



Fraunhofer

**TESTED[®]
DEVICE**

Hydroflex OHG

PurMop Z40

Report No. HY 1404-705

DUPLICATE

Statement of
Qualification

Particle Emission

Statement of Qualification

Customer: Hydroflex OHG
Am Weidenhäuser Bahnhof 10
35075 Gladenbach
Germany

Component tested

Category: Working Place and Operator

Subcategory: Work Equipment

Product name: Mop cover PurMop Z40
(manufacturing date: 02/2013; color: white; Lot-No.: 023002)

Test result / Classification:

When dry and under the specified test conditions, the mop cover PurMop Z40 fulfills the requirements up to air cleanliness class 5 in accordance with ISO 14644-1. This is equivalent with ACP_c class 5 according to VDI 2083 part 9.2 (in preparation).

Random sampling of particle emissions (airborne) at representative sites

Standards/Guidelines: Based on VDI 2083-9.1, without 24-hour running-in period.
The norms stated refer to the relevant editions applicable at the time of the tests.

Test devices: Optical particle counter:
LasAir II 110 with measuring ranges $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ und $\geq 5.0 \mu\text{m}$

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:..... $22^\circ\text{C} \pm 0.5^\circ\text{C}$
- Relative humidity: $45\% \pm 5\%$

Test procedure parameters:

Test bench (according to ISO 9073-10)

- Motion cycle:
 - Linear compression s:..... 120 mm
 - Torsion:..... 180°
- Cycle time t: 1 s
- Sampling chamber:..... None
- Duration of stress applied to test piece: 100 min
- Distance between particle counting probe and test piece:..... 130 mm

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

Department of Ultraclean Technology
and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

Stuttgart, May 30, 2014

Place, date of first document issued

--

Place, current date

i. A. 
Frank Bürger, Project Manager Fraunhofer IPA

DUPLICATE

DUPLICATE