IPA

Cleanroom (atmospheric)

valid until: December 12, 2030

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TESTED®
DEVICE

Beckhoff Automation
XPlanar APS4244+APM4330
Report No. BE 2511-1690

DUPLICATE

Statement of
Qualification

Single product
Particle Emission
in Cleanroom
(atmospheric)

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Statement of Qualification · Single product

Customer

Beckhoff Automation GmbH & Co. KG
Hülshorstweg 20
33415 Verl
Germany

Tested product

Category: Automation Components

Subcategory: Transfer Systems and Bearing

Product name: XPlanar Test Setup 2 x APS4244 + 1 x APM4330
(manufacturing date: 8/1/2025; overall width: 320 mm; overall length: 640 mm; article number: APS9002)

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 ≥ 0.1 µm, ≥ 0.2 µm, ≥ 0.3 µm, ≥ 0.5 µm, ≥ 1.0 µm and ≥ 5.0 µm

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 ± 0.5 °C
- Relative humidity: ..... 45 % ± 5 %

Test procedure parameters:

- Travel distance length: ..... l = 320 mm
- Travel distance width: ..... w = 160 mm
- Carrier medium / Drive: ..... magnetic levitation (active tile, passive mover)
- Counts of mover on system: ..... n = 1 mover
- Mover Weight: ..... m = 1.5 kg
- Velocity: ..... v = 1 m/s
- Acceleration: ..... a = 10 m/s²

Test result / Classification

The XPlanar Test Setup 2 x APS4244 + 1 x APM4330 is suitable for use under the specified test parameters (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %) in cleanrooms of the following Air Cleanliness Class according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
v = 1 m/s a = 10 m/s² Counts of mover on system: n = 1 Mover weight: m = 1.5 kg	1
Overall result	

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

Business unit
Testing and Certification

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-- — Place, current date

on behalf of
Dr.-Ing. Frank Bürger, head of business unit Testing and Certification

This document only applies to the named product in its original state and is valid for a period of 5 years from the date the first document was issued. The document can be verified under **www.tested-device.com**.