COGNEX

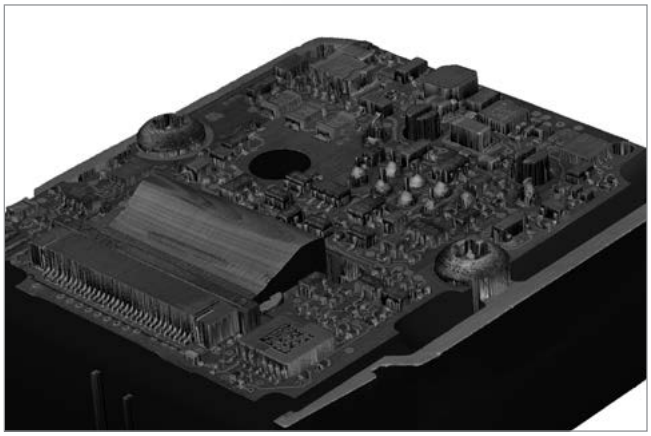
DSMAX LASER DISPLACEMENT SENSOR

DSMax™ is the fastest and highest definition laser line 3D displacement sensor on the market for acquiring images and inspecting products in 3D. It is the only sensor that offers both high scan rates (up to 18 kHz) at full measurement range and maximum resolution images (2,000 profile points). The accurate, single shot high dynamic range (HDR) image is ideal for measuring and inspecting very small parts, such as electronic components, which can contain highly reflective or dark features.

DSMax includes telecentric optics for optimal image formation and shadow reduction. Combining speed and resolution makes DSMax a unique solution for obtaining fast, accurate 3D images of small, detailed parts.

Benefits at a glance

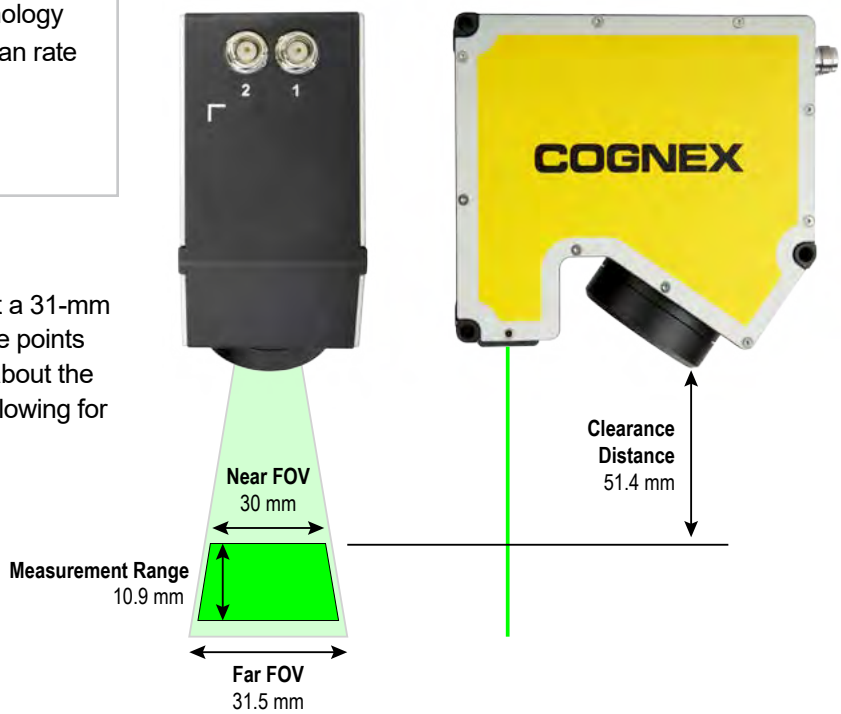
- Up to 18kHz full field scan rate to maximize throughput
- 2,000 profile points within 31-mm FOV increases accuracy
- High speed and high sensitivity imager optimized to green laser shortens exposure for faster cycle times
- Telecentric optics accurately detects and locates small objects
- Cognex exclusive compressive sensing technology enables scans at maximum resolution and scan rate
- Factory calibrated to deliver results in real-world units of measurement



Accurate 3D inspections of small, detailed parts

DSMax concentrates 2,000 profile points within just a 31-mm field of view (FOV). The higher the number of profile points spread across a field of view reveals more details about the part and increases the precision of the 3D image allowing for more accurate 3D inspections.

