



Fraunhofer
TESTED[®]
DEVICE
KUKA Deutschland GmbH
KR AGILUS-2 series
Report No. KU 2507-1650

DUPPLICATE

Statement of
Qualification

Product series
Particle Emission
in Cleanroom
(atmospheric)

Statement of Qualification • Product series

Customer

KUKA Deutschland GmbH
Zugspitzstrasse 140
86165 Augsburg
Germany

Test result / Classification

The KR AGILUS-2 series is suitable for use under the specified test parameters (room temperature: $22^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$; relative humidity: $45\% \pm 5\%$) in cleanrooms of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanliness Class
40 % of maximum velocity	4
80 % of maximum velocity	5
Overall result	5

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: 56kg; max. payload: 6kg; range: 726mm)
- KR 10 R1100-2
(manufacturing date: 3/2025; color: white; article number: 0010028057; serial number: 4613772; weight: 59kg; max. payload: 10kg; range: 1101 mm)

Please note: Transport damages, incorrect installation, oil leakage, aging behavior, corrosion etc. can influence the test result.

Random sampling of particle emissions (airborne) at representative sites in cleanroom under atmospheric conditions

Standards/guidelines:

ISO 14644-1, -14

The norms stated generally refer to the version valid at the time of the tests.

Test equipment:

Optical particle counter:

LasAir II 110 and LasAir III 110 with measuring ranges $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ and $\geq 5.0 \mu\text{m}$

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

Test procedure parameters:

- Velocity: 40 % and 80 % of maximum velocity
- Attached payload: 6kg and 10kg
- Range: 726mm and 1101 mm
- Operation of each axis: separately
- Break between cycles: 1s
- Movement of each axis:
 - Axis 1: 150° to -150°
 - Axis 2: -40° to -160°
 - Axis 3: 120° to -90°
 - Axis 4: 150° to -150°
 - Axis 5: 80° to -110°
 - Axis 6: 200° to -200°

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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Business unit
Testing and Certification

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Stuttgart, November 10, 2025
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on behalf of 
Dr.-Ing. Frank Bürger, head of business unit Testing and Certification

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