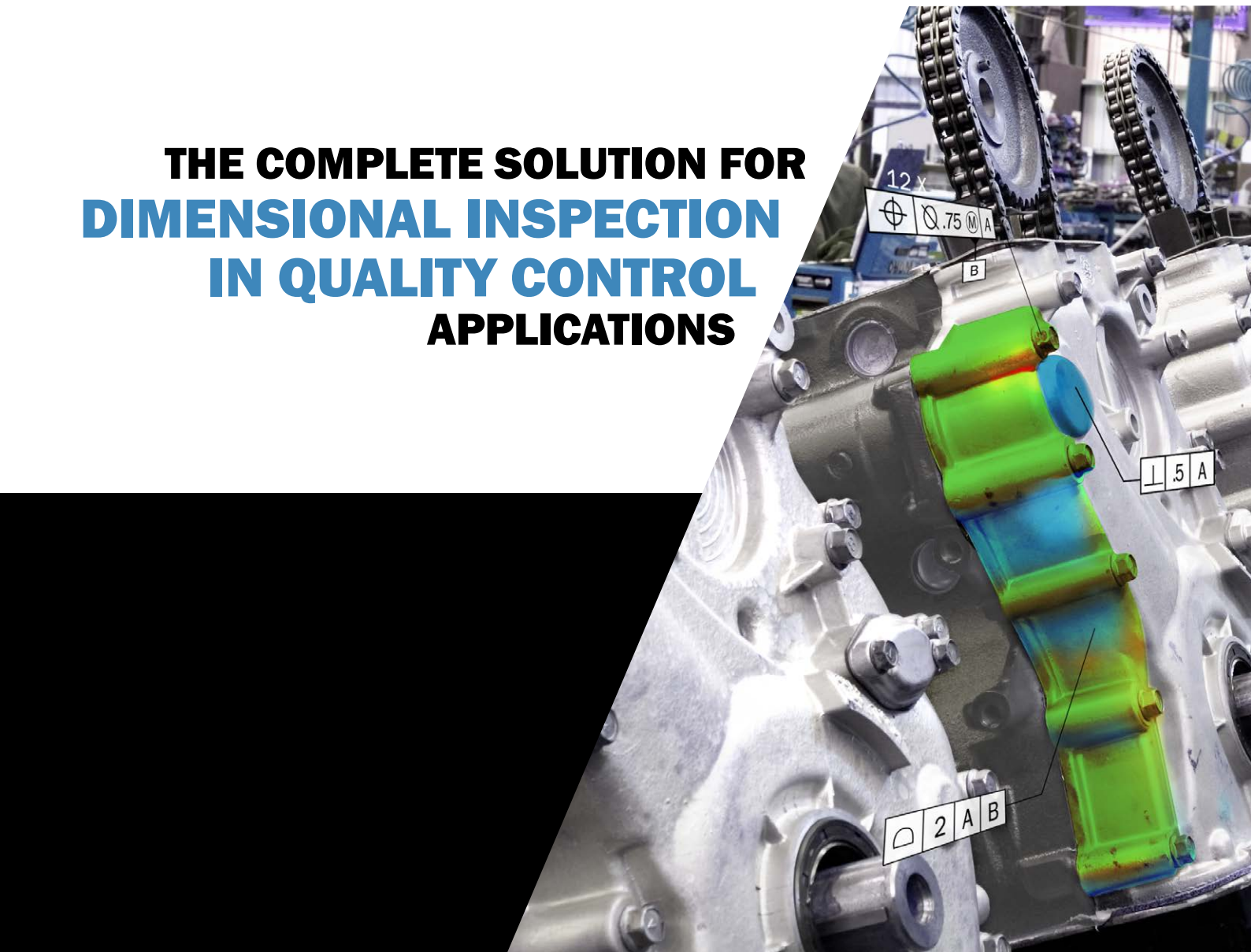




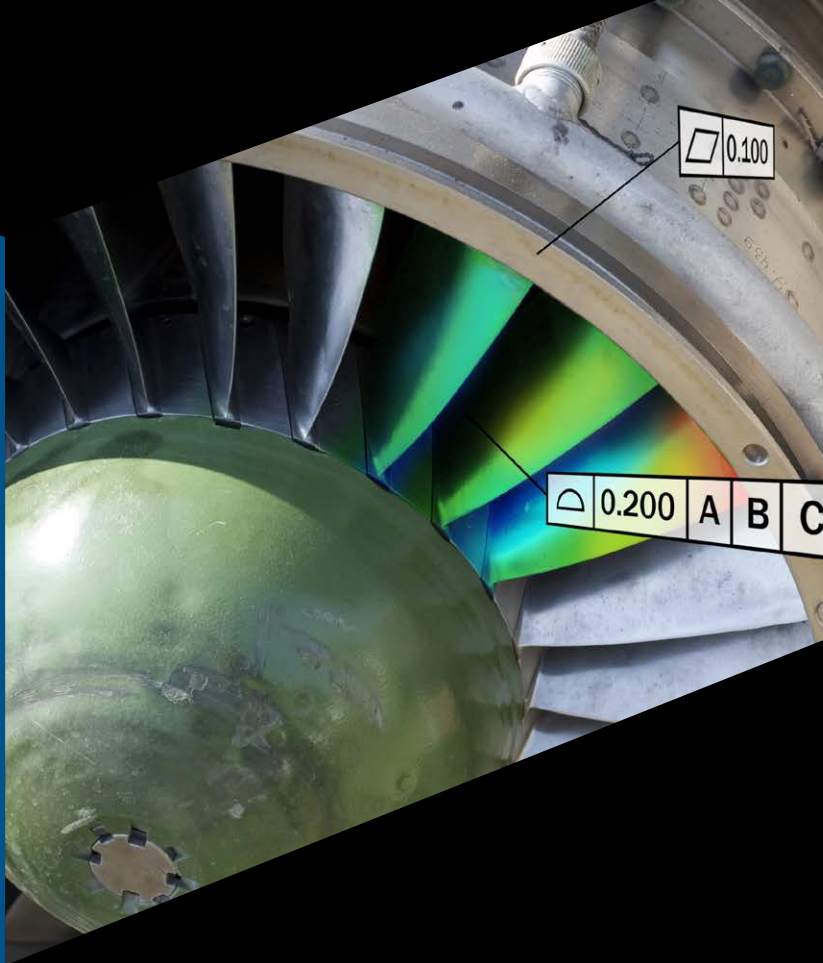
# THE COMPLETE SOLUTION FOR DIMENSIONAL INSPECTION IN QUALITY CONTROL APPLICATIONS



**CREAFORM**

**AMETEK**<sup>®</sup>  
ULTRA PRECISION TECHNOLOGIES





# ARE QUALITY CONTROL ISSUES IMPACTING YOUR BOTTOM LINE?

Creaform's comprehensive range of portable and automated 3D optical measurement technologies is specifically dedicated to dimensional inspection for quality control in production environments. It combines the power of optical portable CMMs, 3D scanners, photogrammetry and fully integrated dimensional inspection software.

It is highly efficient at measuring parts of any type of material ranging from 0.05 to 10 m (0.15 to 33 ft) in size and with an accuracy of up to 0.015 mm (0.0006 