

The Absolute Arm range

Meet the world's first IP54-protected portable measuring arm, for portable 3D scanning and probing anywhere

KODA[®]
ISO 9001:2015

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85

ABSOLUTEARM

AS1

The Absolute Arm

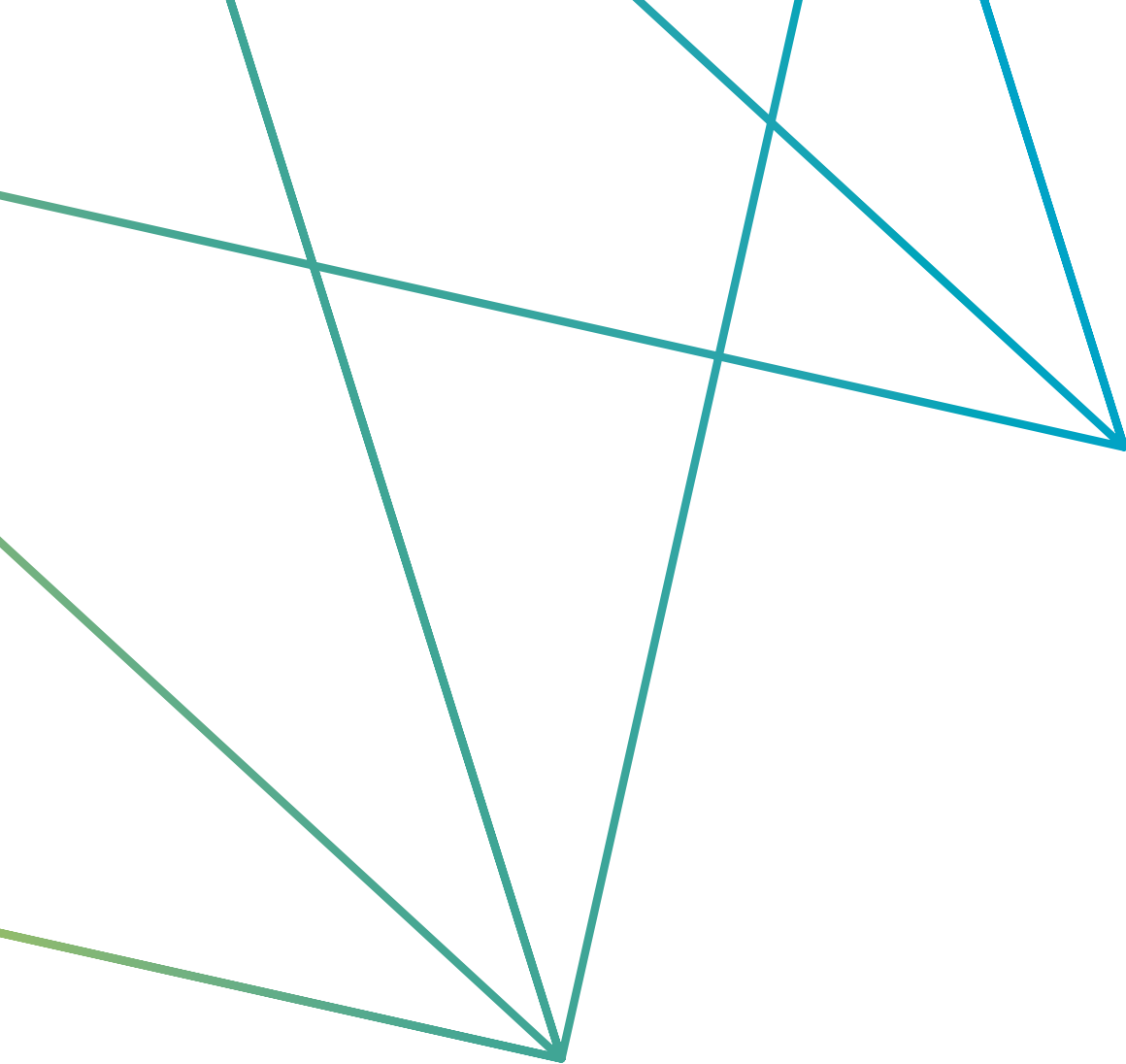
Designed for anywhere in the world.

The Absolute Arm is made for measurement anywhere, from the quality room to the shop floor, from the design table to a milling machine, from air-conditioned stability to humid and dusty workshops. Full IP54-rated protection – a world first for a portable measuring arm – supports this go-anywhere measurement concept, along with the Absolute Arm's easy portability and simple usability.

With four different 3D scanning options, the Absolute Arm is made for the future of industrial measurement. High-speed, high-productivity, user-friendly and highly versatile – this is a portable measuring arm that offers more than incremental changes, delivering the new features requested by users as they look to measure in ever more challenging environments.

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Robust hardware meets world-class performance.

The product of over 50 years of experience in developing articulated measuring arms, the Absolute Arm combines the latest advancements in materials and measurement science.

Every component has been designed with practicality, usability, stability and resilience in mind. This platform of innovative technology makes high-accuracy portable measurement effortless in any situation.

Movement

The unique [Zero-G Counter Balance](#) system and low-friction rotating grips reduce user fatigue and maximise accuracy by minimising inertia.

Touch control

Multi-functional control buttons and a convenient [touchscreen OLED wrist display](#) put measurement control directly in the user's hand.

Measurement

A wide range of [probes and high-speed 3D scanners](#) combined with a choice of 7 sizes and 3 accuracy levels delivers endlessly flexible measurement functionality.

Feedback

Easy user interaction in even the harshest industrial environments through [visual, acoustic and haptic](#) feedback functions, including alerts for significant changes to ambient temperature, base stability and joint stresses.

Encoders

Patented [Absolute Encoders](#) within every articulated joint are exclusive to Hexagon and make the Absolute Arm the only portable measuring arm that has completely eliminated warm-up times and encoder referencing before use.

Materials

High-tech [carbon-fibre tube](#) construction ensures strength and thermal stability under any environmental conditions, and the improved frame structure of the latest-generation Absolute Arm delivers better repeatability, increased accuracy and better performance throughout the temperature range.

