valid until: April 19, 2028

Fraunhofer

TESTED®
DEVICE

Rollon S.p.A.
ONE 80
Report No. RO 2211-1366

DUPLICATE

Statement of
Qualification
Single product
Particle Emission

Fraunhofer
IPA

Fraunhofer
IPA

Statement of Qualification · Single product

Customer

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

Component tested

Category: Automation Components

Subcategory: Linear Units

Product name: Linear unit ONE 80
(manufacturing date: 10/31/2022; weight: 35 kg; serial number: N08-0325)

Random sampling of particle emissions (airborne) at representative sites

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

Test devices: 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
- Temperature: ..... 22 °C ± 0.5 °C
- Relative humidity: ..... 45 % ± 5 %

Test procedure parameters:

- Travel length: ..... s = 2600 mm
- Attached payload: ..... none
- Suction:
  - Suction capacity: ..... Q = 32 l/min per connection
  - 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

Test result / Classification

When operated under the specified test conditions, the linear unit ONE 80 is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanliness 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	3
v_3 = 2.0 m/s; a_3 = 4.0 m/s²; horizontal	7
v_1 = 0.5 m/s; a_1 = 1.0 m/s²; vertical	2
v_2 = 1.0 m/s; a_2 = 2.0 m/s²; vertical	4
v_3 = 2.0 m/s; a_3 = 4.0 m/s²; vertical	3
Overall result	**7**

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

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

RO 2211-1366	Stuttgart, April 19, 2023
Report No. first document	Place, date of first document issued
--	--
Report No. current document	Place, current date

on behalf of
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

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**.