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DEVICE

BAUER KOMPRESSOREN GmbH
B-VIRUS FREE-459
Report No. BA 2012-1196

DUPLICATE

Statement of
Qualification

Single product
UVC radiation intensity

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Statement of Qualification · Single product

Customer

BAUER KOMPRESSOREN GmbH
Stäblistrasse 8
81477 Munich
Germany

Component tested

Category: Cleanroom Facilities

Subcategory: Filtration Systems

Product name: UVC reaction tube B-VIRUS FREE-459
(manufacturing date: 9/21/2020; color: silver/gray/white; serial number: 20-183444)

Determination of UVC radiation intensity

Standards/Guidelines: DIN EN 14255-1; DIN 5031-10
The norms stated generally refer to the version valid at the time of the tests.

Test devices:
Data capture: ..... UVpadE
..... Opsytec Dr. Gröbel

Test environment parameters:
Temperature: ..... 22 °C ± 0.5 °C

Test procedure parameters:
- Measuring range: ..... wavelength from λ = 200 nm to λ = 280 nm
- Running-in time before start of measurement: ..... 10 min
- Measuring time per measuring point: ..... 10 s
- Active throughflow: ..... none

Test result / Classification

The UVC radiation intensity of the UVC reaction tube B-VIRUS FREE-459 was measured according to DIN EN 14255-1. The average irradiance measured was 28 mW/cm² (equates to 28 mJ/cm²*s).
For the tested reaction tube, the following values were obtained according to DIN 5031-10 for an inactivation of influenza as a typical human-pathogenic virus:

Inactivation of influenza					
Rate [%]	**Required dose** [mJ/cm²]	**Irradiance** [mJ/cm²*s]	**V_{eff}** [l]	**t_{Limit}** [s]	**F_{max}** [m³/h]
90	3,5	28	2.6	0,12	76
99	10.5			0.37	25
99.9	31.5			1.11	8

According to literature data from Bianco et. al., 2020[1], the following values are obtained for the inactivation of SARS-CoV-2 as a human pathogenic virus in the tested reaction tube:

Inactivation of SARS-CoV-2 (according to Bianco et. al., 2020[1])					
Rate [%]	**Required dose** [mJ/cm²]	**Irradiance** [mJ/cm²*s]	**V_{eff}** [l]	**t_{Limit}** [s]	**F_{max}** [m³/h]
99.9	3.7	28	2.6	0.13	72
total kill	16.9			0.60	16

[1]Bianco, Andrea; Biasin, Mara; Pareschi, Giovanni; Cavalleri, Adalberto; Cavatorta, Claudia; Fenizia, Claudio et al. (2020): UV-C irradiation is highly effective in inactivating and inhibiting SARS-CoV-2 replication. In: medRxiv. DOI: 10.1101/2020.06.05.20123463

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.

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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**.

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