

# THE COMPLETE QUALITY CONTROL PORTFOLIO FOR DIMENSIONAL INSPECTION IN PRODUCTION ENVIRONMENT



**CREAFORM**

**AMETEK**

# CREAFORM'S METROLOGY SOLUTIONS THE KEY TO REDUCING THE WORKLOAD OF TRADITIONAL CMMs AND SOLVING BOTTLENECK ISSUES

Quality control requires highly accurate measuring instruments. Therefore, inspections of high-tolerance features are generally assigned to traditional CMMs, whereas 3D optical measurement technologies are the preferred solutions for all other quality control applications, specifically those that occur on the shop floor. Not only are they less expensive to purchase, but they also measure faster, require less training, handling, and programming time, and save precious CMM time for critical inspections.

Creaform's comprehensive range of portable and automated 3D optical measurement technologies are specifically designed to support dimensional inspection for quality control in production environment. They combine the power of optical portable CMMs, 3D scanners, photogrammetry, and fully integrated dimensional inspection software.

Creaform's solutions, thanks to their impressive accuracy, speed, portability, and versatility, enable quality control and quality assurance professionals to validate the conformity and quality of manufactured parts regardless of size, shape, material, surface finish, and complexity.

Whether you require part inspections, dynamic measurements, or tool and jig verifications, explore Creaform's quality control portfolio and find the solution that best suits your needs.

## EXPLORE CREAFORM'S 3D OPTICAL MEASUREMENT TECHNOLOGIES



### HandySCAN3D

ACCURACY, PORTABILITY,  
SPEED AND VERSATILITY

The truly portable metrology-grade 3D scanner that delivers accurate results within seconds



### MetraSCAN3D

SPEED, ACCURACY  
AND VERSATILITY

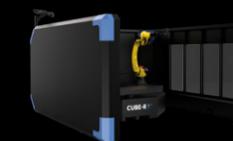
Fast and accurate optical CMM 3D scanner engineered for shop floor conditions



### MetraSCAN3D-R

SPEED, ACCURACY  
AND VERSATILITY

The robot-mounted optical CMM scanner for at-line inspection



### CUBE-R

SPEED, ACCURACY,  
VERSATILITY AND SIMPLICITY

The most accessible turnkey 3D scanning CMM for at-line inspection



### HandyPROBE

ACCURACY, SIMPLICITY  
AND PORTABILITY

The arm-free portable probing system designed for use on the shop floor



### MaxSHOT3D

ACCURACY AND  
LARGE-SCALE PROJECTS

The unmatched accuracy of photogrammetry for large-scale metrology projects

## Customer Care Program

Creaform is committed to offering first-class customer service so that you can get the most out of your system. Our multilingual team of product specialists will provide you with assistance to answer your immediate needs. Our fleet of leading-edge calibration tools in our service centers gives you local access to faster maintenance service and repair.

Be sure to subscribe to the Customer Care Program to take advantage of worry-free maintenance and global repair coverage for all of your Creaform hardware and software. Whether you need to access our latest software releases and knowledge base or require a loaner unit while your device is being serviced, we have a plan tailored to your needs.



## HandySCAN3D™

### THE TRULY PORTABLE METROLOGY-GRADE 3D SCANNER

The HandySCAN 3D™ is the reference in portable metrology-grade 3D laser scanners. Its fast measurement rate increases the speed and efficiency of measurement processes, whereas its self-positioning capability and complete portability allow for impressive freedom of movement. Moreover, the HandySCAN 3D generates accurate and repeatable results across all work conditions or environments, enabling manufacturing companies to reduce downtime and accelerate time-to-market.

The HandySCAN 3D is the most effective and reliable metrology solution to acquire accurate 3D measurements of physical objects anywhere—even in difficult environments and with complex surfaces.



