

# Absolute Arm 7-Axis w/ Absolute Scanner AS1

## Key features



**Infinite rotation**  
on major axes

**Absolute Encoders**  
exclusive to Absolute Arm, no referencing needed: power-on and measure

**SpinGrip and SpinKnob**  
ergonomic infinite-rotation handling grips minimise operator fatigue, ensure thermal stability and maximise accuracy

**Advanced materials**  
high-end carbon-fibre construction ensures thermal stability

**Arm architecture**  
uneven tube lengths, typical in industrial robot design, make the arm lighter to use

**HomeDock**  
secures the wrist with probe/sensor in a safe position

**OLED touchscreen wrist display**  
instant access to settings and monitoring

**Ergonomics**  
wrist design with intelligent button positioning allows total control during measurement, including removable handle and 3 pistol-grip sizes

**Absolute Scanner AS1**  
fully certified, extra-wide blue laser line, up to 300 Hz scan-rate with 1.2 million points/sec, SHINE technology, IP54 rated, repeatable mounting (no realignment needed)

**Automatic probe and sensor recognition**  
change touch probes or mount sensors on the fly without any recalibration

**Zero-G counterbalance**  
minimises torque in the arm's base, giving effortless movement

**SmartLock**  
safely locks the arm when at rest, or conveniently locks it at any intermediate angle while measuring

**Control Packs (WiFi and battery)**  
boost functionality with full scanning performance over WiFi or single-cable connection (USB or Ethernet) and battery power (hot-swappable dual battery pack)

**Embedded LED pictograms**  
for visual feedback of arm's functions and status

**Robust feedback**  
instant visual, acoustic and haptic feedback

**Mounting options**  
selection of magnetic or vacuum bases, tripods and stands

**Measurement volume**  
2 m | 2.5 m | 3 m | 3.5 m | 4 m | 4.5 m

**Volume extension**  
Leap Frog Kit or GridLOK system allows large-volume measurement

**3 accuracy levels**  
83, 85 and 87 series

**Real-time remote monitoring**  
Compatibility with Metrology Asset Manager, the leading solution for of Industry 4.0 asset performance management

**Full protection**  
the world's first IP54-rated portable measuring arm for complete protection and confidence in challenging environments

**24-month warranty**  
on all Absolute Arm systems

**Probing accuracy**  
certification to ISO 10360-12 as standard

**Scanning System Accuracy**  
total system (arm and scanner) specification to ISO 10360-8 annex D

**Verification artefacts**  
supplied with each arm, allow users to verify system performance according to certification

**Service centres**  
an extensive network of Hexagon service centres means quality service and support is always nearby

**SMART**  
proprietary software featuring Self-Monitoring Analysis and Reporting Technology (SMART) that manages the arm in the field by monitoring diagnostics including shocks and temperature

**Quick Measure**  
built-in utility program allows basic measurements without additional software

**SHINE technology**  
Systematic High-Intelligence Noise Elimination (SHINE) technology allows the Absolute Scanner AS1 to scan any surface, whatever the finish or material, and deliver full performance at all times – maximum frame rate with maximum laser width for maximum productivity

