

HANDY™ PROBE



GET THE **measure**
OF **things!**

HANDY PROBE™

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 WIRELESS CMM** ALLOWS TOTAL FREEDOM OF MOVEMENT FOR SIGNIFICANTLY INCREASED PRODUCTIVITY AND QUALITY!

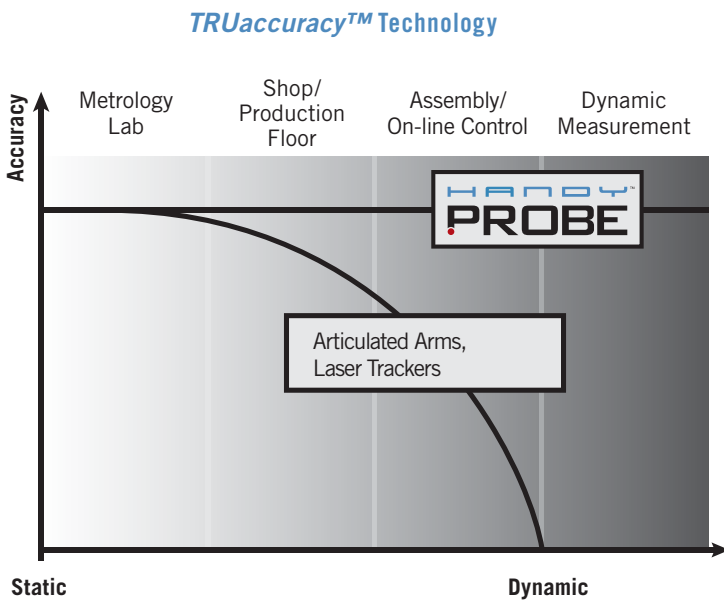
UP TO
22 µm



BENEFITS

Higher Measurement Accuracy. Creaform's *TRUaccuracy™* technology ensures highly-accurate measurements, regardless of the measurement environment (instability, vibrations, thermal variation, 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.



Faster and Easier Measurement: Handheld, armless device and wireless data transmission process allow the user to move freely around the part. **Automatic alignment** through optical reflectors allows probing of many identical parts in rapid succession. **Lightweight** (450 g), it can be used during extended periods of time without causing musculo-skeletal problems.

Greater, Extendable Measurement Volume: Compared to other portable CMM systems, the HandyPROBE allows a greater basic measurement volume. In addition, this volume can be easily and dynamically extended without any loss of accuracy and without **any conventional leapfrog** or additional alignment set-up involved. 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**.



Truly Portable Device: The full portability of the HandyPROBE makes it possible to inspect or reverse engineer parts, sub-units or complex assemblies with unequalled **precision, mobility** and **flexibility** - no matter where (lab, factory, off-site, etc.).

User-friendly: Easy-to-learn, **intuitive** system with a very short learning curve – you can keep using the same metrology software and probing techniques! Installation in less than 5 minutes. Allows the measurement of parts in production without having to align every part.

Excellent ROI: Yields considerable **productivity** and operating profits in the field of industrial coordinate measurement and control. Measurement errors can be reduced by up to 75%, and control time by a factor of 10.

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 optical CMM 3D 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 optical CMM 3D scanner, allows faster and more accurate reverse engineering of mixed parts (geometrical and free-form).

INDUSTRIES

- Aerospace
- Automotive/Transport Equipment Production
- Consumer Products
- Education
- Metallurgy and Metal Processing
- Machine Tool Production
- Forming, Moulding, Manufacturing, Casting and Assembling

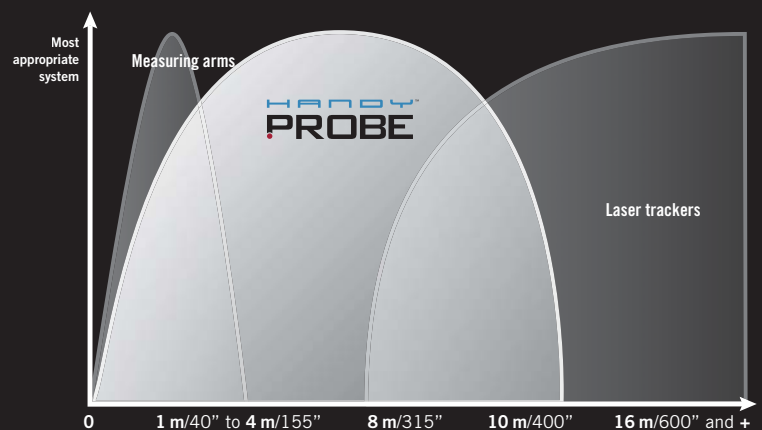


WHY CHOOSE A HandyPROBE PORTABLE CMM OVER A LASER TRACKER?

- Half the price of a laser tracker
- Shorter learning curve
- Greater portability and ergonomics (± 9 kg (20 lbs.) lighter)
- Tolerant to beam cut-off
- Easier to use than spherical mirror reflectors (SMRs)
- No annual factory calibration
- Low maintenance cost (no need to replace SMRs, extensions, etc.)

WHY CHOOSE A HandyPROBE PORTABLE CMM OVER A CONVENTIONAL MEASURING ARM?

