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TESTED®
DEVICE

Hypex d.o.o.
CTV 110-1616-ISO7-510-L-0-1
Report No. LA 1306-649

DUPLICATE

Statement of
Qualification

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Statement of Qualification

Customer:

LANG GmbH & Co. KG
Dillstraße 4
35625 Hüttenberg
Germany

Component tested:

Category: Automation Components

Subcategory: Linear Units

Type: Linear axis CTV 110-1616-ISO7-510-L-0-1 manufactured by Hypex d.o.o.

Random check measurements of particle emission (airborne) at representative points

Test procedure: According to VDI 2083 – 9.1
Each standard stated refers to the version valid at the time of testing.

Measuring instruments: Optical Particle Counter:
LasAir II 110 with measuring channels of
≥ 0.1 µm, ≥ 0.2 µm, ≥ 0.3 µm, ≥ 0.5 µm, ≥ 1.0 µm and ≥ 5.0 µm

Test parameters of the test environment:

- Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1
- Air flow velocity:.....0.45 m/s
- Air flow guidance:.....vertical unidirectional air flow
- Temperature:.....22 °C ± 0.5 °C (71.6 °F ± 0.9 °F)
- Relative humidity:..... 45 % ± 5 %

Test parameters of the test execution:

Operated with:
- Stepper motor ST5918L4508-B (Nanotec Electronic GmbH & Co. KG)
- Controller L-Step Express 19“ 480VA (LANG GmbH & Co. KG)

- Mounting position:..... horizontal
- Stroke length:.....s = 450 mm
- Load of the linear axis:..... m = 4.75 kg
- Parameter set 1:.....s_1 = 0.43 m ; v_1 = 0.15 m/s ; a_1 = 2.5 m/s²
- Parameter set 2:.....s_2 = 0.43 m ; v_2 = 0.3 m/s ; a_2 = 5 m/s²
- Parameter set 3:.....s_3 = 0.43 m ; v_3 = 0.6 m/s ; a_3 = 10 m/s²

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Test results / Classification:
(according to ISO 14644-1)

The linear axis CTV 110-1616-ISO7-510-L-0-1 is suitable for use in cleanrooms fulfilling Air Cleanliness Class 7.

Parameters	Air Cleanliness Class
Set 1 (v = 150 mm/s)	6
Set 2 (v = 300 mm/s)	7
Set 3 (v = 600 mm/s)	7
Overall result	**7**

DUPLICATE

The measuring equipment used for the qualification is regularly calibrated and is based on national and international standards. In the case where no national standards exist, the measuring procedure used corresponds with technical regulations and norms valid at the time of the measurement. The documents drawn up for this procedure are available for viewing.

The validity of this certificate applies only to the mentioned product in this particular condition for a duration of 5 years.
Further information: **www.tested-device.com**.

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Stuttgart, Oktober 9, 2013
Place, Date

i. A.
Project manager