in). It is the ideal solution to validate the dimensional conformity and/or quality of production tools, jigs, parts, assemblies, sub-assemblies or final products. Thanks to Creaform's solutions, you can rely on the precision of your measurements regardless of production environment instabilities—all while avoiding bottlenecks at the CMM.

## ADDRESS QUALITY CONTROL CHALLENGES HEAD ON

There's a Creaform solution for any quality control application



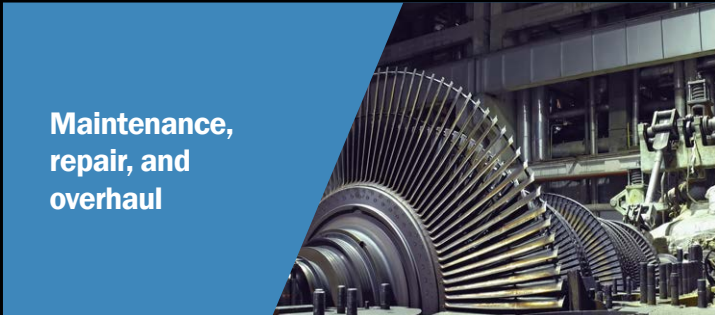
Part inspections



Dynamic measurements



Tool and jig verifications



Maintenance, repair, and overhaul

## THE PERFECT QUALITY CONTROL SOLUTION FOR EVERY PART SIZE



HandySCAN3D™

3D SCANNING

The truly portable metrology-grade 3D scanner that delivers highly accurate measurements