SEE IT IN ACTION



## MetraSCAN3D-R™

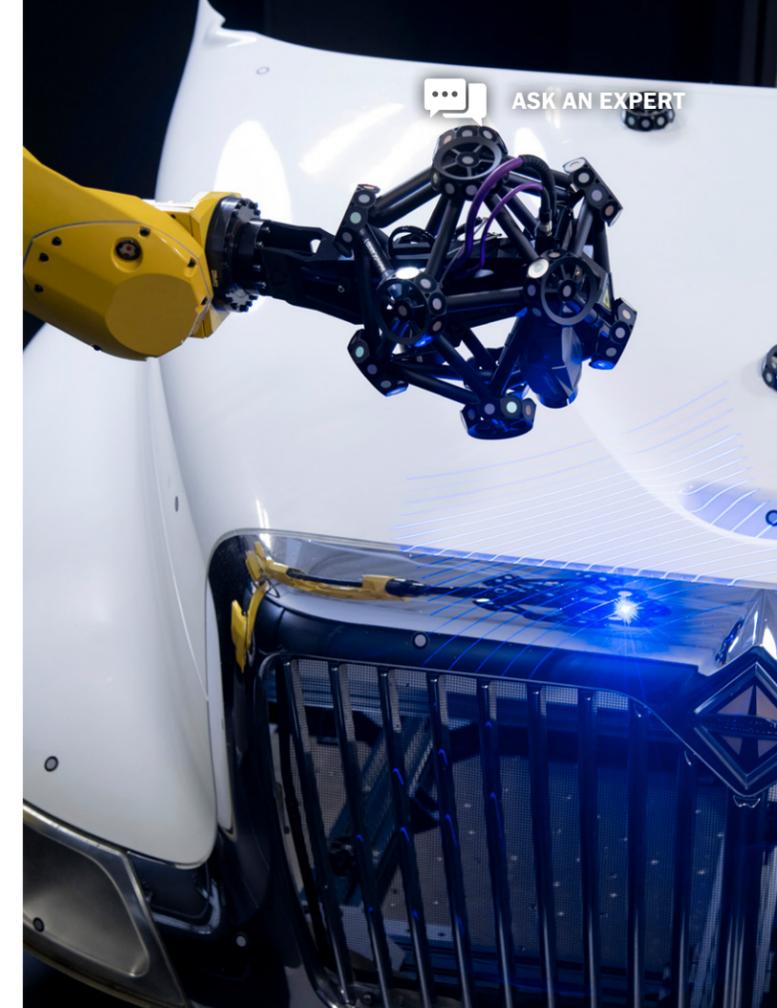
### THE ROBOT-MOUNTED OPTICAL CMM SCANNER FOR AUTOMATED QUALITY CONTROL

The MetraSCAN 3D-R™ stands as a powerful, innovative robot-mounted optical CMM scanner that can be seamlessly integrated into automated quality control processes for at-line inspection in mass production. The cutting-edge technology that is unique to the MetraSCAN 3D-R enables manufacturing companies to harness the power of optical measurement and industrial automation directly on their production lines, making quality control easier and more effective.

Designed for automated quality control applications, the MetraSCAN 3D-R is the perfect solution for manufacturing companies who want to increase their productivity by measuring more dimensions on more parts regardless of size, geometry, finish, or reflectivity.



SEE IT IN ACTION



## MetraSCAN3D™

### FAST AND ACCURATE 3D SCANNER & PORTABLE CMM FOR THE SHOP FLOOR

The MetraSCAN 3D™ is the most complete 3D scanning solution for metrology-grade measurements and inspections. Insensitive to shop floor vibrations, part movement, and environmental instability, it significantly increases the efficiency, speed, and simplicity of measurement processes. Engineered to work both in the metrology lab and on the production floor, the MetraSCAN 3D is designed for manufacturing and metrology professionals who want to deliver approved quality parts quickly and efficiently.

MetraSCAN 3D is the ideal shop floor metrology solution for performing 3D dimensional and surface inspections on a large variety of parts regardless of size, material, finish, or complexity.



SEE IT IN ACTION



Optional probing capability with HandyPROBE



## CUBE-R™

### THE COMPLETE TURNKEY SOLUTION FOR AUTOMATED QUALITY CONTROL

The CUBE-R™ leverages the power of the MetraSCAN 3D-R in a high-productivity industrial measuring cell designed to be integrated into factories for at-line inspection. Due to its operational simplicity, compatibility with metrology software, and off-line programming, the CUBE-R is a CMM that is accessible to all, regardless of the level of expertise or experience.

Offered in 16 configurations, the CUBE-R is the perfect solution for solving quality and productivity issues. When compared to the CMM, the CUBE-R is much faster, providing a gain in performance and better efficiency in order to optimize manufacturing processes.



SEE IT IN ACTION

## HandyPROBE™

### THE PORTABLE CMM FOR THE SHOP FLOOR

The HandyPROBE™ is an arm-free portable probing system designed for use on the shop floor. Because its measurement volume is flexible, it can be extended easily and dynamically without significant loss in accuracy, which comes with conventional leapfrog. Thereby, the HandyPROBE outperforms traditional portable CMMs in simplicity and efficiency. Without the requirements of a rigid measurement setup, the complete measuring system—the part, optical tracker, and wireless probe—can all be moved freely at any time during the measurement sequence, which adds even more simplicity to the process.

Offering measurement accuracy unaffected by the instabilities of the environment, the HandyPROBE is the best metrology solution for measuring geometrical entities on parts of any size directly on the production floor.

 **SEE IT IN ACTION**



 **ASK AN EXPERT**

## VXelements™

### SIMPLE, POWERFUL, AND FULLY INTEGRATED 3D SOFTWARE PLATFORM AND APPLICATION SUITE

VXelements™ powers Creafom's entire fleet of 3D scanning and measurement technologies. It combines all of the essential elements for data acquisition, reverse engineering, and inspection into a user-friendly interface. Its real-time visualization capability and sleek working environment provide a simple and efficient measurement experience.

