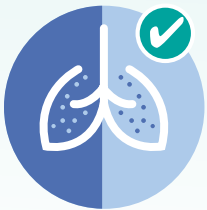


AeroEclipse® II BAN™ Nebulizer

with Breath Actuated Technology



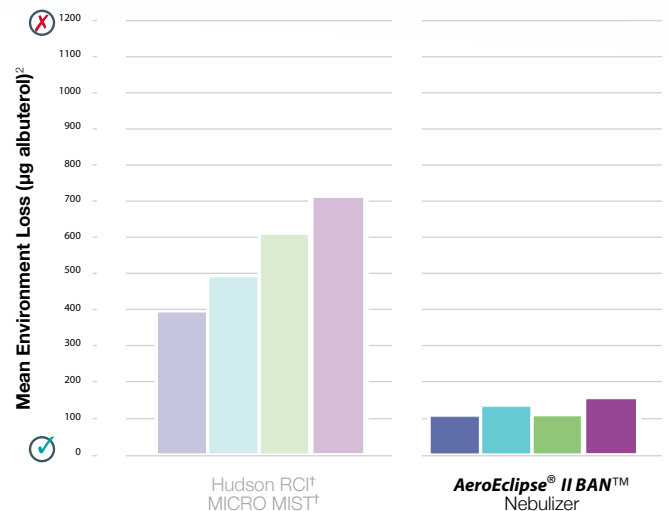
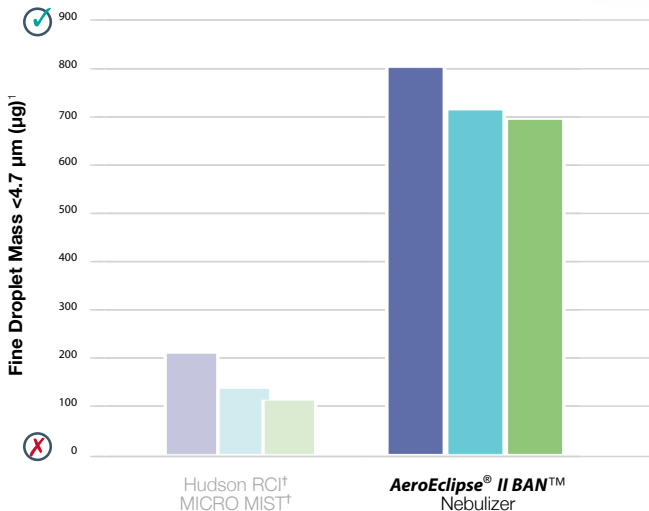
Dose Assurance

achieves higher, more consistent dose delivery independent of inhalation/exhalation ratio compared to a non-breath actuated small volume nebulizer¹



Decreased Exposure to Harmful Emissions

has substantially reduced environmental losses compared to a non-breath actuated small volume nebulizer²



- I:E 1:4, 6 BPM
- I:E 1:3, 7 BPM
- I:E 1:2, 10 BPM
- I:E 1:1, 15 BPM

Both studies: 3-mL fill of 2.5 mg salbutamol; tidal volume = 500 mL; $n = 5$ devices/group. The AeroEclipse® II BAN™ Nebulizer group was operated in breath actuated mode. I:E = inspiration:expiration; BPM = breaths per minute



Designed and
Developed in Canada

Manufactured in Canada with
Canadian and imported parts.



Methacholine Guideline Recommendations³ and the **AeroEclipse® II BAN™** Nebulizer

1999 Guidelines⁴

PC₂₀ – The provocative concentration at which the patient's FEV₁ drops 20% from their baseline measure.

2017 Guidelines³

PD₂₀ – The provocative dose delivered that results in a 20% drop in the patient's FEV₁ from their baseline measure.

Why the Change?

- Nebulizers have evolved to offer more reproducible delivery profiles, without the need for calibration
- Nebulizer efficiency is much greater than in 1999, requiring less time to deliver the same dose
- Concentration prescribed a specific delivery profile, not common across devices making substitution of nebulizers difficult
- Dose is easy to calculate and allows use of different devices or protocols with the same end result

As a high efficiency nebulizer, the **AeroEclipse® II BAN™** Nebulizer should be used with a shorter nebulization time or lower initial concentration or both.³

Published Values for the AeroEclipse® II BAN™ Nebulizer⁵

- Rate of Output = 2.70 ± 0.22 mg/min (@ 16 mg/mL)
- Respirable Fraction = 76% < 5 µg

Calculation of Delivered Dose for Methacholine

For **1 minute** of tidal breathing using the **AeroEclipse® II BAN™** Nebulizer, the estimated delivered dose would be:

$$\left(\begin{array}{c} 2.70 \text{ mg/min} \\ \text{Published delivery} \\ \text{rate for 16 mg/mL} \\ \text{concentration}^5 \end{array} \right) \times \left(\begin{array}{c} 0.76 \\ \text{\% of particles} \\ \text{sized < 5 } \mu\text{m}^5 \end{array} \right) = 2.05 \text{ mg (2,050 } \mu\text{g)}$$

Example Calculation of Delivered Dose

To determine the dose for other dilutions, the estimated delivered dose in 1 minute would be:

$$\left(\begin{array}{c} [\text{Conc(mg/mL)/16 mg/mL}] \\ \text{New dilution concentration} \\ \text{divided by the known 16 mg/mL} \end{array} \right) \times \left(\begin{array}{c} 2,050 \text{ } \mu\text{g} \\ \text{Known dose delivered} \\ \text{in 1 minute} \end{array} \right)$$

Calculate Your Delivered Dose

$$\frac{\text{Your Drug Concentration Here}}{16 \text{ mg/mL}} \times 2,050 \text{ } \mu\text{g} = \text{ (Delivered dose in 1 minute)}$$

Please note this is for guidance only and that individual institutions may decide to generate alternative protocols if they have data to support such approaches.



¹ Nagel M, et al. Dose Assurance with Nebulizer Therapy – A Laboratory Investigation into the Medication Delivery Performance of a Range of Different Nebulizers at Different Inspiratory/Expiratory Ratios. American Journal of Respiratory and Critical Care Medicine 2021;203:A4672. ² Nagel M, et al. Laboratory-Based Examination of the Potential for Fugitive Emission of Aerosols to the Local Environment from a Range of Commercially Available Nebulizer Systems. Respiratory Drug Delivery, 2021;1:287-292. ³ Coates AL, Wanger J, Cockcroft DW, Culver BH and the Bronchoprovocation Testing Task Force. ERS technical standard on bronchial challenge testing: general considerations and performance of methacholine challenge tests. European Respiratory Journal 2017;49:1601526;1-17. ⁴ Crapo RO, Casaburi R, Coates AL, et al. Guidelines for methacholine and exercise challenge testing – 1995. American Journal of Respiratory and Critical Care Medicine 2000;161:309-329. ⁵ Coates AL, Leung K, Dell SD. Developing alternative delivery systems for methacholine challenge tests. Journal of Aerosol Medicine and Pulmonary Drug Delivery 2014;27(1):66-70. 105211-001 Rev C. ©/™ Trade-marks of Trudell Medical International. † trade-marks and registered trade-marks of their respective companies. © Trudell Medical International 2017, 2020, 2022. All rights reserved.



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