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Technical Specification

November 2019

# 3M™ Versaflo™ Powered Air Purifying Respirator TR-800

## Description

Before using the TR-800 PAPR, all users must read and understand the product *User Instructions*. Consult the TR-800 *User Instructions* for general system operation. Consult the TR-800 Charger and Battery Pack *User Instructions* for additional information. If you have further questions, consult your supervisor or call 3M Technical Service at 1-800-243-4630 (USA) or 1-800-267-4414 (Canada).

## Specifications

| Characteristic | Value |
|---|---|
| Air flow<br>Loose-Fitting Headgear<br><br><br><br>Tight-Fitting Facepieces | <br>Nominal 6.7 cfm (190 lpm) – Standard flow<br>Nominal 7.2 cfm (205 lpm) – Medium flow<br>Nominal 7.8 cfm (220 lpm) – High flow<br><br>Nominal 4.25 cfm (120 lpm) – Standard flow<br>Nominal 5.25 cfm (150 lpm) – Medium flow<br>Nominal 6 cfm (170 lpm) – High flow |
| Weight<br>TR-800 motor/blower – no battery pack<br>Standard battery pack – TR-830<br>TR-6700 Series filter<br>TR-6800 Series filter<br>TR-6300 Series filter/cartridge<br>TR-6500 Series filter/cartridge<br>High Durability belt – TR-626<br>High Durability extender – TR-626X<br>Easy clean belt – TR-627<br>Easy clean belt extender – TR-627X<br>TR-6700FC Filter Cover<br>TR-6800FC Filter Cover<br>TR-6300FC Filter Cover<br>TR-6500FC Filter Cover<br>TR-6600 Prefilter<br>TR-626 Spark arrestor | <br>Approx. 1.50 lbs (676 grams)<br>Approx. 1.50 lbs (663 grams)<br>Approx. 0.5 lbs (230 grams)<br>Approx. 0.6 lbs (270 grams)<br>Approx. 1.5 lbs (700 grams)<br>Approx. 1.9 lbs (786 grams)<br>Approx. 0.95 lbs (432 grams)<br>Approx. 0.3 lbs (152 grams)<br>Approx. 0.6 lbs (270 grams)<br>Approx. 0.20 lbs (89 grams)<br>Approx. 0.13 lbs (61 grams)<br>Approx. 0.17 lbs (75 grams)<br>Approx. 0.24 lbs (108 grams)<br>Approx. 0.25 lbs (115 grams)<br>Approx. 0.01 lbs (1 grams)<br>Approx. 0.01 lbs (5 grams) |
| Operating Conditions Operating temperature<br><br><br><br>Operating altitude/elevation range | 23 °F to 131 °F (-5°C to 55 °C).<br>Motor/blower battery alarm will activate when battery pack internal temperature exceeds 131 °F (55 °C). Motor/blower will shut down if the battery pack temperature reaches 140 °F (60 °C).<br><br>-328 feet to 16,404 feet (-100 meters to 5000 meters) |
| Storage conditions<br>Relative humidity<br>Temperature (daily storage)<br>Temperature (extended storage)<br>Optimal storage temp for battery packs to maintain existing charge while off charger | <br>< 90%<br>-22 °F to 122 °F (-30 °C to 50 °C)<br>40 °F to 95 °F (4 °C to 35 °C)<br>59 °F (15 °C) |
| Battery Charging | Optimal: 68 °F to 77 °F (20 °C to 25 °C)<br>Permissible: 32 °F to 104 °F (0 °C to 38 °C) |

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|---|---|
| Shelf Life from date of manufacture when stored in original packaging and recommended storage conditions:<br>1. Motor/blower<br>2. Battery pack<br>3. HE filter<br>4. Gas & vapor cartridge/HE | 1. 5 years*<br>2. 6 months<br>3. 5 years<br>4. 5 years<br>* Run for 5 minutes/year |
| Belts | All belts approx. 52 in. (132 cm)<br>Belt extender approx. 20 in (50 cm)<br>TR-627 Easy Clean – Easy clean refers to the non- porous material and submergibility of the belt.<br>TR-626 High Durability – Leather straps with a durable rubber hip belt. |
| Battery pack - TR-830<br>1. Chemistry<br>2. Charge time<br>3. Run time | 1. Lithium-ion<br>2. Less than 4.5 hours<br>90 % of full capacity in < 3.5 hours<br>3. Approx. 4-8 hours[1, 2]<br>[1] New battery and filter, used at 68° -70 °F (20° – 21.1°C)<br>[2] Dependent on headgear, filter/cartridge, selected airflow, and filter loading<br><br>Note: Consult a transportation specialist for any requirements or limitations prior to transporting lithium-ion battery packs.<br><br>TR-830 are shipped compliant with UN 38.3. |
| Motor/blower alarms –<br>The TR-800 features audible and visual alarms. | Will alarm continually until resolved.<br>Audible/Visual alarm: Flashing icons draw attention to reason for alarms. Flashes continually until resolved. |
| Motor/blower operational noise | < 80 dBA at ear per NIOSH Noise Level Test RCT-APR-STP-0030. Noise levels dependent on system configuration and filter loading. |
| Motor/blower alarms –<br>1. Filter loading/Low air flow<br><br>2. Low battery voltage<br><br>3. System alarm | 1. Audible and visual alarms will activate when filter pressure exceeds that which the blower can assure adequate airflow of at least 6 CFM (170 lpm) for greater than approx. 30 seconds. Bottom LED on filter loading indicator will flash red. System will power down after approx. 15 minutes.<br>2. Audible and visual alarms will activate when approx. 10-15 minutes of power remains. Bottom LED of battery charge status indicator will flash red. This alarm will also activate if the battery pack temperature reaches or exceeds 131 °F (55 °C).<br>3. Activates when system software malfunctions. All icons will flash and alarm. Power down motor/blower unit to clear alarm. If unit does not reset, contact 3M Technical Service. |
| Intrinsic Safety | The 3M™ Versaflo™ Powered Air Purifying Respirator TR-800 Motor/Blower, with the 3M™ Battery Pack TR-830 attached, has been tested and classified for intrinsic safety in Hazardous Locations (Exia) by Underwriters Laboratory (UL) for the following:<br>Exia Division 1: Class I, II, III; Division 1(Includes Division 2), Groups C, D, E, F, G, T4<br>Ex ia I Ma<br>Class I, Zone 0, AEx ia IIB, T4<br>Class I, Zone 0, Ex ia IIB, T4<br>Zone 20, AEx ia IIIC, T135°C<br>Zone 20, Ex ia IIIC, T135°C<br>-20°C ≤ Ta ≤ 55°C |

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|---|---|
| Silicone | The TR-800 assembly does not contain components made of free silicone*<br>*The optional cleaning and storage plugs (TR- 653) uses silicone gaskets (TR-654) |
| Ingress Protection (IP Rating) | IP54 for TR-800 Blower (while in use)<br>IP67 for TR-800 Blower with TR-653 Cleaning Plugs attached (while cleaning) |

**Personal Safety Division**
3M Center, Building 235-2W-70
St. Paul, MN 55144-1000

3M PSD products are occupational use only.

**In United States of America**
Technical Service: 1-800-243-4630
Customer Service: 1-800-328-1667
3M.com/workersafety
**In Canada**
Technical Service: 1-800-267-4414
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3M.ca/Safety