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DEVICE

KUKA Roboter GmbH
LBR iiwa 7 R800 CR
Report No. KU 1707-925

Statement of
Qualification

Electrostatic
Discharge Behavior

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Statement of Qualification

Customer

KUKA Roboter GmbH
Zugspitzstrasse 140
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Germany

Component tested

Category: Automation Components

Subcategory: Robotics

Product name: LBR iiwa 7 R800 CR
(manufacturing date: 5/2017; serial number: 982698; payload: 7 kg; reach: 800 mm)

Measurement of the electrostatic field

Standards/Guidelines: SEMI E78-0309
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:
- Insulating base:
  – Type: .... 4 x insulating feet – fully-insulated hexagonal feet with $R > 10^{14}\,\Omega$
  – Material: ..... glass-filled polyester
  – Thickness: ..... 35 mm
- Tool weight ..... no tool mounted
- Motion sequence: ..... typical pick & place movement
  – Axis 1: ..... -66° to -13°
  – Axis 2: ..... -63° to -38°
  – Axis 3: ..... -14° to 0°
  – Axis 4: ..... 75° to 83°
  – Axis 5: ..... -99° to -66°
  – Axis 6: ..... -100° to -90°
  – Axis 7: ..... -63° to -35°
- Capacity: ..... 50 % of maximum capacity
- Operating state during the test: ..... on

Test result / Classification

The robot LBR iiwa 7 R800 CR fulfills the permissible limit values for the sensitivity threshold 2009/50 nm according to SEMI E78-0309.

Electrostatic Field			
Electrostatic Level		**Test result**	
Year Node	limit value [V/cm]	mean value [V/cm]	max. single value measured [V/cm]
2009 50 nm	55	45	110
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.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

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

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