DS1000 Series

3D DISPLACEMENT SENSOR | LASER PROFILING SYSTEM

- **Tools for inspection include height, tilt, plane-fitting, volume and cross-section**
- **Factory-calibrated with results in real world units, micron-level accuracy**
- **Complete 2D and 3D machine vision solution**
- **Industrial IP65 laser and camera**

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

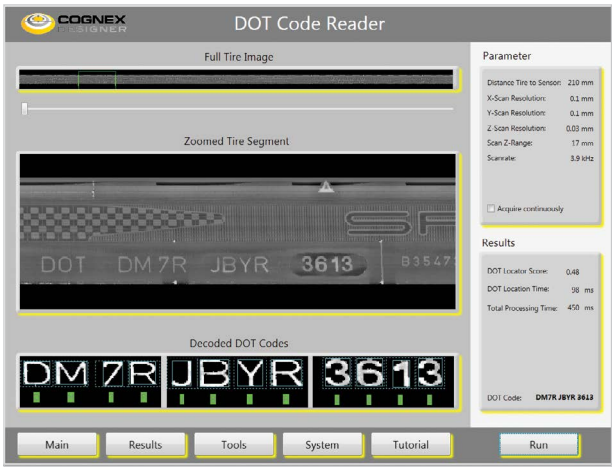
Ability to combine 3D and 2D cameras
- Many applications require both

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

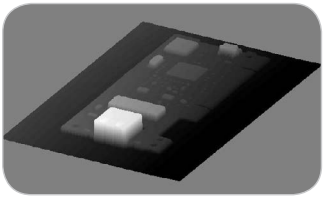
Industrial IP65 Housing
- IP69K enclosure option for food and beverage applications

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

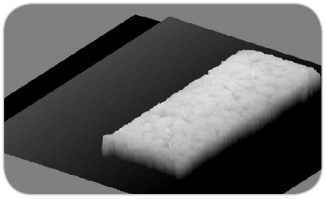
Cognex Designer makes it easy to set up a professional looking graphical user interface such as the DOT Code Reader interface displayed below.



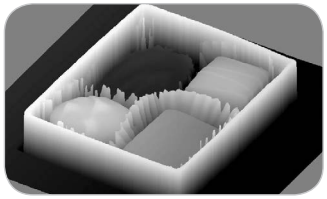
Optical Character Recognition (OCR)



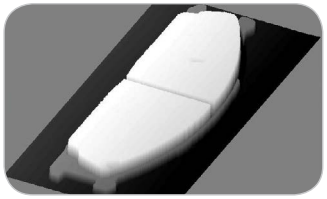
Measure heights



Verify volumes



Determine presence/absence



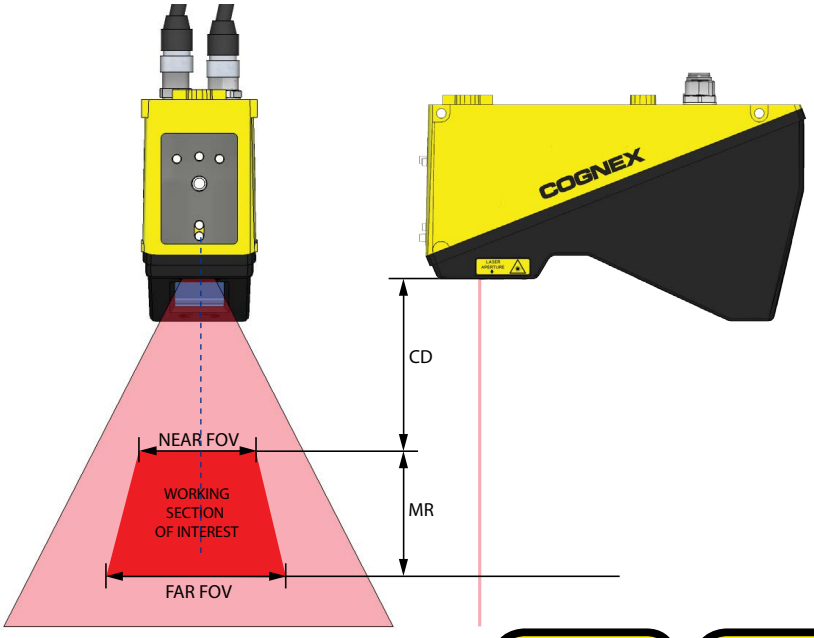
Identify surface defects

Specifications

Dimensions	93.3 mm to 115.2 mm (H) x 50 mm (W) x 167.06 mm (L)
Weight	700 g
Operating Temperature	0ºC to 50ºC (32ºF to 113ºF)
Storage Temperature	-10ºC to 60ºC (-14ºF to 140ºF)
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, C SP US
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

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



COGNEX Companies around the world rely on Cognex vision and ID to optimize quality, drive down costs and control traceability.

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