



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

ic audio GmbH  
WA 06-77/T CLR  
**Report No. IC 2507-1647**

DUPLICATE

Statement of  
Qualification

Single product  
Particle Emission  
in Cleanroom  
(atmospheric)

Customer	ic audio GmbH Boehringerstrasse 14a 68307 Mannheim Germany
Tested product	
Category:	Working Place and Operator
Subcategory:	Equipment Parts
Product name:	WA 06-77/T CLR wall-mounted speaker for cleanrooms (manufacturing date: 5/14/2025; color: RAL 9016; article number: 20248539; batch number: 03/25; rated power: 6 watt; line voltage: 100 V)

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 $\geq 0.1\text{ }\mu\text{m}$ , $\geq 0.2\text{ }\mu\text{m}$ , $\geq 0.3\text{ }\mu\text{m}$ , $\geq 0.5\text{ }\mu\text{m}$ , $\geq 1.0\text{ }\mu\text{m}$ and $\geq 5.0\text{ }\mu\text{m}$
Test environment parameters:	<ul style="list-style-type: none"><li>Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1</li><li>Airflow velocity:.....0.45 m/s</li><li>Airflow pattern:..... vertical laminar flow</li><li>Room temperature: .....22 °C ± 0.5 °C</li><li>Relative humidity: ..... 45 % ± 5 %</li></ul>
Test procedure parameters:	<ul style="list-style-type: none"><li>Installation position: .....vertical</li><li>Master:.....approx. 80 % (~ 89.9 dB)</li><li>Bass:.....middle</li><li>Treble: .....middle</li></ul>

Test result / Classification

The WA 06-77/T CLR wall-mounted speaker for cleanrooms is suitable for use under the specified test parameters (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %) in cleanrooms of the following Air Cleanliness Class according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
<ul style="list-style-type: none"><li>Installation position: vertical</li><li>Master: approx. 80 % (~ 89.9 dB)</li><li>Treble: middle</li><li>Bass: middle</li></ul>	1
Overall result	

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

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	IC 2507-1647 Report No. first document	Stuttgart, August 5, 2025 Place, date of first document issued
Business unit Testing and Certification	-- Report No. current document	-- Place, current date
Nobelstrasse 12 70569 Stuttgart Germany	on behalf of Dr.-Ing. Frank Bürger, head of business unit Testing and Certification	