valid until: March 14, 2030

Fraunhofer

TESTED®
DEVICE

SG Armaturen A/S
DiLED IV 595x595
Report No. SG 2502-1597

DUPLICATE

Statement of
Qualification

Product series
**Particle Emission
in Cleanroom
(atmospheric)**

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Statement of Qualification · Product series

Customer

SG Produktion A/S,
Egestubben 16-26
5270 Odense N
Denmark

Tested product

Category: Cleanroom Facilities

Subcategory: Lighting Systems

Product name: DiLED IV 595x595
Tested Products:

- DiLED IV 595x595 T15/24 8000lm 4000K Ra>90 CD-DA-EL Glas prismatisk WHI/9010/25 IP20/65 junction box 5P Linect (manufacturing date: 1/2025)
- DiLED IV 595x595 T15/24 7250lm RGB-TW 1800-6500K Ra>90 VD DA8 Glas prismatisk WHI/9010/25 IP20/65 junction box 5P Linect (manufacturing date: 1/2025)
- DiLED IV 595x595 T15/24 6600lm RGB-TW 1800-6500K Ra>90 VD-DA Glas prismatisk WHI/9010/25 IP20/65 junction box 5P Linect (manufacturing date: 1/2025)
- DiLED IV 595x595 T15/24 6600lm RGB-TW 1800-6500K Ra>90 VD DA8-EL Glas prismatisk WHI/9010/25 IP20/65 junction box 5P Linect (manufacturing date: 1/2025)

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:

- Structure-borne noise: approx. 50 Hz

Test result / Classification

When operated under the specified test conditions (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %), the luminaire series DiLED IV 595x595 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. 50 Hz	1
Overall result	

It should be noted that cleanrooms of class 1 to 5 according to ISO 14644-1 have a higher filter occupancy, which may restrict the use of panel lighting systems. Cleanrooms with a horizontal displacement flow form an exception to this.
The test result may be affected by the surrounding ceiling system, in particular the material pairing between lights and ceiling frames, as well as other mounting accessories. Particle emission behavior should be reassessed in each assembly situation.

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

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

SG 2502-1597	Stuttgart, March 14, 2025
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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**.

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