Protection

High-quality construction and sealing have allowed the Absolute Arm to be the world's first [IP54-rated](#) portable arm, as well as allowing for operation in environmental temperatures as low as 5 and as high as 45 degrees Celcius.

Security

The [HomeDock](#) and [SmartLock](#) features allow the arm to be stowed and locked in place between measurements, for greater security during transport, setup and station changes.

Portability

True [wireless](#) connectivity and [hot-swappable batteries](#) give greater flexibility when moving the arm around the shop floor, along with [full-speed WiFi](#) scanning performance.





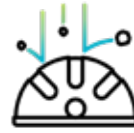
**Movement,
measurement
and monitoring
all around the world.**

The Absolute Arm was designed from the ground up with usability in mind. The goal is to deliver consistent, reliable and accurate results, whatever the experience level of the user.



Accuracy

The Absolute Arm range offers probing accuracy as fine as only 6 microns and scanning system accuracy to within 39 microns.



Resilience

Full IP54 protection combined with robust and shock-resistant transportation cases keeps the arm properly protected and in perfect condition wherever and however it's needed.



Portability

Even the largest Absolute Arm weighs less than 13 kilograms, making set-up and repositioning a quick and easy process.



Connectivity

Industry 4.0 ready with full 300 Hertz scanning performance over WiFi and simple integration within Hexagon's Smart Factory concept.



Productivity

The SHINE technology of the Absolute Scanner AS1 takes data quality to a new level without compromising on speed, while the Absolute Scanner AS1-XL decreases scan times for large parts thanks to its extra-wide laser scanline.



Asset management

The Absolute Arm is now compatible with the Metrology Asset Manager solution, allowing for monitoring and analysing device status in real-time, as with Hexagon laser tracker and CMM systems.



Repeatability

A patented kinematic probe joint minimises downtime by allowing all probes and scanners to be swapped on the fly with no need for realignment.



Monitoring

The SMART – Self-Monitoring Analysis and Reporting Technology – system provides full diagnostic monitoring for comprehensive measurement reliability.



Certification

Probing accuracy certified according to ISO 10360-12 as standard, along with full scanning system accuracy according to ISO 10360-8 Annex D. Accuracy verification can be performed directly by the user with a supplied CMM-certified artefact.



Compatibility

An established and reliable software interface that is compatible with and supported by all major portable metrology software packages.



Absolute Scanner AS1

Flagship high-speed blue laser 3D scanning performance with IP54 protection.



Absolute Scanner AS1-XL

Wide-scanline and large-standoff blue laser 3D scanner with IP54 protection for inspection of large surfaces.



RS5 Laser Scanner

Reliable general-purpose 3D scanning.



HP-L-8.9 Laser Scanner

Entry-level 3D scanning for 6-axis systems



Look. Touch. Control.

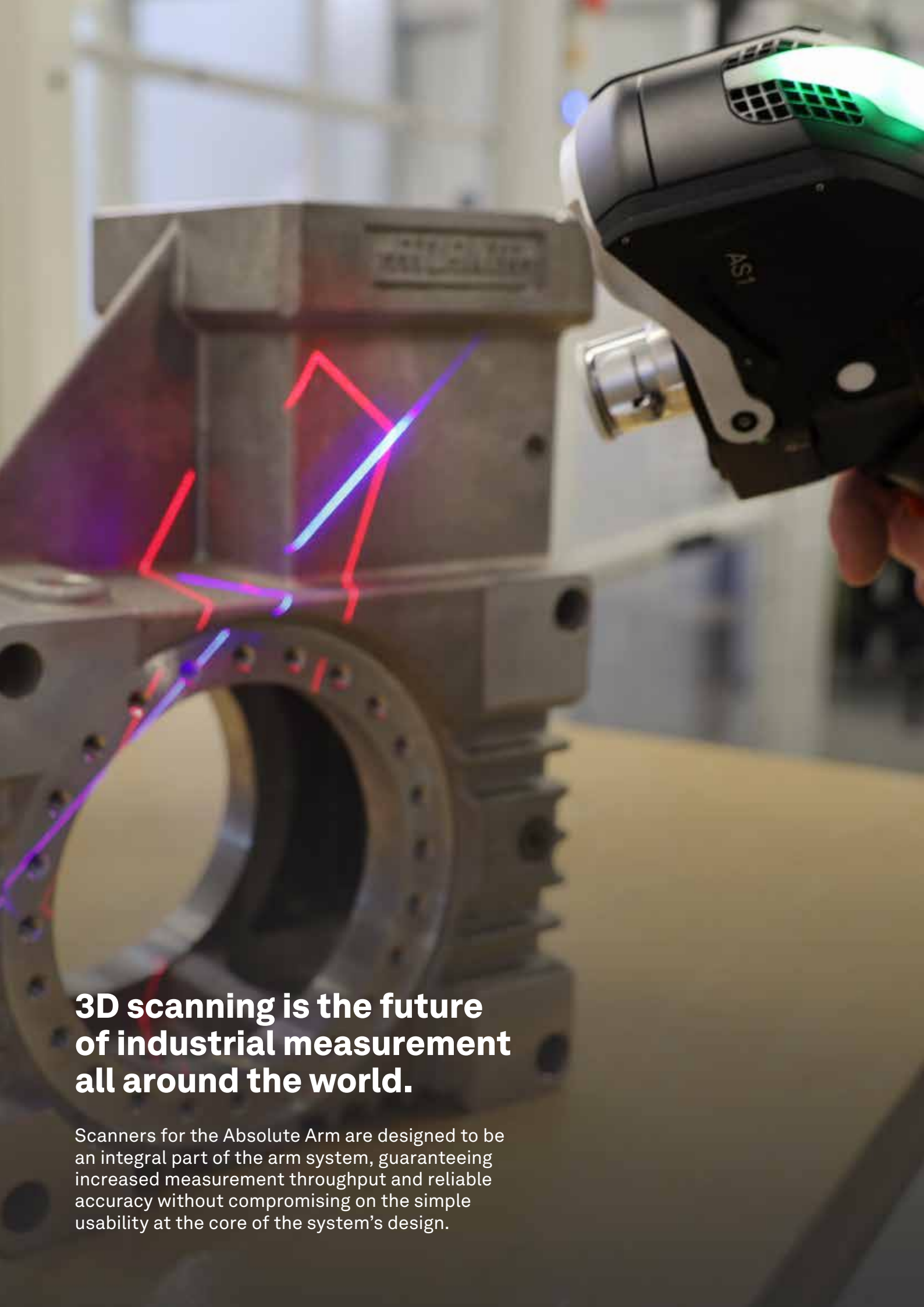
All 7-axis Absolute Arm models are fitted with an OLED touchscreen control and information display panel on the wrist. This allows the operator to quickly change settings and check results without the need to go back-and-forth between the arm and their control computer.

