

## MS-520

Engineered for speed and accuracy, the MS-520 high speed scan head touts an impressive scan rate of 900 scans per second. It outputs a digitized signal ready for decoding, and connects to a Microscan MS-3000 decoder via an 8-pin modular connector and cable. Integral to the MS-520's exceptional performance capabilities and operating life is its maintenance-free, durable, brushless DC motor. The Microscan MS-520 scan head is ideal for systems that require precise, high speed automated bar code data acquisition, including clinical, photofinishing, document handling, and electronics manufacturing applications.

## HIGH SPEED BAR CODE SCAN HEAD

**High Speed Scanning:** A spinning, 10-sided mirror delivers reliable, redundant scanning of fast moving labels. The MS-520's laser beam is reflected through a 60° arc up to 900 times per second along a single line or 2° raster.

**Easy Decoder Connection:** Direct connection to the Microscan MS-3000 decoder, which provides real-time decoding and instantaneous data transmission to the host computer, is supplied via an 8-pin modular connector and cable.

**Brushless DC Motor:** An exceptionally durable, brushless motor is used to maximize the life of the scan head. A solid performer, this maintenance-free motor precisely spins the scanning mirror at the user selected rate, which can reach 900 scans per second.

**Wide-angle Photodetector:** The double-window photodetector allows the MS-520 to capture more reflected light (from a wide, 60° scan angle), and thereby delivers greater scanning accuracy. Microscan's proprietary light-pipe transmits light to a pair of photodiodes that convert light energy into an analog electrical wave that is digitized and transmitted to the decoder.

**Service options:**

- Installation assistance program
- Service agreements
- Training
- On-site service

**Symbologies:** The MS-520 scans virtually all widely used bar code symbologies, including:

- Code 39
  - Codabar
  - Interleaved 2 of 5
  - UPC/EAN
  - Code 128
  - Code 49
- Other codes are available, call Microscan for details.



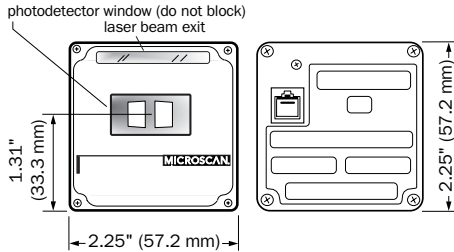
**Versatile Mounting:** Built-in mounting holes allow for easy and quick positioning of the MS-520 scan head, whether using a mounting plate or a Microscan Universal Stand™ (available in 4-inch, 6-inch, or 10-inch heights). The cube-shape, coupled with a wide scan angle and large depth of field further expands positioning options.

# MS-520 HIGH SPEED SCAN HEAD

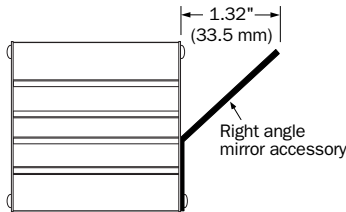
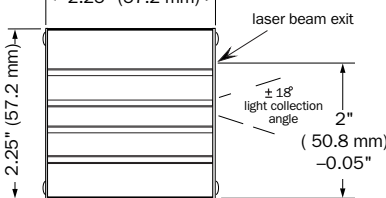
## SPECIFICATIONS AND OPTIONS

### MECHANICAL

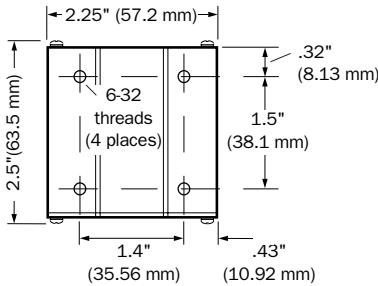
#### Front/Back



#### Side



#### Bottom



### ENVIRONMENTAL

**Weight:** 8 oz. (227 g)

**Operating temperature:**

Visible: 32° to 104°F (0° to 40°C)

Infrared: 32° to 113°F (0° to 45°C)

**Humidity:** Up to 95% (non-condensing)

**Ambient light immunity:**

- 450 foot candles (indoor, fluorescent, in candescent, mercury vapor, sodium vapor)
- 2000 foot candles (soft indoor)

