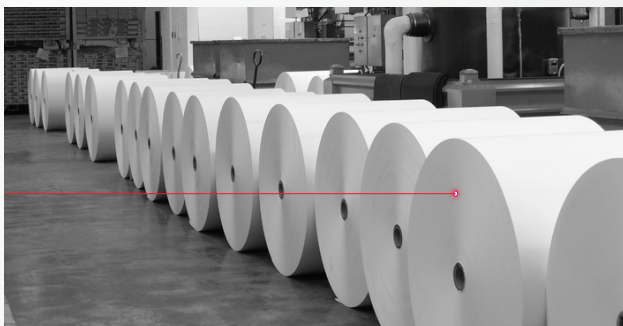
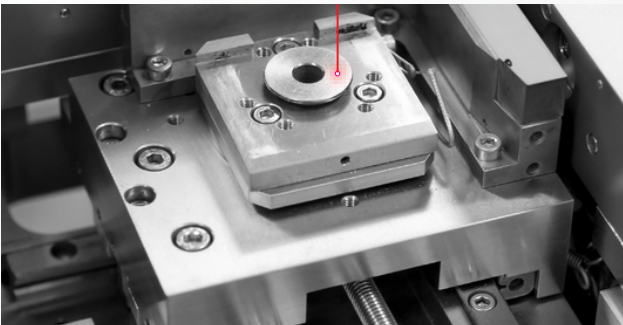
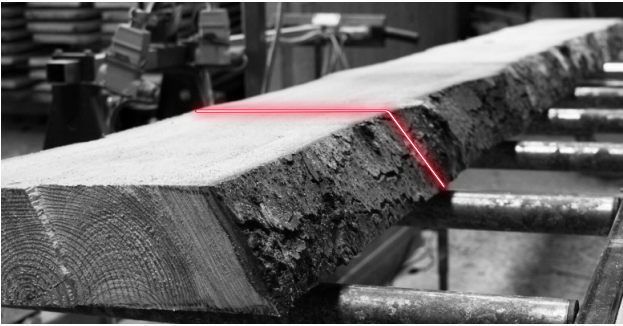
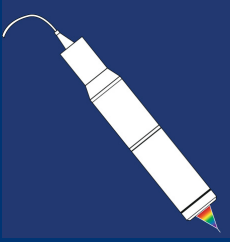


Acuity Sensors and Scanners



Product
Brochure

CCS PRIMA



- ■ ULTRA PRECISION
- ■ SHINY TARGETS
- ■ CONFOCAL DESIGN
- ■ GLASS THICKNESS

The CCS Prima series of confocal displacement sensors are amongst the most precise measuring instruments in the world. Using a confocal chromatic imaging principle, the CCS Prima measures challenging surfaces such as mirrors, lenses and glass.

Versatile models

There are thirteen model configurations of the CCS Prima sensor, supporting distance resolutions to 5 nanometers.

Component design

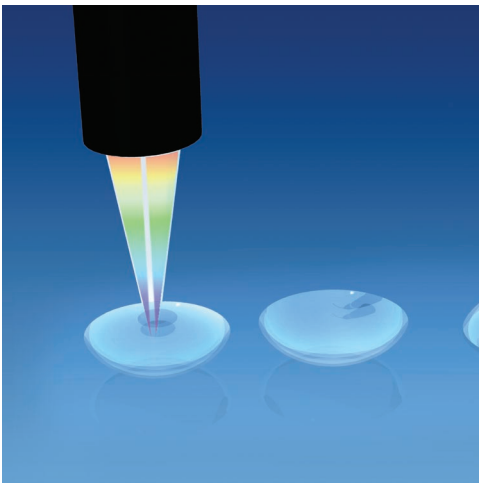
The CCS Prima system comprises a solid-state controller, a fiber optic cable and a measurement “pen”. The controller transmits white light to the pen and reflected image signal are returned to the controller for analysis. Distance, thickness and intensity data are communicated via Ethernet communications to a PC computer.

