HANDY™
PROBE

THE OPTICAL PORTABLE CMM
FOR INDUSTRIAL APPLICATIONS

PORTABLE **3D** MEASUREMENT SOLUTIONS

CREAFORM

The HandyPROBE™ arm-free **portable** probing system and the C-Track™ dual-camera sensor form a unique duo that generates high-accuracy measurements with an **accuracy** of up to **22 μm** and also increases the reliability and speed of the measurement process. This portable CMM was designed and optimized to operate in "real-life" shop floor conditions.

Compared to other coordinate measurement technologies, the HandyPROBE 100 % portable CMM allows total freedom of movement for significantly increased productivity and quality!

FASTER AND EASIER MEASUREMENT.
HANDHELD AND **ARM-FREE**. **WIRELESS** DATA TRANSMISSION PROCESS ALLOWS THE USER TO MOVE FREELY AROUND THE PART

LIGHTWEIGHT. WEIGHS 450 G

TRUaccuracy™ TECHNOLOGY.
HIGHLY-ACCURATE MEASUREMENTS, **NO MATTER** THE MEASUREMENT **ENVIRONMENT** (INSTABILITY, VIBRATIONS, THERMAL VARIATIONS, ETC.) **OR OPERATOR SKILLS**

GREATER, EXTENDABLE MEASUREMENT VOLUME. CAN BE EASILY AND DYNAMICALLY EXTENDED **WITHOUT** ANY **LOSS OF ACCURACY** AND WITHOUT ANY **CONVENTIONAL LEAPFROG**
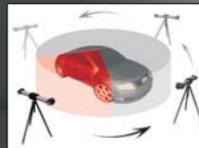
AUTOMATIC ALIGNMENT. THE USE OF OPTICAL REFLECTORS ALLOWS PROBING OF MANY IDENTICAL PARTS IN RAPID SUCCESSION

NO NEED FOR THE OPERATOR TO RE-ALIGN DATA AFTER MOVING THE PART OR THE C-TRACK, RESULTING IN **LESS SET-UP AND ERROR ACCUMULATION**

MEASUREMENT OF PARTS IN PRODUCTION WITHOUT HAVING TO ALIGN EVERY PART

COMPATIBLE WITH ALL MAJOR SOFTWARE. INSTANT INTEGRATION INTO YOUR QC PROCESS

USER-FRIENDLY. INTUITIVE SYSTEM WITH A VERY SHORT LEARNING CURVE. **5-MINUTE INSTALLATION.**

TRULY PORTABLE. UNEQUALLED PRECISION, MOBILITY AND FLEXIBILITY - NO MATTER WHERE (LAB, FACTORY, OFF-SITE)

HANDYPROBE SOLUTION

TRUaccuracy TECHNOLOGY

Higher Measurement Accuracy. Creaform's *TRUaccuracy* technology ensures highly-accurate measurements, regardless of the measurement environment (instability, vibrations, thermal variations, etc.) or operator skills.

– With the **dynamic referencing** mode of the C-Track, the coordinate system can be literally "locked" onto the part(s) being measured, thus maintaining part alignment during the entire 3D scanning process.

– With the **automatic alignment** function, manual operation is no longer needed during the alignment phase and root cause errors are drastically reduced.

– With the **fast user calibration** process using a **certified gauge,** the HandyPROBE delivers constant accuracy during its entire life cycle.

– With the **continuous monitoring** of **parameters** (temperature, accuracy, etc.), device accuracy is maintained throughout entire operation.
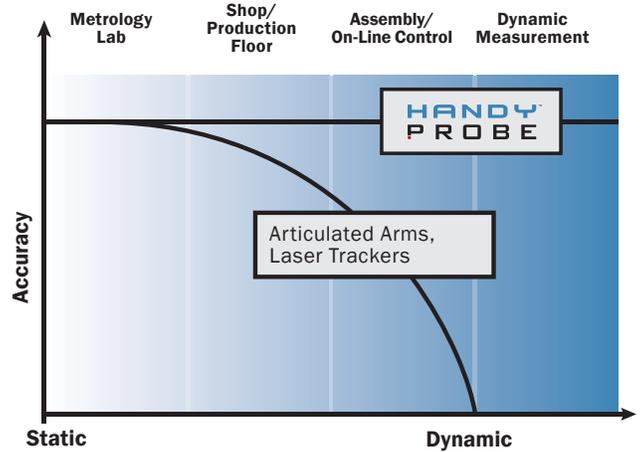
APPLICATIONS

The HandyPROBE is a powerful arm-free measurement system. Data acquired by this system may be processed in real-time using any major inspection and metrology software. This highly-accurate device can carry out the following tasks:

Inspection

– Part-to-CAD analysis
– First article inspection
– Supplier quality inspection
– Conformity assessment of 3D models against original parts/production tooling
– Conformity assessment of manufactured parts against originals
– Alignment
– Tooling certification
– Multi-shot measurement (up to 30 points/sec.)
– When used with a MetraSCAN 3D optical CMM scanner, allows full free form inspection and generates high density colour maps

Reverse Engineering

– Reverse engineering of geometrical entities (spheres, cylinders, planes)
– When used with a MetraSCAN 3D optical CMM scanner, allows faster and more accurate reverse engineering of mixed parts (geometrical and free form).

