API Arm - 7 Axis Portable Measuring Arm

FEATURES & BENEFITS

The API Arm provides an ideal combination of contact and non-contact measurement. The innovative design utilizes advanced materials to provide a reliable, portable, and lightweight coordinate measuring machine.

Simple Operation
Carbon fiber tubes, ergonomic handle, and integrated counterbalance allow scanning with minimal effort.

True Portability
With an integrated battery, WiFi connection, and temperature regulation the arm can perform wherever you need it.

Extended Global Measurement Volume
The API Arm can be paired with an API Laser Tracker to extend the overall working volume of the system while maintaining the highest level of accuracy.

Magnetic Docking
The handle of the arm conveniently attaches to the body when not in use.

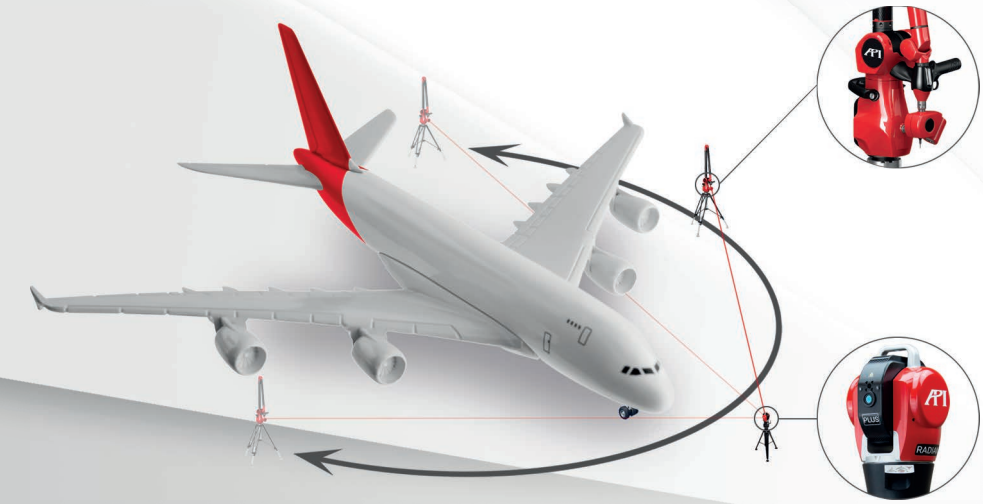
Multiple Sizes Available
The API Arm is available in 2m, 2.5m, 3m, 4m, and 4.5m sizes to provide the perfect fit for your application.

SKYLINE-SCANNER
The Skyline scanner is an excellent solution for 3D analysis. High speed scanning and 200mm laser line allows you to detect the smallest details in record time. This scanner integrates into the handle with a quick detach feature.

PROBE CONNECTIVITY
A probe can be connected directly to the handle for contact measurement. The available probes have auto detection for quick setup.

COMMON APPLICATIONS
- Dimensional Analysis
- Rapid Prototyping
- First Article Inspection
- Reverse Engineering
- Surface Acquisition

TRACKED ARM FOR LARGE PART INSPECTION



- Allows the possibility to use a portable arm to measure large parts (up to 80m). The long range and precision of the API Radian laser tracker adds versatility, flexibility and accuracy to the combination portable measuring solution.
- Overall precision results from the volumetric accuracy of the arm during local measurements, and subsequent ly from the laser tracker alignment precision.
- The measuring arm is placed on a tripod and moved around the large part in order to measure in several measurement stages. The tracker follows its move ments through SMRs placed on the arm. Each position is stored and then associated to the previous ones to obtain a single coordinate system.
- The solution is suited to automotive, aerospace, and energy industries as well as large parts suppliers nee ding both portability and precision.

TECHNICAL FEATURES

Technical Specifications

Axis	Working Volume	E_{UNI}*	P_{SIZE}*	P_{FORM}*	L_{DIA}*	S_{PAT}*
7	2m	0.037 mm	0.012 mm	0.020 mm	0.044 mm	0.022 mm
7	2.5m	0.041 mm	0.015 mm	0.024 mm	0.055 mm	0.027 mm
7	3m	0.069 mm	0.020 mm	0.035 mm	0.081 mm	0.042 mm
7	3.5m	0.079 mm	0.024 mm	0.041 mm	0.095 mm	0.054 mm
7	4m	0.094 mm	0.029 mm	0.048 mm	0.115 mm	0.066 mm
7	4.5m	0.114 mm	0.045 mm	0.060 mm	0.125 mm	0.078 mm

*All specifications are subject to change without notification

According to ISO 10360-12, 2016:
E_{UNI} (EUni:0:Tact.AArm): Unidirectional distance error between two probed points in the arm volume
P_{SIZE} (PSize.Sph.1x25:Tact.AArm): Error on the measurement of a sphere diameter by probing
P_{FORM} (PForm.Sph.1x25::Tact.AArm): Dispersion value in measurement of a sphere radius by probing
L_{DIA} (LDia.5x5:Art:Tact.AArm): Errors due to arm articulations, mainly axes 5, 6 and 7 of the wrist, measured with probe
S_{PAT}: Measurement error when the probe is stationary and the arm elbow moves from left to right

According to ISO 10360-8:2013:
L_{DIA} scanning (LDia:j:ODS) : Errors due to arm articulations, mainly axes 5, 6 and 7 of the wrist, measured with scanner
*¹ MPE (P[Size.Sph.All:Tr:ODS]): Error on the measurement of a sphere diameter by Scanning
*² MPL (P[Form.Sph.D95%:Tr:ODS]): dispersion value on 95% of the measured points on a sphere
*³ MPL (P[Form.Pla.D95%:Tr:ODS]): dispersion value on 95% of the measured points on a plane

3D Scanner Specifications

	ACE SKYLINE EYES	ACE SKYLINE WIDE	ACE SKYLINE OPEN
Max. Scanning Speed	600,000 pts/sec	600,000 pts/sec	200,000 pts/sec
Accuracy	± 9 µm	± 15 µm	± 20 µm
Max. Laser Line Width	100mm	200mm	100mm
Max. Frequency	300Hz	300Hz	200Hz
Laser Class	Blue, Class 2M	Blue, Class 2M	Blue, Class 2M
Line Resolution	25 µm	50 µm	50 µm
Stand-off Distance	90mm	85mm	85mm
Field of View	80mm	110mm	110mm
LED Indicators	YES	YES	NO
Temperature Compensation	YES	YES	NO

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