Confocal arrangement

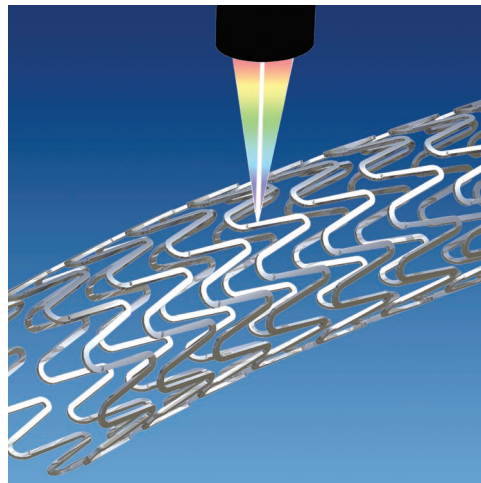
The emitted and reflected light travels in the same linear path, permitting excellent lateral resolution of the tiniest surface features without interference. Attach the measurement pen to a linear stage to create high-definition 3D profiles.

CCS Prima Applications

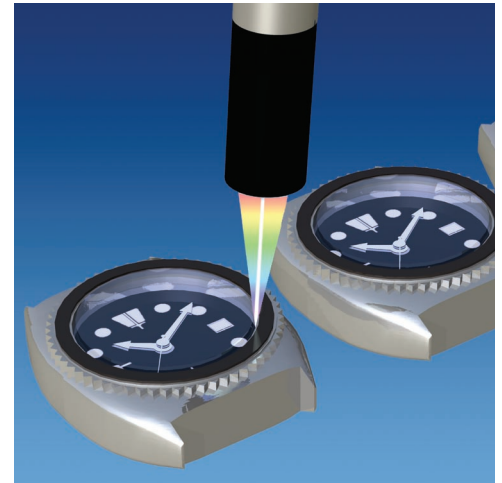
Lens thickness measurements



Precision stent measurements



Manufacturing tolerance check



The AR200 laser measurement sensor is Acuity's value distance-measuring sensor. Using laser triangulation measurement principles with high-speed CMOS detector arrays, the AR200 sensor delivers high accuracy in a very compact model. This model includes both serial and analog outputs for simple integration.

Compact Design

Size-critical applications appreciate the AR200's short dimensions. Measuring approximately 54 X 20 X 70 mm, the AR200 sensor head fits anywhere. With integrated digital, analog and discrete output signals, this sensor requires no external controller or signal conditioner. Simply plug it directly into your PC or PLC!

Sharp Resolution

Intelligently-designed optics and the latest in digital CMOS detector technology deliver high resolution across the measurement ranges. AR200 resolution specifications begin at 1.8 microns.

Versatile Outputs

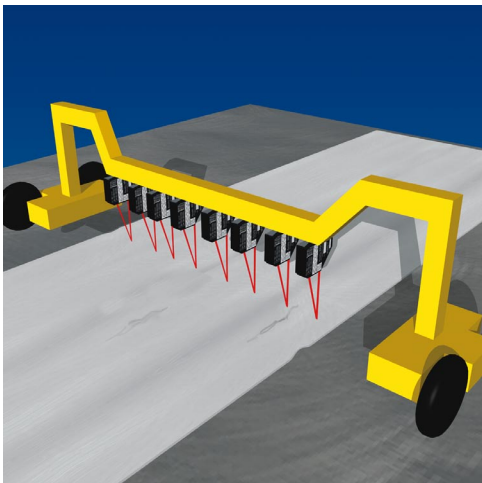
Integrators of the Acuity laser measurement sensors appreciate the bundle of digital, analog and discrete outputs that come standard in each model. The AR200 sensors are equipped with RS232, 0-10V analog, 4-20mA current loop and NPN and PNP discrete outputs for alarm triggers.



