Statement of Qualification

Particle Emission
Statement of Qualification

Customer: KUKA Roboter GmbH
Zugspitzstraße 140
86165 Augsburg
Deutschland

Test result / Classification:
(ISO 14644-1)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Air Cleanliness Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>2</td>
</tr>
<tr>
<td>80%</td>
<td>2</td>
</tr>
<tr>
<td>Overall result</td>
<td>2</td>
</tr>
</tbody>
</table>

The Robot Series KR 6/10 AGILUS sixx CR is suitable for use in cleanrooms fulfilling the specifications of Air Cleanliness Class 2.

Random sampling of particle emissions (airborne) at representative sites

Component tested
Category: Automation component
Subcategory: Robotics
Product name: Robot Series KR 6/10 AGILUS sixx CR
(tested on robots KR6 R900 sixx CR / serial number 500040 and
KR10 R1100 sixx CR / serial number 502072)

Standards / Guidelines:
• 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 devices:
• LasAir II 110 with measuring ranges ≥ 0.1 µm, ≥ 0.2 µm, ≥ 0.3 µm,
  ≥ 0.5 µm, ≥ 1.0 µm and ≥ 5.0 µm
• Airnet 310 with measuring ranges ≥ 0.3 µm, ≥ 0.5 µm, ≥ 1.0 µm
  and ≥ 5.0 µm

Test environment parameters:
• Speed: ........................................................................ 40% and 80% of maximum utilization
• Attached payload: ............................................................ 6 kg
• Pause between cycles: ............................................... 1 s
• Operation of each axis: ................................................. separately
• Position of each axis: ...................................................... see report

Test procedure parameters:

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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Place, date of first document issued

Place, current date

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