valid until: February 7, 2030

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TESTED®
DEVICE

igus GmbH
SKS28.068.02.1
Report No. IG 2501-1587

Statement of
Qualification

Single product
Particle Emission
in Cleanroom
(atmospheric)

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Statement of Qualification · Single product

Customer

igus GmbH
Spicher Strasse 1a
51147 Cologne
Germany

Component tested

Category: Energy Supply

Subcategory: Cable Guiding System

Product name: Clean Room corrugated Energychain - e-skin SKS28.068.02.1
(manufacturing date: 11/22/2024; color: white; article number: SKS28.068.02.1; batch number: 71465878)

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

Test procedure parameters:

- Installation height: ..... h = 150 mm
- Stroke length: ..... s = 820 mm
- Parameter Set 1: ..... v_1 = 0.5 m/s; a_1 = 1.0 m/s²
- Parameter Set 2: ..... v_2 = 1.0 m/s; a_2 = 2.0 m/s²
- Parameter Set 3: ..... v_3 = 2.0 m/s; a_3 = 4.0 m/s²

Test result / Classification

When operated under the specified test conditions (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %), the Clean Room corrugated Energychain - e-skin SKS28.068.02.1 is suitable for use in cleanrooms fulfilling the specifications 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	1
v_2 = 1.0 m/s; a_2 = 2.0 m/s²	2
v_3 = 2.0 m/s; a_3 = 4.0 m/s²	2
Overall result	**2**

Please note: Transport damages, incorrect installation, aging behavior, 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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on behalf of
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