

MS-3 CCD



Compact Shape/Size

Wide Scan Angle

Ultra-Compact CCD Reader

The MS-3 CCD offers the fastest read performance in embedded compact linear CCD readers. Advanced CCD technology is coupled with world-class algorithms to ensure quick and accurate decoding of small, damaged or poorly printed codes.

High performance and flexibility make the MS-3 CCD the optimal embedded reader for reading difficult codes.

MS-3 CCD: At a Glance

- Decodes/second: up to 270
- Read Range: 1 to 16" (25 to 406 mm)
- Low 5V Power Draw
- IP54 Enclosure



ESP® : Easy Setup Program 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 .85" (21.6 mm) tall scanner weighs only 2 ounces (57 g) for easy mounting onto robotic equipment or into tight spaces.

Wide Scan Angle

The wide scan angle of 48 degrees creates space savings within your system, and allows greater flexibility with positioning.

High Scan Speed

A scan speed of up to 270 decodes per second and Microscan's world-class decode algorithms ensure accurate reading every time.

Reading Capabilities

The MS-3 CCD 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

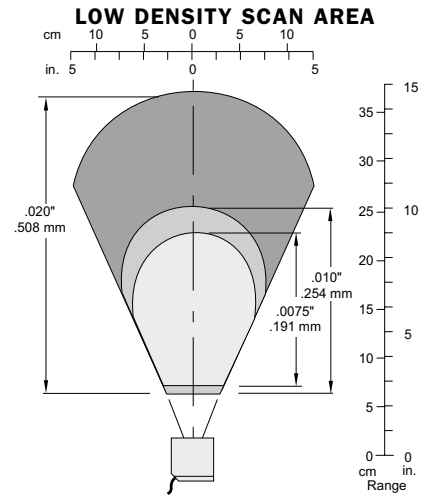
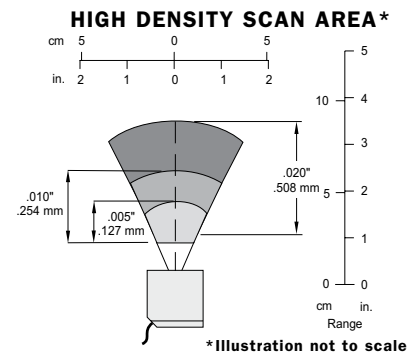
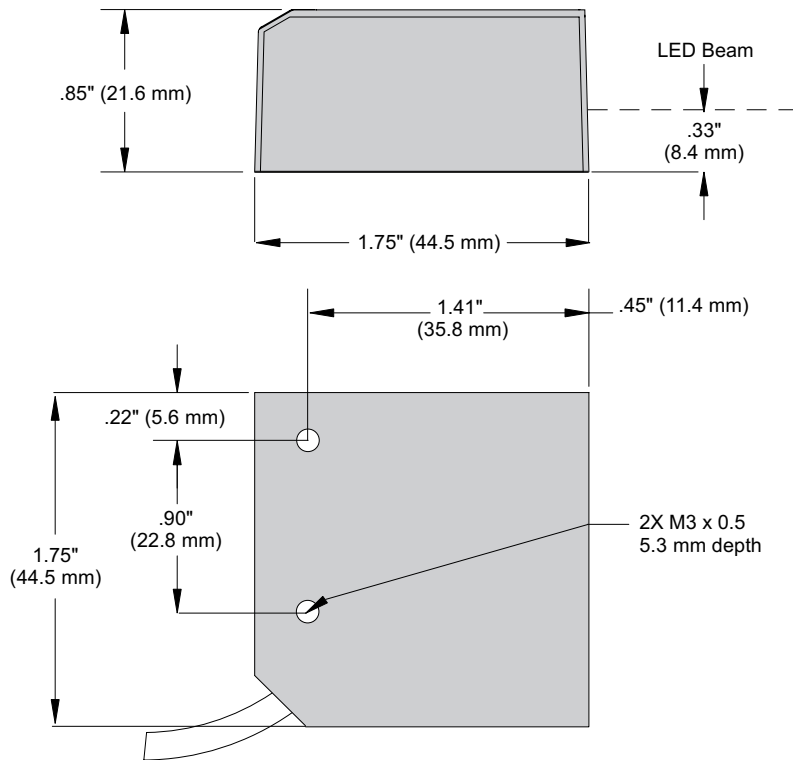
MS-3 CCD: Available Codes

Linear

All Standard



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

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:

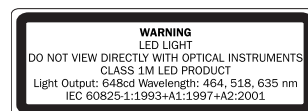
EN 55022:98 ITE disturbances class A

ELECTRICAL

Power: 5V +/-5%, 200 m/V 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-width	Read Range
HIGH DENSITY	
.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)
LOW DENSITY	
.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.