Specifications	Values (mm)
Near Field of View (FOV)	30
Far Field of View (FOV)	31.5
Clearance Distance (CD)	51.4
Measurement Range (MR)	10.9

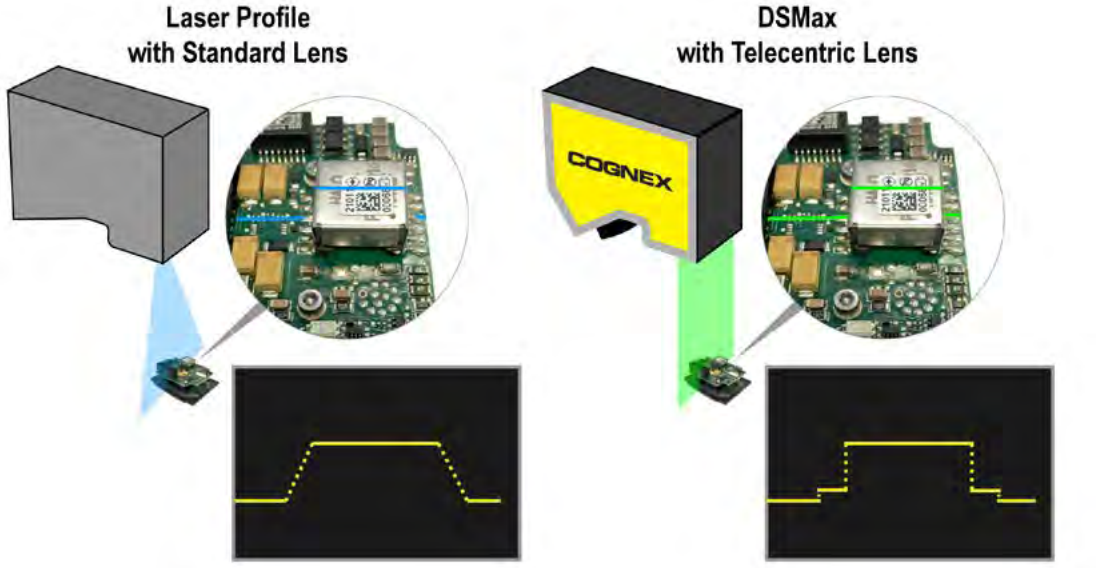


Short cycle times increase throughput

DSMax acquires high resolution 3D images 5X faster than other displacement sensors on the market. DSMax uses a high-speed imager, high-speed compressive sensing technology, and the CoaXPress® protocol to achieve up to 18 kHz (full field) scan rates at maximum resolution that reduce cycles times and maximize throughput.

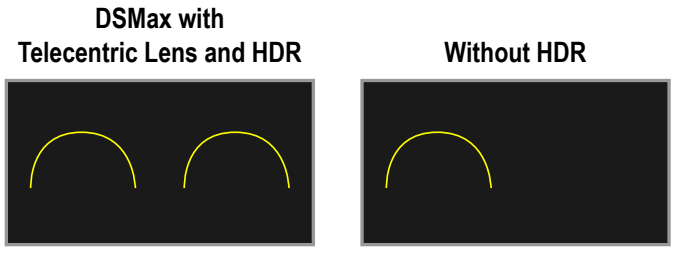
Telecentric optics optimizes image formation

DSMax is equipped with a telecentric lens which reduces shadows and delivers high-contrast images. It achieves this by directing the laser line straight down on the object reducing the amount of light reflected away from the lens and increasing the light reflected back to the imager. Telecentric optics are ideal for precise measurements, where accuracy, repeatability, and throughput are necessary to solve the application.



