IPA

Cleanroom (atmospheric)

valid until: November 28, 2030

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DEVICE

Rollon S.p.A.
ONE 110 modified 2025
Report No. RO 2510-1674

Statement of
Qualification

Single product
Particle Emission
in Cleanroom
(atmospheric)

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Statement of Qualification · Single product

Customer

Rollon S.p.A.
Via Trieste 26
20871 Vimercate (MB)
Italy

Tested product

Category: Automation Components

Subcategory: Linear Units

Product name: Linear unit ONE 110 modified 2025
(manufacturing date: 6/2025; weight: 62.6 kg; serial number: N11-0178)

Random sampling of particle emissions (airborne) at representative sites in cleanroom under atmospheric conditions

Standards/guidelines: ISO 14644-1, -14
The norms stated generally refer to the version valid at the time of the tests.

Test equipment: Optical particle counter:
LasAir II 110 and LasAir III 110 with measuring ranges ≥ 0.1 µm, ≥ 0.2 µm, ≥ 0.3 µm, ≥ 0.5 µm, ≥ 1.0 µm and ≥ 5.0 µm

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
- Room temperature: ..... 22 °C ± 0.5 °C
- Relative humidity: ..... 45 % ± 5 %

Test procedure parameters:

- Attached payload: ..... none
- Travel length: ..... s = 2280 to 1550 mm
- Suction: ..... max. suction volume
  – Pump type 1: ..... VT 4.4 (Becker)
  – Pump type 2: ..... VTE 3 (Rietschle Thomas)
- Parameter Set 1: ..... v_1 = 0.5 m/s; a_1 = 1.0 m/s²; horizontal, slide at the top
- Parameter Set 2: ..... v_2 = 1.0 m/s; a_2 = 2.0 m/s²; horizontal, slide at the top
- Parameter Set 3: ..... v_3 = 2.0 m/s; a_3 = 4.0 m/s²; horizontal, slide at the top
- Parameter Set 4: ..... v_1 = 0.5 m/s; a_1 = 1.0 m/s²; vertical, slide at the side
- Parameter Set 5: ..... v_2 = 1.0 m/s; a_2 = 2.0 m/s²; vertical, slide at the side
- Parameter Set 6: ..... v_3 = 2.0 m/s; a_3 = 4.0 m/s²; vertical, slide at the side

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Test result / Classification

The linear unit ONE 110 modified 2025 is suitable for use under the specified test parameters (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %) in cleanrooms of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
v_1 = 0.5 m/s; a_1 = 1.0 m/s²; horizontal	4
v_2 = 1.0 m/s; a_2 = 2.0 m/s²; horizontal	6
v_3 = 2.0 m/s; a_3 = 4.0 m/s²; horizontal	6
v_1 = 0.5 m/s; a_1 = 1.0 m/s²; vertical	5
v_2 = 1.0 m/s; a_2 = 2.0 m/s²; vertical	6
v_3 = 2.0 m/s; a_3 = 4.0 m/s²; vertical	6
Overall result	**6**

Please note: Transport damages, incorrect installation, oil leakage, aging behavior, corrosion etc. can influence the test result.

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.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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RO 2510-1674 — Report No. first document
Stuttgart, November 28, 2025 — Place, date of first document issued

-- — Report No. current document
-- — Place, current date

on behalf of
Dr.-Ing. Frank Bürger, head of business unit Testing and Certification

This document only applies to the named product in its original state and is valid for a period of 5 years from the date the first document was issued. The document can be verified under **www.tested-device.com**.