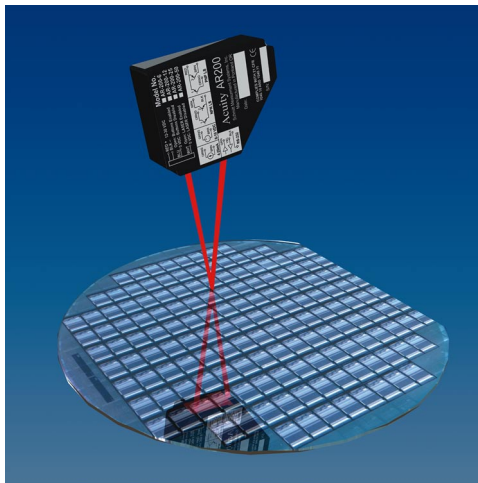
- COMPACT DESIGN 
- CMOS DETECTOR 
- VERSATILE OUTPUTS 
- COST-EFFECTIVE 

AR200 Applications

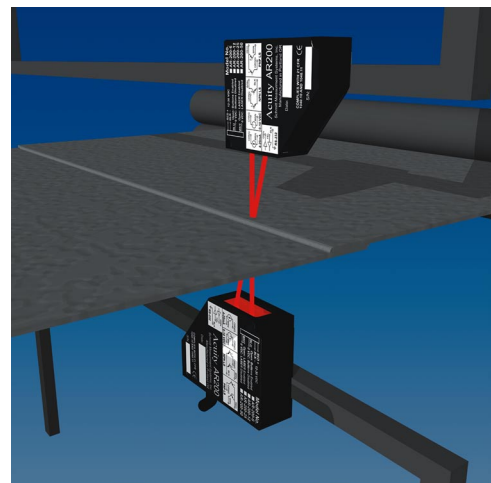
Measures defects on sheets



Positions silicon wafers



Steel strip thickness

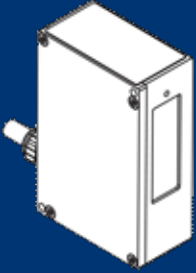


LASER

high-accuracy

serial

AR700



- COMPACT FOOTPRINT
- FASTEST SAMPLING
- VERSATILE OUTPUTS
- SHARP RESOLUTION

The AR700 laser distance gauge has the highest precision of any Acuity model. The series includes a dozen models spanning from 3.175 mm to 1.27 m. All models boast rapid frequency responses and include multiple serial and analog interfaces.

Small Footprint

The AR700 series uses several case sizes to achieve the smallest footprint while maintaining performance specifications. The shortest-range AR700 models are smaller than the palm of your hand!

Fast Sampling Rates

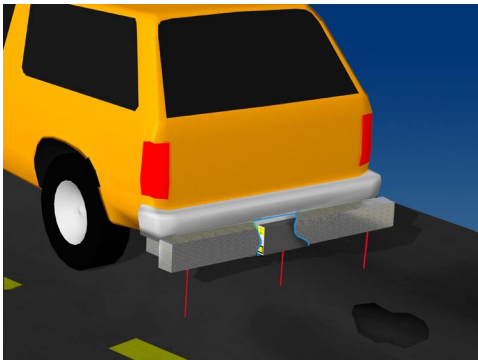
At 9400 Hz, the AR700 is one of the fastest digital triangulation sensors on the market. Because the sensor is designed to have great sensitivity to changes in return signal, it is not necessary to average multiple distance samples to get a reliable distance reading.

Versatile Outputs

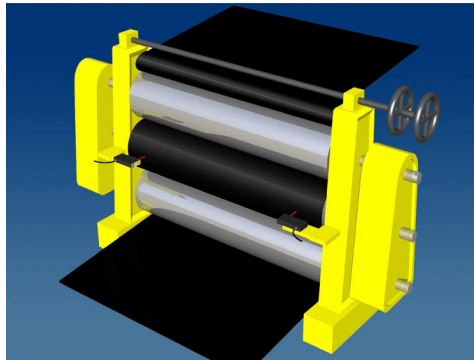
Integrators of the Acuity laser distance gauge can easily interface the model through RS232, RS422, 0-10V and 4-20 mA outputs. The instrument also has external hardware triggers to sample on command and alarm outputs for QC process feedback.

AR700 Applications

Road profiling



Calendared rubber



Tire profiling



The AR1000 and AR3000 laser distance sensors are ideal for long-range measurements to diffuse targets, up to 30 and 300 meters respectively. To special reflective targets, the measurement capabilities extends to 150 and 3000 meters respectively.

