

Absolute Arm 7-Axis with RS5 Laser Scanner

Key features

Infinite rotation

on major axes

Absolute Encoders

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



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

RS5 Laser Scanner

fully certified, wide scan line, 752000 points/sec from any surface, zero warm-up time, repeatable mounting, no recalibration needed

$\label{eq:automatic} \textbf{Automatic probe and sensor recognition}$

change touch probes or mount laser sensors on the fly without any recalibration

Zero-G counterbalance

minimises torque in the arm's base, giving effortless movement

Smartl oc

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



24-month warranty

on all Absolute Arm systems



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

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	Criteria for choosing Absolute Arm 7-Axis with RS5 Laser Scanner	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	
	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	
	Availability of extended-volume measurement options?	Yes (Leapfrog/GridLOK)	
Robustness	Does the arm have IP54-rating for protection when measuring in harsh environments?	Yes (does not apply to RS5)	
	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.)	
	Is a 24-month warranty offered as standard with all systems?	Yes	
Ease of use	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	
	Could the system accept alternative laser scanners, compatible with laser tracker, for larger-scale measurement?	Yes (AS1/AS1-XL)	
	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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