

# Product information

## Optical-tactile devices with CNC table and tailstock Mar4D PLQ 4200-T4

### Product features

#### Speed:

Measuring processes in production should be fast above all else. A newly developed control architecture on the Mar4D PLQ 4200 device series therefore ensures that its axes move at a unique speed, such as the C-axis at up to 120 rpm. Fast measurement is also guaranteed by the built-in sensors: the modern, high-resolution matrix camera records the measurement data optically at top speed. The tactile probes - Mahr T7W for form features and Renishaw SP25M for 3D features - also impress with their speed. Particularly with the Mar4D PLQ 4200-T4 variant with automatic centering and tilting table, you also benefit from extremely fast alignment thanks to mathematical-mechanical combination technology. Finally, the user-friendly MarWin software platform evaluates all measurement data reliably and as required. The operator can carry out several measurements in just one clamping operation, which also significantly speeds up inspections and therefore reliable quality statements.

#### Productivity:

An investment in a Mar4D PLQ 4200 is long-term and future-proof. The device saves costs, time and space in production, as it offers up to five measuring functions in one unit, meaning that our customers can use it to replace up to five other measuring systems. In addition, thanks to its multi-sensor technology, the Mar4D PLQ 4200 can handle a wide range of different measuring tasks, including internal measurement, extremely flexibly, quickly and precisely. Rotationally symmetrical workpieces with a diameter of up to 200 mm, a length of 1,000 mm and a weight of 50 kg can be inspected. Overall, users increase their measuring capacities while waiting times are reduced. In addition, waste is significantly reduced as several integrated environmental controls ensure consistently reliable measuring conditions.



Item no.: **5554254**

### Technical data

<b>Travel/measuring path X1 axis</b>	200 mm
<b>Travel/measuring path X2 axis</b>	200 mm
<b>Travel/measuring path Y-axis</b>	40 mm
<b>Pos.-/Meas. path Z-axis</b>	450 mm
<b>Positioning speed C-axis</b>	0.2 - 15 1/min
<b>Positioning speed X1 axis</b>	0.5 - 200 mm/s
<b>Positioning speed X2 axis</b>	0.5 - 200 mm/s
<b>Positioning speed Y-axis</b>	0.5 - 50 mm/s
<b>Positioning speed Z-axis</b>	0.5 - 200 mm/s
<b>Workpiece length max.</b>	450 mm
<b>Workpiece diameter max.</b>	210 mm
<b>Table load max.</b>	50 kg
<b>Error limit Length</b>	$MPE \leq (2.4 + l/200) \mu\text{m}$ ; 'l' in mm
<b>Error limit diameter</b>	$MPE \leq (1.3 + d/150) \mu\text{m}$ ; 'd' in mm
<b>Measured value resolution Length</b>	0.01 - 0.0001 mm
<b>Measured value resolution diameter</b>	0.01 - 0.0001 mm
<b>Angular resolution</b>	0.01 - 0.0001 °
<b>Reference temperature</b>	20 °C
<b>Sensors</b>	optical tactile
<b>Optical system</b>	telecentric precision optics, image field approx. 15 x 10 mm (W x H)
<b>Camera system</b>	CMOS matrix camera
<b>Probe system</b>	Mahr T7W and/or RENISHAW SP25M
<b>Special equipment</b>	CNC table and motorized tailstock
<b>Measuring computer</b>	AIO PC or industrial AIO PC with UPS (each incl. Microsoft Windows 10 IoT LTSC)
<b>Operating temperature</b>	10 °C to 35 °C
<b>Storage and transport temperature</b>	5 °C to 60 °C
<b>Sound pressure level</b>	<75 dB(A)
<b>Permissible humidity</b>	max. 70 %; non-condensing
<b>Mains voltage</b>	90 – 240 V
<b>Mains frequency</b>	50/60 Hz
<b>Power consumption max.</b>	850 W

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### Precision:

The Mar4D PLQ 4200 device series guarantees exact measuring results and their reliable repeatability. For example, integrated environmental controls for temperature and vibrations in real time ensure that external influences on the measurement results are reduced or even completely eliminated. In addition, a motorized abutment with configurable clamping force monitoring minimizes operator intervention and thus influences and, in turn, increases accuracy. The measuring technologies also work with maximum precision: the modern high-resolution matrix camera and the tried-and-tested Mahr T7W tactile probes for form features and Renishaw SP25M for 3D features. Finally, the tried-and-tested MarWin software reliably evaluates the measurement data and thus ensures reproducible quality statements.

### User-friendliness:

Ergonomics and safety were at the heart of the development of the Mar4D PLQ 4200; both are implemented far higher than the market's standard. This ensures a spacious device layout for convenient loading and unloading, even by smaller people. If the operator uses a manipulator, he can operate the device in a way that is particularly effortless and body-friendly. A large number of processes are automated, such as clamping, aligning and measuring. Furthermore the Mar4D PLQ 4200 device series is robot-ready, i.e. prepared for automatic prepared for automatic loading by a robot. An interior monitoring system protects the system and prevents service calls. The light grid in front of the loading space and functional LEDs that indicate the status of the measurement status ensure the safety of operator and device.

### Technical data

<b>Transportation options</b>	suitable for air freight
<b>Scope of delivery</b>	PC holder and two 60° centering tips ( 2 – 44 mm)