PRODUCT BROCHURE

HEXAGON METROLOGY

HP-L-20.8

Laser Scanner for ROMER Absolute Arm


LASER
POWER
HP-L-208
HEXAGON

FAST – ACCURATE – VERSATILE

The new laser scanner by Hexagon Metrology

Designed for ROMER Absolute Arms, the HP-L-20.8 produces first class performance on complex workpieces made from the most challenging materials. With adjustable line lengths up to 220mm and a speed up to 150,000 points per second, this flexible laser scanner delivers accurate 3D point clouds at high speed.

Benefits of laser scanning:

- Rapid capture of free form surfaces
- High density point cloud for accurate feature inspection
- Reliable measurement of fragile, flexible and soft parts
- Increased productivity with shorter measuring times
- Complete digital copies created in minutes

Manual setting of the laser power according to surface colour or reflectivity is not required – the patented HP-L scanning technology automatically adapts in real time making the 20.8 extremely robust to ambient light and data outliers thus delivering the highest integrity point cloud.

The HP-L-20.8 can be used in combination with a tactile probe to aid high accuracy alignments or perform specific dimensioning tasks.

Specified according to the new ISO standard for optical probes 10360-8:2013, the sensor conforms to international metrology norms.

PRODUCTIVE AND PORTABLE

High speed scanning taken to your part

The HP-L-20.8 is fully integrated with the ROMER Absolute arm and does not need additional cables or external controllers – the solution fits in a single transport case. For simple probing applications, a repeatable mounting allows removal of the sensor and remounting on the arm in a matter of seconds without the need for any recalibration. Further, the sensor is compatible with most Hexagon Metrology CMMs to enable automated measurement tasks.

Sensor Features:

- Fast – up to 220mm line or up to 150 000 points per second
- Accurate – patented technology delivers high integrity point cloud
- Versatile – automatic laser power adjustment according to surface
- Portable – arm and scanner fit in a single transport case
- Removable – repeatable mounting means no recalibration
- CMM compatible – also works on Horizontal arm, Bridge and Gantry systems

A Wide Range of Industries and Applications

The 20.8 is suitable for measuring almost any material, including machined, semi-finished, stamped, forged, cast, painted metals, sand cores, carbon fibre, plastics, clay, rubber, wood and ceramic. Here are typical examples:

Measuring Applications:

- Sheet Metal Parts
- Dies & Moulds / Tooling
- Machined Parts
- Jigs & Fixture setup and alignment
- Tubes & Tube Assembly
- CAD-to-Part comparison
- Alignment
- Reverse Engineering
- Virtual Assembly
- Body in White
- On-machine tool inspection
- Composites inspection
- Die-Casting and Patterns

Feature Pack

The new Feature Pack means no extra cables or controller

Measurement Volume

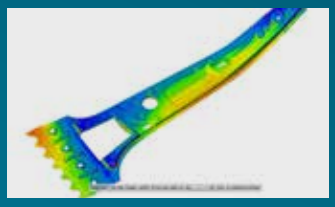
Combined with the ROMER Absolute Arm the HP-L-20.8 comes with fully verifiable scanning system accuracy

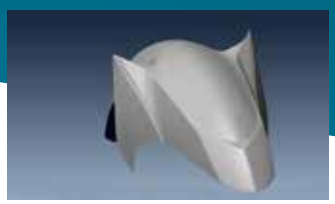
Multi-Sensor
Hard probe can be connected at the same time as the scanner

Simple to use
Change seamlessly between scanning and probing at the press of a button

Removable
Repeatable mounting allows the 20.8 to be removed in seconds and remounted with no need for recalibration

THE RIGHT SOLUTION – FOR EVERY USER





In use at Infiniti Red Bull Racing

The variety of components that Infiniti Red Bull Racing need to measure is vast. At their factory in Milton Keynes, UK, the workflow is governed by time management, this defines that the Inspection Department needs to be accurate, flexible and most importantly – fast! There are no second chances in Formula 1.

Hence Infiniti Red Bull Racing are using ROMER Absolute Arms and HP-L laser scanners from Hexagon Metrology to keep the Infiniti Red Bull Racing cars in pole position.

"The lack of need for operator intervention to keep changing settings in order to scan different surfaces means that varying colours and materials are scanned easily with only one setting. this contributes wholly to our time management needs"

Chris Charnley, Infiniti Red Bull Racing, Milton Keynes, England

Application Examples

Automotive tier 1 supplier – B-Pillar inspection
"This sheet metal part was measured with a time saving of approximately 70%, thanks to the sensor's repeatable mounting, short warmup time and significantly faster scan rate."

Motorcycle mudguard – plastic moulding reverse engineering
"The high accuracy and integrity of the point cloud from the 20.8 means that difficult parts can be scanned without powder and the point clouds directly meshed in one step, avoiding time consuming manual editing."

