

## CIMCORE

CIMCORE is a brand of Hexagon Metrology for portable measuring arms. CIMCORE Arms are sold and supported through a worldwide network of independent distributors that bring local support and expertise.

CIMCORE brand products are built in ISO certified Hexagon Metrology factories located in the United States and Europe.

Regional sales contacts:  
[www.cimcore.com](http://www.cimcore.com)

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All rights reserved. Due to continuing product development, CIMCORE reserves the right to change product specifications without prior notice.

### Absolute Encoders

Referencing and warm-up time was for yesterday – just switch the arm on and measure.

### RDS

CIMCORE proprietary RDS software is the virtual double of the CIMCORE Arm. For highspeed accuracy checks, calibration and simple measurements.

### Laser Scanning

The CIMCORE Arm is available with a completely integrated high-performance laser scanner or the external CMS 108 scanner, for complex scanning tasks. CIMCORE Arms are the only scanning systems on the market to offer fully verifiable scanning system accuracy.

### Automated Probe Recognition

Intelligent Quick Change Probes: Swap touch-probes at any time without the need to recalibrate. The CIMCORE Arm's repeatable mount allows to change probes on the fly, according to your measurement needs.

### Instant Feedback

The CIMCORE Arm provides immediate acoustic and haptic feedback to the operator, allowing the CIMCORE Arm to be used in even the most harsh industrial environments.

### Measurement Volume

Size does matter: The CIMCORE Arm is available in seven lengths between 1.5 m and 4.5 m.

### Certification

All CIMCORE Arms including scanning systems pass through B89.4.22 certification. Additional certifications according to VDI/VDE 2617-9 or ISO 10360 are available.

### SmartLock

If the CIMCORE Arm is not in use it can be locked safely into its rest position. SmartLock also allows the arm to be fixed in any intermediate position.

### Zero G

Zero G counterbalance eliminates torque in the base and arm members, more forgiving of the arm being mounted in a vertical position and puts you in control of the arm.

### Feature Packs

Thanks to easily interchangeable Feature Packs, the functionality of the CIMCORE Arm can always be enhanced. Feature packs are available for wi-fi communication, wi-fi scanning capability and full battery operation.



## CIMCORE ARM Overview





CIMCORE ARM WITH SIX MOVEMENT AXES

The CIMCORE Arm with six rotational axes is designed for highly accurate tactile measurements on countless work pieces. The six axis CIMCORE Arm allows reliable part inspection on features of sheet metal parts, plastic components or carbon fibre structures. In case your measurement jobs require laser scanning later, an upgrade is possible at any time.



CIMCORE ARM WITH INTEGRATED LASER SCANNER

Freedom of movement: with a fully integrated and certified laser scanner system, this is an all-purpose metrology system 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. The laser scanner is tuned for a vast variety of materials without compromise in accuracy. CIMCORE's integrated laser scanner does not need warm-up time or additional cables and controllers. Changing from scanning to probing and vice versa is possible at any time.



CIMCORE ARM WITH EXTERNAL LASER SCANNER

The CIMCORE Arm with external scanner is a modular high-end laser scanning platform designed for the CMS108 laser scanner from Hexagon Metrology. With CMS108, the CIMCORE Arm offers first-class performance even on complex surfaces and work pieces made of the most challenging materials. Setting the laser according to surface colour or reflectivity is not required: the automatic laser control of the CMS108 automatically adapts to the surface conditions. CMS108 is also the first ever laser scanner with a zoom function, providing three different line widths. Third party scanners can also be connected.



CIMCORE ARM for Tube Inspection

The CIMCORE Tube Inspection Solution covers all 3 main tasks of tube measurement in a single non-contact product: tube inspection and definition, geometry measurement and even interfacing to CNC tube bending machines is possible, via bending program correction. The CIMCORE Tube Inspection Solution is the only portable true tube inspection solution on the market. It can be taken to the work piece to measure pipes, lines, hoses and tubes in situ, thereby saving time and effort. Reverse engineering of tubes and hoses is also unbelievably fast, and without any need for complex laser scanning.

## CIMCORE ARM. SPECIFICATIONS.

### 6-Axis Probing Specifications

|           | Model | Measuring range  | Point repeatability <sup>1</sup> | Volumetric accuracy <sup>2</sup> | Arm weights       |
|-----------|-------|------------------|----------------------------------|----------------------------------|-------------------|
| 73 series | 7315  | 1.5 m / 4.9 ft.  | 0.025 mm / 0.0010 in.            | ± 0.037 mm / 0.0015 in.          | 7.1 kg / 15.6 lbs |
|           | 7320  | 2.0 m / 6.6 ft.  | 0.030 mm / 0.0012 in.            | ± 0.042 mm / 0.0017 in.          | 7.4 kg / 16.3 lbs |
|           | 7325  | 2.5 m / 8.2 ft.  | 0.038 mm / 0.0015 in.            | ± 0.051 mm / 0.0020 in.          | 7.7 kg / 17.0 lbs |
|           | 7330  | 3.0 m / 9.8 ft.  | 0.059 mm / 0.0023 in.            | ± 0.075 mm / 0.0030 in.          | 8.0 kg / 17.6 lbs |
|           | 7335  | 3.5 m / 11.5 ft. | 0.079 mm / 0.0031 in.            | ± 0.100 mm / 0.0039 in.          | 8.3 kg / 18.3 lbs |
|           | 7340  | 4.0 m / 13.1 ft. | 0.099 mm / 0.0039 in.            | ± 0.125 mm / 0.0049 in.          | 8.6 kg / 19.0 lbs |
|           | 7345  | 4.5 m / 14.8 ft. | 0.120 mm / 0.0047 in.            | ± 0.150 mm / 0.0059 in.          | 8.9 kg / 19.6 lbs |
| 75 series | 7520  | 2.0 m / 6.6 ft.  | 0.016 mm / 0.0006 in.            | ± 0.023 mm / 0.0009 in.          | 7.7 kg / 17.0 lbs |
|           | 7525  | 2.5 m / 8.2 ft.  | 0.020 mm / 0.0008 in.            | ± 0.029 mm / 0.0011 in.          | 8.0 kg / 17.6 lbs |
|           | 7530  | 3.0 m / 9.8 ft.  | 0.030 mm / 0.0012 in.            | ± 0.044 mm / 0.0017 in.          | 8.3 kg / 18.3 lbs |
|           | 7535  | 3.5 m / 11.5 ft. | 0.040 mm / 0.0016 in.            | ± 0.057 mm / 0.0022 in.          | 8.6 kg / 19.0 lbs |
|           | 7540  | 4.0 m / 13.1 ft. | 0.055 mm / 0.0022 in.            | ± 0.069 mm / 0.0027 in.          | 8.9 kg / 19.6 lbs |
|           | 7545  | 4.5 m / 14.8 ft. | 0.070 mm / 0.0028 in.            | ± 0.082 mm / 0.0032 in.          | 9.2 kg / 20.3 lbs |

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

### 7-Axis Probing and Scanning Specifications

|           | Model     | Measuring range  | Probing point repeatability <sup>1</sup> | Probing volumetric accuracy <sup>2</sup> | Scanning system accuracy SI <sup>3</sup> (with RS2) | Scanning system accuracy SE <sup>4</sup> (with CMS108) | Arm weights SI     | Arm weights SE    |
|-----------|-----------|------------------|--|--|---|--|--------------------|-------------------|
| 73 series | 7320SI/SE | 2.0 m / 6.6 ft.  | 0.044 mm / 0.0017 in.                    | ± 0.061 mm / 0.0024 in.                  | 0.079 mm / 0.0031 in.                               | 0.075 mm / 0.0030 in.                                  | 8.3 kg / 18.3 lbs  | 7.9 kg / 17.4 lbs |
|           | 7325SI/SE | 2.5 m / 8.2 ft.  | 0.049 mm / 0.0019 in.                    | ± 0.069 mm / 0.0027 in.                  | 0.084 mm / 0.0033 in.                               | 0.080 mm / 0.0031 in.                                  | 8.6 kg / 19.0 lbs  | 8.2 kg / 18.1 lbs |
|           | 7330SI/SE | 3.0 m / 9.8 ft.  | 0.079 mm / 0.0031 in.                    | ± 0.100 mm / 0.0039 in.                  | 0.119 mm / 0.0047 in.                               | 0.113 mm / 0.0044 in.                                  | 8.9 kg / 19.6 lbs  | 8.5 kg / 18.7 lbs |
|           | 7335SI/SE | 3.5 m / 11.5 ft. | 0.099 mm / 0.0039 in.                    | ± 0.125 mm / 0.0049 in.                  | 0.147 mm / 0.0058 in.                               | 0.140 mm / 0.0055 in.                                  | 9.2 kg / 20.3 lbs  | 8.8 kg / 19.4 lbs |
|           | 7340SI/SE | 4.0 m / 13.1 ft. | 0.115 mm / 0.0045 in.                    | ± 0.151 mm / 0.0059 in.                  | 0.181 mm / 0.0071 in.                               | 0.172 mm / 0.0068 in.                                  | 9.5 kg / 20.9 lbs  | 9.1 kg / 20.1 lbs |
|           | 7345SI/SE | 4.5 m / 14.8 ft. | 0.141 mm / 0.0056 in.                    | ± 0.179 mm / 0.0070 in.                  | 0.214 mm / 0.0084 in.                               | 0.203 mm / 0.0080 in.                                  | 9.8 kg / 21.6 lbs  | 9.4 kg / 20.7 lbs |
| 75 series | 7520SI/SE | 2.0 m / 6.6 ft.  | 0.023 mm / 0.0009 in.                    | ± 0.033 mm / 0.0013 in.                  | 0.058 mm / 0.0023 in.                               | 0.053 mm / 0.0021 in.                                  | 8.6 kg / 19.0 lbs  | 8.2 kg / 18.1 lbs |
|           | 7525SI/SE | 2.5 m / 8.2 ft.  | 0.027 mm / 0.0011 in.                    | ± 0.038 mm / 0.0015 in.                  | 0.063 mm / 0.0025 in.                               | 0.058 mm / 0.0023 in.                                  | 8.9 kg / 19.6 lbs  | 8.5 kg / 18.7 lbs |
|           | 7530SI/SE | 3.0 m / 9.8 ft.  | 0.042 mm / 0.0017 in.                    | ± 0.058 mm / 0.0023 in.                  | 0.083 mm / 0.0033 in.                               | 0.078 mm / 0.0031 in.                                  | 9.2 kg / 20.3 lbs  | 8.8 kg / 19.4 lbs |
|           | 7535SI/SE | 3.5 m / 11.5 ft. | 0.055 mm / 0.0022 in.                    | ± 0.081 mm / 0.0032 in.                  | 0.101 mm / 0.0040 in.                               | 0.096 mm / 0.0038 in.                                  | 9.5 kg / 20.9 lbs  | 9.1 kg / 20.1 lbs |
|           | 7540SI/SE | 4.0 m / 13.1 ft. | 0.067 mm / 0.0026 in.                    | ± 0.098 mm / 0.0039 in.                  | 0.119 mm / 0.0047 in.                               | 0.114 mm / 0.0045 in.                                  | 9.8 kg / 21.6 lbs  | 9.4 kg / 20.7 lbs |
|           | 7545SI/SE | 4.5 m / 14.8 ft. | 0.084 mm / 0.0033 in.                    | ± 0.119 mm / 0.0047 in.                  | 0.138 mm / 0.0054 in.                               | 0.133 mm / 0.0052 in.                                  | 10.1 kg / 22.3 lbs | 9.7 kg / 21.4 lbs |

All specifications in relation to B89.4.22.

### CIMCORE ARMS. Laser scanners.

|                               | Integrated scanner RS2            | External scanner CMS108             |  |
|-------------------------------|-----------------------------------|-------------------------------------|--|
| Scanning sensor specification | Max. point acquisition rate       | 30'000 Points/s                     |  |
|                               | Points per Line                   | 1000                                |  |
|                               | Line rate                         | 50 Hz                               |  |
|                               | Line width range                  | min 46 mm<br>mid 65 mm<br>max 85 mm | 104 mm / 51 mm / 20 mm<br>130 mm / 63 mm / 25 mm<br>148 mm / 75 mm / 30 mm |
|                               | Stand off (mid range)             | 150 mm ± 50 mm                      | 180 mm ± 40 mm   |
|                               | Minimum point spacing (mid range) | 0.046 mm                            | 0.025 mm   |
|                               | Laser power control               | Semi-automatic – per line           | Fully automatic – per point  |
|                               | Accuracy (2 sigma)                | 30 µm                               | 20 µm  |
|                               | Weight                            | 340 g                               | 398 g  |
|                               | Controller                        | No                                  | Yes  |
|                               | Laser safety                      | Class 2M                            | Class 2  |
| Working temperature           | 5°C – 40°C (41°F – 104°F)         | 10°C – 42°C (50°F – 108°F)          |  |

<sup>1</sup> 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.

<sup>2</sup> The Volumetric Accuracy Test most accurately represents the reasonable expectations for machine performance in practical measuring applications since it involves measuring a certified length standard many times in several locations and orientations and compares the resultant measurements to the actual length. The Volumetric Length Accuracy Test is the most appropriate test for determining machine accuracy and repeatability. The result is the maximum deviation of the measuring distance less the theoretical length.

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

<sup>3</sup> SI designates the CIMCORE Arm with integrated scanner, SE designates the CIMCORE Arm with external scanner.

<sup>4</sup> 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.

All probing specifications are achieved with a CIMCORE Arm mounted on a CIMCORE base plate or magnetic base and using a 15 mm steel ball probe with a length of 50 mm under stable environmental conditions.

All RS2 scanning specifications are achieved with a CIMCORE Arm mounted on a CIMCORE base plate or magnetic base and a matte grey calibration sphere of 25.4 mm diameter under stable environmental conditions.

