



Fraunhofer

**TESTED[®]
DEVICE**

Mennens Dongen B.V.
EUROSYSTEM ALU
Report No. ME 1806-1052

DUPLICATE

Statement of
Qualification

Particle Emission

Statement of Qualification

Customer Mennens Dongen B.V.
Metaalstraat 5
5107 ND Dongen
The Netherlands

Component tested

Category: Automation Components

Subcategory: Transfer Systems and Bearing

Product name: EUROSYSTEM ALU
(manufacturing date: 1/17/2018; color: gray; serial number: 291041486;
load capacity: 2000 kg)

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 $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$,
 $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ 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 °C \pm 0.5 °C
- Relative humidity: 45 % \pm 5 %

Test procedure parameters:

- Test weight:..... m = 31.6 kg
- Velocity: v = 4 m/min
- Periodic running time:t₁ = 1 min
- Periodic resting time:t₂ = 6 min
- Total running time: t₃ = 8 h

Test result / Classification

When operated under the specified test conditions, the EUROSYSTEM ALU is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Class according to ISO 14644-1:

Test parameter(s)	Air Cleanliness Class
Test weight: m = 31.6 kg Velocity: v = 4 m/min Periodic running time: t ₁ = 1 min Periodic resting time: t ₂ = 6 min Total running time: t ₃ = 8 h	6
Overall result	6

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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Department of Ultraclean Technology and Micromanufacturing

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on behalf of 
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