HandyPROBE™

PROBING

The only truly accurate portable CMM with greater, extendable measurement volume



MetraSCAN3D™

3D SCANNING

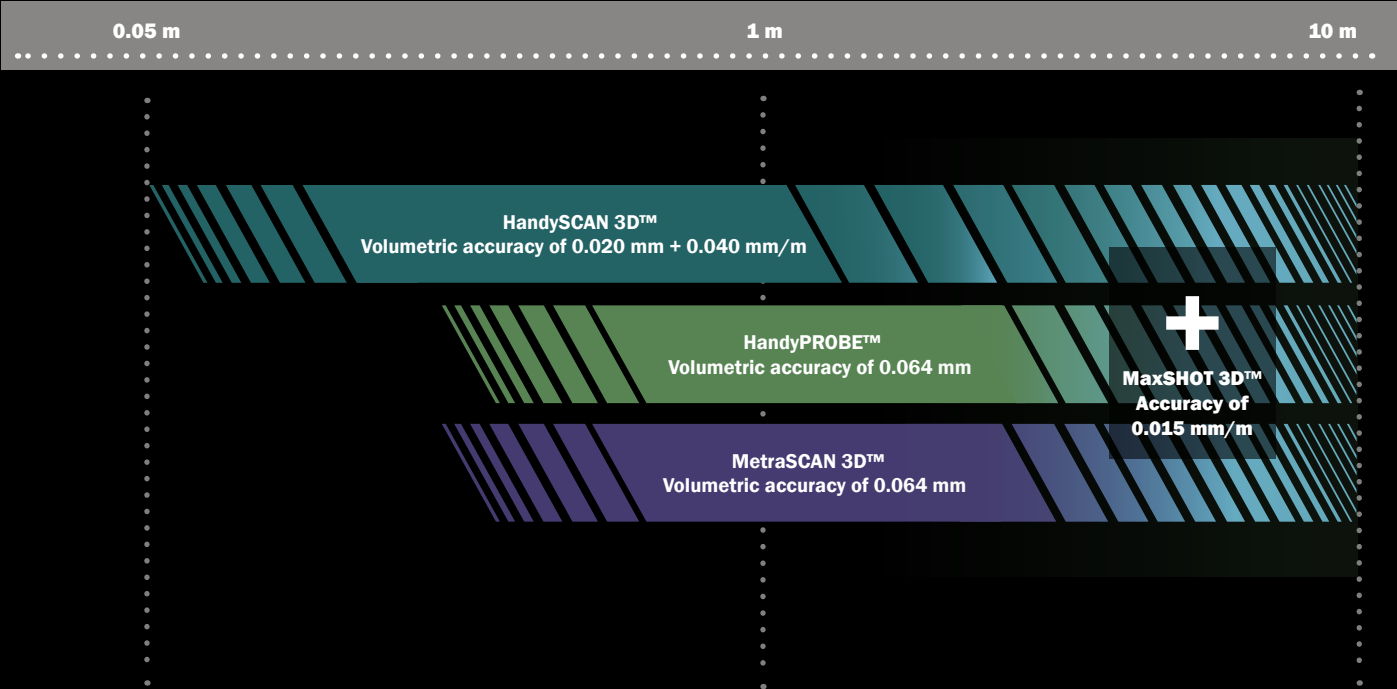
The most accurate manual or automated 3D scanning solution, whether in a lab or on the shop floor



MaxSHOT3D™

PHOTOGRAMMETRY

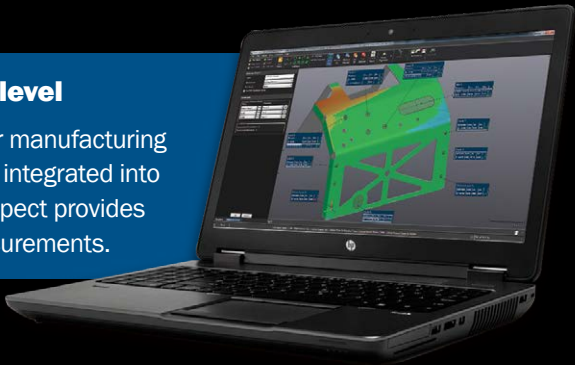
The easiest way to integrate photogrammetry's accuracy within your inspection projects



## VXinspect™

**VXinspect: Quality control software that takes it to the next level**

VXinspect™ is an intuitive and powerful 3D inspection software designed for manufacturing companies conducting first article inspection (FAI) or quality control. Directly integrated into VXelements™, Creaform's 3D software platform and application suite, VXinspect provides the simplest integration of probing, 3D scanning and photogrammetry measurements.





**MetraSCAN 3D-R**

**ROBOT-MOUNTED OPTICAL 3D SCANNER:** AUTOMATED PART INSPECTION OF UP TO HUNDREDS OF PARTS A DAY, DIRECTLY ON THE PRODUCTION LINE

**ROBUST INDUSTRIAL DESIGN:** ADAPTED FOR SHOP-FLOOR CONDITIONS AND ENVIRONMENTS

**PRODUCTIVITY STATION**

**MULTITASKING:** SIMULTANEOUS OPERATION OF DATA ACQUISITION AND ANALYSIS FOR A CONTINUOUS AND UNINTERRUPTED MEASUREMENT FLOW