Slide off. Slide on. Scan.

The unique modular wrist of the 7-axis Absolute Arm systems allows for a range of quick and easy customisations, including even removing or changing the scanner unit with just the flip of a lever.

- Quickly switch between laser scanning and touch probing in the same measurement session
- Completely remove a mounted 3D scanner for easier probing in tight areas
- All probes and scanners can be remounted without realignment, allowing for immediate measurement
- Pistol grips are available in three different sizes – choose the most comfortable fit for the user
- Remove the grip completely to measure hard-to-reach areas such as holes and cavities
- The Absolute Scanner AS1 and Absolute Scanner AS1-XL can also be mounted onto an Absolute Positioner AP21 unit and used with a laser tracker for larger-scale measurement





3D scanning is the future of industrial measurement all around the world.

Scanners for the Absolute Arm are designed to be an integral part of the arm system, guaranteeing increased measurement throughput and reliable accuracy without compromising on the simple usability at the core of the system's design.

With the Absolute Scanner AS1, there are no compromises. There's no need to reduce scanning speed to achieve best-quality data, even when using a WiFi connection; no sacrificing usability and productivity in the search for better quality. Just premium engineering that guarantees reliable, high-accuracy results.

Built on Hexagon's unique patented SHINE technology, the AS1 always delivers full scanning performance, even on the most challenging part surfaces. Whether faced with glossy black plastic automotive body parts or moulded carbon-fibre components, the innovative algorithms behind SHINE allow the AS1 to scan with no reduction in quality or productivity. Full frame rate and full laser line width, without spray and without the forced performance reductions that are a hallmark of other scanners.

Absolute Scanner AS1

- ✓ High-quality scan data collected at full speed, whatever the part
- ✓ Scan 99 percent of surface types with default exposure settings thanks to Systematic High-Intelligence Noise Elimination (SHINE) technology
- ✓ Wide scan line for faster part coverage
- ✓ High-quantity data collection without sacrificing data quality
- ✓ Effortlessly removed from the arm for easier probing or large-surface scanning with the AS1-XL
- ✓ Remountable in seconds with no time-wasting realignment
- ✓ Horizontally oriented scan line for more comfortable measurement
- ✓ Projected laser range finder makes correct scanner positioning simple
- ✓ Full-speed scanning performance over WiFi or a single cable
- ✓ IP54 protection rating for measurement in harsh environments
- ✓ Complete System Scanning Certification defined according to ISO 10360-8 Annex D
- ✓ Cross-platform compatibility allows the AS1 to be used with both a portable measuring arm and a laser tracker




With the Absolute Scanner AS1-XL, the SHINE technology central to the performance of the Absolute Scanner AS1 now reaches a bigger scale. An extra-wide scan line, extended stand-off and flagship-level measurement speed make the AS1-XL a quantum leap forward in large-scale non-contact measurement for portable measuring arms.

Thanks to SHINE, the AS1-XL still delivers rich, clean data from most measurement surfaces without complex settings adjustment. This performance comes built on the same modular platform as the AS1, which means light-weight operation and near-instant hotswapping between laser tracker and portable measuring arm referencing depending on the needs of the application. And with a single-case AS1 | AS1-XL bundle, instant scanner exchange allows for fine feature measurement with the AS1, then large surface inspection with the AS1-XL, then back again in the same measuring session.

Absolute Scanner AS1-XL

- ✓ Metrology-grade 3D scan data at very high speed across large surfaces
- ✓ Easy scanning of almost any surface type or finish using basic settings thanks to Systematic High-Intelligence Noise Elimination (SHINE) technology
- ✓ Extra-wide scan line for faster coverage of large surfaces
- ✓ Large standoff for measurement within deep cavities or other hidden areas
- ✓ Effortlessly removed from the arm for easier probing or finer detailed scanning with the AS1
- ✓ Remountable in seconds with no time-wasting realignment
- ✓ Horizontally oriented scan line for more comfortable measurement
- ✓ Projected laser range finder makes correct scanner positioning simple
- ✓ Full-speed scanning performance over WiFi or a single cable
- ✓ IP54 protection rating for measurement in harsh environments
- ✓ Complete System Scanning Certification defined according to ISO 10360-8 Annex D
- ✓ Cross-platform compatibility allows the AS1-XL to be used with both a portable measuring arm and a laser tracker





The RS5 Laser Scanner is a general-purpose 3D scanner ideal for less-challenging applications like design modelling, tube or casting measurement, product benchmarking or virtual assembly.

Retaining the trademark flexibility of the Absolute Arm range, the RS5 can be removed for easier handling and measuring in tight spaces just like the flagship Absolute Scanner AS1, and likewise is also quickly remountable with no need for realignment.

Built on reliable technology, the RS5 Laser Scanner is a more affordable alternative to a premium laser scanner.

RS5 Laser Scanner

- ✓ High-quality scan data without high-end investment
- ✓ Wide scan line covers parts quickly
- ✓ Easily removed from the arm for better usability while probing
- ✓ Remountable in seconds with no time-wasting realignment
- ✓ Horizontally oriented scan line for more comfortable measurement
- ✓ Full-speed scanning performance over WiFi or a single cable
- ✓ Complete System Scanning Certification defined according to ISO 10360-8 Annex D



Probing goes portable.