Built for tough environments

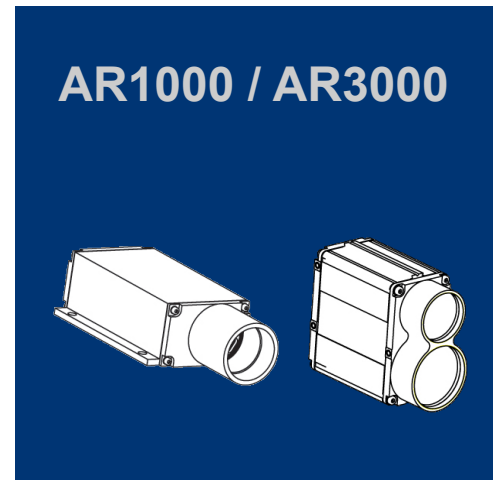
Both models are specified with IP67 environmental enclosure ratings, permitting their use in dusty, dirty and wet environments. The optical lens should always be kept clean for optimal performance.

Visible laser spots

The AR1000 uses a low-power, Class 2 visible laser diode for accurate measuring and simple alignment. The AR3000 model is Class 1 eye-safe with an infrared laser diode for measuring and a selectable, visible laser spot for initial setup and alignment.

Standard serial connection

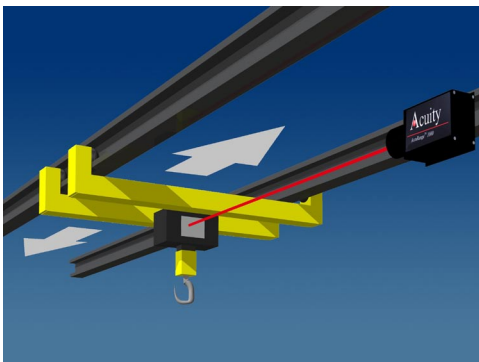
The AR1000 and AR3000 sensors use a connection to a PC computer for its initial configuration. After this setup, measurements can be received through a serial connection or a current loop interface to most controllers, computers, displays and data acquisition systems.



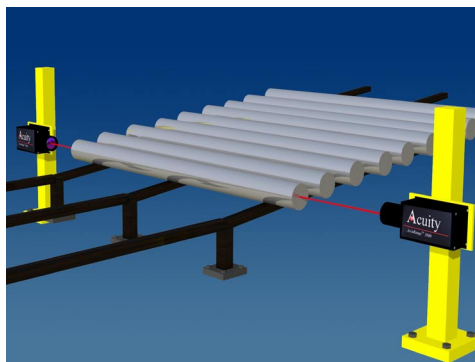
- VERY LONG RANGE
- RUGGED DESIGN
- VISIBLE LASER SPOT
- WATERPROOF

AR1000 & AR3000 Applications

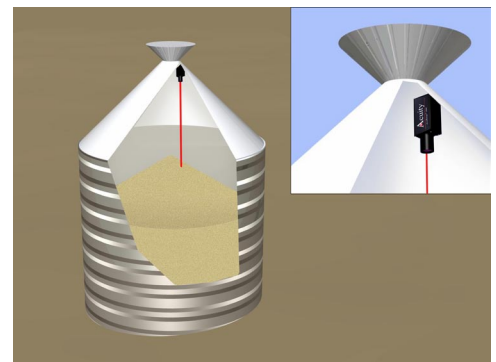
Cranes and hoists



Length measurement



Silo fill heights

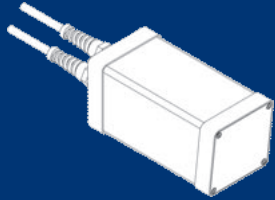


LASER

high-accuracy

serial

AR4000



The AR4000 laser rangefinder is Acuity's unique, mid-range distance measuring sensor. Using patented time-of-flight measurement principles, this device measures beyond sixteen meters with sharp resolution. This instrument is ideal for heavy industrial applications requiring measurement of long distances at fast speeds.

Long Range at High Speeds

The AR4000 is one of the industry's longest-distance rangefinders that can measure at extremely high refresh rates. This model can track targets up to 16.5 meters away, with 0.3 mm resolution and at a sampling rate up to 200 KHz when using an external interface card.