**SIMPLE USER INTERFACE:** DESIGNED TO MINIMIZE OPERATOR INTERACTION AND HELP PERFORM AUTOMATIC INSPECTION



**CUBE-R**

**3D SCANNING CMM:** HIGH-PRODUCTIVITY INDUSTRIAL MEASURING CELL DESIGNED FOR REAL-LIFE SHOP-FLOOR CONDITIONS

**COMPLETE TURNKEY SOLUTION:** NO INTEGRATION REQUIRED, FULLY ENCLOSED AND SHOP-FLOOR READY

**HandyPROBE Next**

**ACCURACY:** IMPRESSIVE ACCURACY REGARDLESS OF THE MEASUREMENT ENVIRONMENT (INSTABILITY, VIBRATIONS, ETC.) OR OPERATOR SKILLS

**MULTIFUNCTION BUTTONS:** ALLOW EASIER INTERACTION WITH THE SOFTWARE WITHOUT HAVING TO GO BACK TO THE COMPUTER

**SMART PROBE ADPTER:** QUICK CONNECT PROBE ADAPTER FOR EASY, AUTORECOGNITION TIP CHANGES



**HandySCAN 3D**

**PORTABILITY:** LIGHT STAND-ALONE DEVICE FOR ON-THE-GO SCANNING

**SPEED:** 11 BLUE LASER CROSSES, HIGH MEASUREMENT RATE AND AUTOMATIC MESH OUTPUT FOR UNMATCHED SCANNING SPEED

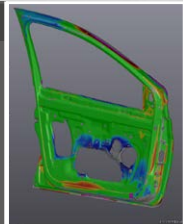
**ACCURACY:** IMPRESSIVE ACCURACY REGARDLESS OF THE MEASUREMENT ENVIRONMENT (INSTABILITY, VIBRATIONS, ETC.) OR OPERATOR SKILLS



**VXinspect SOFTWARE MODULE**

**DIMENSIONAL INSPECTION:** INTUITIVE AND POWERFUL 3D INSPECTION SOFTWARE

**MULTIPLE-MEASUREMENT MODE:** SEAMLESS INTEGRATION OF BOTH SINGLE-POINT TOUCH PROBE AND NON-CONTACT MEASUREMENTS

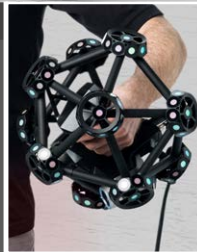


**MetraSCAN 3D**

**ACCURACY:** IMPRESSIVE METROLOGY-GRADE ACCURACY REGARDLESS OF THE MEASUREMENT ENVIRONMENT (INSTABILITY, VIBRATIONS, ETC.) OR OPERATOR SKILLS

**SPEED:** 7 LASER CROSSES, HIGH MEASUREMENT RATE AND AUTOMATIC MESH OUTPUT FOR UNMATCHED SCANNING SPEED

**DIFFICULT SURFACES:** SCAN ANY TYPE OF MATERIAL, EVEN BLACK, MULTICOLORED AND SHINY SURFACES



**MaxSHOT 3D**

**PHOTOGRAMMETRY ACCURACY:** DELIVER UNMATCHED ACCURACY OVER LARGE PART MEASUREMENTS

**GO/NO-GO VISUAL FEEDBACK:** LASER-PROJECTED FRAME WITH INSTANT FEEDBACK WILL LET USERS, OF ANY LEVEL, KNOW IF THE IMAGE IS GOOD OR BAD

**SOFTWARE DIAGNOSTICS:** EASY-TO-UNDERSTAND IMAGE DIAGNOSTICS TO HELP USERS CARRY OUT CORRECTIVE ACTIONS BEFORE TAKING MEASUREMENTS



**C-Link FUNCTIONALITY**

**VIRTUAL METROLOGY LAB:** CREATE A VIRTUAL METROLOGY LAB BY NETWORKING 2 TO 4 C-Tracks™ FOR COMPLETE COVERAGE OF THE MEASUREMENT AREA

**CREAFORM SHOP-FLOOR WORKSTATION:**

MAXIMUM MOBILITY: INCORPORATES ALL THE TOOLS YOU NEED IN ONE EASY TO MOVE UNIT DESIGNED FOR REAL-LIFE SHOP-FLOOR CONDITIONS

**C-Track STAND**

**MAXIMUM FLEXIBILITY:** INCREASES THE STABILITY OF THE C-Track AND FACILITATES MOBILITY AROUND THE PART WHILE STILL IN OPERATION



**C-Track OPTICAL TRACKER**

**DYNAMIC REFERENCING:** THE SYSTEM FEATURES DYNAMIC REFERENCING CAPABILITIES USING OPTICAL REFLECTORS PLACED ON THE PART ALLOWING THE USERS TO MOVE THE OBJECT AND THE SYSTEM ANY WAY THEY WANT DURING MEASUREMENT

