THE RIGHT SOLUTION FOR EVERY SCANNING APPLICATION

Hexagon Manufacturing Intelligence’s portable laser scanning solutions offer the most effective means of point-cloud data acquisition for any large-volume measurement applications.

Generating detailed dimensional data even on shiny metallic or dark surfaces and virtually unaffected by changes in ambient light, Hexagon laser scanners are the fastest and most accurate way to use portable laser tracker technology to record multiple points. In combination with the unique six degrees of freedom (6DoF) measurement capabilities of the ultra-portable Leica Absolute Tracker AT960 coordinate measuring machine (CMM), they offer absolute accuracy with a range of up to 60 metres.

As a non-contact measurement method, laser scanning protects part surfaces from damage and with no need for surface preparation, setup times are minimised. For manual inspection applications, the ergonomically-designed Leica Absolute Scanner LAS-20-8 provides an easy-to-use system packed with operator-friendly features, while the high-speed dynamics of the Leica T-Scan 5 give superior performance for feature-heavy parts or automated robotic inspection systems.

Instantly interchangeable with the Leica T-Probe or reflectors for seamless switches between measurement methods, LAS-20-8 and the Leica T-Scan 5 enable users to harness the full potential of the AT960. With their proven plug-and-play principles, they turn a laser tracker system into the right scanning solution for the task, all in a matter of minutes.
ABSOLUTE ERGONOMICS

Lightweight, ergonomic and designed for complete usability in harsh shop-floor environments, the Leica Absolute Scanner LAS-20-8 is an affordable way to add 3D laser scanning to the metrology toolset.

Based on the ‘flying-dot’ operating concept, the scanner offers excellent performance for freeform surface inspection, automatically adjusting the laser intensity without user intervention for the best possible readings in a single pass.

LAS-20-8 is automatically recognised by the laser tracker for seamless changes between reflector, probe and scanner measurements, while users can also select pre-set scanning modes from the main button to apply the right setup for each section of the part. The unit features a guidelight, three line-of-sight indicators and haptic feedback in addition to the LED and audio indicators, giving even the most inexperienced operators complete confidence in their handling. IP50 rated and with a battery power option, LAS-20-8 is the handheld scanning solution that can be taken anywhere.
At A Glance

- User-oriented design for manual scanning operations
- Battery power option and the single network cable connection offers complete portability
- Automatic adjustments for accurate surface scanning on a range of material types
- Self-identifying for quick changes between scanning, probing and reflector measurements
- Customisable measurement profiles switched at the click of a button
- Haptic, acoustic and visual feedback to ensure ease of use with minimal training
- IP50-rated design offers robustness and durability in tough conditions
- RDS software interface shared with Hexagon portable measuring arms enables operators to utilise existing knowledge for system checks, compensation and certifications

EXCELLENT PERFORMANCE FOR FREEFORM SURFACE INSPECTION
With unrivalled high-speed dynamics and exceptionally high point density, the Leica T-Scan 5 is the ultimate scanning solution for either automated inspection operations or expert manual users looking for advanced functionality in a laser scanner.

Reliably using laser line technology to deliver hundreds of millions of accurate points on virtually any surface, the Leica T-Scan 5 offers the best option for any application where feature location and small detail analysis is a priority. User aids including acoustic and visual feedback and a guidelight to find the optimum scanning position make the scanner easy to train on and operate, while a range of customisable measurement profiles and options available through the operating software make it the tool of choice for experienced laser tracker operators.

The Leica T-Scan 5 makes full use of the Leica Absolute Tracker AT960’s dynamic tracking performance to provide results quickly, making it ideal for automated installations with today’s improving robotic speeds.

**At A Glance**

- Optimised for advanced manual or automated scanning applications
- High-speed data capture offers superior performance on feature-rich workpieces
- Ultra-high dynamic range detects very fine differences even on challenging surfaces
- Automatically recognised by the laser tracker for easy switches with probe and reflector measurements
- Robustly engineered IP40-rated design for workshop conditions or use in robotic cells
- Advanced measurement profile adjustments available within the operating software
- Dual-colour pilot beam plus acoustic and visual feedback help trained operators achieve consistent results
- Network cable and mains power supply designed for easy integration into an automated system
THE TOOL OF CHOICE FOR EXPERIENCED LASER TRACKER OPERATORS
ABSOLUTE ADAPTABILITY

Hexagon laser scanning solutions are optimised specifically for a particular application range, offering a choice of performance characteristics to suit the needs of the process and the operator. The Leica Absolute Scanner LAS-20-8 and the Leica T-Scan 5 use different laser scanning technology platforms to ensure that every user can find the specification that is right for them.
# SPECIFICATIONS