The Absolute Arm is the absolute standard when it comes to reliable high-accuracy touch probe measurement, delivering market-leading accuracy in a portable form factor.

Every arm is supplied with three pre-calibrated touch probes, so measurement can begin immediately. The established TESA kinematic joint for repeatable probe mounting means probes can be hot-swapped quickly and easily, with no need for realignment between changes.

With some 100 probes available within the Absolute Arm accessory range, there's one that suits every measurement need. Straight probes, angled probes, trigger probes, tube probes – all are available at various lengths and tip diameters. Take a look at the comprehensive Absolute Arm Accessories Catalogue for more details.

Meet the probing specialist.

The Absolute Arm is also available in a range of dedicated 6-axis models. These probing systems are built on well-established measurement technology and intended for applications where laser scanning is less important.

The Absolute Arm 6-Axis offers the same probing functionality as the full 7-axis models while delivering improved probing accuracy to within just 6 microns. It's also fully upgradeable to entry-level laser scanning with the addition of the HP-L-8.9 Laser Scanner from the Absolute Arm accessories range, and is fully IP54 protected just like the 7-axis models.



FA
3.0A

UK
CACE





The world's most accurate portable measuring arm, now for anywhere in the world.

Combining ultra-high accuracy with small size, the Absolute Arm Compact is designed for optimum results in tight spaces. And with its full IP54 protection rating, the Compact couldn't be better suited to measurement in machining centres where oil and metal shavings are a constant presence.

The system's integrated base and unique counter-weight balancing system allow for excellent ease-of-use, making on-machine setup simple and delivering fast measurement times. The Compact is also fully compatible with WiFi and battery-operation Control Pack options, as well as the HP-L-8.9 Laser Scanner for entry-level 3D scanning.

And on top of all this, the Absolute Arm Compact is still the world's most accurate portable measuring arm, with accuracy to within just 6 microns. It's an incredible package of advanced portable technology that represents the perfect choice for measuring small-to-medium parts with absolute accuracy.

Complementing the metrology toolkit.

The ultra-high-accuracy measurement capabilities and extreme portability of the Absolute Arm Compact make it the perfect companion in CMM applications that require occasional measurements in hard-to-reach areas. That's why we offer the option to supply the Compact arm with full ISO 10360-2 certification, allowing users to maintain certification consistency while benefiting from its unique combination of portability and accuracy.

Applications

Made to measure everywhere.

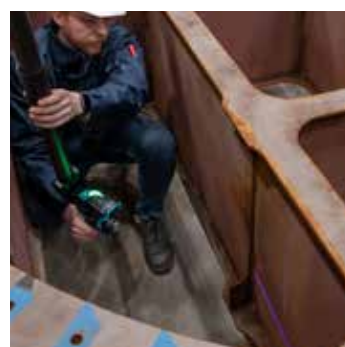
The Absolute Arm range is a single solution to measurement challenges across a wide range of industries and applications, in even the harshest measurement environments.



Jig and fixture
Build and inspect
Tube and wire



Sheet metal
Mould and die
Shop floor



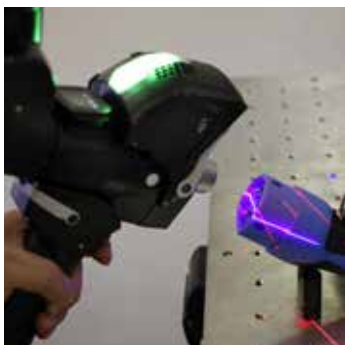
Additive
manufacturing
Rectangle-section
tubes



Composite inspection
In-process checks
Digitising



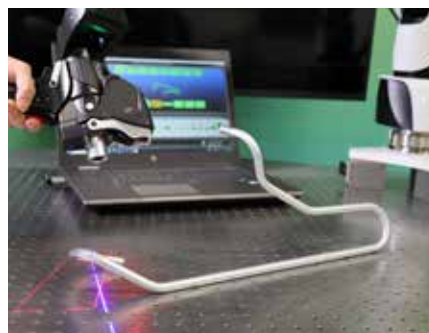
Maintenance
and repair
Reverse engineering
Virtual assembly



CAD-to-part
Gear measurement
On-machine
verification

Special application solutions

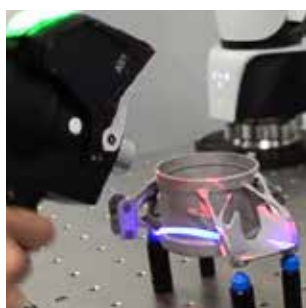
The innovative technical features and accessories available with an Absolute Arm support a range of special applications, delivering key productivity improvements in sectors where a dedicated solution can deliver great improvements.



Tube and wire

The Absolute Arm offers two dedicated tube and wire application solutions, both of which can be managed within Hexagon's dedicated tube and wire measurement software platform, BendingStudio XT. This advanced software platform can manage every aspect of the tube and wire production process, all the way to directly defining and communicating bending machine correction data.

Any 7-Axis Absolute Arm fitted with a laser scanner such as the Absolute Scanner AS1 can be used to deliver incredibly fast and accurate 3D data for even complex and flexible tubes within BendingStudio XT. Another tube inspection option is the non-contact infrared tube probes that can be used to quickly create 3D CAD data by collecting straight and in-bend geometry data. Each solution is designed to significantly reduce the production-correction loop within the bent part manufacturing process and deliver incredible productivity benefits.



Additive manufacturing

Very high density scan data has a vital role to play in the emerging field of additive manufacturing, allowing even small physical details to be captured so the final 3D dataset is more complete and (in the case of metal printing) can be compensated with greater accuracy.



Reverse engineering

Complete part data at sub-millimetre accuracy is key for high-quality reverse engineering – something that can be delivered quickly and reliably by an Absolute Arm scanner, particularly in combination with Hexagon's dedicated reverse engineering software REcreate.



