



# Fraunhofer

## TESTED<sup>®</sup> DEVICE

Atlas Copco IT AB  
ETD M20 ABL V2

**Report No. AT 2408-1545**

DUPLICATE

Statement of  
Qualification

Single product  
Particle Emission  
in Cleanroom  
(atmospheric)

Customer

Atlas Copco Industrial Technique AB  
Sickla Industriväg 15  
105 23 Stockholm  
Sweden

Component tested

Category: Working Place and Operator

Subcategory: Work Equipment

Product name: ETD M20 ABL V2  
(manufacturing date: week 44/2023; color: black; article number: 8432 0815 21; serial number: C5761530)  
in combination with:

- Controller MT Focus 6000  
(manufacturing date: week 35/2020; color: black; article number: 8432 0851 00; serial number: C2690001)
- MT Power Supply (MT PS 180W-36V)  
(manufacturing date: week 22/2023; color: black; article number: 8432 0840 02; serial number: B5560964)

Random sampling of particle emissions (airborne) at representative sites in cleanroom under atmospheric conditions

Standards/Guidelines: ISO 14644-1, -14  
The norms stated generally refer to the version valid at the time of the tests.

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

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
- Room temperature: .....22 °C  $\pm$  0.5 °C
- Relative humidity: ..... 45 %  $\pm$  5 %

Test procedure parameters:

- Installation position: ..... horizontal
- Velocity: ..... v = 900 rpm
- Cycle: .....movement: 15 s; break: 5 s

Test result / Classification

When operated under the specified test conditions (room temperature: 22 °C  $\pm$  0.5 °C; relative humidity: 45 %  $\pm$  5 %), the screwdriver ETD M20 ABL V2 in combination with controller and power supply is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
Screwdriver: <ul style="list-style-type: none"><li>• Installation position = horizontal</li><li>• Velocity = 900 rpm</li><li>• Cycle = movement: 15 s</li><li>• Break between cycles = 5 s</li></ul>	4
Controller	3
Power supply	3
Overall result	4

Please note: Transport damages, incorrect installation, oil leakage, aging behavior, corrosion etc. can influence the test result.

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.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12  
70569 Stuttgart  
Germany

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on behalf of  
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

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