**GREATER, EXTENDABLE MEASUREMENT VOLUME:** CAN BE EASILY AND DYNAMICALLY EXTENDED WITHOUT ANY LOSS OF ACCURACY OR ANY CONVENTIONAL LEAPFROGGING

**AUTOMATIC ALIGNMENT:** THE USE OF OPTICAL REFLECTORS ALLOWS FOR THE MEASUREMENT OF MANY IDENTICAL PARTS IN RAPID SUCCESSION WITHOUT THE NEED TO REALIGN



# EXPERIENCE TRUE QUALITY CONTROL ON YOUR SHOP FLOOR

All of Creaform's quality control solutions feature innovative and exclusive technologies



## TRUaccuracy™

The technology ensures product performance and is insensitive to instabilities found in any shop floor environment



## TRUportability™

The technology allows users to inspect parts with unequalled mobility and flexibility—no matter where (lab, factory, off-site, etc.)



## TRUsimplicity™

The technology makes it possible for operators to take reliable measurements, regardless of their experience levels, thanks to the short learning curve and intuitive use of each system

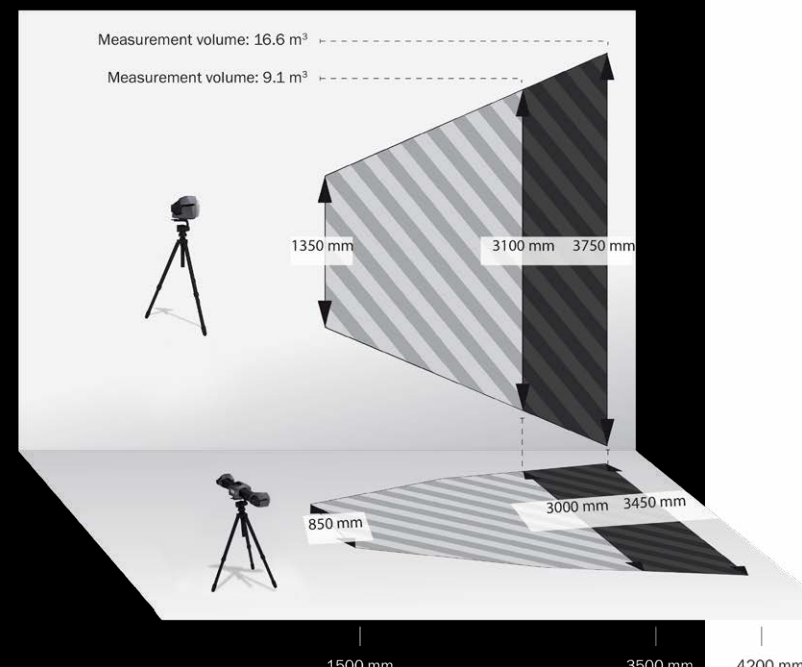
Creaform technologies are backed by a world-class customer support to ensure seamless integration in your workflow so you can be up and running in no time.

## HandyPROBE™

### THE ONLY TRULY ACCURATE PORTABLE CMM

The HandyPROBE Next™ arm-free probing system outperforms traditional portable CMMs on the shop floor. Because it is truly portable and insensitive to instabilities found in every production environment (e.g. part displacement, setup or CMM instability), it is highly efficient at measuring parts that can't be moved to a granite or cast iron table. It is also ideal for geometric and surface inspections. HandyPROBE Next can accurately measure parts ranging from 0.2 to 10 m in size and made of any type of materials.

HandyPROBE Next comes with a C-Track optical tracker providing dynamic referencing capabilities for the highest accuracy and greater, extendable measurement volume—ideal for dimensional inspection on the shop floor or assembly line. The probing system can also be paired with a MetraSCAN 3D scanner to offer high-performance scanning capabilities.



reddot award 2016  
best of the best

PROBING



## TRUaccuracy

- Metrology-grade accuracy, high repeatability and traceable certificate
- Dynamic referencing: accuracy remains insensitive to instabilities
- No accuracy drift over time with the easy field calibration
- Continuous monitoring of accuracy parameters

## TRUportability

- Lightweight, wireless and arm-free probe for total freedom of movement
- Designed for use on the shop floor
- Handheld and ergonomic design
- Easy setup adjustments, flexible working volume

## TRUsimplicity

- No rigid setup required: part can be moved freely
- Automatic alignment for repetitive inspections
- Short learning curve and intuitive operation
- Optional 3D scanning capabilities
- Intuitive software

## MetraSCAN3D™

### THE COMPLETE METROLOGY-GRADE 3D SCANNER

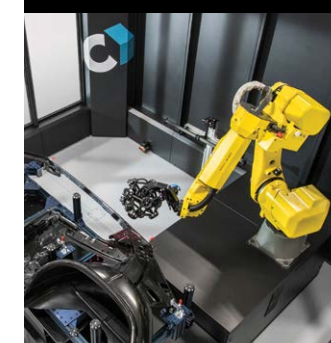
The MetraSCAN 3D is the most complete 3D scanning solution for metrology-grade measurements and inspection. Truly portable and insensitive to changes found in shop-floor environments (e.g. vibrations, part displacement, setup or CMM instability), it significantly increases the reliability, speed and versatility of measurement processes. It also outperforms scanners that are mounted on traditional portable CMMs. The MetraSCAN 3D is the best solution for geometrical and freeform surface inspections on parts ranging from 0.2 to 10 m in size, regardless of the type of material, color, or reflectivity.

