



Fraunhofer

TESTED[®] DEVICE

ATLAS COPCO TOOLS AB
Series ETD MXX ABL
Report No. AT 1105-555

DUPLICATE

Statement of
Qualification

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Customer: ATLAS COPCO TOOLS AB
 Tooltec Division
 105 23 Stockholm
 Sweden

Component tested:

Category: Working Place and Operator

Subcategory: Work Equipment

Type: MicroTorque Series ETD MXX ABL
 Tested components:
 • ETD M27 ABL
 • ETD M80 ABL
 • ETD M120 ABL
 • ETD M250 ABL

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

Test procedure: According to VDI 2083 Part 9.1

Measuring instruments being used: 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 of Air Cleanliness Class ISO Class 1 (according to ISO 14644-1)
 • Air flow velocity: 0.45 m/s
 • Air flow guidance: vertical unidirectional air flow from ceiling to floor
 • Temperature: $22 \text{ }^\circ\text{C} \pm 0.5 \text{ }^\circ\text{C}$ ($71.6 \text{ }^\circ\text{F} \pm 0.9 \text{ }^\circ\text{F}$)
 • Relative humidity: $45 \% \pm 5 \%$

Test parameters of the test execution:
 • Cycle: 12 cycles/minute (one cycle every 5 seconds)
 • ETD M27 ABL: v=800 rpm; angle: 9600°
 • ETD M80 ABL: v=850 rpm; angle: 10200°
 • ETD M120/250 ABL: v=700 rpm; angle: 8400°

Test results:
 (according to ISO 14644-1)

The MicroTorque Series ETD MXX ABL is suitable for use in cleanrooms fulfilling the Air Cleanliness Class 6.

Test object	Air Cleanliness Class (in accordance to ISO 14644-1)
ETD M27 ABL	ISO Class 4
ETD M80 ABL	ISO Class 5
ETD M120 ABL	ISO Class 6
ETD M250 ABL	ISO Class 6

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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.

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 and Micromanufacturing

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Stuttgart, June 27, 2011

Place, Date

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