High Accuracy

Our patented approach to time-of-flight measurement yields tremendous accuracy, even at long distances. Our minimal-diverging laser beam spot can measure to small targets.

Enduring tough environments

The AR4000 series rangefinders are designed in NEMA-4 rated enclosures and can withstand tough industrial environments. Thorough electrical insulation makes this sensor reliable in high-noise environments.

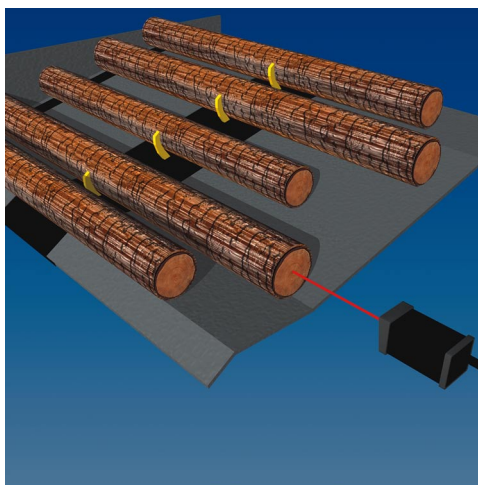
- RUGGED CASE
- OUTDOOR USE
- FASTEST SAMPLING
- DARK TARGETS

AR4000 Applications

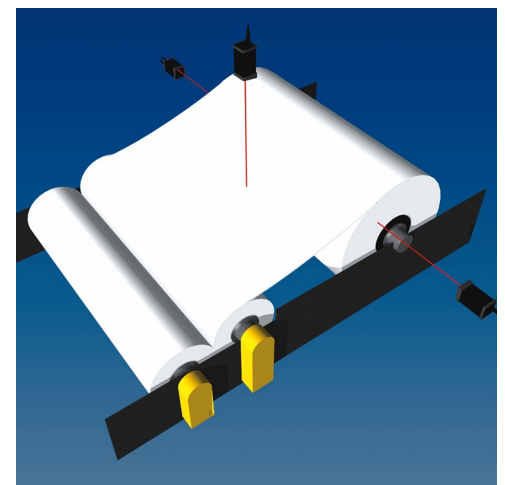
Port crane positioning



Log measuring and positioning



Paper roll width and loop control



time-of-flight

digital

wood

The AccuRange laser line scanner is a unique, non-contact measuring system for rapidly profiling objects and scenery. Coupled with our commercial interface cards, the scanner can sample at speeds up to 200 KHz. Line scanners are ideal for automatically profiling conveyed material and truck beds.

Fast two-dimensional profiling

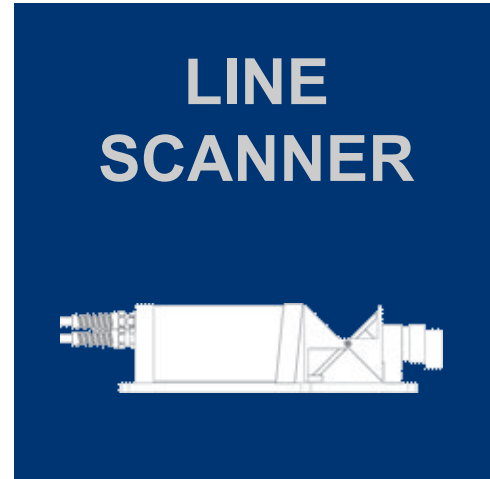
This laser line scanner combines a fast-sampling rangefinder with a spinning mirror to collect material and scenery profiles within a full 360° rotation.

Outdoor scanning

The Acuity laser line scanner can be configured with special sunlight filters to enable accurate measuring in outdoor environments. An optional environmental enclosure protects the delicate hardware from the elements.