Gears

Working with the QUINDOS software platform, the Absolute Arm Gear Measurement System offers fast and simple 3D measurement for gear measurement applications that have previously required complex metrology devices.



On-machine verification

With the flexible size and integrated base of the Absolute Arm, measurements can be made directly on a CNC milling machine, improving productivity by tightening the feedback loop of inspection and production adjustment to a single user at a single station.

Series, sizes and setup

The Absolute Arm is available in 3 different series, each representing a different level of accuracy. Users can then choose from 7 different arm sizes, offering measurement volumes between 1.2 and 4.5 metres in diameter. Almost every one of those combinations of series and size is then available in both 7-axis or 6-axis models for scanning or probing, depending on the users measurement priorities.



	83	85	87
1.2 m	✓	✓	
2.0 m	✓	✓	
2.5 m	✓	✓	✓
3.0 m	✓	✓	✓
3.5 m	✓	✓	✓
4.0 m	✓	✓	✓
4.5 m	✓	✓	✓

Available measurement volumes for each Absolute Arm series.

Volume versus reach

Some manufacturers quote their arm's maximum reach as its measurement volume. With the Absolute Arm, the quoted measurement volume represents the largest area within which reliable accurate measurement is feasible, rather than just the maximum possible horizontal extension of the arm.

Measurement volume




Maximum reach



Protecting absolute accuracy

In a first for the world of portable measuring arms, all Absolute Arm systems are now fully IP54-rated, guaranteeing protection against dust and moisture.

The Absolute Scanner AS1 and AS1-XL also offers IP54-level protection, for high-productivity scanning jobs that must be carried out in challenging environments such as workshops and foundries.



5 = Dust protection
Entry of dust is not entirely prevented, but it must not enter in a quantity that is sufficient to interfere with satisfactory use of the equipment.

4 = Splashing water
Water splashing against the enclosure from any direction will have no harmful effect.

What is an IP rating?

Defined in IEC 60529, IP, or Ingress Protection, Codes classify the protection afforded by casings and enclosures in an attempt to improve on vague marketing terms like 'waterproof'. Every IP Code is made up of two digits, each of which signifies the level of a different type of protection.

Solid particle protection
The first digit indicates protection against access to hazardous parts and harmful ingress of solid materials such as dust.

Liquid ingress protection
The second digit indicates protection against the harmful ingress of liquids, principally water.

The IP54 rating of the Absolute Arm system and a scanner like the Absolute Scanner AS1 or AS1-XL make it an ideal solution for measurement in areas where moisture and dust are unavoidable. Combined with the Absolute Arm's market-leading guaranteed operability in environmental temperatures from 5°C up to 45°C, there's no better measuring system for harsh environments.





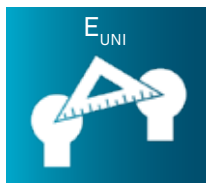
Certifying absolute accuracy

All Absolute Arm systems are produced and delivered in line with fully traceable and internationally recognised certifications, giving users complete confidence in the reliability of their measurements.

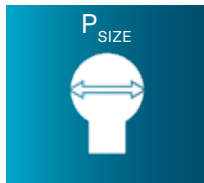
ISO 10360-12

As standard, probing accuracy certification is in line with the rigorous ISO 10360-12 test for defining the probing accuracy of portable measuring arms.

This is an extremely demanding and internationally recognised standard that requires certified length and sphere artefacts be measured multiple times in different positions within the arm measurement volume with a touch probe. The results of these measurements provide four accuracy results that together represent the arm's overall accuracy for contact measurement.



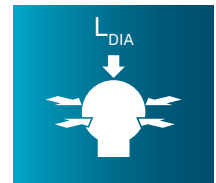
The E_{UNI} value is the maximum permissible error for unidirectional length measurements. It therefore most closely reflects most measurement needs.



The P_{SIZE} value is the maximum permissible error for measuring the diameter of a sphere. It therefore signifies the accuracy of feature measurements.



The P_{FORM} value is the maximum permissible error for the form of a sphere. This is a value that defines the dispersion accuracy of the arm.



The L_{DIA} value is the maximum permissible error for the articulation location. It therefore represents the repeatability of the arm.

ISO 10360-8

A full system scanning accuracy certification in line with the ISO 10360-8 Annex D standard is supplied with every Absolute Arm scanning system. This represents the global accuracy of the arm and scanner together. The test involves measuring a certified sphere artefact with five different arm articulations, in different locations throughout the arm measurement volume. A certified sphere artefact is supplied with every Absolute Arm scanning system.

ISO 10360-2

The Absolute Arm Compact is available with optional ISO 10360-2 certification. This is a CMM-type certification that quotes the arm accuracy according to a variable 'L', where 'L' is equal to the length of measurement that is being performed. A higher L-value denotes a larger measurement distance, such that ISO-certified accuracy increases with lower L-values. This is a useful option for users who plan to use their Absolute Arm Compact in conjunction with a bridge, gantry, vision or horizontal-arm CMM.

ISO 17025

Every Absolute Arm is manufactured in a production environment certified to ISO 17025.

Patent notice

Products described in this brochure may be covered by one or more of the following U.S. patents: 7779548 | 8122610 | 7908757 | 8099877 | 10,302,745 B2 | 10,323,927 B2 | 2021122059 | 2021123719 | 2021122057 | 2021122060 | 2021122058 | and other U.S. and foreign patents pending.

Making the most of portable measuring arm technology

Driven by a truly end-to-end approach to innovation, Hexagon's wide range of accessories for portable measurement arms reaches from added functionality to improved productivity while covering every need in between.

Mounting the Absolute Arm

A selection of bases, tripods and stands is compatible with every Absolute Arm, including a convenient vacuum mount, all attachable through the specially designed Mounting Ring.



Large-volume measurement

Volume expansion accessories allow the Absolute Arm to measure parts and objects beyond its standard reach.

Leap Frog Kit

Extended measurement can be achieved with a Leap Frog Kit that allows the arm to measure from different stations.

