



Fraunhofer

**TESTED[®]
DEVICE**

Carl Zeiss IMT GmbH
MICURA

Report No. ZE 1307-658

DUPLICATE

Statement of
Qualification

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Customer: Carl Zeiss Industrielle Messtechnik GmbH
Carl-Zeiss-Str. 22
73447 Oberkochen
Germany

Component tested:

Category: Process Equipment
Subcategory: Measuring Equipment
Type: MICURA coordinate measuring machine

Test results / Classification:
(according to ISO 14644-1)

The MICURA coordinate measuring machine is suitable for use in cleanrooms fulfilling the Air Cleanliness Class 6:

Parameters	Air Cleanliness Class
X-axis (at v=300 mm/s)	6
Y-axis (at v=220 mm/s)	5
Z-axis (at v=300 mm/s)	6
Overall result	6

Random check measurements of particle emission (airborne) at representative points

Test procedure: According to VDI 2083 Part 9.1
Each standard stated refers to the version valid at the time of testing.

Measuring instruments: Optical Particle Counter:
Model LasAir II 110 manufactured by PMS with measuring channels of
≥ 0.1 µm, ≥ 0.2 µm, ≥ 0.3 µm, ≥ 0.5 µm, ≥ 1.0 µm and ≥ 5.0 µm

Test parameters of the test environment:

- Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1
- Air flow velocity:..... 0.45 m/s
- Air flow guidance:vertical unidirectional air flow
- Temperature:22 °C ± 0.5 °C (71.6 °F ± 0.9 °F)
- Relative humidity: 45 % ± 5 %

Test parameters of the test execution:

- X-axis moving separatly
 - traversing range X-axis:.....0 mm to 500 mm
 - movement speed X-axis: 300 mm/s
 - position Y-axis:.....-250 mm
 - position Z-axis:.....-250 mm
- Y-axis moving separatly
 - traversing range Y-axis: 0 mm to -500 mm
 - movement speed Y-axis: 220 mm/s
 - position X-axis: 250 mm
 - position Z-axis:.....-250 mm
- Z-axis moving separatly
 - traversing range Z-axis: 0 mm to -500 mm
 - movement speed Z-axis: 300 mm/s
 - position X-axis: 250 mm
 - position Y-axis:.....-250 mm
- Three-axis-motion
 - motion sequence:standard cycle for continuous operation
 - movement speed X-axis: 300 mm/s
 - movement speed Y-axis: 220 mm/s
 - movement speed Z-axis: 300 mm/s

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The measuring equipment used for the qualification is regularly calibrated and is based on national and international standards. In the case where no national standards exist, the measuring procedure used corresponds with technical regulations and norms valid at the time of the measurement. The documents drawn up for this procedure are available for viewing.

The validity of this certificate applies only to the mentioned product in this particular condition for a duration of 5 years.
Further information: www.tested-device.com.