



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

ROLLON GmbH  
CLEANROOM UNIT ONE80  
**Report No. RO 1505-764**

DUPLICATE

Statement of  
Qualification

Particle Emission

# Statement of Qualification

## Customer

ROLLON GmbH  
Bonner Straße 317-319  
40589 Düsseldorf  
Germany

## Component tested

Category: Automation Component

Subcategory: Linear Units

Product name: CLEANROOM UNIT ONE80 - N08VA027403B  
(manufacturing date: 1/2015; color: anodized-grey, red; serial number: N08-0065; stroke: 2200mm)

## Test result / Classification

When operated with an extraction system and under the specified test conditions the CLEANROOM UNIT ONE80 - N08VA027403B is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Classes according to ISO 14644-1:

Parameter	Air Cleanliness Class
$v_1 = 0.5 \text{ m/s}; a_1 = 1.0 \text{ m/s}^2$	1
$v_2 = 1.0 \text{ m/s}; a_2 = 2.0 \text{ m/s}^2$	1
<b>Overall result</b>	<b>1</b>

## Random sampling of particle emissions (airborne) at representative sites

Standards/Guidelines: VDI 2083-9.1; ISO 14644-1  
The norms stated refer to the relevant editions applicable at the time of the tests.

Test devices: Optical particle counter:  
LasAir II 110 and LasAir III 110 with measuring ranges  $\geq 0.1 \mu\text{m}$ ,  $\geq 0.2 \mu\text{m}$ ,  $\geq 0.3 \mu\text{m}$ ,  $\geq 0.5 \mu\text{m}$ ,  $\geq 1.0 \mu\text{m}$  and  $\geq 5.0 \mu\text{m}$

Test environment parameters:

- Cleanroom Air Cleanliness Class (according to ISO 14644-1):.....ISO 1
- Airflow velocity:..... 0.45 m/s
- Airflow pattern:.....vertical laminar flow
- Temperature:.....  $22^\circ\text{C} \pm 0.5^\circ\text{C}$
- Relative humidity: .....  $45\% \pm 5\%$

Test procedure parameters:

- Installation position: ..... vertical, drive underneath
- Travel length: .....  $s = 2000 \text{ mm}$
- Payload: .....  $m = 20 \text{ kg}$
- Volume flow rate of extraction: .....  $Q = 1001 \text{ m}^3/\text{min}$
- Parameter set 1: .....  $v_1 = 0.5 \text{ m/s}; a_1 = 1.0 \text{ m/s}^2$
- Parameter set 2: .....  $v_2 = 1.0 \text{ m/s}; a_2 = 2.0 \text{ m/s}^2$

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

Fraunhofer Institute for  
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Place, date of first document issued

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Place, current date

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Udo Gommel, Project Manager Fraunhofer IPA