PC-programmable

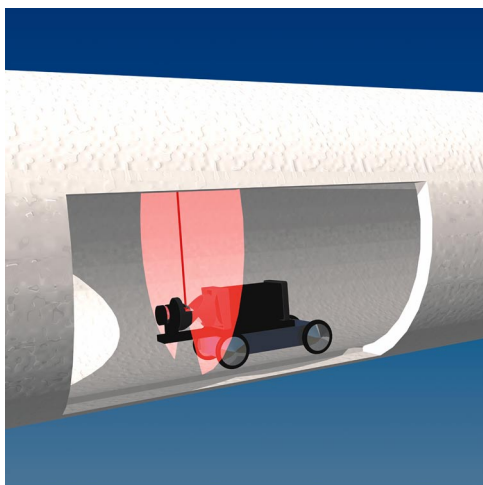
Each laser line scanner communicates with computers through special interface cards for the most common PC buses. Data is easily captured and manipulated to deliver only the measurements of interest.



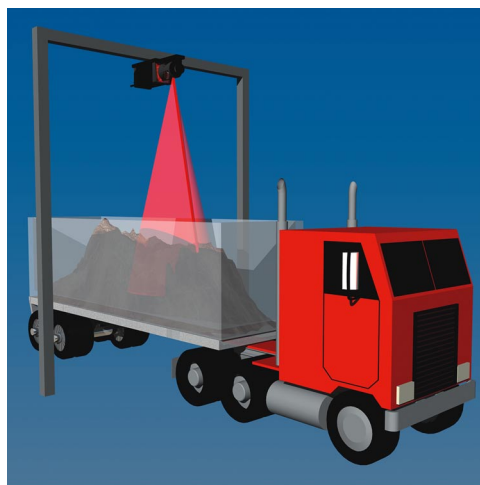
- FAST 2D PROFILING
- PC-PROGRAMMABLE
- EYE-SAFE OPERATION
- OUTDOOR SCANNING

Line Scanner Applications

Tunnel profiling



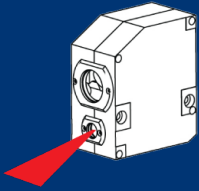
Truck bed & container scanning



Ladle profiling



AP620



- COMPACT CASE
- NO EXTERNAL LIGHTING
- 2D PROFILES
- FASTEST SAMPLING

The AP620 Profile Measurement Scanner is a 2D laser sensor for industrial measurement applications. Combining accurate dimensional measurements with machine vision inspection principles, the AP620 can scan materials and surfaces for in-process dimensional verification.

Two-dimensional measurements

The AP620 scanner is the equivalent of 1024 single-point distance sensors. Profile images of the projected laser line capture essential height, angle, gap and curvature information.

High Accuracy

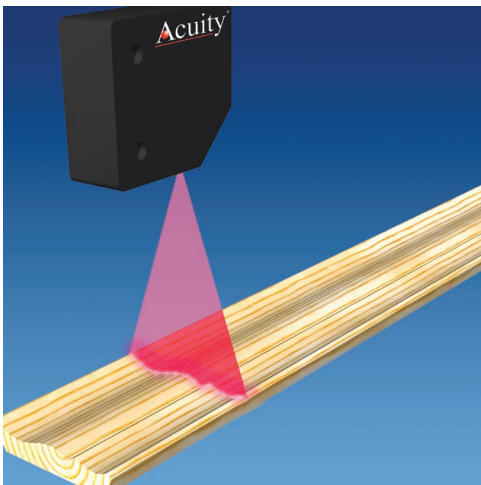
The measurement specifications in both the range and field-of-view axes are industry-leading. Digitize your parts to within 10 microns.

Adjustable laser and autogain

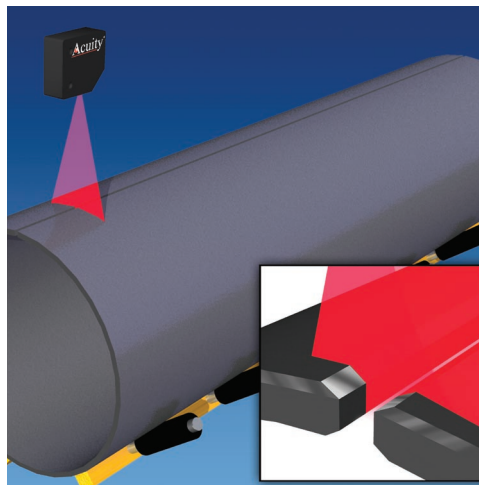
The AP620 profile scanner permits software adjustment of the solid-state laser line generator to optimize return signals on a variety of materials, including black rubber or shiny metal.