#### VXinspect™

##### Dimensional Inspection Software Module

VXinspect™ is an intuitive 3D inspection software designed for conducting first article inspection (FAI) or quality control in the manufacturing process. Directly integrated into VXelements, it provides the simplest integration of probing, 3D scanning, and photogrammetry measurements into all inspection workflows, with no compromises made on measurement quality and GD&T requirements.

#### VXscan-R™

##### Digital Twin Environment Software Module

VXscan-R™ is a reliable and accurate digital twin environment useful for program preparation, scan parameter adjustment—speed, shutter time, and scan resolution—simulation and execution. With VXscan-R's scanning intelligence and dedicated functions, programming robot paths and optimizing the line of sight become easier and faster. Thanks to VXscan-R, automated quality control is now accessible to non-experts—solving programming issues and helping them feel confident when working with robotic systems.



## MaxSHOT3D™

### UNMATCHED ACCURACY ON LARGE-SCALE METROLOGY PROJECTS

The MaxSHOT 3D™ is a portable optical coordinate measuring system. Based on a series of 2D photos, the MaxSHOT 3D generates an accurate positioning model for Creafom 3D scanners or portable CMM technologies. It provides the high data accuracy and efficiency of photogrammetry required for a wide range of applications, specifically large-scale projects and large-size parts. Thanks to its sophisticated user guidance technology and laser-projected software feedback, the MaxSHOT 3D is accessible to everyone, regardless of their knowledge in metrology.

The MaxSHOT 3D is the best solution for quality control and inspection teams who need the highest measurement accuracy and efficiency on large-scale metrology projects.

 **SEE IT IN ACTION**

### EXTEND THE POWER OF YOUR INSPECTION PROCESS

#### Creaform Portable Workstation

Take full advantage of Creaform 3D scanner portability with this accessory package. Designed to facilitate mobility across the shop floor and increase reliability by protecting your scanning system while still in operation or when stored.

#### Creaform C-Track Shop-Floor Stand

The Creaform C-Track Shop Floor Stand, available as stand-alone or bundled with the portable workstation, increases the stability and mobility of the C-Track while still in operation and facilitates mobility around the part to take full advantage of your portable optical CMM.

#### Virtual Metrology Lab

Take full advantage of the C-Link functionality by connecting up to four C-Tracks in a single network to create a virtual metrology lab. This dimensional inspection solution, designed for metrology lab applications, enables seamless probing and 3D scanning operations without having to move the C-Track optical tracker around.



