



Fraunhofer

TESTED[®] DEVICE

M. Braun Inertgas-Systeme GmbH
Flow Box (Project 11144)
Report No. MB 1703-892

DUPLICATE

Statement of
Qualification

Cleanroom Acceptance

Statement of Qualification

Customer M. Braun Inertgas-Systeme GmbH
 Dieselstrasse 31
 85748 Garching
 Germany

Component tested

Category: Services

Subcategory: Cleanroom Acceptance

Product name: MB Laminar Flow Box (Project 11144)
 (Manufacturing date: 2017; serial number: unique specimen)

Test result / Classification

In the state "at rest", the MB Laminar Flow Box (Project 11144) fulfills the following requirements

Function test	Result
Air Cleanliness Class according to ISO 14644-1	ISO Class 3

Measurement for the cleanroom acceptance (retraining)

Standards/Guidelines: ISO 14644-1; VDI 2083 Part 3
 The norms stated generally refer to the version valid at the time of the tests.

Test devices: Optical particle counter:
 LasAir II 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: Process gas Ambient Air

Test procedure parameters:

- Pressure difference during the particle measurement: < 0.1 mbar
- H₂O: < 0.1 ppm
- O₂: 0.9 ppm
- Temperature Box 1: 24.0 °C
- Temperature Box 2: 22.9 °C

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.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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Place, date of first document issued

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Place, current date

on behalf of 
 Frank Bürger, Project Manager Fraunhofer IPA