SAFETY CERTIFICATIONS DESIGNED FOR

CDRH, FCC, UL/cUL, CE, BSMI



ISO 9001:2000
CERTIFIED QMS

ROHS/WEEE COMPLIANT

(Low Density CCD Option)

ISO CERTIFICATION

Issued by RWTÜV, USA Inc.

ISO 9001:2000 - Cert No. 03-1212

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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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MS-3 LASER



Ultra-Compact Bar Code Scanner

The MS-3 Laser offers the fastest read performance in embedded compact bar code scanners. The wide scan angle of 70 degrees is coupled with ultra-compact size and flexible mounting.

High performance and flexibility make the MS-3 Laser the optimal choice for reliable reading in embedded instruments.

MS-3 Laser: At a Glance

- Decodes/second: up to 1000
- Read Range: 2 to 10" (51 to 254 mm)
- Wide Scan Angle
- IP54 Enclosure



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



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

For more information, visit www.smallscanners.com.

MS-3 Laser: Available Codes

Linear

All Standard



Stacked

MicroPDF



PDF417



RSS



Compact & Lightweight

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.

High Scan Speed

Adjustable scan speed from 300 up to 1000 decodes per second and Microscan's world-class decode algorithms ensure accurate reading every time.

Wide Scan Angle

The wide scan angle of over 70 degrees and a factory customizable focal point add up to space savings within your system, allowing greater flexibility with positioning.

Visible Indicators

Illuminated LEDs on top of the scanner provide visual confirmation of the scanner performance.

Real-time Controls

The inputs include a trigger signal, a "new master" input, and a programmable input for resetting counters or releasing outputs. The outputs can be configured to activate upon a variety of conditions including matchcode and diagnostic operations.

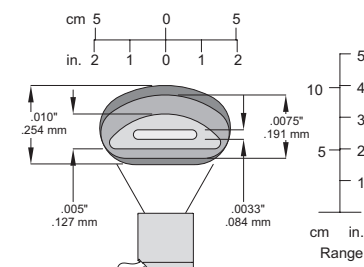
Application Examples

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

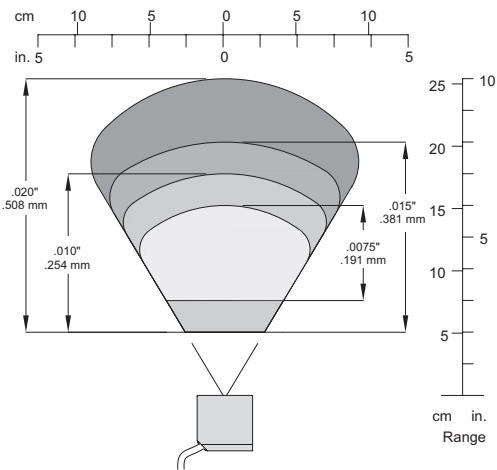
MICROSCAN®

MS-3 LASER SCANNER SPECIFICATIONS AND OPTIONS

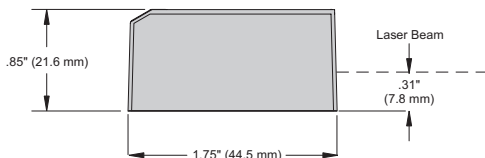
HIGH DENSITY SCAN AREA



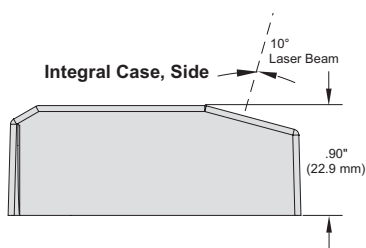
LOW DENSITY SCAN AREA



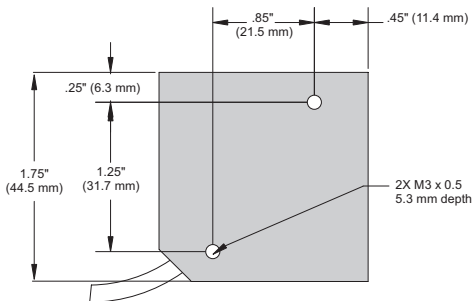
Standard Case, Side



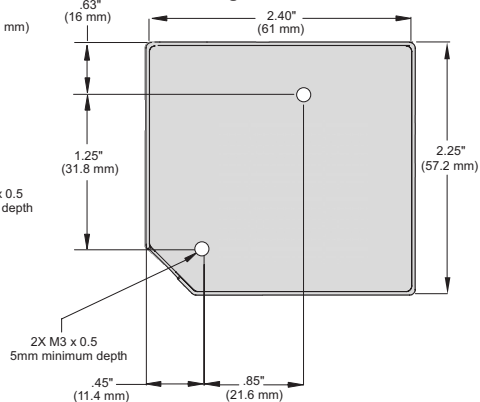
Integral Case, Side



Standard Case, Back



Integral Case, Back



MECHANICAL

Weight (Standard): 2 oz. (57 g)
Weight (Right Angle): 2.8 oz. (87 g)

