

Circulaire II Features & Benefits

- 1. The Circulaire II is a “dosimetric” system** that uses the conserver principle for aerosol delivery system so that it does not waste medication. A 550 mL thin-film reservoir bag acts as a highly efficient conserver to store fresh aerosol generated during exhalation.
- 2. The Circulaire II has a higher rate of aerosol drug delivery than other nebulizers**, owing to the beneficial effect of the reservoir or conserver. This is what allows it to outperform other types of devices and deliver more aerosol drug in a shorter amount of time, typically 4 minutes for most medications. For bronchodilators, there is no need to use concentrated albuterol to reduce the treatment time.
- 3. The Circulaire has a Mass Median Aerodynamic Diameter, or MMAD, of 2.7 microns.** The MMAD, therefore, is right in the middle of the optimum range for particle size distribution for a wide range of aerosol medications. The Respirable Mass, also known as Fine Particle Fraction, or percentage of particles below 5 microns in size is 82%, which is among the highest of small volume medication nebulizers.
- 4. Compared to all other nebulizers that deliberately draw in room air, the Circulaire II is a quasi-closed system** that draws in room air only during exceptionally large tidal volumes (that do not occur with most patients). As a result of limiting room air entrainment, aerosol density is not diluted by room air and this contributes to the greater rate of drug delivery.
- 5. The Circulaire II is supplied with an integral expiratory filter** because Westmed believes that practitioners who administer aerosol drug therapy should be protected from inhaling medications intended for patients, as well as being protected from inhaling any droplets that may be exhaled or coughed out by patients.
6. Studies have shown that **the one-way "flapper" valve inside the Circulaire II manifold protects both the nebulizer and the reservoir** from retrograde contamination by the patient, thereby increasing the infection control value of the Circulaire II.
- 7. An adult and a pediatric mask, made of Westmed's proprietary Comfort Soft Plus™ material, are available for the Circulaire.** These masks are portless, or non-vented. That is, they do not have the conventional holes in their side for exhalation. This allows them to maintain the quasi-closed system of the Circulaire and direct exhalation through the expiratory filter and variable expiratory resistor.
- 8. The expiratory port is supplied with a Variable Expiratory Resistor that adds a small amount (0 to ~5 cm H₂O) of Positive Expiratory Pressure (PEP)** to the exhalation phase to help slow the patient's breathing rate and allow adequate time for the reservoir to fill. The small amount of PEP may also help splint airways open during exhalation, thereby preventing small airway collapse, and may aid in better distribution of inspired aerosol as the treatment progresses. Another potential benefit of PEP is that it may create shear forces at the boundary between airway secretions and the airway surface, to help mobilize the secretions. An optional PEP manometer is also available for measuring PEP levels during a deep breath PEP maneuver and for providing visual feedback to the patient.