THE C-Track™ DUAL-CAMERA SENSORS

The C-Track dual-camera sensors are fitted with high quality optics and special lighting, enabling them to measure all reflectors within their operating space. In addition to tracking the whole system's reference model, the C-Track ensure the exact localization of the HandyPROBE, perform continuous image acquisition and transmission, lighting of reflectors, management of the exchanges with the computer and storage of the sensor parameters.

C-Track **1480**
C-Track **780**
C-Track **380**

1240 mm (49 in.)   2747 mm (108 in.)   3165 mm (125 in.)   3680 mm (145 in.)

1800 mm (71 in.)   3120 mm (123 in.)   3825 mm (151 in.)   4695 mm (185 in.)

C-Track 1**480**
C-Track **780**
C-Track **380**

1153 mm (45 in.)   1964 mm (77 in.)   2404 mm (95 in.)   2941 mm (116 in.)

1800 mm (71 in.)   3120 mm (123 in.)   3825 mm (151 in.)   4695 mm (185 in.)
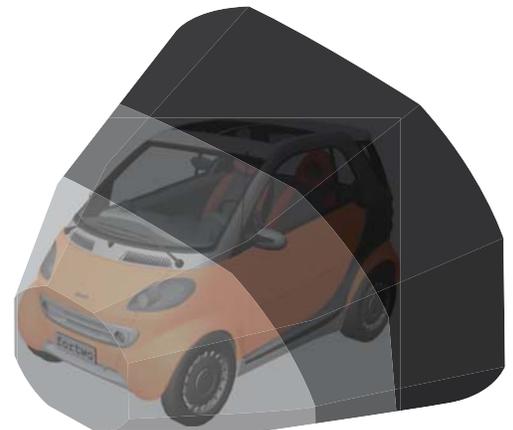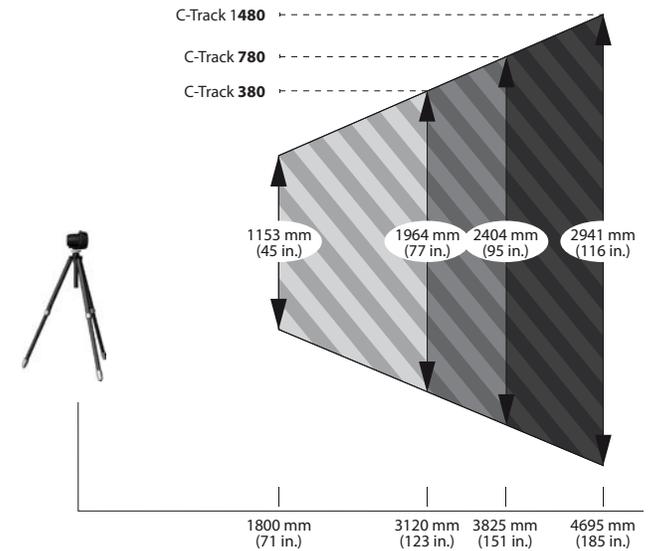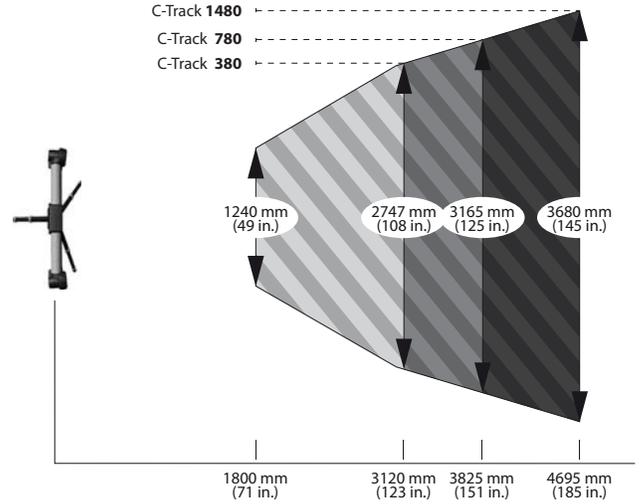
C-Track **380**
C-Track **780**
C-Track **1480**

VXelements™

The HandyPROBE arm-free portable probing system comes with VXelements, the all-in-one 3D data acquisition software that powers its entire fleet of probing and measurement technologies. The software gathers all the essential elements and tools into a uniform, user-friendly and intuitive working environment.

