

PMT[®] ALPHA^P

MEASURING ARM



- ▶ Internal counterbalance
- ▶ Dual high performance batteries
- ▶ Perfect equi-arm design
- ▶ High-Speed WiFi performance
- ▶ Aerospace grade carbon-fiber material
- ▶ High accuracy

ALPHA^P accuracy specifications

Contact Measurement(Arm)										
Measurement Range	¹ SPAT		² E _{UNI}		³ P _{SIZE}		⁴ P _{FORM}		⁵ L _{DIA}	
	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis
1.5m	0.012mm	—	0.022mm	—	0.007mm	—	0.012mm	—	0.024mm	—
2.0m	0.016mm	0.018mm	0.024mm	0.026mm	0.008mm	0.010mm	0.015mm	0.019mm	0.030mm	0.038mm
2.5m	0.018mm	0.020mm	0.026mm	0.028mm	0.009mm	0.011mm	0.018mm	0.022mm	0.032mm	0.042mm
3.0m	0.026mm	0.032mm	0.038mm	0.048mm	0.012mm	0.016mm	0.025mm	0.032mm	0.045mm	0.072mm
3.5m	0.036mm	0.045mm	0.052mm	0.061mm	0.016mm	0.020mm	0.034mm	0.039mm	0.060mm	0.088mm
4.0m	0.045mm	0.055mm	0.063mm	0.076mm	0.020mm	0.026mm	0.038mm	0.044mm	0.077mm	0.098mm
4.5m	0.055mm	0.065mm	0.080mm	0.095mm	0.028mm	0.036mm	0.050mm	0.065mm	0.101mm	0.122mm

¹ SPAT Single Point Articulation Test

² E_{UNI} Distance Error between two points comparing measured versus nominal values

³ P_{SIZE} Sphere Probing Size Error comparing measured versus nominal values

⁴ P_{FORM} Sphere Probing Form Error

⁵ L_{DIA} Sphere Location Diameter Error (Diameter of the spherical zone containing the centers of a sphere measured from multiple orientations)

► All values represent MPE (Maximum Permissible Error)

► Contact Measurement (Arm): In accordance with ISO 10360-12

► Non-Contact Measurement (ScanArm): In accordance with ISO 10360-8



Non-Contact Measurement(ScanArm)		
Measurement Range	System Accuracy	
	HD	SD
2.0m	0.038mm	0.043mm
2.5m	0.042mm	0.048mm
3.0m	0.047mm	0.055mm
3.5m	0.060mm	0.068mm
4.0m	0.074mm	0.080mm
4.5m	0.120mm	0.125mm

Complies with the following EC Directives:

2014/53/EU Radio Equipment Directive;

2014/32/EU Measuring Instruments Directive;

Shock and Vibrations Testing per International Electrotechnical Commission (IEC) Standard: IEC 60068-2-6;

Extreme Temperature Cycling (-20°C to 60°C).

Based on: IEC 60068-2-1.



Laser Line Probe Specifications

Item	HD	SD
Accuracy	±15µm(2σ)	±28µm(2σ)
Stand-off	115mm	
Effective Scan Width	Near Field 80 mm; Far Field 150 mm	
Points Per Line	Maximum 4,000 points/line	
Scan Rate	1.2 Million Points Per Second	
Laser	Class 2	
Weight	536g	

► Accuracy and Repeatability Specified at Full Field of View (FOV)

Arm Hardware Specifications

- Operating temp range:** 5°C - 45°C (41°F - 113°F)
- Temperature rate:** 3°C/5min (37.4°F/5min)
- Operating humidity range:** 0 - 95%, non-condensing
- Power supply:** Universal worldwide voltage; 100-240VAC; 50/60Hz
- Battery life:** 5h+ for one battery; 10h+ for two batteries (base on contact measurement)
- Data transmission mode:** USB or Wi-Fi
- Weight (range):** 8.8kg to 10.6kg

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MEASURING ARM



- ▶ Internal counterbalance
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- ▶ Perfect equi-arm design
- ▶ High-Speed WiFi performance
- ▶ Aerospace grade carbon-fiber material
- ▶ Lead the technology trend

ALPHA^m accuracy specifications

Contact Measurement(Arm)										
Measurement Range	¹ SPAT		² E _{UNI}		³ P _{SIZE}		⁴ P _{FORM}		⁵ L _{DIA}	
	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis	6Axis	7Axis
1.5m	0.018mm	—	0.025mm	—	0.009mm	—	0.016mm	—	0.026mm	—
2.0m	0.020mm	0.022mm	0.028mm	0.030mm	0.010mm	0.012mm	0.018mm	0.022mm	0.032mm	0.040mm
2.5m	0.023mm	0.027mm	0.030mm	0.032mm	0.012mm	0.013mm	0.022mm	0.025mm	0.038mm	0.048mm
3.0m	0.034mm	0.042mm	0.042mm	0.053mm	0.016mm	0.020mm	0.032mm	0.035mm	0.052mm	0.078mm
3.5m	0.043mm	0.055mm	0.056mm	0.066mm	0.020mm	0.024mm	0.038mm	0.043mm	0.066mm	0.092mm
4.0m	0.052mm	0.065mm	0.066mm	0.082mm	0.024mm	0.029mm	0.044mm	0.048mm	0.083mm	0.102mm
4.5m	0.061mm	0.073mm	0.089mm	0.099mm	0.038mm	0.043mm	0.078mm	0.082mm	0.108mm	0.132mm

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Non-Contact Measurement(ScanArm)		
Measurement Range	System Accuracy	
	HD	SD
2.0m	0.040mm	0.050mm
2.5m	0.045mm	0.055mm
3.0m	0.052mm	0.062mm
3.5m	0.065mm	0.076mm
4.0m	0.081mm	0.090mm
4.5m	0.131mm	0.139mm

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ALPHA[®] 6 axis accuracy specifications

Measurement Range	¹ SPAT	² E _{UNI}	³ P _{SIZE}	⁴ P _{FORM}	⁵ L _{DIA}
1.5m	0.028mm	0.036mm	0.015mm	0.029mm	0.038mm
2.0m	0.030mm	0.040mm	0.018mm	0.035mm	0.041mm
2.5m	0.035mm	0.045mm	0.020mm	0.038mm	0.050mm
3.0m	0.055mm	0.065mm	0.028mm	0.045mm	0.080mm
3.5m	0.075mm	0.080mm	0.035mm	0.058mm	0.098mm
4.0m	0.090mm	0.100mm	0.044mm	0.068mm	0.116mm
4.5m	0.112mm	0.120mm	0.048mm	0.086mm	0.128mm



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► Contact Measurement (Arm): In accordance with ISO 10360-12

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Operating humidity range : 0 - 95%, non-condensing



Power supply : Universal worldwide voltage; 100-240VAC; 50/60Hz



Battery life: 5h+ for one battery; 10h+ for two batteries (base on contact measurement)



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Weight (range) : 8.8kg to 10.6kg

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