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**TESTED[®]
DEVICE**

HMPtechnologie GmbH
RTU Septa sorting equipment
Report No. HM 1204-596

DUPLICATE

Statement of
Qualification

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Customer: HMPtechnologie GmbH
Am Eichelgärtchen 36b
56283 Halsenbach
Germany

Component tested:

Category: Automation Components

Subcategory: Linear Units

Type: RTU Septa sorting equipment

- Linear module EDM 20-100 EL, e.p.s elektropneumatische Systeme GmbH
- Rotary unit SE 20 E-2-50, e.p.s elektropneumatische Systeme GmbH
- Piezo linear feeder PLF, Fehlings Automation GmbH
- Drum feeder DF, Fehlings Automation GmbH
- Sensor DTA-1G-1,5-SA-V, Micro-Epsilon Messtechnik GmbH & Co. KG

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

Test procedure: According to VDI 2083 Part 9.1

Measuring instruments being used: Optical Particle Counter:
Model LasAir II 110 manufactured by PMS with measuring channels of $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ and $\geq 5.0 \mu\text{m}$

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: $22 \text{ }^\circ\text{C} \pm 0.5 \text{ }^\circ\text{C}$ ($71.6 \text{ }^\circ\text{F} \pm 0.9 \text{ }^\circ\text{F}$)
- Relative humidity: 45 % \pm 5 %

Test parameters of the test execution:

- Linear module EDM 20-100 EL
Cycle of movement: 1/s
Stroke length:..... 100mm
- Rotary unit SE 20 E-2-50
Cycle of movement: 1/s
Angle of movement:..... 90°
- Piezo linear feeder PLF
Vibration frequency: 450 Hz
Length of the rail:..... 350mm

Test results / Classification:

(according to ISO 14644-1)

- Drum feeder DF
Cycle of movement: 10/min
Radius of the drum:..... 155 mm
- Sensor DTA-1G-1,5-SA-V
Cycle of movement: 1/s
Compressed dry air supply:..... 6 bar (ultra-pure)

The RTU Septa sorting equipment is suitable for use in cleanrooms fulfilling the Air Cleanliness Class 6.

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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, June 6, 2012
Place, Date


Project manager