IPA

Cleanroom (atmospheric)

valid until: November 10, 2030

Fraunhofer

TESTED®
DEVICE

KUKA Deutschland GmbH
KR AGILUS-2 series
Report No. KU 2507-1650

DUPLICATE

Statement of
Qualification

Product series
Electrostatic
Charge Behavior

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Statement of Qualification · Product series

Customer

KUKA Deutschland GmbH
Zugspitzstrasse 140
86165 Augsburg
Germany

Tested product

Category: Automation Components

Subcategory: Robotics

Product name: KR AGILUS-2 series
Tested products:
- KR 6 R700-2
  (manufacturing date: 3/2025; color: white; article number: 0010027948; serial number: 4613800; weight: 56 kg; max. payload: 6 kg; range: 726 mm)
- KR 10 R1100-2
  (manufacturing date: 3/2025; color: white; article number: 0010028057; serial number: 4613772; weight: 59 kg; max. payload: 10 kg; range: 1101 mm)

Measurement of charge behavior

Standards/guidelines: SEMI E78-0222
The norms stated generally refer to the version valid at the time of the tests.

Test equipment:
- Data capture: ..... Influence E-Fieldmeter EFM51
  ..... Wolfgang Warmbier GmbH & Co. KG

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 parameters:
- Tool weight: ..... no tools mounted
- Motion sequence: ..... typical pick & place sequence
- Capacity: ..... 80 % of maximum capacity

Test result / Classification

The robot KR 6 R700-2 fulfills the permissible limit values of 5 V/cm (0.5 kV/m) for the sensitivity threshold 2033/7.7 nm according to SEMI E78-0222.

Electrostatic field			
Electrostatic level		**Test result**	
Year Node	Limit value [V/cm]	Mean value [V/cm]	Max. single value measured [V/cm]
2033 7.7 nm	8.5	5	7
Limit value:		**fulfilled**	

The robot KR 10 R1100-2 fulfills the permissible limit values of 4 V/cm (0.4 kV/m) for the sensitivity threshold 2033/7.7 nm according to SEMI E78-0222.

Electrostatic field			
Electrostatic level		**Test result**	
Year Node	Limit value [V/cm]	Mean value [V/cm]	Max. single value measured [V/cm]
2033 7.7 nm	8.5	4	5
Limit value:		**fulfilled**	

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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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 current date the document was issued. The document can be verified under www.tested-device.com.