GridLOK

For more demanding applications, the GridLOK system creates an expanded measurement arena within which the arm can be repositioned anywhere with no undue loss of accuracy.





Buy Absolute Arm accessories online | shop.hexagonmi.com

Hexagon's Manufacturing Intelligence online shop offers a streamlined search, order and delivery service for a wide range of accessories and spare parts in many countries worldwide.

- Quickly find the right inspection solution with the shop's state-of-the-art search function: filter by price, radius, thread, and other criteria to pinpoint the exact product required
- Fast UPS dispatch
- Easy bulk purchase via CSV file uploads
- Convenient payment – on account or by credit card

Whether buying in bulk or single items, shop.hexagonmi.com takes the time and stress out of securing measuring equipment.

Portable workstations

Hexagon portable base stations provide the ideal workplace for your portable measuring arm. Available in a number of sizes and configurations, they have a rigid design and are fully rust-proofed. Stable, lockable wheels and a convenient handle allows for easy movement and secure stowing.





Centralised manufacturing within an open and integrated digital reality platform

Nexus is Hexagon's new digital reality platform for manufacturers. It connects people, technologies and data to accelerate innovation and bring ideas to life faster than ever before.



Break silos and put data to work

By connecting data across functions, Nexus enables collaboration and breaks down barriers between different engineering disciplines.



Build on Hexagon's manufacturing expertise

Nexus simplifies access to world-leading manufacturing expertise from Hexagon and its partner ecosystem.



Experience the freedom of an open platform

Reimagine operations with an open platform that meets users where they are – starting with the technology they already own and integrating innovation at their own pace.

| Learn more at nexus.hexagon.com

Nexus delivers

- **Speed:** faster time to market through fluid collaboration and automated data sharing
- **Efficiency:** time and cost savings due to increased visibility and faster decision making across disciplines
- **Productivity:** unlock further improvements in productivity through faster feedback loops across the entire product lifecycle
- **Optimal data sharing:** only share the data needed to solve a particular problem



Metrology Asset Manager

nexus APP



Check Absolute Arm health and performance in real time from anywhere in the world

As users increasingly venture further away from base with their Absolute Arm systems, it's natural to want to know how devices are performing in the field. The Metrology Asset Manager solution delivers exactly that, with its simple, accurate and highly reliable remote monitoring and analysis functionality.

The Metrology Asset Manager solution is fully compatible with all Absolute Arm models, each of which now includes a two-year subscription to Metrology Asset Manager Advanced on purchase and the option to include a GPS location add-on for every device.



Major metrology software

Driving the tools of high-end inspection



Hexagon is the largest software developer in the metrology industry and offers a wide range of individually customisable software packages. Hardware solutions from Hexagon support this with a foundation of cross-platform compatibility, designed for perfect functionality with both the many advanced platforms developed in-house and the best third-party programs on the market.

Inspire

PC-DMIS

SpatialAnalyzer

REcreate

BendingStudio XT

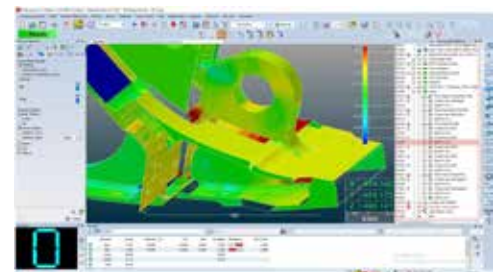
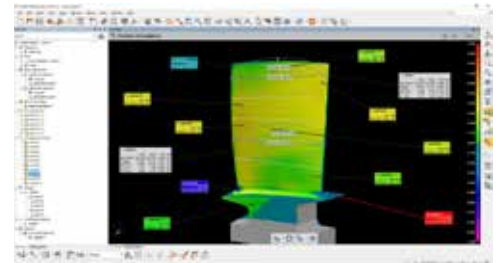
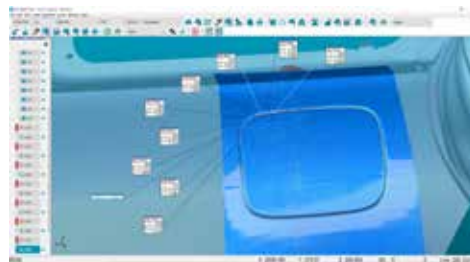
PolyWorks®

Metrolog X4

Verisurf

**3D Systems
(Geomagic)**

and many more



 Hexagon

 Third-party

World-class products to rely on

Drawing on decades of research and development experience, portable measuring arm technology from Hexagon's Manufacturing Intelligence division is built on a long history of outperforming technological innovation.