AP620 Applications

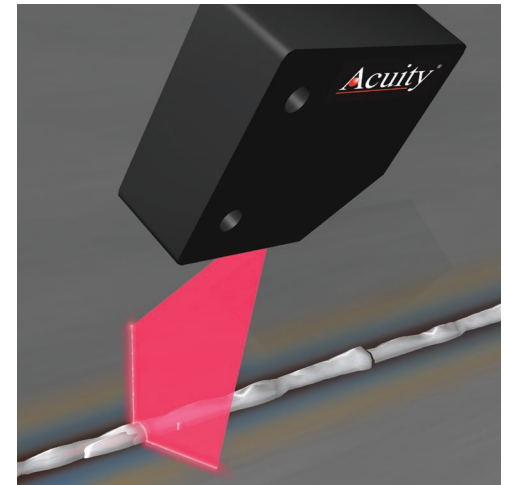
Wood moulding profiling



Gap width measuring



Weld seam profiling / tracking



2D scanning

ethernet

The AccuRange 3D Laser Scanner quickly captures point cloud dimensions of scenes and materials. The scanner can be easily configured to scan “full field” or to concentrate on distinct “regions”. This scanning appliance incorporates a unique beam-steering head.

Industrial applications

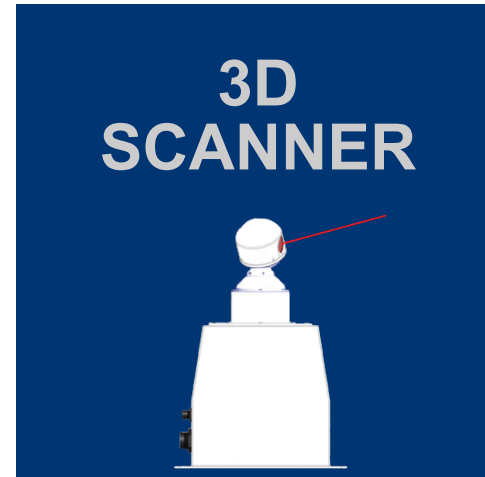
Unlike other, more expensive, three dimensional laser scanners that are tripod-mounted, the AccuRange 3D Laser Scanner is designed for fixed industrial installations for continuous factory automation usage.

Configurable field of view

The scanner appliance’s beam steering head can quickly aim the laser. Software controls permit full 360° azimuth rotations and +/- 30° elevation, allowing unprecedented control of the scanner’s field of view. Minimize scanning time by aiming the device only where it is intended!

High-speed sampling

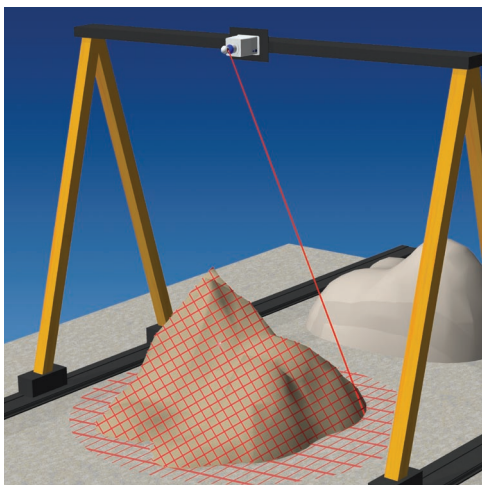
The system captures up to 200,000 data points per second and sends that point-cloud information via ethernet to a host computer. The universal data files can be read by many commercially-available plotting software packages.