The **VXprobe module** allows users to interact with data acquired using a HandyPROBE and share it with any other VXelements component or third-party software.
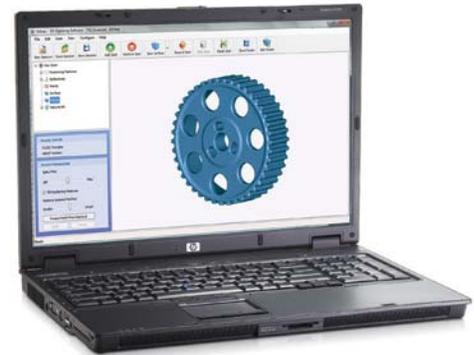
ACCESSORIES

Included

- HandyPROBE probing stylus
- C-Track dual-camera sensor (model chosen by the client)
- 45° shaft (Ø8mm - Height 12mm Ø6) metal reflectors (4)
- Magnetic supports for reflector Ø 6 mm (4)
- L20 sphere 3 ruby stylus M4 (1)
- M4 stylus tool (to install the stylus onto adapter)
- Controller (screen and keyboard not included)
- Probe adapter, fixed and mobile part (1)
- Calibration bar, carrying case, tripod and universal power supply
- One-year warranty on parts and labour

Optional

- HandyPROBE adhesive black contour targets
- Hold-down horizontal clamps with D6 reflector holder
- Metal reflectors (various angles, diameters and heights)
- Renishaw styli and accessories (various types and dimensions)
- And more...

CREAFORM CUSTOMER SERVICE

When you purchase a HandyPROBE portable CMM, Creaform backs you up with the CreaCare customer service program. We offer readily available, multilingual technical support on all continents, ensured by knowledgeable, proactive and committed product specialists.

We find it important to help you simplify your work, increase your efficiency and make the most out of your HandyPROBE portable CMM. That is why all Creaform technologies come with a free CreaCare maintenance plan and annual calibration for the first year. To keep you on the technological edge, you can also choose to get instant downloading access to every new release of VXelements (and the VXprobe module). If you wish, you can ask that a qualified metrologist comes over to your place to help you get started with your CMM, and to train you and/or your staff on your specific applications.

Last but not least, Creaform's client service agents follow-up with each and every client to make sure that they are satisfied with their HandyPROBE, and that they know exactly who to contact in case of a problem. And if anything should happen, we guarantee quick and reliable servicing.

RELATED PRODUCTS

MetraSCAN 3D™ OPTICAL CMM SCANNERS

The MetraSCAN 3D optical CMM scanners and the C-Track dual-camera sensor form a unique duo that generates the most accurate measurements in the lab and on the shop floor. Combined with the HandyPROBE, this complete and powerful inspection solution increases the reliability, speed and versatility of the measurement process.

The MetraSCAN 70 and the MetraSCAN 210 are powerful 3D scanning systems. We can combine them to a HandyPROBE to create a 3D scanning and probing system that can be used for a wide range of metrology applications.

MaxSHOT 3D™

The MaxSHOT 3D optical coordinate measuring system is a complementary product that adds photogrammetry to the range of applications possible with our technologies. The system combines the MaxSHOT 3D photogrammetric video camera and the VXshot™ processing software, and stands out from other systems because it is so easy to use. Its user-friendly design allows even those new to photogrammetry to quickly and easily generate a high accuracy positioning model of an object based on a series of photos.

The MaxSHOT 3D system generates positioning models that can be used with the HandyPROBE system to determine their repositioning around the object to be probed. Doing so, we get highly accurate data, and most especially when measuring larger parts.

VXtrack™

Combined with the HandyPROBE arm-free CMM, VXtrack provides a complete portable 3D measuring solution offering both probing inspection and dynamic measurement capabilities. Furthermore, the probing stylus is very useful for aligning parts with respect to a referential (determined through a group of reflectors), allowing for movement or deformation monitoring directly on the part's referential.

C-Link™

It is possible to network 2 or 4 C-Tracks with a HandyPROBE to get access to and benefit from the C-Link functionality, which drastically increases the measurement speed and ease of use of the system.