| Criteria for choosing Absolute Arm 7-Axis with Absolute Scanner AS1 |   | Hexagon                    | Other |
|---|---|----------------------------|-------|
| Accuracy  | Availability of different system sizes and accuracy/metrology levels?   | Yes (6 sizes, 3 levels)    |       |
|   | Certification for volumetric accuracy of probing, according to ISO 10360-12 (certificate included)?   | Yes                        |       |
|   | Certification for complete Scanning System Accuracy (arm and scanner), according to ISO 10360-8 Annex D (certificate included)?   | Yes                        |       |
|   | Does the system include artefacts and software so you can verify its accuracy performance compared to the specifications (software scripts/guides)?   | Yes                        |       |
|   | Can the laser scanner acquire clean data (without noise, outliers or erroneous data points) from any surface (color, material) with default settings (highest speed, full laser-line width)?  | Yes (SHINE technology)     |       |
|   | Does the system have environment monitoring sensors (vibration, displacement, tilt, inclination, joint-stress, ambient temperature) alerting the operator in any shop-floor environment (with audio, visual and haptic warnings), to ensure proper handling and prevent loss of accuracy? | Yes                        |       |
| Robustness  | Availability of extended-volume measurement options?  | Yes (Leapfrog/GridLOK)     |       |
|   | Does the system (arm and scanner) have IP54-rating for protection when measuring in harsh environments?   | Yes                        |       |
|   | Does the system have IP54-status monitoring sensors to provide warnings when compromised?   | Yes                        |       |
|   | Can the arm measure repeatably in an environmental temperature up to 45°C?  | Yes                        |       |
|   | Is the system thermally stable (i.e. high-end carbon-fibre construction)?   | Yes                        |       |
|   | Compliance with impact, shock vibration, emissions and environmental norms (CE, IEC, etc.)?   | Yes (full list in manual)  |       |
|   | Does the system include high-quality cables with safe push-pull locking mechanism?  | Yes                        |       |
|   | Does the system include software for diagnostics and performance monitoring?  | Yes (S.M.A.R.T.)           |       |
| Ease of use   | Is a 24-month warranty offered as standard with all systems?  | Yes                        |       |
|   | Can the system measure immediately after power-on (no warm-up time)?  | Yes                        |       |
|   | Does the system feature Absolute Encoders (with no need to be initialized before measurement)?  | Yes                        |       |
|   | Can you easily swap probes and scanners without extra tools?  | Yes                        |       |
|   | Can probes or scanners be mounted and used without stopping to calibrate or select the probe in the software?   | Yes                        |       |
|   | Does the system have a built-in display providing the operator with instant feedback on the arm status and the measurements taken?  | Yes                        |       |
|   | Does the system offer both automatic and manual laser scanner exposure adjustment for scanning surfaces of different colours and reflectivity but without affecting the frame rate or laser line width?   | Yes                        |       |
|   | Can the compatible scanners be hot swapped with no need to pause for alignment?   | Yes                        |       |
|   | Does the arm allow infinite rotation on major axes?   | Yes                        |       |
|   | Does the system come with a single carrying case with wheels for mobility?  | Yes                        |       |
|   | Does the system's counterbalance mechanism allow the arm to be used comfortably and with a single hand (with an ergonomically designed wrist)?  | Yes                        |       |
|   | Does the arm include a safety locking mechanism when at the home position to prevent accidental tilt?   | Yes                        |       |
|   | Does the system have options for ergonomically positioned handling grips?   | Yes (SpinGrip/SpinKnob)    |       |
|   | Are multiple handgrip sizes offered (small, medium, large) as standard, for comfortable usage by any operator?  | Yes                        |       |
|   | Can you remove the handgrip from the wrist, for easier laser scanning inside tight spaces or cavities?  | Yes                        |       |
|   | Can you remove the laser scanner and handgrip for easier probing inside tight spaces or cavities?   | Yes                        |       |
|   | Is the arm able to lock at least one axis at a desired angle for measurements in low-ceiling or confined areas?   | Yes (for arms up to 3.5 m) |       |
|   | Is battery operation available (with hot-swappable batteries)?  | Yes (Control Pack W or B)  |       |
|   | Is wireless measurement available for probing and scanning?   | Yes (Control Pack W)       |       |
|   | Is there a variety of mounting options (magnetic, tripod, vacuum base)?   | Yes                        |       |
|   | Are other probe types (extended, angled, curved or tube-measurement probes) available?  | Yes                        |       |
|   | Can the laser scanner also be used with a laser tracker for larger-scale measurement?   | Yes                        |       |
|   | Can the system connect to an asset management platform providing real-time remote performance monitoring and location tracking through a user-friendly dashboard?   | Yes                        |       |

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Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

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