Paired with the C-Track optical tracker that enables dynamic referencing, automatic alignment and continuous monitoring of parameters, it provides the most accurate measurements in the lab and on the shop floor. Offering optional probing capabilities with the HandyPROBE Next, users can harness the power of both 3D scanning and portable optical CMMs for a streamlined inspection process.



## MetraSCAN3D-R™

A powerful robot-mounted optical 3D scanner that can be integrated into factory automation projects. Paired with the R-Series Productivity Station and Autocalibration Kit, it optimizes production cycle and throughput resulting in better product quality.



## CUBE-R™

CUBE-R™ is a truly accurate turnkey 3D scanning measuring machine for at-line inspection of parts up to 3 m. It leverages the power of MetraSCAN 3D metrology-grade scanner in a high-productivity industrial measuring cell designed for real-life shop-floor conditions.



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best of the best

3D SCANNING



## TRUaccuracy

- Metrology-grade accuracy, high repeatability and traceable certificate
- Dynamic referencing: accuracy insensitive to instabilities
- No accuracy drift over time with the easy field calibration
- Continuous monitoring of accuracy parameters

## TRUportability

- Lightweight and arm-free scanner for total freedom of movement
- Designed for use on the shop floor
- Handheld and ergonomic design
- Easy setup adjustments, flexible working volume

## TRUsimplicity

- Large scanning area and high measurement rate
- No rigid setup required: part can be moved freely
- Automatic alignment for repetitive inspections
- Short learning curve and intuitive operation
- 3D scanning of any type of surface (black, multicolored, shiny, etc.)
- Real-time visualization
- Optional probing capabilities



# HandySCAN3D™

## THE TRULY PORTABLE METROLOGY-GRADE 3D SCANNER

HandySCAN 3D is a metrology-grade handheld portable 3D laser scanners. It is the fastest on the market with the highest measurement rate and accuracy available—all while remaining very simple to use. Its self-positioning capabilities and portability allow unmatched freedom of movement. HandySCAN 3D provides consistent and repeatable results across all work conditions or environments, enabling you to reduce turnaround times and increase profitability. It is the perfect solution when you need to reach confined areas or any object regardless of the size, complexity, material, or color. It represents the ideal tool for quality control applications.

3D SCANNING



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winner



### TRUaccuracy

- Metrology-grade measurements
- Accuracy in real-life conditions
- No rigid setup required
- High resolution for details

### TRUpportability

- Lightweight and small
- Stand-alone device
- Easy access to confined spaces

### TRUsimplicity

- Plug-and-play
- Simple user interface
- Instant mesh for ready-to-use files
- Masters complex and difficult surfaces

# MaxSHOT3D™

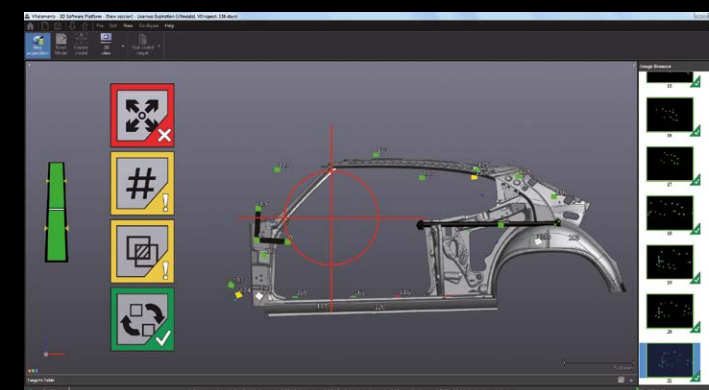
## YOUR BEST SHOT AT LARGE-SCALE PROJECTS

The MaxSHOT 3D portable optical coordinate measuring system is a complementary product that provides the high data accuracy and speed of photogrammetry to a wide range of applications already possible with Creaform technologies, especially when it comes to large-scale projects and parts from 2 to 10 m. Based on a simple series of 2D photos, the MaxSHOT 3D makes it possible to quickly and easily generate a highly accurate positioning model of your parts, which significantly increases 3D measurement accuracy. Thanks to its laser-projected and software feedback, users of any level can use the MaxSHOT 3D!