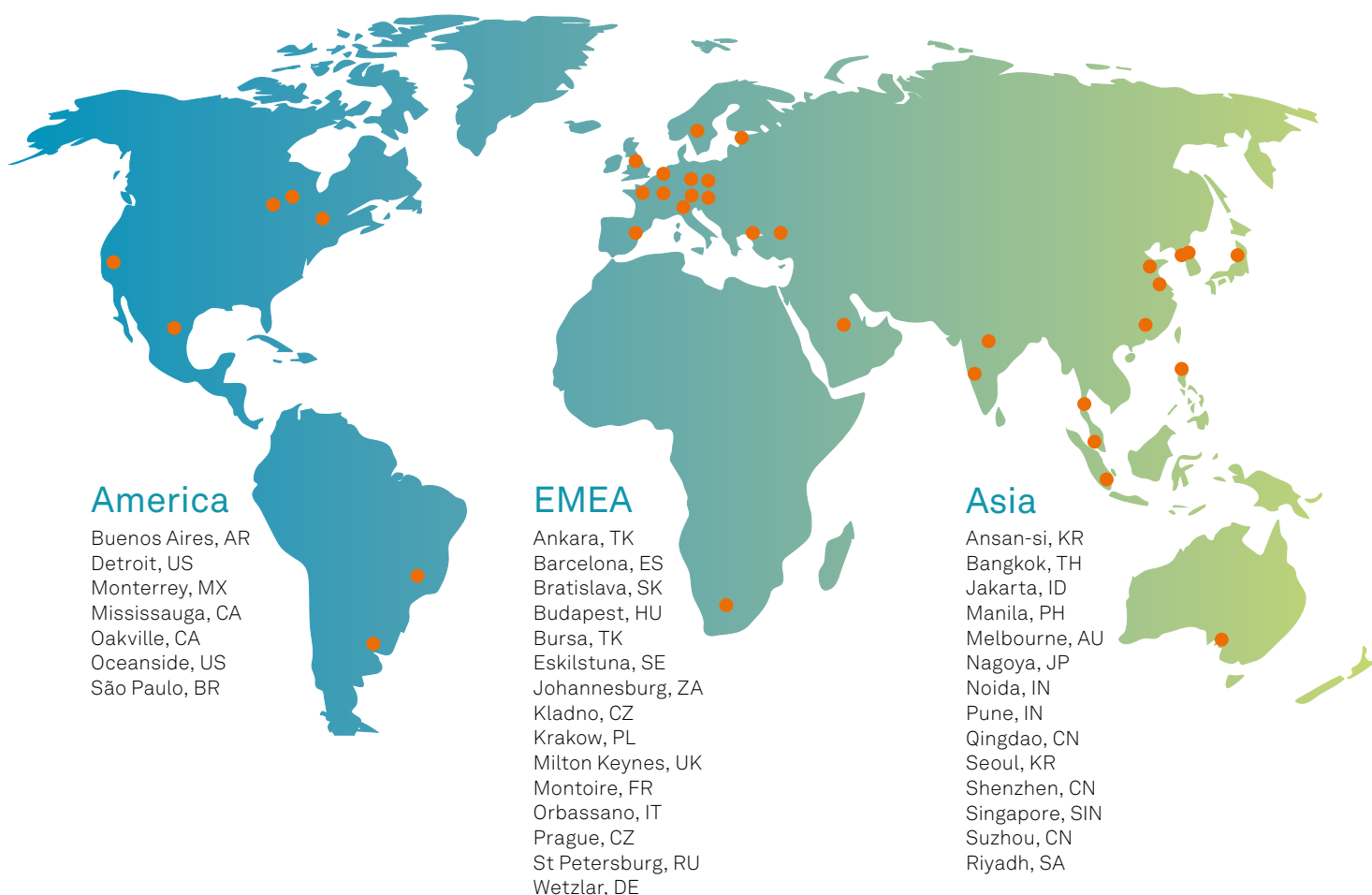
Deriving quality from experience to drive productivity is what keeps Hexagon in front and able to deliver first-class solutions for industries around the world.

Along with the assurance of ten years of serviceability, owners of Hexagon portable measuring arm systems benefit from a 24-month factory warranty as standard – our guarantee that our technology will always meet the needs of our users.

World-class support delivered locally

The international presence of Hexagon guarantees comprehensive aftersales support and services across the globe. With the largest dedicated service team of any metrology equipment manufacturer and an emphasis on locally delivered solutions, Hexagon is unmatched from service, repair, certification and calibration through operator training and software maintenance and upgrades.

There are now 36 Absolute Arm service centres worldwide, all of which are able to offer full ISO certification facilities along with a complete array of other support and maintenance services.



World-class service made simple

Hexagon offers a wide range of support services extending well beyond the point of purchase. Delivered by experienced and skilled engineers at ISO-certified laboratories, local Hexagon Precision Centres or even on-site to minimise downtime, our after-sales portfolio is the most complete on the market.

- Maintenance and warranty plans that ensure equipment availability.
- Trouble-free usage and minimal downtime.
- Preferred hotline access at no additional cost.
- Access to professional advice whenever needed.

Customer Care Packages

Absolute Arm owners have the opportunity to invest in a Customer Care Package – a standardised after-sale service package designed to ensure equipment remains in top condition and can be relied upon for accurate measurement results throughout a lifetime of use.

Customer Care Packages include a selection of the following benefits, depending on the tier chosen.

	Platinum	Gold	Silver	Bronze
Planned annual service	✓	✓	✓	✓
Customer hardware support	✓	✓	✓	✓
Annual maintenance and recertification	✓	✓	✓	
Remote connected assistance	✓	✓		
Repair parts and labour	✓			
Customised local benefits	✓	✓	✓	✓

For complete details of the benefits of each level of Customer Care Package, please contact a local Hexagon representative.

Absolute Arm specifications

Absolute Arm 7-Axis accuracy and size specifications

	Model	E _{UNI} ¹	P _{SIZE} ²	L _{DIA} ³	P _{FORM} ⁴	AS1 SSA ⁵	AS1-XL SSA ⁵	RS5 SSA ⁵	Max. reach
83 series	8320-7	0.039 mm	0.015 mm	0.048 mm	0.033 mm	0.057 mm	-	0.059 mm	2.48 m
	8325-7	0.048 mm	0.019 mm	0.057 mm	0.038 mm	0.062 mm	0.114 mm	0.065 mm	2.98 m
	8330-7	0.064 mm	0.027 mm	0.086 mm	0.049 mm	0.078 mm	0.142 mm	0.088 mm	3.48 m
	8335-7	0.082 mm	0.035 mm	0.108 mm	0.060 mm	0.095 mm	0.169 mm	0.100 mm	3.98 m
	8340-7	0.104 mm	0.043 mm	0.134 mm	0.073 mm	0.113 mm	0.198 mm	0.116 mm	4.48 m
	8345-7	0.135 mm	0.053 mm	0.168 mm	0.090 mm	0.155 mm	0.236 mm	0.164 mm	4.98 m
85 series	8520-7	0.029 mm	0.010 mm	0.038 mm	0.021 mm	0.039 mm	-	0.043 mm	2.48 m
	8525-7	0.031 mm	0.012 mm	0.048 mm	0.025 mm	0.045 mm	0.097 mm	0.046 mm	2.98 m
	8530-7	0.053 mm	0.020 mm	0.080 mm	0.035 mm	0.061 mm	0.129 mm	0.063 mm	3.48 m
	8535-7	0.064 mm	0.024 mm	0.096 mm	0.043 mm	0.075 mm	0.147 mm	0.076 mm	3.98 m
	8540-7	0.081 mm	0.029 mm	0.117 mm	0.050 mm	0.085 mm	0.159 mm	0.087 mm	4.48 m
	8545-7	0.113 mm	0.040 mm	0.140 mm	0.065 mm	0.134 mm	0.189 mm	0.141 mm	4.98 m
87 series	8725-7	0.027 mm	0.011 mm	0.042 mm	0.021 mm	0.041 mm	0.087 mm	0.042 mm	2.98 m
	8730-7	0.048 mm	0.016 mm	0.072 mm	0.032 mm	0.054 mm	0.103 mm	0.056 mm	3.48 m
	8735-7	0.060 mm	0.019 mm	0.087 mm	0.038 mm	0.065 mm	0.121 mm	0.068 mm	3.98 m
	8740-7	0.075 mm	0.025 mm	0.106 mm	0.043 mm	0.076 mm	0.138 mm	0.078 mm	4.48 m
	8745-7	0.104 mm	0.035 mm	0.125 mm	0.050 mm	0.115 mm	0.155 mm	0.121 mm	4.98 m

