IPA

Cleanroom (atmospheric)

valid until: November 21, 2030

Fraunhofer

TESTED® DEVICE

EXPRESSO Deutschland
lift2move cleanroom
Report No. EX 2509-1673

DUPLICATE

Statement of Qualification

Single product
Particle Emission in Cleanroom (atmospheric)

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Statement of Qualification · Single product

Customer

EXPRESSO Deutschland GmbH & Co. KG
Antonius-Raab-Strasse 19
34123 Kassel
Germany

Tested product

Category: Automation Components

Subcategory: Transfer Systems and Bearing

Product name: lift2move cleanroom
(manufacturing date: 9/2025; color: silver; weight: 75.8 kg; article number: 300141800RR; serial number: 1)

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:

- Stroke length: ..... s = 1600 mm
- Total height: ..... h = 2335 mm
- Travel speed: ..... v = 80 mm/s
- Cycles: ..... n = 1200
- Pause: ..... t = 60 s after each cycle
- Payload: ..... m = 180 kg

Test result / Classification

The lift2move cleanroom 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 Class according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
Stroke length: s = 1600 mm Travel speed: v = 80 mm/s Pause time: t = 60 s after each cycle Cycles: n = 1200 Payload: m = 180 kg	5
Overall result	

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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-- — 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**.