



Fraunhofer

**TESTED[®]
DEVICE**

LAPP KOREA LLC
FD 8711 C MC 7x0.34
Report No. LA 2410-1570

DUPLICATE

Statement of
Qualification

Single product
Outgassing Behavior
Ammonia

Customer	LAPP KOREA LLC 42, Jangangongdan 8-gil, Jangan-myeon 18579 Hwaseong-si, Gyeonggi-do, Republic of Korea
Tested product	
Category:	Energy Supply
Subcategory:	Cable Systems
Product name:	CLEANROOM FD 8711 C MC 7 x 0.34 mm ² (manufacturing date: 9/9/2024; color: black; serial number: 85133400; batch number: E/37; lenght: 1 m)

Emission chamber measurements with impingement in combination with ion chromatography (IC)

Standards/guidelines:	ISO 14644-8, -15; ISO 16000-6, -9, -11, -25; VDI 2083 Part 17 The norms stated generally refer to the version valid at the time of the tests.
Test equipment:	• Measuring station:.....Metrohm Professional IC 850
Sample storage:	• Pre-conditioning: – Cleanroom Air Cleanliness Class (according to ISO 14644-1):.....ISO 1 – Airflow velocity:.....0.45 m/s – Airflow type:.....vertical laminar flow – Temperature:22 °C ± 0.5 °C – Relative humidity:45 % ± 5 % – Purified air:VOC-filtered
Test procedure parameters:	Outgassing test temperature:23 °C

Test result / Classification

The outgassing behavior of the cable system CLEANROOM FD 8711 C MC 7 x 0.34 mm² at the stated temperatures was investigated according to ISO 14644-15. Based on the outgassing rates determined for the specific units, the following material classification was made for the corresponding Contaminant Category:

Contaminant Category (x)	SER _u ¹⁾ 23 °C [g/unit*s]	ISO-ACC ₈ Class (x) based on 23 °C
Ammonia (NH ₃)	< 2.9 x 10 ⁻⁹	< -8.5

¹⁾SER_u: Unit-specific emission rate

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	LA 2410-1570 Report No. first document	Stuttgart, February 20, 2025 Place, date of first document issued
Department of Ultraclean Technology and Micromanufacturing	-- Report No. current document	-- Place, current date
Nobelstrasse 12 70569 Stuttgart Germany	on behalf of Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA	

This document only applies to the named product in its original state and is valid for a period of 5 years from the date the first document was issued. The document can be verified under www.tested-device.com.