IPA

valid until: April 26, 2029

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DEVICE

SAMICK PRECISION IND.
LMES10uu
Report No. SA 2308-1446

DUPLICATE

Statement of
Qualification

Single product
Outgassing Behavior
VOC/SVOC

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Statement of Qualification · Single product

Customer

SAMICK PRECISION IND. CO., Ltd
39, Seongseogongdannam-ro 32-gil
Dalseo-gu 42721 Daegu
South Korea

Component tested

Category: Automation Components

Subcategory: Transfer Systems and Bearing

Product name: LMES10uu
(manufacturing date: 12/7/2022; color: black; serial number: VLT07050-013 and VLH07050-021)

Emission measurements with purge-and-trap thermodesorption method and gas chromatography combined with mass spectrometry (TD-GC/MS)

Standards/Guidelines: ISO 14644-8, -15; ISO 16000-6, -9, -11, -25
The norms stated generally refer to the version valid at the time of the tests.

Testing equipment: Measuring station: ..... PerkinElmer Clarus 600, Clarus SQ8 ATD 650

Test procedure parameters:

- Retention range (VOC): ..... C6 to C16
- Outgassing test temperature: ..... 23 °C
- Duration of preconditioning: ..... > 5 min
- Flow rate purge gas: ..... 100 ml/min
- Flow rate sampling gas: ..... 100 ml/min
- Duration of sampling: ..... 1 h
- Volume of the emission cell: ..... 44 m³

Test result / Classification

The outgassing behavior of LMES10uu 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_e Class (x) based on 23° C
VOC	9.2×10^{-11}	**-10.0**
SVOC	8.8×10^{-10}	**-9.1**
Amines	$< 2.8 \times 10^{-13}$	**--**
Organophosphates	$< 2.8 \times 10^{-13}$	**--**
Siloxanes	$< 2.8 \times 10^{-13}$	**--**
Phthalates	$< 2.8 \times 10^{-13}$	**--**

[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

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

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on behalf of
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

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