The DS1000 3D sensor optimizes product quality by providing three-dimensional inspection of your products. Compact and industrially designed for even the harshest factory environment, it also includes industry-leading Cognex vision software with a powerful new 3D toolset.

Calibrated 3D Vision from Cognex
The factory-calibrated DS1000 provides results in real units of measurement with micron-level accuracy, making 3D applications easier to use and quicker to deploy.

Unlike traditional 2D machine vision, the system provides a topographical representation of your part from which you can measure 3D features such as length, width, height, tilt or volume relative to any surface. It also simplifies challenging OCR or presence/absence applications by creating contrast from height changes, independent of color.

Application examples include:
• Reading embossed or raised characters such as those on automobile tires
• Detecting missing objects in boxes or packages by height inspection
• Identifying surface defects and chips
• Measuring heights and tilts of components to determine misalignment
• Verify the correct volume for portion control

Benefits
Complete 2D and 3D machine vision solution
• Expanded range of sensor options
• Bundled with VC5 Controller
• Easy deployment with Cognex Designer™ software

Results in real-world units (mm)
• Calibrated 3D system
• Micron-level accuracy

Contrast independent inspection
• Dark object on dark background
• Independent of color

Ability to combine 3D and 2D cameras
• Many applications require both

World-class 3D and 2D vision tools
• Height, volume, plane-fitting, tilt and cross-section tools
• PatMax®, IDMax® and OCRMax™ algorithms

Industrial IP65 Housing
• IP69K enclosure option for food and beverage applications

For a simplified overview of how it works, watch the demonstration video at www.cognex.com/ds1000.

Cognex Designer makes it easy to set up a professional looking graphical user interface such as the DOT Code Reader interface displayed below.

Optical Character Recognition (OCR)
### Specifications

- **Dimensions:** 93.3 mm to 115.2 mm (H) x 50 mm (W) x 167.06 mm (L)
- **Weight:** 700 g
- **Operating Temperature:** 0°C to 50°C (32°F to 113°F)
- **Storage Temperature:** -10°C to 60°C (-14°F to 140°F)
- **Maximum Humidity:** 85% (non-condensing)
- **Housing:** IP65 (with Cognex recommended IP65 Ethernet and power I/O cables)
- **Shock:** 50 gs (11 ms half-Sine pulse)
- **Vibration:** 8 gs (10-500 Hz for 30 minutes)
- **Discrete I/O Operating Limits:** Trigger input voltage limits: -24 VDC – +24 VDC
  - Input ON: > 10 VDC (>6 mA)
  - Input OFF: < 2 VDC (<1.5 mA)
- **Encoder Input Specifications:**
  - Differential: A+/B+: 5-24V (50 kHz max)
  - A-/B-: Inverted (A+/B+)
  - Single-ended: A+/B+: 5-24V (50 kHz max)
  - A-/B-: +0VDC=½(A+/B+)
- **Power Supply:**
  - Voltage: +24 VDC (22-26 VDC)
  - Current: 500 mA max
- **Scan Rate:** Up to 10 kHz
- **Software:** Cognex Designer software
- **Ethernet:**
  - Gigabit Ethernet interface
  - Integrated link and traffic LEDs
  - Standard M12-8 female connector
- **Certifications:**
  - CE
  - cUL
  - FCC
- **Accessories:**
  - Ethernet cable: 5m, IP65-rated
  - Power: + I/O + Encoder cable, IP65-rated
  - Mounting bracket
  - Stainless steel enclosure, IP69K-rated for the food industry
- **VC5 Controller:**
  - Intel i5 processor
  - Precision I/O Real Time Communication
  - 207 mm (H) 132.6 mm (W) x 229.5 (L)

### Model Comparison

<table>
<thead>
<tr>
<th>Specifications</th>
<th>DS1050</th>
<th>DS1101</th>
<th>DS1300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Field of View (mm)</td>
<td>43</td>
<td>64</td>
<td>90</td>
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<tr>
<td>Far Field of View (mm)</td>
<td>79</td>
<td>162</td>
<td>410</td>
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<tr>
<td>Clearance Distance (mm)</td>
<td>87</td>
<td>135</td>
<td>180</td>
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<tr>
<td>Measurement Range (mm)</td>
<td>76</td>
<td>220</td>
<td>725</td>
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<tr>
<td>Laser Class</td>
<td>2M, 3R</td>
<td>2M, 3R</td>
<td>3R</td>
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<tr>
<td>Resolution X (mm)</td>
<td>0.059-0.090</td>
<td>0.079-0.181</td>
<td>0.101-0.457</td>
</tr>
<tr>
<td>Resolution Z (mm)</td>
<td>0.004-0.014</td>
<td>0.010-0.052</td>
<td>0.016-0.265</td>
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</tbody>
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