### LASER LIGHT

**Type:** Semiconductor visible laser diode (670 nm nominal), Infrared Class I version available

**Safety class:** CDRH Class II (670 nm), CDRH Class I (780 nm)

### SCANNING PARAMETERS

**Mirror type:** Rotating 10-faceted

**Optional raster mirror image:** 10 raster scan lines over a 2-degree arc (or 0.24 inch raster over a 6-inch distance)

### READ RANGES

	Narrow-bar-width	Read Range	Maximum Scan Width*
<b>VISIBLE LASER (330 SPS)</b>			
<b>Ultra High Density</b>	.0047" (.119 mm)	1.75" to 3" (4.45 to 7.62 cm)	3" (7.62 cm)
	.0075" (.191 mm)	1" to 4" (2.54 to 10.16 cm)	4" (10.16 cm)
<b>Standard Density</b>	.0075" (.191 mm)	2" to 5" (5.1 to 12.7 cm)	4.75" (12.07 cm)
	.010" (.254 mm)	1.5" to 6" (3.8 to 15.24 cm)	6" (15.24 cm)
	.015" (.381 mm)	1" to 7" (2.54 to 17.78 cm)	7.5" (19.05 cm)
	.020" (.508 mm)	1" to 9" (2.54 to 22.86 cm)	9.25" (23.5 cm)
	.030" (.762 mm)	4" to 10" (10.2 to 25.4 cm)	9.5" (24.13 cm)
	.040" (1.02 mm)	4" to 10" (10.2 to 25.4 cm)	9.5" (24.13 cm)
	.050" (1.27 mm)	5" to 10" (12.7 to 25.4 cm)	9.75" (24.77 cm)
<b>INFRARED LASER (330 SPS)</b>			
<b>Ultra High Density</b>	.0047" (.119 mm)	1.75" to 3" (4.45 to 7.62 cm)	3" (7.62 cm)
	.0075" (.191 mm)	1.25" to 3" (3.18 to 7.62 cm)	3.5" (8.89 cm)
<b>Standard Density</b>	.0075" (.191 mm)	2" to 4.5" (5.1 to 11.43 cm)	3.5" (8.89 cm)
	.010" (.254 mm)	1.5" to 5" (3.81 to 12.7 cm)	4.75" (12.07 cm)
	.015" (.381 mm)	1" to 6" (2.54 to 15.24 cm)	6" (15.24 cm)
	.020" (.508 mm)	1" to 7" (2.54 to 17.78 cm)	7" (17.78 cm)
	.030" (.762 mm)	4" to 9" (10.2 to 22.86 cm)	8.5" (21.59 cm)
	.040" (1.02 mm)	4" to 9" (10.2 to 22.86 cm)	8.5" (21.59 cm)
	.050" (1.27 mm)	5" to 9" (12.7 to 22.86 cm)	8.5" (21.59 cm)
<b>VISIBLE LASER (900 SPS)</b>			
<b>Standard Density</b>	.0075" (.191 mm)	2.5" to 4.25" (6.35 to 10.8 cm)	—
	.010" (.254 mm)	1.75" to 5.5" (4.45 to 14 cm)	3.6" (9.14 cm)**
	.015" (.381 mm)	1.5" to 6.5" (3.81 to 16.5 cm)	—
	.020" (.508 mm)	1.5" to 6.5" (3.81 to 16.5 cm)	—

\* Performance may vary slightly for raster units.

\*\* At 4.25 inches (10.8 cm).

**Scan rate:** up to 330 scans per second (900 SPS optional)

**Pitch:** ±50°

**Skew:** ±40°

**Label contrast:** 25% min. absolute dark to light differential at 670 nm wavelength

### DECODER INTERFACE

Compatible with Microscan MS-3000 decoder

**Port:** output socket for 8-pin RJ-45 modular connector

**Cabling:** 6-foot cable standard; available in 1-foot increments to 15 feet

### ELECTRICAL

**Power requirements:**

+12 VDC @ 50 mA maximum

-12 VDC @ 35 mA maximum

+5 VDC @ 240 mA (330 sps) or 340 mA (900 sps)

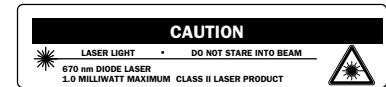
**Input signals:** TTL high enable for laser diode and motor (controlled by decoder software)

### PIN ASSIGNMENTS

Pin No.	Function
1	+12 VDC out
2	-12 VDC out
3	Signal ground
4	+5 VDC out
5	Scan sync (TTL)
6	Motor control (+5 VDC)
7	Video in TTL (-)
8	Video in TTL (+)

### SAFETY CERTIFICATIONS

CDRH, UL/cUL, CSA, and TÜV



ISO 9001/Cert. No. US96/0465

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Specifications subject to change.

Product specifications are given for typical performance at 25°C (77°F) using grade A Code 39 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.

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