HP-L-20.8 Laser Scanner

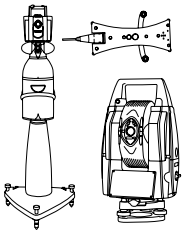
Technical Data		
Laser		Class 2
Standoff		180 ± 40mm
Line rate		max. 100Hz
Line width range	min	176 mm / 104 mm / 51 mm / 40 mm / 20 mm
	mid	220 mm / 130 mm / 63 mm / 51 mm / 25 mm
	max	231 mm / 148 mm / 75 mm / 60 mm / 30 mm
Data Rate		max. 150,000 points per second
Minimum point spacing		0.013 mm
Probing Form error (1 σ)		9 µm
Probing Dispersion value* P[Form.Sph.D95%:Tr:ODS]		36 µm
Operating Temperature		10° to 42° C / 50° to 108° F
Warmup Time		5 minutes
Sensor IP Rating		64
Sensor Size L x W x H		137 x 76 x 85 mm
Sensor Weight		410g (462g with silicon sleeve)
Storage temperature		-25° to -70° / -13° to -158° F
Relative humidity		10% to 90% non-condensing
Operational elevation		0 to 2000 m / 0 to 6600 ft.

*ISO10360-8:2013

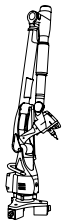
HP-L-20.8 Laser Scanner on ROMER Absolute Arm

	Model	Measuring range	Scanning system accuracy*	Arm weight incl. Scanner
73 series	7320SE	2.0 m / 6.6 ft.	0,075 mm / 0.0030 in.	7,9 kg / 17.4 lbs.
	7325SE	2.5 m / 8.2 ft.	0,080 mm / 0.0031 in.	8,2 kg / 18.1 lbs.
	7330SE	3.0 m / 9.8 ft.	0,113 mm / 0.0044 in.	8,5 kg / 18.7 lbs.
	7335SE	3.5 m / 11.5 ft.	0,140 mm / 0.0055 in.	8,8 kg / 19.4 lbs.
	7340SE	4.0 m / 13.1 ft.	0,172 mm / 0.0068 in.	9,1 kg / 20.1 lbs.
	7345SE	4.5m / 14.8 ft.	0,203 mm / 0.0080 in.	9,4 kg / 20.7 lbs.
75 series	7520SE	2.0 m / 6.6 ft.	0,053 mm / 0.0021 in.	8,2 kg / 18.1 lbs.
	7525SE	2.5 m / 8.2 ft.	0,058 mm / 0.0023 in.	8,5 kg / 18.7 lbs.
	7530SE	3.0 m / 9.8 ft.	0,078 mm / 0.0031 in.	8,8 kg / 19.4 lbs.
	7535SE	3.5 m / 11.5 ft.	0,096 mm / 0.0038 in.	9,1 kg / 20.1 lbs.
	7540SE	4.0 m / 13.1 ft.	0,114 mm / 0.0045 in.	9,4 kg / 20.7 lbs.
	7545SE	4.5m / 14.8 ft.	0,133 mm / 0.0052 in.	9,7 kg / 21.4 lbs.

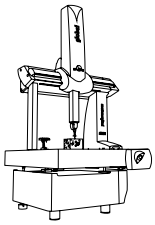
* The Scanning System Accuracy Test most accurately represents the reasonable expectations for machine performance in practical measuring applications while using the laser scanning method. The test consists of measuring a matte grey sphere with 5 different arm articulations. In each articulation of the arm the sphere is scanned from 5 different directions such that the majority of the sphere is scanned. The result is the maximum 3D centre to centre distance of the 5 spheres.



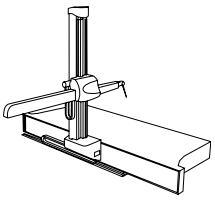
LASER TRACKERS
& STATIONS



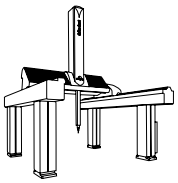
PORTABLE MEASURING ARMS



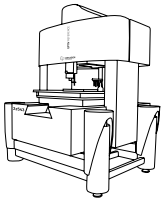
BRIDGE CMMS



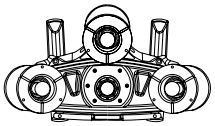
HORIZONTAL ARM CMMS



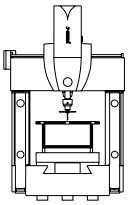
GANTRY CMMS



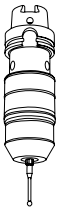
MULTISENSOR & OPTICAL SYSTEMS



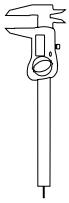
WHITE LIGHT SCANNERS



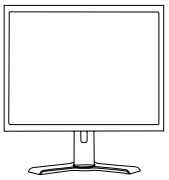
ULTRA HIGH ACCURACY CMMS



SENSORS



PRECISION MEASURING
INSTRUMENTS



SOFTWARE SOLUTIONS

HEXAGON
METROLOGY

Hexagon Metrology offers a comprehensive range of products and services for all industrial metrology applications in sectors such as automotive, aerospace, energy and medical. We support our customers with actionable measurement information along the complete life cycle of a product – from development and design to production, assembly and final inspection.

With more than 20 production facilities and 70 Precision Centres for service and demonstrations, and a network of over 100 distribution partners on five continents, we empower our customers to fully control their manufacturing processes, enhancing the quality of products and increasing efficiency in manufacturing plants around the world.

For more information, visit **www.hexagonmetrology.com**

Hexagon Metrology is part of Hexagon (Nordic exchange: HEXA B). Hexagon is a leading global provider of design, measurement and visualisation technologies that enable customers to design, measure and position objects, and process and present data.

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