valid until: May 22, 2029

Fraunhofer

TESTED®
DEVICE

KUKA Deutschland GmbH
LBR iisy 11 R1300 CR
Report No. KU 2303-1404

Statement of
Qualification

Single product
Electrostatic
Charge Behavior

Fraunhofer IPA

Statement of Qualification · Single product

Customer

KUKA Deutschland GmbH
Zugspitzstrasse 140
86165 Augsburg
Germany

Component tested

Category: Automation Components

Subcategory: Robotics

Product name: LBR iisy 11 R1300 CR
(manufacturing date: 1/10/2024; color: white and orange; weight: 46.3 kg; serial number: 4561014)

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 devices:
- Data capture: ..... Influence-E-Fieldmeter, type EMF58 ..... Eltex-Elektrostatik-GmbH

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

Test result / Classification

The robot LBR iisy 11 R1300 CR fulfills the permissible limit values of 2 V/cm (0.2 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]	Max. mean value [V/cm]	Max. single value measured [V/cm]
2033 7.7 nm	8.5	2	4
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 IPA

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

KU 2303-1404 — Report No. first document
Stuttgart, May 22, 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