



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

FANUC Europe Corporation  
LR-Mate 200iD/7LC  
**Report No. FA 1602-808**

DUPLICATE

Statement of  
Qualification

Electrostatic  
Discharge Behavior

# Statement of Qualification

**Customer**  
 FANUC Europe Corporation  
 Zone Industrielle  
 6468 Echternach  
 Luxembourg

**Component tested**

Category: Automation Component  
 Subcategory: Robotics  
 Product name: LR-Mate 200iD/7LC  
 (manufacturing date: 11/9/2015; color: white; serial number: E-81493;  
 type: A05B-1112-3321)

## Measurement of the electrostatic field

Standards/Guidelines: SEMI E78  
 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
- Insulating mounts:
  - type: ..... 4x hexagonal insulators with  $R > 10^{14} \Omega$
  - material: ..... Polyester, glassfilled
  - thickness: ..... 35 mm

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: .....  $22 \text{ }^\circ\text{C} \pm 0.5 \text{ }^\circ\text{C}$
- Relative humidity: .....  $45 \% \pm 5 \%$

Test procedure parameters:

- Speed: ..... 50 %
- Attached payload: ..... no tool mounted
- Motion sequence:..... representative pick & place movement

## Test result / Classification

The robot LR-Mate 200iD/7LC fulfills the permissible limit value of 50V/cm (5 kV/m) defined in SEMI E78-0309 for the Sensitivity Level 2010/45 nm.

Electrostatic Field		
Electrostatic Level		Test result
Year Node	[V/cm]	[V/cm]
2010 45 nm	50	43
Limit value:		<b>fulfilled</b>

This equates to a defined permissible limit value of 100V/cm (10kV/m) for Sensitivity Level 1 according to SEMI E78-0998 and causes minimal surface charges.

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.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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Place, date of first document issued

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Place, current date

on behalf of   
 Frank Bürger, Project Manager Fraunhofer IPA