



Fraunhofer

TESTED[®] DEVICE

ETS GEORGES RENAULT
ERXS80

Report No. DE 2503-1602

DUPLICATE

Statement of
Qualification

Single product
Particle Emission
in Cleanroom
(atmospheric)

Customer	Etablissements Georges Renault 38 rue Bobby Sands 44800 Saint Herblain France
Tested product	
Category:	Working Place and Operator
Subcategory:	Work Equipment
Product name:	Screwdriver ERXS80 (manufacturing date: 12/2024; material number: 6151658760; serial number: 24D73879) in combination with: <ul style="list-style-type: none">Controller for ERXS screwdriver (manufacturing date: 4/2023; part number: 6159327200; serial number: 08 09 23 00064)Power Supply for CVIXS controller (manufacturing date: 2022; part number: 6159326630; serial number: 42012200584)

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 equipment:	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:	<ul style="list-style-type: none">Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1Airflow velocity:.....0.45 m/sAirflow pattern:..... vertical laminar flowRoom temperature:22 °C \pm 0.5 °CRelative humidity: 45 % \pm 5 %
Test procedure parameters:	<ul style="list-style-type: none">Installation position: horizontalTightenings/min:..... 15Run down angle: 3600 °Final angle:..... 720 °Run down velocity: 500 rpm (50 % tool max. velocity)Final velocity: 100 rpm (10 % tool max. velocity)

Test result / Classification	The screwdriver ERXS80 in combination with Controller for ERXS screwdriver and Power Supply for CVIXS controller is suitable for use under the specified test parameters (room temperature: 22 °C \pm 0.5 °C; relative humidity: 45 % \pm 5 %) in cleanrooms of the following Air Cleanliness Classes according to ISO 14644-1:
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Test parameter(s)	Air Cleanlines Class
Screwdriver: <ul style="list-style-type: none">Installation position = horizontalmax. velocity = 500 rpmTightenings/min = 15	5
Controller	1
Power supply	1
Overall result	5

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	DE 1802-1007 Report No. first document	Stuttgart, March 28, 2018 Place, date of first document issued
Business unit Testing and Certification	DE 2503-1602 Report No. current document	Stuttgart, April 4, 2025 Place, current date
Nobelstrasse 12 70569 Stuttgart Germany	on behalf of Dr.-Ing. Frank Bürger, head of business unit Testing and Certification	