3D scanner specifications

	AS1	AS1-XL	RS5	HP-L-8.9
Scanner type	Blue laser line scanner	Blue laser line scanner	Red laser line scanner	Red laser line scanner
Accuracy	0.016 mm (P _{Form.Sph.1x25:ODS}) ⁹	0.134 mm (P _{Form.Sph.1x25:ODS}) ⁹	0.028 mm (2σ)	0.04 mm (2σ)
Point acquisition rate	up to 1.2 million points/s	up to 1.2 million points/s	up to 752 000 points/s	45 000 points/s
Points per frame	max. 4000	max. 4000	max. 7520	max. 750
Frame rate	max. 300 Hz	max. 300 Hz	max. 100 Hz	max. 60 Hz
Line width (mid)	150 mm	600 mm	115 mm	80 mm
Standoff	165 ± 50 mm	700 ± 300 mm	165 ± 50 mm	135 ± 45 mm
Minimum point spacing	0.027 mm	0.080 mm	0.011 mm	0.08 mm
System scanning certification	yes	yes	yes	no
Laser class	2	2	2M	2
Protection rating	IP54	IP54	-	-
Operating temperature	5-45°C	5-45°C	5-40°C	5-40°C
Weight	0.4 kg	0.46 kg	0.4 kg	0.32 kg

Absolute Arm 6-Axis accuracy and size specifications

	Model	E _{UNI} ¹	P _{SIZE} ²	L _{DIA} ³	P _{FORM} ⁴	Max. reach
83 series	8312-6	0.022 mm	0.009 mm	0.021 mm	0.014 mm	1.49 m
	8320-6	0.033 mm	0.012 mm	0.040 mm	0.024 mm	2.23 m
	8325-6	0.042 mm	0.017 mm	0.047 mm	0.034 mm	2.73 m
	8330-6	0.056 mm	0.022 mm	0.062 mm	0.048 mm	3.23 m
	8335-6	0.070 mm	0.030 mm	0.079 mm	0.059 mm	3.73 m
	8340-6	0.085 mm	0.037 mm	0.095 mm	0.069 mm	4.23 m
	8345-6	0.105 mm	0.048 mm	0.110 mm	0.086 mm	4.73 m
85 series	8512-6	0.018 mm	0.006 mm	0.016 mm	0.011 mm	1.49 m
	8520-6	0.023 mm	0.008 mm	0.030 mm	0.017 mm	2.23 m
	8525-6	0.028 mm	0.010 mm	0.035 mm	0.020 mm	2.73 m
	8530-6	0.040 mm	0.014 mm	0.049 mm	0.028 mm	3.23 m
	8535-6	0.053 mm	0.018 mm	0.066 mm	0.036 mm	3.73 m
	8540-6	0.065 mm	0.022 mm	0.082 mm	0.041 mm	4.23 m
	8545-6	0.080 mm	0.028 mm	0.102 mm	0.050 mm	4.73 m
87 series	8725-6	0.025 mm	0.009 mm	0.028 mm	0.017 mm	2.73 m
	8730-6	0.036 mm	0.012 mm	0.044 mm	0.025 mm	3.23 m
	8735-6	0.048 mm	0.015 mm	0.061 mm	0.032 mm	3.73 m
	8740-6	0.061 mm	0.019 mm	0.075 mm	0.036 mm	4.23 m
	8745-6	0.074 mm	0.026 mm	0.094 mm	0.046 mm	4.73 m

Absolute Arm Compact 10360-2 accuracy specifications

Model	MPE _p ⁷	MPE _e ⁸
8312	0.008 mm	5+L/40 <0.018 mm
8512	0.006 mm	5+L/65 <0.015 mm

Absolute Arm technical specifications

Operating temperature	5 to 45°C
Storage temperature	-30 to +70°C
Operational elevation	up to 2000 m
Relative humidity	10 to 90% non-condensing
Protection rating	IP54
Marks of conformity	CE – FCC – IC
Power requirement	110-240 V

¹E_{UNI} Maximum permissible longitudinal error of measurement – according to ISO 10360-12:2016

²P_{SIZE} Maximum permissible probe deviation, size – according to ISO 10360-12:2016

³L_{DIA} Maximum permissible probe deviation, position – according to ISO 10360-12:2016

⁴P_{FORM} Maximum permissible probe deviation, shape – according to ISO 10360-12:2016

⁵SSA Scanning System Accuracy: L_{DIA} according to ISO 10360-8 Annex D

⁶Weight Weight without scanner

⁷MPE_p Maximum permissible error, probing – according to ISO 10360-2

⁸MPE_e Maximum permissible error, length measurement – according to ISO 10360-2

⁹P_{FORM} Based on a part of the ISO-10360 standard

FORM.Sph.1x25:005



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