reddot award 2017  
winner

PHOTOGRAMMETRY



### TRUaccuracy

- Metrology-grade measurements: Accuracy of up to 0.015 mm
- Volumetric accuracy: 0.015 mm/m
- Average deviation: 0.005 mm/m

### TRUpportability

- Shop-floor compatible: Can be used in any production environment
- Bring it anywhere: Everything fits into one portable carrying case
- Highly ergonomic design: Developed specifically for photogrammetry

### TRUsimplicity

- Live feedback on measurement quality: Laser projected frame with GO/NO-GO feedback
- Software diagnostics: VXelements guides users in troubleshooting measurement quality
- Intuitive controls and operation: Experience ultra-short learning curves
- Multifunction buttons: Easily interact with the software

## DIMENSIONAL INSPECTION SOFTWARE MODULE

Directly integrated into VXelements, Creaform's 3D software platform and application suite, VXinspect provides the simplest integration of probing, 3D scanning, and photogrammetry measurements. VXinspect is an intuitive and powerful 3D inspection software that is designed for manufacturing companies conducting first article inspection (FAI) or quality control in manufacturing process.

The software features all functionalities required by preproduction control or when setting up a high-efficiency measurement sequence to control multiple parts. With its intuitive interface, it is the best solution for all inspection workflows. You won't have to compromise on measurement quality or GD&T requirements.

- CAD import
- Multiple-measurement mode
- Alignment
- Geometric dimensioning and tolerancing (GD&T)

SOFTWARE

### VXelements: CREAFORM'S 3D SOFTWARE PLATFORM AND APPLICATION SUITE

VXelements powers our entire fleet of 3D scanning and measurement technologies. It gathers all the essential elements and tools into a user-friendly, simplified, and sleek working environment.

#### VXmodel: Scan-to-CAD software module

VXmodel™ is a post-treatment software that directly integrates into VXelements. It allows for the finalization of 3D scan data to use directly in any 3D printing or CAD software. VXmodel provides the simplest and fastest path from 3D scans to your computer-aided design or additive manufacturing workflow.

#### VXtrack: Dynamic tracking software module

VXtrack™ accurately and efficiently measures the positions and orientations of reflectors in space; all measurements can be taken simultaneously and accurately. This makes it possible to control displacements, drive assembly processes or measure deformations.

#### VXremote: Remote access software application

VXremote™ improves your efficiency on the shop floor by providing fast and easy remote access to VXelements. It offers quick activation and setup and requires no hardware or server to install or maintain. You can have its data acquisition functionalities at your fingertips.

## EXTEND THE POWER OF YOUR INSPECTION PROCESS

### Creaform Shop-Floor Workstation

The **Creaform Shop-Floor Workstation** is designed to facilitate mobility across the shop floor and increase reliability by protecting your scanning and probing systems while still in operation or when stored (two C-Tracks and stands can fit in the workstation).

### Creaform C-Track Shop-Floor Stand

The **Creaform C-Track Shop-Floor Stand**, available as stand-alone or bundled with the workstation, increases the stability of the C-Track while still in operation and facilitates mobility around the part without the risk of injury.



### Virtual Metrology Lab

Take full advantage of the C-Link™ functionality by connecting up to 4 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.



### Optical Probing Accessories

Use your MaxSHOT 3D or C-Track as an optical probing device and get direct 3D measurements for various types of features: hole location, edge location, surface points, etc.



## 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. Gain peace of mind knowing your equipment will get even better with time.

## METROLOGY AND ENGINEERING SERVICES

Convinced of the quality and possibilities of the Creaform technologies, but not quite yet ready to commit and buy? Know that Creaform offers a wide range of metrology and engineering services. Our experts have earned a worldwide reputation for effectiveness and professionalism. Whether you need their help to perform 3D scanning, quality control, reverse engineering, FEA/CFD simulations, product and tool development, or training services, you can count on their commitment to meet your requirements with responsiveness and adaptability.