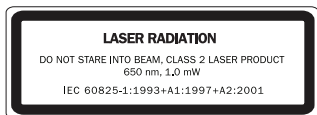
ENVIRONMENTAL

Housing: IP54 (category 2)
Operating temperature: 0° to 50°C (32° to 122°F)
Storage temperature: -50° to 75°C (-58° to 167°F)
Humidity: Up to 90% (non-condensing)
Operating life: 40,000 hours at 25° C

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

LASER LIGHT



Type: Semiconductor visible laser diode (650 nm nominal)
Safety Class: CDRH Class II, 1.0 mW max.

COMMUNICATION

Interface: RS-232, RS-422/485 (up to 115.2k), Keyboard Wedge, USB

PROTOCOLS

Point-to-Point · Point-to-Point w/RTS/CTS · Point-to-Point w/XON/XOFF · Point-to-Point w/RTS/CTS & XON/XOFF · Polling Mode D · Multidrop · User Defined · User Defined Multidrop · Daisy Chain

SCANNING PARAMETERS

Options: single line, fixed raster
 Scan rate: Adjustable from 300 to 1000 scans/second, default=500
 Scan width angle: >70°
Pitch: ±50°
Skew: ±40°
Label contrast: 25% min. @ 650 nm

HOST CONNECTOR/PIN ASSIGNMENTS

High Density 15 Pin D-sub Socket Connector

Pin No.	Host RS232	Host/Aux RS232	Host RS422/485	In/Out
1	Power +5 VDC			In
2	TxD	TxD	TxD(-)	Out
3	RxD	RxD	RxD(-)	In
4	Power/Signal Ground			
5	NC			
6	RTS	Aux TxD	TxD(+)	Out
7	Output 1 TTL ^a			Out
8	Default configuration ^b			In
9	Trigger			In
10	CTS	Aux RxD	RxD (+)	In
11	Output 3 TTL ^a			Out
12	New Master (NPN)			In
13	Chassis ground ^c			
14	Output 2 TTL ^a			Out
15	NC			

- a. Can sink 10 mA and source 2 mA.
 b. The default is activated by connecting pin 8 to ground pin 4.
 c. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

CONNECTOR

Type: 3 ft. cable terminated with High Density 15-pin D-Sub socket connector

ELECTRICAL

Power: 5 VDC +/- 5 %, 200 mV p-p max. ripple, 260 mA @ 5 VDC (typ.)

DISCRETE I/O

Trigger Input: 3 to 24V rated (1 mA @ 5 VDC)

New Master: 3 to 24V rated (1 mA @ 5 VDC)

Outputs (1, 2, 3): 5V TTL compatible, can sink 10 mA and source 2mA

SYMBOLOGIES

Code 39, Codabar, Code 128, I 2 of 5, Code 93, UPC/EAN, Pharmacode, PDF417 (option)

INDICATORS

Beeper: Good read, Match/Mismatch, Noread,
On/Off LEDs: 1 status, 1 power, 5 read performance (representing percentage of good decodes)

READ RANGES

Narrow-bar-width	Read Range
HIGH DENSITY	
.0033" (.084 mm)	2.3" to 2.6" (58 to 66 mm)
.005" (.127 mm)	2" to 3.1" (51 to 79 mm)
.0075" (.191 mm)	1.7" to 3.7" (43 to 94 mm)
.010" (.254 mm)	1.5" to 4" (38 to 102 mm)
LOW DENSITY	
.0075" (.191 mm)	3" to 6" (76 to 152 mm)
.010" (.254 mm)	2" to 7" (51 to 178 mm)
.015" (.381 mm)	2" to 8" (51 to 203 mm)
.020" (.508 mm)	2" to 10" (51 to 254 mm)

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

SAFETY CERTIFICATIONS DESIGNED FOR CDRH, FCC, UL/cUL, CE, BSMI



ISO 9001:2000
CERTIFIED QMS

ROHS/WEEE COMPLIANT

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