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

At 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.

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**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 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
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 D-Sub socket connector

DISCRETE I/O
Trigger Inputs: 4.5 to 24V rated (10 mA @ 24 VDC)

SYMBOLS

CHARACTERISTICS
Voltage: 5V +/- 5%
Current: 150 mA typical

HOST CONNECTOR/PIN ASSIGNMENTS
15 Pin D-sub Socket Connector

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Host/RS-232</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power +5 VDC</td>
</tr>
<tr>
<td>2</td>
<td>TxD</td>
</tr>
<tr>
<td>3</td>
<td>RXD</td>
</tr>
<tr>
<td>4</td>
<td>Power/Signal Ground</td>
</tr>
<tr>
<td>5</td>
<td>NC</td>
</tr>
<tr>
<td>6</td>
<td>RTS (5V only)</td>
</tr>
<tr>
<td>7</td>
<td>NC</td>
</tr>
<tr>
<td>8</td>
<td>NC</td>
</tr>
<tr>
<td>9</td>
<td>Trigger (NPN)</td>
</tr>
<tr>
<td>10</td>
<td>CTS (5V only)</td>
</tr>
<tr>
<td>11</td>
<td>NC</td>
</tr>
<tr>
<td>12</td>
<td>NC</td>
</tr>
<tr>
<td>13</td>
<td>Chassis Ground</td>
</tr>
<tr>
<td>14</td>
<td>NC</td>
</tr>
<tr>
<td>15</td>
<td>NC</td>
</tr>
</tbody>
</table>

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

REGULATORY APPROVALS
UL recognized component, VDE certified ISO 9001/Cert. No. US96/0465

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All rights reserved. Specifications subject to change. Product specifications are given for typical performance at 23°C (74°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.