# TECHNICAL SPECIFICATIONS

		HandySCAN 3D™		MetraSCAN 3D™	MetraSCAN 3D-R™		HandyPROBE™	MaxSHOT 3D™
		HandySCAN BLACK+™ Elite	HandySCAN MAX™ Elite	MetraSCAN BLACK+™ Elite	MetraSCAN-R BLACK+™ Elite	MetraSCAN-R BLACK+™ Elite HD	HandyPROBE Next+™ Elite	MaxSHOT Next™ Elite
<b>PART SIZE RANGE</b> (recommended)		0.05–4 m (0.15–13 ft)	1–15 m (3.3–49.2 ft)	0.2–6 m (0.7–20 ft)	N/A		0.2–6 m (0.7–20 ft)	2–10 m (7–33 ft)
<b>ACCURACY</b>		0.025 mm (0.0009 in)	0.075 mm (0.0030 in)	0.025 mm (0.0009 in)	0.025 mm (0.0009 in)		0.025 mm (0.0009 in)	Up to 0.015 mm (0.0006 in)
<b>VOLUMETRIC ACCURACY</b> (based on working volume)	9.1 m³ (320 ft³)	N/A		0.064 mm (0.0025 in)	0.064 mm (0.0025 in)		0.064 mm (0.0025 in)	N/A
	16.6 m³ (586 ft³)	N/A		0.078 mm (0.0031 in)	0.078 mm (0.0031 in)		0.078 mm (0.0031 in)	
<b>VOLUMETRIC ACCURACY</b> <sup>(4)</sup> (based on part size)		0.020 mm + 0.040 mm/m (0.0008 in + 0.0005 in/ft) 0.020 mm + 0.015 mm/m (0.0008 in + 0.00018 in/ft) <sup>(2)</sup>	0.100 mm + 0.015 mm/m (0.0039 in + 0.00018 in/ft)	0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft) <sup>(3)</sup>	0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft) <sup>(3)</sup>		0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft) <sup>(3)</sup>	0.015 mm/m (0.00018 in/ft)
<b>ACCEPTANCE TEST</b> <sup>(4)</sup>		Based on VDI/VDE 2634 and ISO 10360	Based on VDI/VDE 2634	Based on VDI/VDE 2634 and ISO 10360	Based on VDI/VDE 2634 and ISO 10360		Based on ISO 10360	Based on VDI/VDE 2634
<b>VOLUMETRIC ACCURACY WITH MaxSHOT NEXT™ Elite</b> <sup>(5)</sup>		0.020 mm + 0.015 mm/m (0.0008 in + 0.00018 in/ft)	0.100 mm + 0.015 mm/m (0.0039 in + 0.00018 in/ft)	0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft)	0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft)		0.025 mm + 0.015 mm/m (0.0009 in + 0.00018 in/ft)	
<b>MEASUREMENT RESOLUTION</b>		0.025 mm (0.0009 in)	0.040 mm (0.0016 in)	0.025 mm (0.0009 in)	0.025 mm (0.0009 in)	0.015 mm (0.0006 in)	N/A	N/A
<b>MESH RESOLUTION</b>		0.100 mm (0.0039 in)	0.400 mm (0.0157 in)	0.100 mm (0.0039 in)	0.100 mm (0.0039 in)	0.050 mm (0.0018 in)		
<b>SCANNING AREA</b>		310 x 350 mm (12.2 x 13.8 in)	1000 x 1000 mm (3.3 x 3.3 ft)	310 x 350 mm (12.2 x 13.8 in)	310 x 350 mm (12.2 x 13.8 in)	170 x 190 mm (6.7 x 7.5 in)		
<b>STAND-OFF DISTANCE</b>		300 mm (11.8 in)	1000 mm (3.3 ft)	300 mm (11.8 in)	300 mm (11.8 in)			
<b>DEPTH OF FIELD</b>		550 mm (21.7 in)	2200 mm (7.2 ft)	250 mm (9.8 in)	250 mm (9.8 in)	100 mm (3.9 in)		
<b>LIGHT SOURCE</b> <sup>(6)</sup>		30 blue laser lines (+ 1 extra line)	38 blue laser lines	30 blue laser lines (+ 1 extra line)	45 blue laser lines	69 blue laser lines		
<b>MEASUREMENT RATE</b>		1,800,000 measurements/s	2,250,000 measurements/s	1,800,000 measurements/s	1,800,000 measurements/s	3,000,000 measurements/s	60 measurements/s	
<b>WEIGHT</b>		0.94 kg (2.1 lb)	1.22 kg (2.7 lb)	Scanner: 1.49 kg (3.28 lb) C-Track: 5.7 kg (12.5 lb)	Scanner: 2.91 kg (6.41 lbs) Scanner + Calibration bar: 4.26 kg (9.39 lbs) C-Track: 5.7 kg (12.5 lbs)		Probe: 0.5 kg (1.1 lb) C-Track: 5.7 kg (12.5 lb)	0.79 kg (1.75 lb)
<b>DIMENSIONS</b> (LxWxH)		79 x 142 x 288 mm (3.1 x 5.6 x 11.3 in)	133 x 79 x 435 mm (5.20 x 3.10 x 17.10 in)	Scanner: 289 x 235 x 296 mm (11.4 x 9.3 x 11.7 in) C-Track: 1031 x 181 x 148 mm (40.6 x 7.1 x 5.8 in)			Probe: 68 x 157 x 340 mm (2.7 x 6.2 x 13.4 in) C-Track: 1031 x 181 x 148 mm (40.6 x 7.1 x 5.8 in)	104 x 180 x 115 mm (4.1 x 7.1 x 4.5 in)
<b>INERTIA LIMIT</b>		N/A		N/A	J6: 0.221 Kg·m² (5.24 lb·ft²) J6: 2.250 Kg·cm·s² (1.95 lbf·in·s²)		N/A	N/A
<b>OPERATING TEMPERATURE RANGE</b>		5–40°C (41–104°F)						
<b>OPERATING HUMIDITY RANGE</b> (non-condensing)		10–90%						
<b>CERTIFICATIONS</b>		EC Compliance (Electromagnetic Compatibility Directive, Low Voltage Directive, Radio Equipment and Telecommunications Equipment), compatible with rechargeable batteries (when applicable), IP50, WEEE						

(1) The volumetric accuracy (based on part size) performance of the system cannot be superior to the default Accuracy and Volumetric accuracy (based on working volume) performance for a given model.  
 (2) Performance obtained with scale bars included in the Accu+ Kit.  
 (3) Performance obtained with the Automatic Volume Extension feature.

(4) Performance tests done in Creaform's ISO/IEC 17025 accredited calibration laboratories.  
 (5) The volumetric accuracy with MaxSHOT NEXT™|Elite performance cannot be superior to the default Accuracy and Volumetric accuracy (based on working volume) performance for a given model.  
 (6) Laser class: 2M (eye safe).



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