest CCD scanners available on the market today.

### Scan Angle

The MS-3 CCD offers a wide scan angle of 48 degrees allowing for flexibility with positioning.

### Low Power Draw

The MS-3 CCD comes standard as 5V for low power draw (150mA). 10-30V input also available with interface accessory.

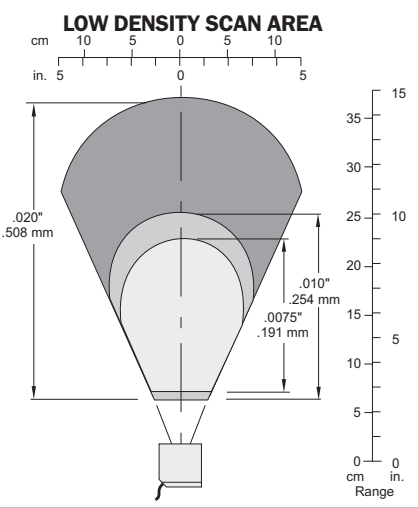
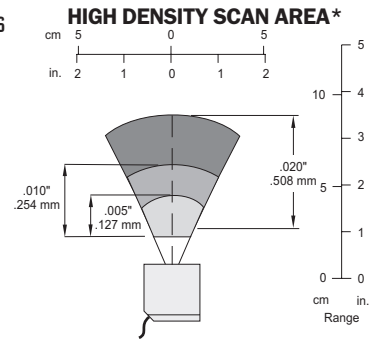
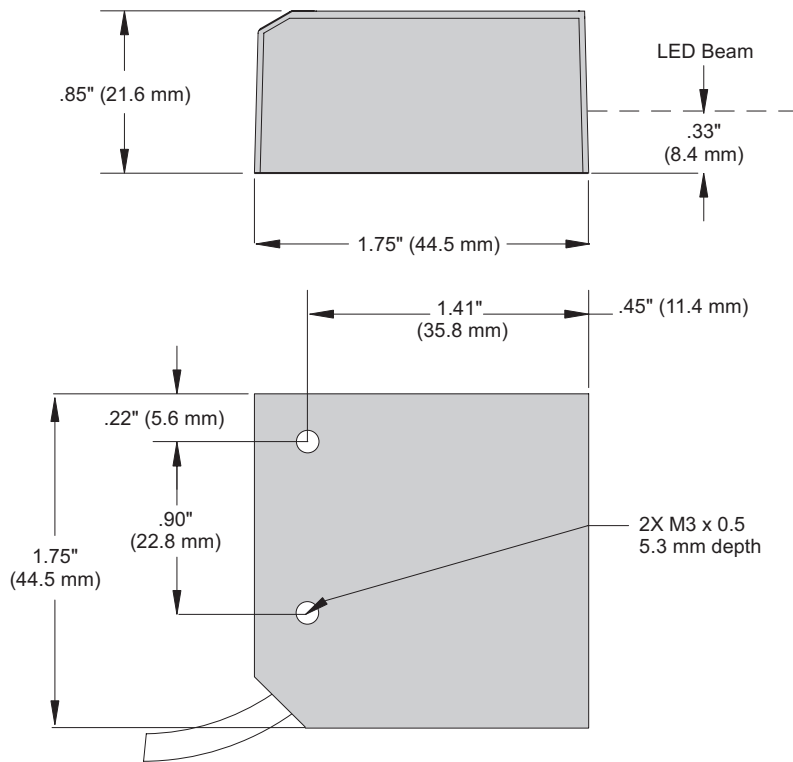
### Symbologies

Like all Microscan scanners, the MS-3 CCD reads virtually all widely used bar code symbologies, including:

- Code 93
- Code 39
- Code 128
- Codabar
- Interleaved 2 of 5
- UPC/EAN



# MS-3 CCD SCANNER SPECIFICATIONS AND OPTIONS



## GENERAL

Compact CCD scanner for OEM devices.

## MECHANICAL

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

## DESIGN

**Flash memory sensor:**

CCD linear image sensor

**Optics:** 645 nm visible LED

Bright and sharp scanning line

## SCANNING PERFORMANCE

**Scan rate:**

**Decoded mode:** 270 scans/sec auto-adaptive.

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

**Depth of field:** 0 to 49.2 cm (19.4")

**Bar code width:** up to 18 cm (7") on 0.3 mm (12 mil) resolution code

**Print contrast:** down to 20%

**Scan angle:** 48° nominal

## COMMUNICATION

**Interface:** RS-232

## CONNECTOR

**Type:** 3 ft. cable terminated with 15-pin high density D-Sub socket connector

## SYMBOLOGIES

UPC (E&A), EAN, Code 11, Code 39, Code 128, UCC EAN 128, ISBN, ISBT, Interleaved, Industrial and Standard 2 of 5, Codabar, Code 93, MSI, Plessey, Telepen.

## ENVIRONMENTAL CHARACTERISTICS

**Operating temperature:** -30 to 60° C (-22 to 140° F)

**Storage temperature:** -40 to 60° C (-40 to 140° F)

**Relative humidity:**

5% to 95% (non-condensing)

**Shock:** 2000G **Vibration:** 50G r.m.s.

**Ambient light:** works in any lighting conditions, from 0 to 100 000 lux

## HOST CONNECTOR/PIN ASSIGNMENTS

### 15 Pin High Density D-sub Socket Connector

Pin No.	Host/RS-232	In/Out
1	Power +5 VDC	In
2	TxD	Out
3	RxD	In
4	Power/Signal Ground	
5	NC	
6	RTS	Out
7	NC	
8	Default Configuration	
9	Trigger (NPN)	In
10	CTS	In
11	NC	
12	NC	
13	Chassis Ground	
14	NC	
15	NC	

## 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%, 200 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)

## SAFETY CERTIFICATION DESIGNED FOR:

CDRH, FCC, UL/CUL, CE, BSMI

## ISO CERTIFICATION

Issued by RWTüV, USA Inc.

ISO 9001:2000 – Cert No. 03-1212

## READ RANGES

Narrow-bar-width	Read Range
<b>HIGH DENSITY</b>	
.005" (.127 mm)	.9" to 1.8" (23 to 46 mm)
.010" (.254 mm)	.8" to 2.4" (20 to 61 mm)
.020" (.508 mm)	1" to 3.5" (25 to 89 mm)
<b>LOW DENSITY</b>	
.0075" (.191 mm)	2.8" to 9" (70 to 228 mm)
.010" (.254 mm)	2.5" to 10" (64 to 254 mm)
.020" (.508 mm)	2.5" to 14.5" (64 to 370 mm)

Note: For Right Angle option, subtract 0.6" (15 mm) from read range. Read ranges are base upon optimal scan speed for specific symbol density.



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All rights reserved. Specifications subject to change. Product specifications are given for typical performance at 25°C (77°F) using grade A labels. Some performance characteristics may vary at high temperatures or other environmental extremes.

**Warranty**—One year limited warranty on parts and labor. Extended warranty available.

# MICROSCAN®

**Microscan Systems, Inc.**

Tel 425 226 5700 / 800 251 7711

Fax 425 226 8250

**Microscan Europe**

Tel 31 172 423360 / Fax 31 172 423366

**Microscan Asia Pacific R.O.**

Tel 65 6846 1214 / Fax 65 6846 4641

**Web site:** www.microscan.com

**E-mail:** info@microscan.com

**Tech support:** helpdesk@microscan.com