

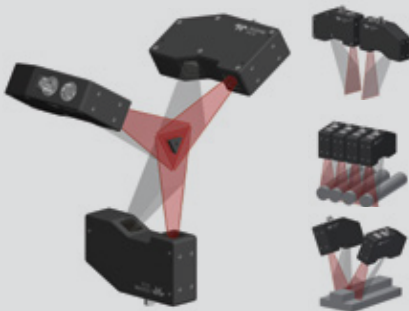
Z-TRAK2 V-2K Series (Preliminary)

Factory Calibrated High-Performance 3D Profile Sensors



FEATURES

- » Scan speed 10K profiles/sec, 2,000 points/profile
- » Factory calibrated real-time measurements in real-world units
- » Unified Measurement Space for 360° in-line inspection and measurements
- » Handles highly reflected surfaces
- » Built-in reflection compensation algorithms
- » Multi-Sensor synchronization
- » Simplified cabling
- » Compact IP67 housing for harsh operating environment
- » Free bundled software:
 - » Sherlock™ for rapid application deployment
 - » Sopera LT SDK for scan and control
 - » Sopera Pro run-times 1D, 2D and 3D image processing
 - » 3rd party software support for 3D image processing



The new Z-Trak2 family of 3D Profile Sensors delivers 10,000 profiles/sec for in-line measurement and inspection applications.

The Z-Trak2 V-2K Series combines speed and performance with easy to use software to deliver highly accurate, real-time results for a wide variety of 3D measurement and inspection applications in electronics, PCB, wafer, flat-panel, factory automation, food processing, and secondary battery markets.

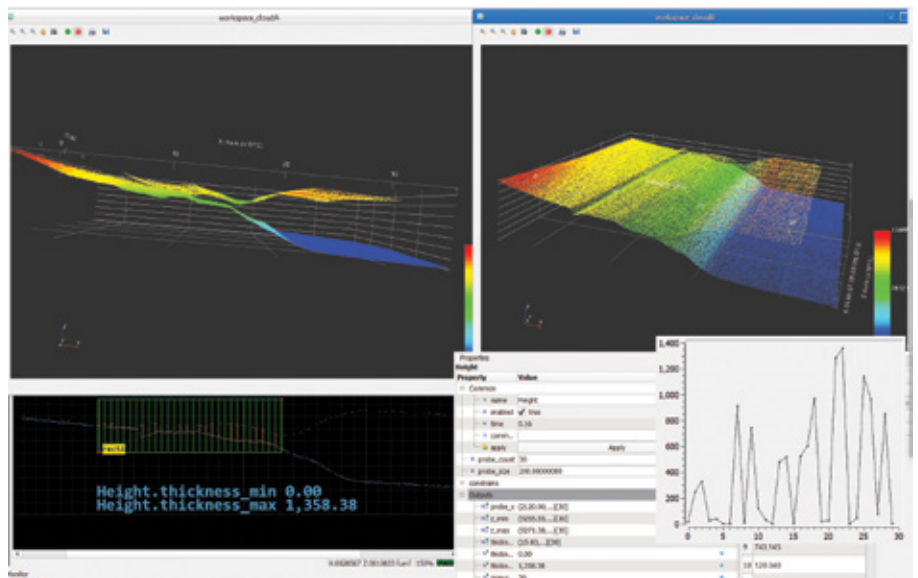
The Z-Trak2 V-2K Series delivers 2K points per profile with a larger FOV and scan speeds beyond 10K profiles/sec. Combined with its hardware-based reflection compensation algorithms and single-scan HDR capabilities, the Z-Trak2 V-2K Series supports a variety of FOVs with blue and red laser configurations.

HIGH DYNAMIC RANGE (HDR) IMAGING

Powered by Teledyne's 3D image sensor technology, the Z-Trak2 family features built-in single-scan HDR capability. This allows Z-Trak2 to scan objects made of highly reflective surfaces like machine aluminum/glass and low reflectivity materials like rubber, plastic, etc. at the same time. The HDR capability helps reduce processing complexity and time, thereby improving system efficiency.

MULTI-SENSOR CONFIGURATION AND UNIFIED MEASUREMENT SPACE (UMS)

Multiple Z-Trak2 sensors can be combined and synchronized to create a unified measurement space, to measure an object in 360° or to eliminate occlusions. Multi-sensor synchronization can be accomplished using off-the-shelf Ethernet switches with better than +/- 1 μs precision. In addition, the Z-Trak2 series offers flexible connection topologies and a choice of calibration targets.



