

FORSCHUNGSINSTITUT FÜR KLINISCHE MEDIZINTECHNIK

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Certification

Nebulizer Performance Test Result

Brand: Plusmed / Type: pM-N01

OBL Manufacturer: TRIMPEKS ITH. IHR. TUR. ve TIC. A.S., Istanbul, Turkey

It is hereby certified, that the above listed heavy duty piston type nebulizer, **Plusmed pM-N01**, has been tested by Rossmax Int. Ltd under the subsequent review of the FIMT (Asperg, Germany) regarding

- (1) the aerosol particle size distribution
- (2) nebulization output rate (including medication delivery)
- (3) effective residual volume.

Tests have been provided according to the standards and regulations given with EN13544 – 2009 (Respiratory Therapy Equipment-Part 1: Nebulizing Systems and their Components) and the FDA Reviewer Guidance for Nebulizers, Metered Dose Inhalers, Spacers and Actuators-1993.

The aerosol particle size was tested by two methods, the Malvern Spraytec Reflectometry Technique (A), as well as the Marble 298 Cascade Impactor Method (B).

The **Plusmed pM-N01** complies with the medically requested mass median aerodynamic diameter MMAD < 5 [µm] as well as with the Rossmax specification of MMAD < 3 [µm]: In (B) MMAD is found as being 2.07 [µm] with a fine particle dose FPD of 81.4 %, in (A) the Dv(50) is found as being < 3.3 [µm] in open valve condition and Dv(50) < 3.5 [µm] in closed valve condition.

The nebulization rate, including the application of ipratropium bromide, flixotide, terbutaline sulphate and salbutamol resulted in a flow > 0.65 [ml/min] in open valve condition and a flow of > 0.23 [ml/min] in closed valve condition.

The residual volume has been < 0.68 [ml] in both closed and open valve status.

The nebulizer **Plusmed pM-N01** fully qualifies for the intended medical application and is especially consistent with a sustained therapeutic use on patients.

Asperg, January 26, 2015

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The Director of the FIMT (Asperg).