# TECHNICAL SPECIFICATIONS

		HandyPROBE™		MetraSCAN 3D™				HandySCAN 3D™		MaxSHOT 3D™
		HandyPROBE Next™	HandyPROBE Next™ Elite	MetraSCAN 350™	MetraSCAN 350™ Elite	MetraSCAN 750™	MetraSCAN 750™ Elite	HandySCAN BLACK™	HandySCAN BLACK™ Elite	MaxSHOT Next™ Elite
PART SIZE RANGE (recommended)		0.2–6 m		0.2–6 m				0.05–4 m		2–10 m
ACCURACY <sup>(1)</sup>		Up to 0.025 mm	Up to 0.020 mm	Up to 0.040 mm		Up to 0.030 mm		0.035 mm	0.025 mm	Up to 0.015 mm
SINGLE POINT REPEATABILITY <sup>(2)</sup> (based on working volume)	9.1 m³	0.060 mm	0.044 mm	N/A				N/A		N/A
	16.6 m³	0.088 mm	0.058 mm							
VOLUMETRIC ACCURACY <sup>(3)</sup> (based on working volume)	9.1 m³	0.086 mm	0.064 mm	0.086 mm	0.064 mm	0.086 mm	0.064 mm	N/A		N/A
	16.6 m³	0.122 mm	0.078 mm	0.122 mm	0.078 mm	0.122 mm	0.078 mm			
VOLUMETRIC ACCURACY (based on part size)		N/A		N/A				0.020 mm +0.060 mm/m <sup>(4)</sup>	0.020 mm + 0.040 mm/m <sup>(4)</sup>	0.015 mm/m <sup>(5)</sup>
VOLUMETRIC ACCURACY WITH MaxSHOT NEXT™   ELITE <sup>(6)</sup>		0.060 mm + 0.015 mm/m	0.044 mm + 0.015 mm/m	0.060 mm + 0.015 mm/m	0.044 mm + 0.015 mm/m	0.060 mm + 0.015 mm/m	0.044 mm + 0.015 mm/m	0.020 mm + 0.015 mm/m		N/A
RESOLUTION		N/A		0.050 mm				0.025 mm		
SCANNING AREA				225 x 250 mm		275 x 250 mm		310 x 350 mm		
STAND-OFF DISTANCE				300 mm				300 mm		
DEPTH OF FIELD				200 mm				250 mm		
LIGHT SOURCE				3 laser crosses		7 laser crosses (+ 1 extra line)		7 blue laser crosses		
LASER CLASS		N/A		2M (eye safe)				2M (eye safe)		2M (eye safe)
MEASUREMENT RATE				205,000 measurements/s		480,000 measurements/s		800,000 measurements/s		1,300,000 measurements/s
WEIGHT		Probe: 0.5 kg C-Track: 5.7 kg		Scanner: 1.38 kg C-Track: 5.7 kg				0.94 kg		0.79 kg
DIMENSIONS (LxWxH)		Probe: 68 x 157 x 340 mm C-Track: 1031 x 181 x 148 mm		289 x 235 x 296 mm				79 x 142 x 288 mm		104 x 180 x 115 mm
OPERATING TEMPERATURE RANGE		5–40 °C								
OPERATING HUMIDITY RANGE (non-condensing)		10–90%								
CERTIFICATIONS		EC Compliance (Electromagnetic Compatibility Directive, Low Voltage Directive, Radio Equipment and Telecommunications Equipment), compatible with rechargeable batteries (when applicable), IP50, WEEE								

- (1) The HandySCAN BLACK and HandySCAN BLACK I Elite (ISO 17025 accredited): Based on VDI/VDE 2634 part 3 standard. Probing error performance is assessed with diameter measurements on traceable sphere artefacts. The MetraSCAN 3D: Typical value for diameter measurement on a calibrated sphere artefact.
- (2) Based on the ASME B89.4.22 standard. The probe of the HandyPROBE Next is located within a conical socket. Individual points are measured from multiple approach directions. Each individual point measurement is analyzed as a range of deviations in X, Y, Z (value = range/2). Performance of the HandyPROBE Next is dependent on the working volume in which the measurement is made: 9.1 m³ or 16.6 m³.

- (3) Based on the ASME B89.4.22 standard. Performance is assessed with traceable length artefacts by measuring these at different locations and orientations within the working volume of the C-Track (value = maximum deviation). Performance of the HandyPROBE Next and MetraSCAN 3D is dependent on the working volume in which the measurement is made: 9.1 m³ or 16.6 m³.
- (4) HandySCAN BLACK and HandySCAN BLACK I 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.
- (5) Based on the VDI/VDE 2634 part 1 standard.
- (6) The volumetric accuracy of the system when using a MaxSHOT 3D cannot be superior to the default volumetric accuracy of the chosen system and model.



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Authorized Distributor

HandySCAN 3D, HandySCAN BLACK, HandySCAN BLACK I Elite, MetraSCAN 3D, MetraSCAN 350, MetraSCAN 750, MetraSCAN 3D-R, HandyPROBE, HandyPROBE Next, HandyPROBE Next I Elite, C-Track, C-Link, MaxSHOT 3D, MaxSHOT Next I Elite, CUBE-R, TRUaccuracy, TRUportability, TRUsimplicity, VXelements, VXinspect, VXmodel, VXtrack, VXremote and their respective logos are trademarks of Creaform Inc. © Creaform Inc. 2019. All rights reserved. V1