



Fraunhofer

**TESTED[®]
DEVICE**

Desoutter GmbH
Screwdriver ERS12
Report No. DE 1303-642

DUPLICATE

Statement of
Qualification

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Customer: Desoutter GmbH
Edmund-Seng-Straße 3-5
63477 Maintal
Germany

Test results / Classification:
(according to ISO 14644-1)

The Screwdriver ERS12 is suitable for use in cleanrooms fulfilling Air Cleanliness Class 8.

Component tested:

Category: Working Place and Operator
Subcategory: Work Equipment
Type: Screwdriver ERS12

Random check measurements of particle emission (airborne) at representative points

Test procedure: According to VDI 2083 Part 9.1
Each standard states refers to the version valid at the time of testing.

Measuring instruments: Optical Particle Counter:
Model LasAir II 110 manufactured by PMS with measuring channels of
 $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ and $\geq 5.0 \mu\text{m}$

Test parameters of the test environment:

- Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1
- Air flow velocity:..... 0.45 m/s
- Air flow guidance:vertical unidirectional air flow
- Temperature: $22^\circ\text{C} \pm 0.5^\circ\text{C}$ ($71.6^\circ\text{F} \pm 0.9^\circ\text{F}$)
- Relative humidity: $45\% \pm 5\%$

Test parameters of the test execution:

- Tightening's/min:..... 15
- Run down angle:..... 3600°
- Final angle:..... 720°
- Run down speed: 500 rpm
- Final speed:..... 60 rpm
- Controller :..... Controller CVIR II

The measuring equipment used for the qualification is regularly calibrated and is based on national and international standards. In the case where no national standards exist, the measuring procedure used corresponds with technical regulations and norms valid at the time of the measurement. The documents drawn up for this procedure are available for viewing.

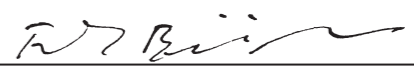
The validity of this certificate applies only to the mentioned product in this particular condition for a duration of 5 years.
Further information: www.tested-device.com.

Fraunhofer Institute for
Manufacturing Engineering and Automation IPA

Department Ultraclean Technology
and Micromanufacturing

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Stuttgart, Mai 23, 2013
Place, Date


i. A.
Project manager