



Fraunhofer

TESTED[®] DEVICE

HAMILTON Bonaduz AG
Microlab STAR
Report No. HA 1201-587

Qualification Certificate

This is to certify that the product mentioned above, provided by

HAMILTON Bonaduz AG
Bonaduz, Switzerland

has been awarded a Fraunhofer certificate TESTED DEVICE bearing the report number HA 1201-587.

Airborne particle emission test (according to ISO 14644-1):
The tests on the Microlab STAR were carried out based on guideline VDI 2083 Part 9.1 and showed a non-conform suitability for use in cleanrooms class 4. However, a clear suitability of the system cannot be declared.

PWP* particle emission measurements (PWP criteria ITRS 2001:
 1×10^{-3} PWP/cm² for particle sizes $> 0.075 \mu\text{m}$):

- 1.4×10^{-3} PWP/cm² (Particle $0.21 \mu\text{m} - 7.70 \mu\text{m}$)
- 1.1×10^{-3} PWP/cm² (Particle $1.40 \mu\text{m} - 6.30 \mu\text{m}$)

Based on PWP measurements, no risk of particulate product contamination is detected according to Ph. Eur. 2.9.19.

*PWP corresponds with Particles per Wafer Pass

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Stuttgart, September 28, 2012

i.A. 
Project manager

DUPLICATE

The validity of this certificate applies only to the mentioned product in this particular condition for a duration of 5 years.

Further information:
www.tested-device.com