



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

Manz AG  
MCS Manz Conveyor System  
**Report No. MA 1108-570**

DUPLICATE

Statement of  
Qualification

# Statement of Qualification

**Customer:** Manz AG  
Steigäckerstraße 5  
72768 Reutlingen  
Germany

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

The MCS Manz Conveyor System is suitable for use in cleanrooms fulfilling the Air Cleanliness Class 5.

## Component tested:

Category: Automation Components  
Subcategory: Transfer Systems and Bearing  
Type: MCS Manz Conveyor System

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

Test procedure: According to VDI 2083 Part 9.1

Measuring instruments being used: Optical laser particle counter:

- PMS Model LasAir II 110 with measuring channels of  $\geq 0.1 \mu\text{m}$ ,  $\geq 0.2 \mu\text{m}$ ,  $\geq 0.3 \mu\text{m}$ ,  $\geq 0.5 \mu\text{m}$ ,  $\geq 1.0 \mu\text{m}$  and  $\geq 5.0 \mu\text{m}$
- PMS Model Airnet 310 with measuring channels of  $\geq 0.3 \mu\text{m}$ ,  $\geq 0.5 \mu\text{m}$ ,  $\geq 1.0 \mu\text{m}$  and  $\geq 5.0 \mu\text{m}$

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  $\pm$  0.5 °C (71.6 °F  $\pm$  0.9 °F)
- Relative humidity: ..... 45 %  $\pm$  5 %

Test parameters of the test execution:

Load:

- Object: ..... Glass plate
- Size: ..... 1000 cm x 400 cm x 2.3 cm
- Weight: ..... 5.3 kg

Motion sequence:

- Direction: ..... Oscillating
- Acceleration: ..... 0.25 m/s<sup>2</sup>
- Velocity: ..... up to 40 m/min

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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](http://www.tested-device.com).


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Stuttgart, October 28, 2011

Place, Date

  
i. A.   
Project manager