# PERFORMANCE. PROTECTION. EFFICIENCY.

### DAR<sup>™</sup> Filters



Filters offer protection by removing bacteria and viruses before they enter a patient's airway. Without them, a patient can be at greater risk for developing a healthcare-associated infection.

Equally important, filters reduce the number of pathogens a patient exhales into the air. This helps protect everyone, including staff, visitors, and other patients — as well as equipment.

Ventilator filters can be either electrostatic or mechanical:

- Electrostatic filters use positive and negative charges to attract and capture particles.
- Mechanical filters feature a multilayered, pleated medium that provides greater efficiency than electrostatic filters.<sup>1</sup>

The large DAR<sup>™</sup> mechanical filters' pleated medium significantly increases bacterial filtration efficiency,<sup>2</sup> reaching an NaCl efficiency of greater than 99.97%.<sup>3</sup>

#### ELECTROSTATIC FILTERS



Electrostatic filter, large







Electrostatic filter, small, angled port

#### MECHANICAL FILTERS



Mechanical filter, large



Mechanical filter, compact



Mechanical filter, small



| ELECTROSTATIC FILTERS                    |  |                         |                      |  |  |  |
|--|--|-------------------------|----------------------|--|--|--|
|  | Large  | Small                   | Small, angled port   |  |  |  |
| Catalog number                           | 350U5865<br>(Without end-tidal<br>CO₂ sampling port) | 350U5879                | 350U19006            |  |  |  |
| Quantity/box                             | 50   | 50                      | 50                   |  |  |  |
| Recommended<br>tidal volume              | 300–1500 mL  | 150–1200 mL             | 150–1200 mL          |  |  |  |
| Resistance to flow before use (ISO 9360) |  |                         |                      |  |  |  |
| 30 L/min                                 | 0.6 cm H₂0   | 0.8 cm H₂0              | 0.9 cm H₂0           |  |  |  |
| 60 L/min                                 | 1.5 cm H₂O   | 2.1 cm H <sub>2</sub> O | 2.3 cm H₂O           |  |  |  |
| 90 L/min                                 | 2.6 cm H₂0   | 3.7 cm H₂0              | 4.3 cm H₂0           |  |  |  |
| Filtration efficiency                    |  |                         |                      |  |  |  |
| Bacterial                                | <u>&gt;</u> 99.9999%                                 | <u>&gt;</u> 99.9999%    | <u>&gt;</u> 99.9999% |  |  |  |
| Viral                                    | <u>&gt;</u> 99.999%                                  | <u>&gt;</u> 99.999%     | <u>&gt;</u> 99.999%  |  |  |  |
| NaCl                                     | <u>&gt;</u> 99.592%*                                 | <u>&gt;</u> 98.096%     | <u>&gt;</u> 98.096 % |  |  |  |
| Internal volume                          | 99 mL  | 36 mL                   | 44 mL                |  |  |  |
| Weight                                   | 35 g   | 19 g                    | 21 g                 |  |  |  |
| Type of filtration                       | Electrostatic  | Electrostatic           | Electrostatic        |  |  |  |

#### MECHANICAL FILTERS

|  | Small                | Compact                 | Large                   | <b>Large</b><br>w/o gas sampling port |  |  |
|--|----------------------|-------------------------|-------------------------|---------------------------------------|--|--|
| Catalog number                           | 351U5979             | 351U5878                | 351U5410                | 351U5856                              |  |  |
| Quantity/box                             | 50                   | 50                      | 50                      | 50                                    |  |  |
| Recommended<br>tidal volume              | 150–1200 mL          | 200–1500 mL             | 300–1500 mL             | 300–1500 mL                           |  |  |
| Resistance to flow before use (ISO 9360) |                      |                         |                         |                                       |  |  |
| 30 L/min                                 | 1.2 cm H₂O           | 0.8 cm H <sub>2</sub> O | 0.8 cm H <sub>2</sub> O | 0.8 cm H <sub>2</sub> O               |  |  |
| 60 L/min                                 | 2.7 cm H₂O           | 1.9 cm H₂O              | 2.0 cm H₂O              | 2.0 cm H₂O                            |  |  |
| 90 L/min                                 | 4.5 cm H₂0           | 3.2 cm H₂O              | 3.6 cm H₂O              | 3.6 cm H <sub>2</sub> O               |  |  |
| Filtration efficiency                    |                      |                         |                         |                                       |  |  |
| Bacterial                                | <u>&gt;</u> 99.9999% | ≥99.9999%               | <u>&gt;</u> 99.9999%    | <u>&gt;</u> 99.9999%                  |  |  |
| Viral                                    | <u>&gt;</u> 99.999%  | <u>&gt;</u> 99.9999%    | <u>&gt;</u> 99.9999%    | <u>&gt;</u> 99.9999%                  |  |  |
| NaCl                                     | <u>&gt;</u> 99.512%* | <u>&gt;</u> 99.747%³    | <u>&gt;</u> 99.978%*    | <u>&gt;</u> 99.978%*                  |  |  |
| Internal volume                          | 42 mL                | 66 mL                   | 92 mL                   | 92 mL                                 |  |  |
| Weight (approx.)                         | 24 g                 | 39 g                    | 47 g                    | 47 g                                  |  |  |
| Type of filtration                       | Mechanical           | Mechanical              | Mechanical              | Mechanical                            |  |  |

\*Internal testing Mirandola (various 2005-2008).

- Cann C, Hampson MA, Wilkes AR, Hall JE. The pressure required to force liquid through breathing system filters. *Anaesthesia*. 2006;61(5):492–497.
- 2. Wilkes AR. Measuring the filtration performance of breathing system filters using sodium chloride particles. *Anaesthesia*. 2002;57(2):162-168.
- 3. Nelson Laboratories Inc. Sodium chloride aerosol testing of breathing system filters (BSF). Lab No. 399951A. *1 Amended*. January 2008.

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