



ROMER Absolute Arm with
integrated scanner.
Factsheet

ROMER

Metrology to go.



 **HEXAGON**
METROLOGY

ROMER Absolute Arm with integrated scanner. Freedom of movement.

The ROMER Absolute Arm with seven rotation axes is available with a fully integrated and certified laser scanner system. The laser scanner is a part of the arm's wrist. Together with the standard touch probe, this system is an all-purpose metrology tool for a multitude of applications. 3D digitizing, 3D modelling, point cloud inspection, reverse engineering, rapid prototyping or copy milling are the most frequent laser scanner applications and with the ROMER Absolute Arm, these tasks go mobile. The laser scanner is tuned for a vast variety of materials without compromise in accuracy.

This low-weight laser scanner solution comes as a cost-efficient package. No additional cable or controller between the laser scanner and the portable measuring arm, permits the ROMER Absolute Arm's infinite rotation of the main movement axis. Thanks to the perfect balance, the ROMER Absolute Arm with the integrated scanner, can be operated with one hand.

ROMER Absolute Arm with integrated scanner: universal, truly integrated and certified laser scanner system.

7-Axis Probing and Scanning Specifications – 73 series

Model	Measuring Range	Probing Point Repeatability ¹	Probing Volumetric Accuracy ²	Scanning System Accuracy SI ³	Arm Weights SI
7320SI	2.0 m / 6.6 ft.	± 0.044 mm / 0.0017 in.	± 0.061 mm / 0.0024 in.	± 0.079 mm / 0.0031 in.	8.3 kg / 18.3 lbs.
7325SI	2.5 m / 8.2 ft.	± 0.049 mm / 0.0019 in.	± 0.069 mm / 0.0027 in.	± 0.084 mm / 0.0033 in.	8.6 kg / 19.0 lbs.
7330SI	3.0 m / 9.8 ft.	± 0.085 mm / 0.0033 in.	± 0.110 mm / 0.0043 in.	± 0.119 mm / 0.0047 in.	8.9 kg / 19.6 lbs.
7335SI	3.5 m / 11.5 ft.	± 0.108 mm / 0.0043 in.	± 0.136 mm / 0.0054 in.	± 0.147 mm / 0.0058 in.	9.2 kg / 20.3 lbs.
7340SI	4.0 m / 13.1 ft.	± 0.120 mm / 0.0047 in.	± 0.168 mm / 0.0066 in.	± 0.181 mm / 0.0071 in.	9.5 kg / 20.9 lbs.
7345SI	4.5 m / 14.8 ft.	± 0.156 mm / 0.0061 in.	± 0.198 mm / 0.0078 in.	± 0.214 mm / 0.0084 in.	9.8 kg / 21.6 lbs.

7-Axis Probing and Scanning Specifications – 75 series

7520SI	2.0 m / 6.6 ft.	± 0.023 mm / 0.0009 in.	± 0.033 mm / 0.0013 in.	± 0.058 mm / 0.0023 in.	8.6 kg / 19.0 lbs.
7525SI	2.5 m / 8.2 ft.	± 0.028 mm / 0.0011 in.	± 0.039 mm / 0.0015 in.	± 0.063 mm / 0.0025 in.	8.9 kg / 19.6 lbs.
7530SI	3.0 m / 9.8 ft.	± 0.048 mm / 0.0019 in.	± 0.066 mm / 0.0026 in.	± 0.083 mm / 0.0033 in.	9.2 kg / 20.3 lbs.
7535SI	3.5 m / 11.5 ft.	± 0.061 mm / 0.0024 in.	± 0.093 mm / 0.0037 in.	± 0.101 mm / 0.0040 in.	9.5 kg / 20.9 lbs.
7540SI	4.0 m / 13.1 ft.	± 0.074 mm / 0.0029 in.	± 0.106 mm / 0.0042 in.	± 0.119 mm / 0.0047 in.	9.8 kg / 21.6 lbs.
7545SI	4.5 m / 14.8 ft.	± 0.088 mm / 0.0035 in.	± 0.126 mm / 0.0050 in.	± 0.138 mm / 0.0054 in.	10.1 kg / 22.3 lbs.

All specifications according to B89.4.22 and VDI/VDE 2617-9.

¹ The **Point Repeatability Test** is the reference test to determine measurement arm repeatability with ball probe. The cone is in front of the machine. Points are measured from multiple approach directions. The average point and the deviation of each point to the average center are calculated. The result is the maximum range divided by two.

² The **Volumetric Accuracy Test** is the most representative test for volume measurement accuracy. A gage block with a known and certified length is measured several times throughout the working volume. This gage block is installed in different positions and measured depending on multiple approach directions. The result is the

maximum deviation of the measuring distance less the theoretical length.

³ 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 center to center distance of the 5 spheres.

Ambient conditions

Working temperature: 0°C – 50°C (32°F – 122°F)
Storage temperature: -30° – 70° C (-22°F – 158°F)
Relative humidity: 10% – 90% non-condensing
Operational elevation: 0 – 2000 m (0 – 6600 ft)

Marks of conformity

CE Compliance: Yes

Power requirement

Universal worldwide voltage 110V – 240V



SpinKnob & SpinGrip - easy handling



ROMER Absolute Encoders: turn on and measure



Rigid carbon fibre tubes



Measuring volume up to 4.5 m



Integrated Scanner



Feature Pack technology – absolute connectivity



Automated Probe Recognition – TESA probes



Magnetic base included in 75 series



Scanning sensor specifications

Point acquisition rate	30'000 Points/s	Laser power control	Semi-automatic – per line
Points per Line	1000	Accuracy (2 sigma)*	30 µm
Line Rate	30 Hz	Weight	340 g
Line width	65 mm	Controller	No
Stand off	150mm ± 50 mm	Laser Safety	Class 2M
Point spacing	0.040 mm	Working temperature	5°C – 40°C (41°F – 104°F)

* The sensor accuracy is defined as the excursion of the XY location of a calibration artefact through the measuring range of the sensor.

ROMER

Coordinate measuring machines for research, development, production and assembly in their most mobile form – this is what ROMER stands for in the global Hexagon Metrology network. The portable measuring arms in which ROMER specialises are produced in Europe and the United States in compliance with stringent quality and environmental standards.

ROMER measuring arms permit tactile or optical 3D measurement. Stability, low weight and simple operation are their key advantages.

ROMER. Metrology to go.

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