



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

REGIOLUX GmbH  
PREMP/625 LED 4200 ET  
**Report No. RE 1812-1087**

DUPLICATE

Statement of  
Qualification

Single product  
Particle Emission

# Statement of Qualification · Single product

**Customer**  
 Regiolum GmbH  
 Hellinger Strasse 3  
 97486 Königsberg  
 Germany

**Component tested**

Category: Cleanroom Facilities

Subcategory: Lighting Systems

Product name: PREMP/625 LED 4200 840 ET IP54 IPA  
 (manufacturing date: week 39/2018; color: RAL 9016 traffic white;  
 serial number: 72500014153; charge number: 1516071)

## 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: The ceiling system was subjected to stress as follows:

- Structure-borne noise: ..... approx. 5 to 50 Hz
- Oscillation velocity ( $\emptyset$ ):.....v = 6.5383 mm/s
- Oscillation acceleration ( $\emptyset$ ):.....a = 2.0833 m/s<sup>2</sup>
- Oscillation of the system ( $\emptyset$ ): ..... s = 0.0583 mm

## Test result / Classification

When operated under the specified test conditions, the luminaire PREMP/625 LED 4200 840 ET IP54 IPA 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
Structure-borne noise = approx. 5 to 50 Hz	1
<b>Overall result</b>	<b>1</b>

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.

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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RE 1812-1087  
 Report No. first document

Stuttgart, January 30, 2019  
 Place, date of first document issued

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 Report No. current document

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 Place, current date

on behalf of   
 Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA