

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





## 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

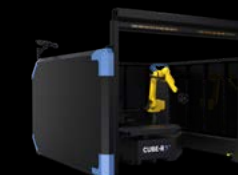
Fast and accurate optical CMM 3D scanner engineered for shop floor conditions



### 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.



reddot award 2019 winner

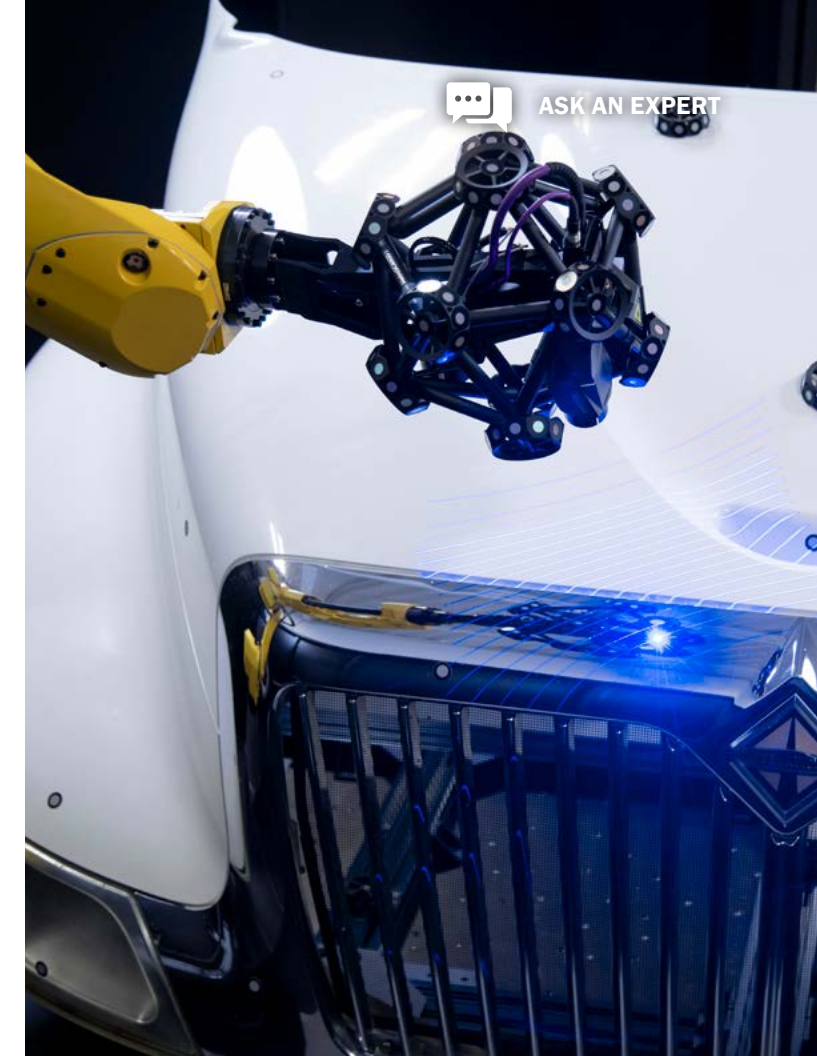


## MetraSCAN3D-R™

### 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.



## 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.



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.





## 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



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best of the best



 ASK AN EXPERT

## VXelements™

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

VXelements™ powers Creaform'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 Creaform 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