COMPATIBLE SOFTWARE

- BuildIT Software & Solutions (BuildIT)
- Delcam (PowerINSPECT)
- Geomagic (Studio and Qualify)
- Innovmetrics (PolyWorks Inspector)
- Inspect 3D (Inca 3D)
- Metrologic (Metrolog XG and V5)

- New River Kinematic (SpatialAnalyzer)
- Rapidform (XOR and XOV)
- Verisurf (VerisurfMeasure)
- Wenzel Metromec (Metrosoft CM)

Other software platforms: contact our specialists at info@creaform3d.com.

TECHNICAL SPECIFICATIONS		C-TRACK 380	C-TRACK 780	C-TRACK 1480	HANDY PROBE
ACCURACY [1]		Up to 0.022 mm (0.0009 in.)	Up to 0.025 mm (0.0010 in.)	Up to 0.030 mm (0.0012 in.)	n/a
SINGLE POINT REPEATABILITY [3]	3.80 m³ (135 ft³)	0.045 mm [2] (0.0018 in.)	0.050 mm [5] (0.0020 in.)	0.055 mm [5] (0.0022 in.)	n/a
	7.80 m³ (275 ft³)	n/a	0.055 mm [2] (0.0022 in.)	0.065 mm [5] (0.0026 in.)	n/a
	14.8 m³ (525 ft³)	n/a	n/a	0.095 mm [2] (0.0037 in.)	n/a
VOLUMETRIC ACCURACY [4]	3.80 m³ (135 ft³)	0.075 mm [2] (0.0029 in.)	0.080 mm [5] (0.0031 in.)	0.090 mm [5] (0.0035 in.)	n/a
	7.80 m³ (275 ft³)	n/a	0.085 mm [2] (0.0033 in.)	0.095 mm [5] (0.0038 in.)	n/a
	14.8 m³ (525 ft³)	n/a	n/a	0.170 mm [2] (0.0067 in.)	n/a
VOLUMETRIC ACCURACY (with MaxSHOT 3D or C-Link) [6]		0.075 mm if $L^{[6]} \leq 1.2$ m (0.0029 in. if $L^{[6]} \leq 4$ ft)	0.085 mm if $L \leq 1.2$ m (0.0033 in. if $L \leq 4$ ft)	0.170 mm if $L \leq 3.0$ m (0.0067 in. if $L \leq 4$ ft)	n/a
		0.045 mm + 0.025 mm/m if L > 1.2 m (0.0018 in. + 0.0003 in./ft if L > 4 ft)	0.055 mm + 0.025 mm/m if L > 1.2 m (0.0022 in. + 0.0003 in./ft if L > 4 ft)	0.095 + 0.025 mm/m if L > 3.0 m (0.0037 in. + 0.0003 in./ft if L > 4 ft)	n/a
MEASUREMENT SPEED		30 Hz	30 Hz	30 Hz	30 Hz
WEIGHT		5.5 kg (12 lbs.)	5.5 kg (12 lbs.)	5.5 kg (12 lbs.)	450 g (1 lb.)
DIMENSIONS		1035 x 169 x 140 mm (40.8 x 6.6 x 5.5 in.)	1035 x 169 x 140 mm (40.8 x 6.6 x 5.5 in.)	1035 x 169 x 140 mm (40.8 x 6.6 x 5.5 in.)	204 x 159 x 97 mm (8 x 6.26 x 3.8 in.)
OPERATING TEMPERATURE RANGE		15 - 40 °C (59 - 104 °F)	15 - 40 °C (59 - 104 °F)	15 - 40 °C (59 - 104 °F)	15 - 40 °C (59 - 104 °F)
OPERATING HUMIDITY RANGE (NON CONDENSING)		10 - 90%	10 - 90%	10 - 90%	10 - 90%
CERTIFICATIONS		EN 301 489-1, EN 301 489-3, EN 300 220-1	EN 301 489-1, EN 301 489-3, EN 300 220-1	EN 301 489-1, EN 301 489-3, EN 300 220-1	EN 301 489-1, EN 301 489-3, EN 300 220-1

[1] Volumetric accuracy using dynamic referencing mode and a 500 mm artefact.

[2] Each system tested according to test methods given in the ASME B89.4.22 standard.

[3] Single point repeatability: The probe of the HandyPROBE 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 (range/2).

[4] Volumetric accuracy: Performance is assessed by measuring traceable length artifacts in different locations and with different orientations within the working volume of the HandyPROBE (maximum range/2).

[5] Typical value.

[6] "L" being the size of the object measured.

CREAFORM

Head Office
5825, rue Saint-Georges
Lévis (Québec) G6V 4L2 Canada
T. 1 418 833.4446 | F. 1 418 833.9588

info@creaform3d.com | www.creaform3d.com

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