## System Comparison

<table>
<thead>
<tr>
<th></th>
<th>Leica Absolute Scanner LAS-20-8</th>
<th>Leica T-Scan 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanner Size / Weight</strong></td>
<td>300 x 201 x 140 mm / 0.94 kg</td>
<td>380 x 210 x 138 mm / 1.1 kg</td>
</tr>
<tr>
<td><strong>Controller Size / Weight</strong></td>
<td>226 x 146 x 91 mm / 1.9 kg</td>
<td>316 x 235 x 142 mm / 6 kg</td>
</tr>
<tr>
<td><strong>Stand Off</strong></td>
<td>180 mm</td>
<td>150 mm</td>
</tr>
<tr>
<td><strong>Working Range</strong></td>
<td>± 40 mm</td>
<td>± 50 mm</td>
</tr>
<tr>
<td><strong>Maximum Scan Width (at stand off)</strong></td>
<td>Approximately 220 mm</td>
<td>Approximately 100 mm</td>
</tr>
<tr>
<td><strong>Maximum Sampling Rate</strong></td>
<td>150 000 pts/sec*</td>
<td>210 000 pts/sec</td>
</tr>
<tr>
<td><strong>Maximum Line Frequency</strong></td>
<td>100 Hz*</td>
<td>160-330 Hz**</td>
</tr>
<tr>
<td><strong>Minimum Point Density (at stand off)</strong></td>
<td>0.013 mm*</td>
<td>0.075 mm</td>
</tr>
<tr>
<td><strong>Scanner / Controller IP Code</strong></td>
<td>IP50 (IEC 60529) / IP30 (IEC 60529)</td>
<td>IP40 (IEC 60529) / IP40 (IEC 60529)</td>
</tr>
</tbody>
</table>

*Depending on measurement mode  **Depending on scan width

## System Accuracies

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<tbody>
<tr>
<td><strong>Measurement uncertainty of spatial length (2 sigma)</strong></td>
<td>$U_L = \pm 60 \mu m$ if under 8.5 m (± 0.0024 in if under 27.9 ft)</td>
<td>$U_L = \pm 26 \mu m + 4 \mu m/m$ if greater than 8.5 m (± 0.0010 in + 0.00005 in/ft if greater than 27.9 ft)</td>
</tr>
<tr>
<td><strong>Measurement uncertainty of sphere radius (2 sigma)</strong></td>
<td>$U_R = \pm 50 \mu m$ if under 8.5 m (± 0.0020 in if under 27.9 ft)</td>
<td>$U_R = \pm 16 \mu m + 4 \mu m/m$ if greater than 8.5 m (± 0.0006 in + 0.00005 in/ft if greater than 27.9 ft)</td>
</tr>
<tr>
<td><strong>Measurement uncertainty of plane surface (2 sigma)</strong></td>
<td>$U_P = \pm 80 \mu m + 3 \mu m/m$ (±0.0031 in + 0.00004 in/ft)</td>
<td></td>
</tr>
</tbody>
</table>

## Typical Measurement Volume (Ø)

<table>
<thead>
<tr>
<th></th>
<th>AT960-MR</th>
<th>AT960-LR</th>
<th>AT960-XR</th>
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</thead>
<tbody>
<tr>
<td><strong>AT960-MR</strong></td>
<td>40 m</td>
<td>20 m</td>
<td>20 m</td>
</tr>
<tr>
<td><strong>AT960-LR</strong></td>
<td>160 m</td>
<td>40 m</td>
<td>40 m</td>
</tr>
<tr>
<td><strong>AT960-XR</strong></td>
<td>160 m</td>
<td>60 m</td>
<td>60 m</td>
</tr>
</tbody>
</table>
To keep up with the constant demand to manufacture more efficiently, highly-flexible and portable measuring solutions with absolute accuracy are truly valuable.

The Leica T-Scan 5 is a measuring device that supports our work and the key objective to maximise precision.

Dieter Hildesheim
Volkswagen Sachsen, Germany
The Leica Absolute Tracker AT960 from Hexagon Manufacturing Intelligence offers us improved portability and faster measurements. As a result, the services we provide are even more efficient.

Laure Corneille Royer
Airbus Helicopters, France
Hexagon Manufacturing Intelligence helps industrial manufacturers develop the disruptive technologies of today and the life-changing products of tomorrow. As a leading metrology and manufacturing solution specialist, our expertise in sensing, thinking and acting – the collection, analysis and active use of measurement data – gives our customers the confidence to increase production speed and accelerate productivity while enhancing product quality.

Through a network of local service centres, production facilities and commercial operations across five continents, we are shaping smart change in manufacturing to build a world where quality drives productivity. For more information, visit HexagonMI.com.

Hexagon Manufacturing Intelligence is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technologies that drive quality and productivity across geospatial and industrial enterprise applications.

COORDINATE MEASURING MACHINES
3D LASER SCANNING
SENSORS
PORTABLE MEASURING ARMS
SERVICES
LASER TRACKERS & STATIONS
MULTISENSOR & OPTICAL SYSTEMS
WHITE LIGHT SCANNERS
METROLOGY SOFTWARE SOLUTIONS
CAD / CAM
STATISTICAL PROCESS CONTROL
AUTOMATED APPLICATIONS
MICROMETERS, CALIPERS AND GAUGES