IPA

Cleanroom (atmospheric)

valid until: July 1, 2027

Fraunhofer

TESTED®
DEVICE

Luceco plc
Cleanroom LED panel light
Report No. LU 2512-1701

DUPLICATE

Statement of
Qualification

Single product
Particle Emission

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Statement of Qualification · Single product

Customer

Luceco plc
Building E, Stafford Park 1,
Telford, Shropshire TF3 3BD,
United Kingdom

Component tested

Category: Cleanroom Facilities

Subcategory: Lighting Systems

Product name: Cleanroom LED panel light
(manufacturing date: 11/5/2022; color: white; article number: LPCR14W75D3K-MX, LPCR24W75D3K-MX, LPCR22W75D3K-MX; serial number: 28.10.N00053; batch number: SPYF0327)

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: The lighting system was subjected to stress as follows:

- Structure-borne noise: ..... approx. 50 Hz
- Oscillation velocity (Ø): ..... v = 0.5144 mm/s
- Oscillation acceleration (Ø): ..... a = 0.0184 m/s²
- Oscillation of the system (Ø): ..... s = 0.0986 mm

Test result / Classification

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

Test parameter(s)	Air Cleanlines Class
Structure-borne noise = approx. 5 to 50 Hz	1
Overall result	

It must be pointed out, that according to ISO 14644-1 cleanrooms classes 1 to 5 have a high filter occupancy, with the result that large-surface lighting/ceiling systems cannot be used in some cases. Cleanrooms with a horizontal displacement flow form an exception to this.

Please note: Transport damages, incorrect installation, 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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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**.