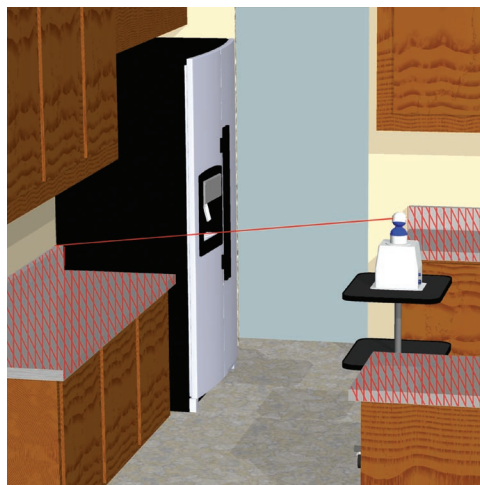
- INDUSTRIAL INSTALLS
- PC-PROGRAMMABLE
- CONFIGURABLE FOV
- HIGH-SPEED SAMPLING

3D Laser Scanner Applications

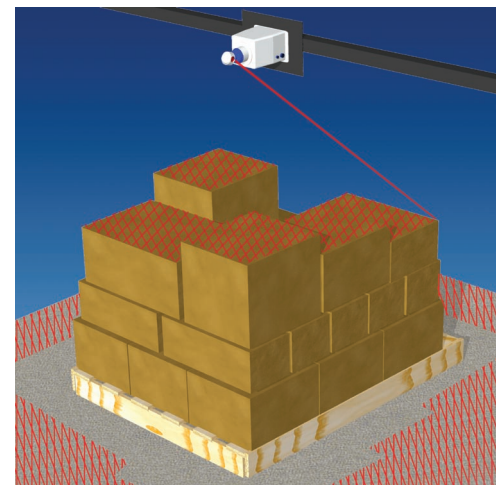
Bulk material profiling



Room dimension scanning

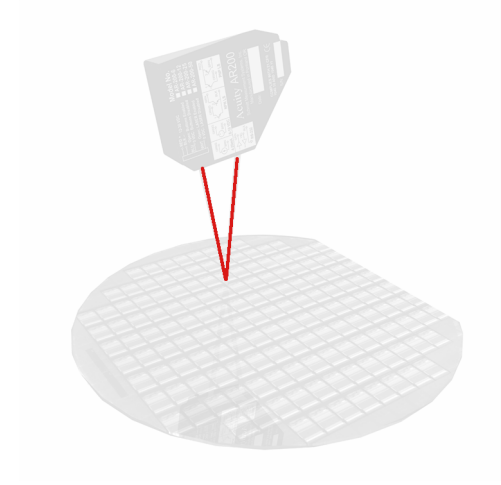
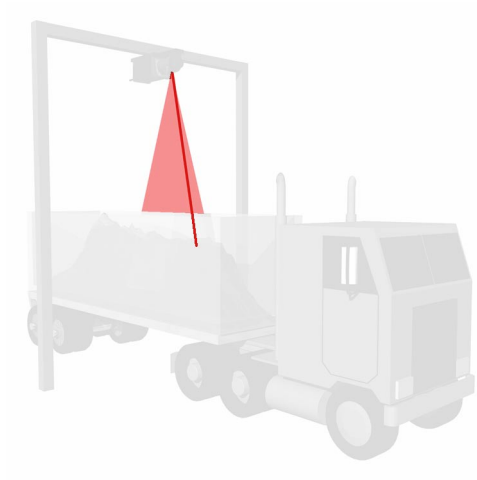
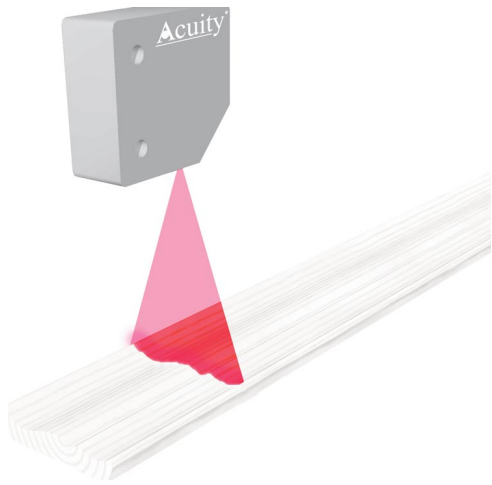


Pallet laser scanning



SCAN

rapid point-cloud generation



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