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winner



### 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.



	HandySCAN 3D™		MetraSCAN 3D™		MetraSCAN 3D-R™		HandyPROBE™		MaxSHOT 3D™
	HandySCAN BLACK™	HandySCAN BLACK™  Elite	MetraSCAN BLACK™	MetraSCAN BLACK™  Elite	MetraSCAN-R BLACK™  Elite	MetraSCAN-R BLACK™  Elite HD	HandyPROBE Next™	HandyPROBE Next™  Elite	MaxSHOT Next™  Elite
<b>PART SIZE RANGE</b> (recommended)	0.05–4 m (0.15–13 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> <sup>(1)</sup>	0.035 mm (0.0014 in)	0.025 mm (0.0009 in)	0.035 mm (0.0014 in)	0.025 mm (0.0009 in)	0.025 mm (0.0009 in)		0.030 mm (0.0012 in)	0.025 mm (0.0009 in)	Up to 0.015 mm (0.0006 in)
<b>VOLUMETRIC ACCURACY</b> <sup>(2)</sup> (based on working volume)	9.1 m <sup>3</sup> (320 ft <sup>3</sup> )	N/A	0.086 mm (0.0034 in)	0.064 mm (0.0025 in)	0.064 mm (0.0025 in)		0.086 mm (0.0034 in)	0.064 mm (0.0025 in)	N/A
	16.6 m <sup>3</sup> (586 ft <sup>3</sup> )		0.122 mm (0.0048 in)	0.078 mm (0.0031 in)	0.078 mm (0.0031 in)		0.122 mm (0.0048 in)	0.078 mm (0.0031 in)	
<b>VOLUMETRIC ACCURACY</b> <sup>(3)</sup> (based on part size)	0.020 mm +0.060 mm/m (0.0008 in + 0.0007 in/ft) <sup>(5)</sup>	0.020 mm + 0.040 mm/m (0.0008 in + 0.0005 in/ft) <sup>(5)</sup>	N/A		N/A		N/A		0.015 mm/m (0.00018 in/ft) <sup>(4)</sup>
<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)		0.060 mm + 0.015 mm/m (0.0024 in + 0.00018 in/ft)	0.044 mm + 0.015 mm/m (0.0017 in + 0.00018 in/ft)	0.044 mm + 0.015 mm/m (0.0017 in + 0.00018 in/ft)		0.060 mm + 0.015 mm/m (0.0024 in + 0.00018 in/ft)	0.044 mm + 0.015 mm/m (0.0017 in + 0.00018 in/ft)	
<b>MEASUREMENT RESOLUTION</b>	0.025 mm (0.0009 in)		0.025 mm (0.0009 in)		0.025 mm (0.0009 in)	0.015 mm (0.0006 in)	N/A		
<b>MESH RESOLUTION</b>	0.100 mm (0.0039 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)		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)		300 mm (11.8 in)		300 mm (11.8 in)				
<b>DEPTH OF FIELD</b>	250 mm (9.8 in)		250 mm (9.8 in)		250 mm (9.8 in)	100 mm (3.9 in)			
<b>LIGHT SOURCE</b>	7 blue laser crosses	11 blue laser crosses (+ 1 extra line)	7 blue laser crosses	15 blue laser crosses (+ 1 extra line)	45 blue laser lines	69 blue laser lines			
<b>LASER CLASS</b>	2M (eye safe)		2M (eye safe)		2M (eye safe)				2M (eye safe)
<b>MEASUREMENT RATE</b>	800,000 measurements/s	1,300,000 measurements/s	800,000 measurements/s	1,800,000 measurements/s	1,800,000 measurements/s	3,000,000 measurements/s	80 measurements/s		N/A
<b>WEIGHT</b>	0.94 kg (2.1 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)		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)		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·m <sup>2</sup> (5.24 lb·ft <sup>2</sup> ) J6: 2.250 Kgf·cm·s <sup>2</sup> (1.95 lbf-in·s <sup>2</sup> )		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) HandyPROBE Next and HandyPROBE Next|Elite performance assessment (ISO 17025 accredited) is based on partial procedure per ISO 10360-12 standard: probing size error (6.2) and length error (6.4). Performance is assessed on traceable sphere and length artefacts. MetraSCAN BLACK, MetraSCAN BLACK|ELITE and MetraSCAN-R BLACK|Elite (ISO 17025 accredited); Based on VDI/VDE 2634 part 3 standard. Probing error performance is assessed with diameter measurement on traceable sphere artefacts. HandySCAN BLACK and HandySCAN BLACK|ELITE (ISO 17025 accredited); Based on VDI/VDE 2634 part 3 standard. Probing error performance is assessed with diameter measurement on traceable sphere artefacts.
- (2) HandyPROBE Next and HandyPROBE Next|Elite performance assessment (ISO 17025 accredited) is based on partial procedure per ISO 10360-12 standard: *Probing size error* (6.2) and *Length error* (6.4). Performance is assessed on traceable sphere and length artefacts. MetraSCAN BLACK, MetraSCAN BLACK|ELITE and MetraSCAN-R BLACK|Elite (ISO 17025 accredited); Based on VDI/VDE 2634 part 3 standard. Sphere-spacing error is assessed with traceable length artefacts by measuring these at different locations and orientations within the working volume.
- (3) HandySCAN BLACK and HandySCAN BLACK|ELITE (ISO 17025 accredited); Based on VDI/VDE 2634 part 3 standard. Sphere-spacing error is assessed with traceable length artefacts by measuring these at different locations and orientations within the working volume.
- (4) Based on the VDI/VDE 2634 part 1 standard.
- (5) The volumetric accuracy of the system when using a MaxSHOT 3D cannot be superior to the default accuracy for a given model.



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