- Higher precision in actual conditions (shop floor)
- Increased ease of operation
- Low maintenance (no encoders, no mechanical maintenance and wear)
- No movement limitation (no physical link)
- Greater portability (± 9 kg (20 lbs.) lighter)
- No annual factory calibration





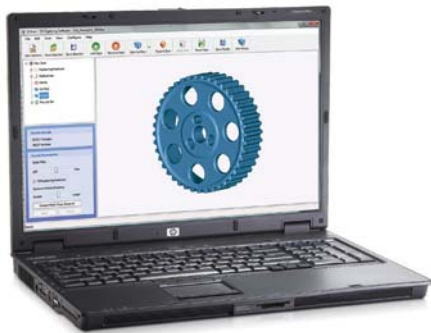
MaxSHOT 3D™

The MaxSHOT 3D optical coordinate measuring system is a complementary product that adds **photogrammetry** to the wide range of 3D optical probing. 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.

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. VXelements includes four software modules: VXscan™, VXprobe™, VXtrack™ and VXshot™. The software gathers all the essential elements and tools into a uniform, user-friendly and intuitive working environment.

VXscan is entirely dedicated to the acquisition and optimization of 3D scanning data. It delivers high performance for that specific task, yet it is simple and user-friendly enough to suit any user's experience level.

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

VXtrack adds dynamic tracking capability to the C-Track line of dual camera sensors. It can now record 30 3D images per second of a reflector or sets of reflectors in real time for the study of a variety of applications involving motion tracking.

VXshot gives access to photogrammetry. It features an extremely simple data acquisition process that guides operators every step of the way throughout the process and clearly and immediately notifies them if they need to take additional pictures to increase measurement accuracy.



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 m ³ (135 ft ³)	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 m ³ (275 ft ³)	n/a	0.055 mm ⁽²⁾ (0.0022 in.)	0.065 mm ⁽⁵⁾ (0.0026 in.)	n/a
	14.8 m ³ (525 ft ³)	n/a	n/a	0.095 mm ⁽²⁾ (0.0037 in.)	n/a
VOLUMETRIC ACCURACY ⁽⁴⁾	3.80 m ³ (135 ft ³)	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 m ³ (275 ft ³)	n/a	0.085 mm ⁽²⁾ (0.0033 in.)	0.095 mm ⁽⁵⁾ (0.0038 in.)	n/a
	14.8 m ³ (525 ft ³)	n/a	n/a	0.170 mm ⁽²⁾ (0.0067 in.)	n/a
VOLUMETRIC ACCURACY (WITH MAXSHOT 3D)		0.075 mm if L ⁽⁶⁾ ≤ 1.2 m (0.0029 in. if L ⁽⁶⁾ ≤ 4 ft)	0.085 mm if L ≤ 1.2 m (0.0033 in. if L ≤ 4 ft)	0.170 mm if L ≤ 3.0 m (0.0067 in. if L ≤ 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		4.9 kg (10.8 lbs.)	4.9 kg (10.8 lbs.)	4.9 kg (10.8 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).

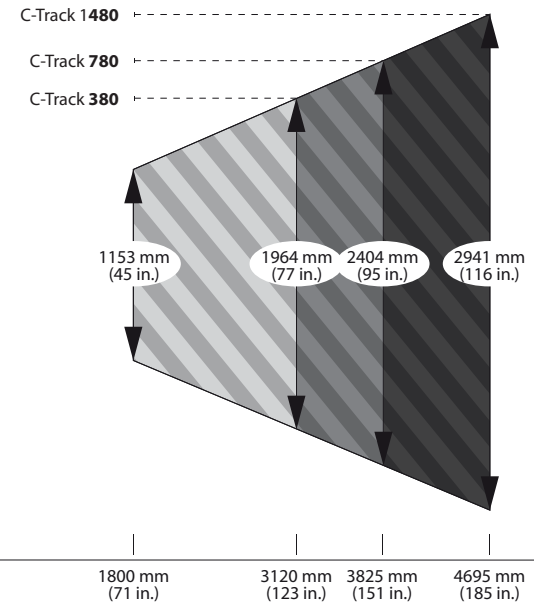
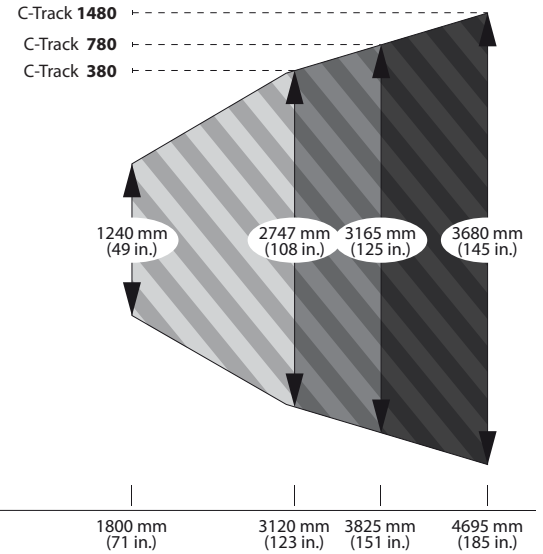
⁽⁵⁾ Typical value.

⁽⁶⁾ "L" being the size of the object measured.



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 380
- C-Track 780
- C-Track 1480

COMPATIBLE SOFTWARE

- Delcam (PowerINSPECT)
- Geomagic (Studio & Qualify)
- InnovMetric Software (PolyWorks Inspector)
- Inspect 3D (Inca 3D)
- Metrologic (Metrolog XG & V5)
- New River Kinematic (SpatialAnalyzer)
- Rapidform (XOR & XOY)
- Verisurf (VerisurfMeasure)
- Wenzel Metromec (Metrosoft CM)

Other software platforms: Contact our experts at info@creaform3d.com

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
- 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 & accessories (various types and dimensions)
- And more...



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