valid until: March 27, 2029

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TESTED®
DEVICE

ABB
IRB 930-12/0.85
Report No. AB 2402-1501

DUPLICATE

Statement of
Qualification

Single product
Particle Emission

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Statement of Qualification · Single product

Customer

ABB Engineering (Shanghai) Ltd.
No. 99, Miaoqiao Road, Pudong New District
201319 Shanghai
China

Component tested

Category: Automation Components

Subcategory: Robotics

Product name: IRB 930-12/0.85
(manufacturing date: 5/12/2023; color: white; weight: 64 kg; serial number: 930-900001)

Random sampling of particle emissions (airborne) at representative sites

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 ≥ 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
- Temperature: 22 °C ± 0.5 °C
- Relative humidity: 45 % ± 5 %

Test procedure parameters:

- Capacity: 50 % and 100 % of maximum velocity
- Attached payload: 12 kg
- Pause between cycles: 1 s to 3 s
- Operation of each axis: separately
- Movement of each axis:
  - Axis J1: -140° to 140°
  - Axis J2: -120° to 120°
  - Axis J3: -10 mm to -390 mm
  - Axis J4: -390° to 390°
- Suction:
  - Pump type: VTE 3 (Part number: 25130110)
  - Manufacturer: Rietschle Thomas
  - Flow: Q = ~ 10 l/min
  - Vacuum: p = 150 mbar abs.

Test result / Classification

When operated under the specified test conditions, the robot IRB 930-12/0.85 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
50 % of maximum velocity	3
100 % of maximum velocity	4
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

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AB 2402-1501 — Report No. first document
Stuttgart, March 27, 2024 — Place, date of first document issued

-- — Report No. current document
-- — Place, current date

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

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**.