SPECIFICATIONS

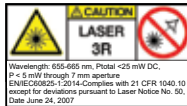
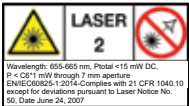
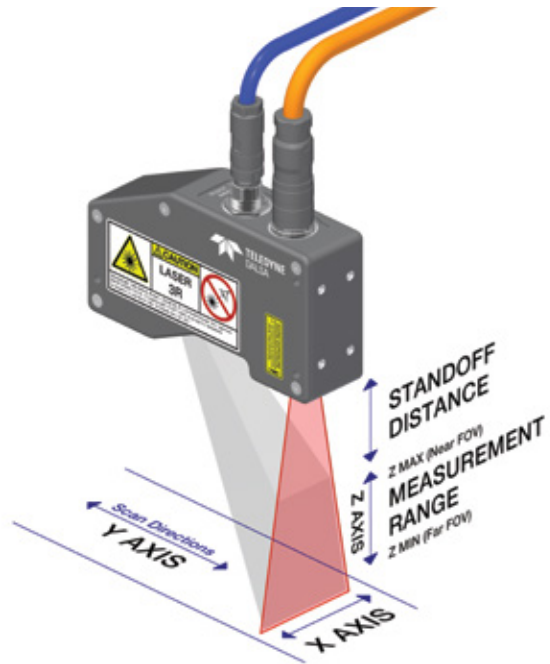
Function	Description
Scanning Rate	<ul style="list-style-type: none"> • AOI: Up to 10K profiles/sec
Connectors	<ul style="list-style-type: none"> • 1 x M12 17-pin: Controls • 1 x M12 8-pin X-Coded: Data Ethernet port • 1 x M12 12-pin: Aux. I/O
Image Enhancements	<ul style="list-style-type: none"> • Single scan HDR • Reflection elimination • Specular configuration • Filters: programmable median • Horizontal and vertical flip • Unified Measurement Space
Multi-Sensor Sync	<ul style="list-style-type: none"> • Single low-cost wiring using off-the-shelf network switches • Sensor grouping • Configuration wizard to ease timing setup
Lasers	<ul style="list-style-type: none"> • Red: 660 nm 2M or 3R • Blue: 405 nm 2M or 3R
Reflectance Management	<ul style="list-style-type: none"> • Time integration • Laser power control: Automatic or manual • Gain control
Output Format	<ul style="list-style-type: none"> • Individual profile, range map and 3D point cloud • Depth (Z), Lateral (X), Reflectance (R) or Laser Peak Width (W) • GenICam 3.0 (SFNC 2.3) compatible 3D Data output formats compatible with • Calibrated Z; Rectified Z, Calibrated ZR/ZR+W • Native values and world units (microns/mm/inch) • 16-bit mono (1D line-scan mode) • 10-bit mono (2D area-scan mode)
Temperature	<p>Storage:</p> <ul style="list-style-type: none"> • -40°C to +80°C (-4°F to +176°F) temperature • 20% to 80% non-condensing relative humidity <p>Operating:</p> <ul style="list-style-type: none"> • 10°C (50°F) to 50°C (122°F) • Relative Humidity: up to 90% (non-condensing)
System Requirements	<ul style="list-style-type: none"> • 1 Gigabit Ethernet • 4 GB or higher system memory

Function	Description
I/O	<ul style="list-style-type: none"> • 3 opto-isolated input • Configurable as a trigger input or as a start/stop trigger • 3 opto-isolated output • Serial communication port or Analog output 4 – 20 mA
Encoder Input	<ul style="list-style-type: none"> • Quadrature (AB) shaft-encoder inputs • RS422/TTL • Up to 20 MHz frequency • Backlash compensation
Scan Control	<p>Profile Trigger</p> <ul style="list-style-type: none"> • Encoder input, Internal timer/counter <p>Fixed Scan</p> <ul style="list-style-type: none"> • External input; Software; Timer/counter <p>Variable Scan</p> <ul style="list-style-type: none"> • Part in place; Start/Stop pulse
Unified Measurement Space	<ul style="list-style-type: none"> • Intuitive GUI for rapid setup • Up to 16 sensors • Supports multiple sensors in side-by-side, circular and in-line configurations • Combine red and blue laser models • Supports models with different measurement ranges
Power Supply	<ul style="list-style-type: none"> • PoE via 8-pin X-code circular connector (optional) • Separate power via 12M 17-pin connector • +12V to 36VDC +/-10% with surge protection
Enclosure	<ul style="list-style-type: none"> • Machined aluminum • IP67 • 4 x mounting holes
Software	<ul style="list-style-type: none"> • Microsoft® Windows® 10 (32/64-bit) compatible • Linux 32/64-bit: <ul style="list-style-type: none"> • Ubuntu/Debian, RHEL/CentOS/Fedora, SLES/openSUSE • Kernel: 2.6.32 or higher • Fully supported by Teledyne DALSA's software packages: <ul style="list-style-type: none"> • Free Software <ul style="list-style-type: none"> • Sherlock 8.0 • Sapera LT 8.60 (or higher), Sapera Processing 8.0 (or higher) RTL • Linux: Teledyne DALSA GevAPI Framework (SDK) ver. 2.40 or higher • 3rd party software: <ul style="list-style-type: none"> • MVTec® Halcon® • NI® Max/Labview® • Cognex® VisionPro® • Stemmer CVB • Application development using C++ and Microsoft .Net (C++, C# or Visual Basic)
Markings	<ul style="list-style-type: none"> • FCC Class B, CE, ICE (pending) • ROHS, China RoHS (pending)



SPECIFICATIONS

	Z-TRAK2 V-2K-0030	Z-TRAK2 V-2K-0100	Z-TRAK2 V-2K-0250	Z-TRAK2 V-2K-0600
DOF	30 mm	100 mm	250 mm	600 mm
Standoff (mm)	65	90	180	380
FOV (mm)	46 - 57	95 - 157	166 - 325	428 - 978
X-Res (µm)	23 - 29	49 - 81	85 - 167	219 - 503
Z-Res (µm)	3	12	40	120
Repeatability (±µm)	0.4 - 0.5	7.5 - 1.25	2.5 - 6.0	7.5 - 15
Linearity (±) % of F.S.	<0.02%	<0.02%	<0.02%	<0.02%
Laser (nm)	Red660-2M	Red660-2M	Red660-3R	Red660-3R
Options	3R, Blue405	3R, Blue405	2M, Blue405	2M, Blue405
Interface	1 GigE	1 GigE	1 GigE	1 GigE
Case Size	T20	T30	T30	T40



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