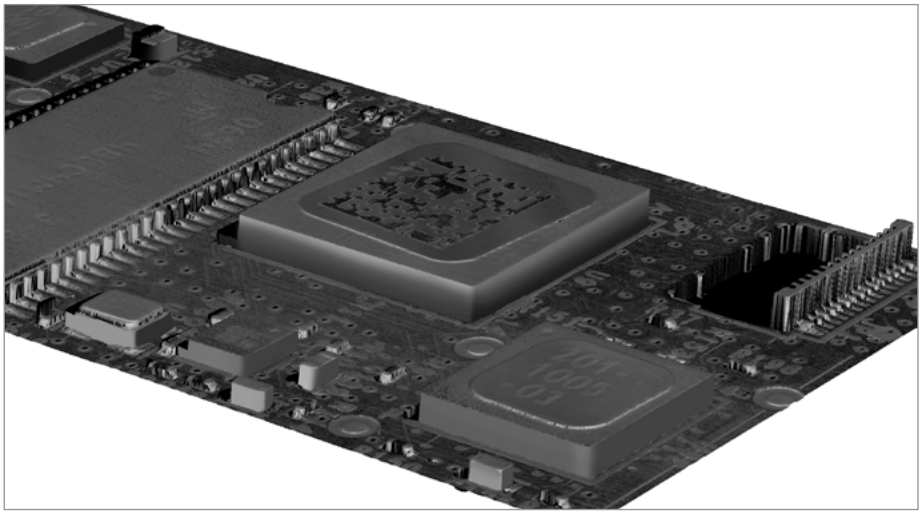
Fast High Dynamic Range (HDR)

DSMax acquires images with a single shot HDR reducing noise in the image and improving accuracy. HDR prevents DSMax from being affected by bright or highly reflective features on the part, delivering an optimized image for machine vision inspection.



Reliable vision tools for accurate inspections

DSMax comes equipped with Cognex well-known and respected VisionPro® 3D toolset for object location, measurement, and inspection. The Cognex Designer integrated development environment simplifies application set up and reduces deployment time.



SPECIFICATIONS

Model	DSMax CX 31 mm Telecentric
Laser class	2M
Laser wavelength	520 nm
Laser output	35 mW max.
Laser maximum total power	< 40 mW
Scan rate	Up to 18 kHz
Profile points	2,000
Linearity	±0.1% of F.S.
X resolution	Top: 0.0146 mm Bottom: 0.0154 mm
Y resolution*	0.015 mm
Z resolution**	Top: 0.0025 mm Bottom: 0.0028 mm
Dimensions	142.7 (L) x 65 (w) x 133.4 (H) mm.
Weight	843 g
Case temperature	0 °C to 50 °C
Storage temperature	-10 °C to 60 °C

Maximum humidity	85% (non-condensing)
Environmental	IP67
Power supply requirements	Voltage: +24 VDC (11–30 VDC) Current: 300 mA max Power: 8 W
Working distance	51.4–62.3 mm
Network communications	Coaxial interface implementing the CoaXPress protocol.
Shock	Up to 50 G
Vibration	Up to 2 G (10–500 Hz for 30 min.)
Certifications	CE, KCC, FDA (laser);CAN/CSA C22.2 No. 61010-1, UL 61010-1, EN 61010-1; EN 61326-1:2013
Frame grabber trigger	Input voltage limits: Trig+ - Trig - = ±24 VDC Input ON: > 6 VDC Input OFF: < 2.5 VDC
Frame grabber encoder input specifications	Differential: A+/B+: 5-24V (500 kHz max) A-/B-: Inverted (A+/B+) Single Ended: A+/B+: 5-24V (500 kHz max) A-/B-: VDC = ½ (A+/B+)

* size of pixel in y
** size of subpixel in z

PARTNER SYSTEM INTEGRATOR PSI COGNEX 威視康

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