Technical Data

**Breathing performance in SCBA mode**
- Breathing rate: 103 liters per minute with mask pressure above ambient.
- Environmental range: The operating range is -10°C to +40°C.
- End of cylinder air: Able to sustain positive pressure down to 10 bar cylinder pressure.

**Breathing performance in ST PAPR mode**
- Breathing rate: 125 - 165 liters per minute.

**Breathing performance in APR mode**
- Exhalation breathing resistance of no greater than 20mm of water at 85 lpm in a negative pressure mode.
- Inhalation resistance including General Purpose Filter: 50mm of water at 85 lpm.

**Live agent permeation performance** (Data validated by ECBC, Edgewood Chemical Biological Center)

<table>
<thead>
<tr>
<th>Requirements Actual</th>
<th>Test agent</th>
<th>NIOSH CBRN requirements</th>
<th>Typical performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge chemical</td>
<td>Max Peak (mg/m³)</td>
<td>Max Cumulative (mg-min/m³)</td>
<td>Mustard (HD)</td>
</tr>
<tr>
<td>Sarin (GB)</td>
<td>0.6</td>
<td>0.004</td>
<td>0.004</td>
</tr>
<tr>
<td>Mustard (HD)</td>
<td>0.087</td>
<td>0.005</td>
<td></td>
</tr>
</tbody>
</table>

**Materials used**
- Harness on ST53 SCBA: Kevlar webbing with stainless steel and nylon hardware.
- Harness on ST53SD SCBA: Nylon Cordura.
- Backplate: Glass reinforced polycarbonate.
- Cylinder valve: Anodized Aluminum.
- ST-PAPR: GE Noryl with a 10% glass fill.

**Weight for ST53 units (based on empty cylinders)**
- ST53 (excluding cylinder and mask): 6.6 lbs.
- Carbon fiber fully wrapped, 2216 psi, 30 minute: 7.75 lbs.
- Carbon fiber fully wrapped, 4500 psi, 30 minute: 7.4 lbs.
- Carbon fiber fully wrapped, 4500 psi, 45 minute: 9.9 lbs.
- Carbon fiber fully wrapped, 4500 psi, 60 minute: 11.95 lbs.

**Weight for ST-PAPR**
- ST-PAPR without CDV, battery or cartridges: 2.5 lbs.
- ST-PAPR with CDV, two general purpose filters and a lithium Sulphur Dioxide battery: 4.4 lbs.

**Weight for ST53SD units (based on empty cylinders)**
- ST53SD 11 cu.ft (includes cylinder but no mask): 5.2 lbs.
- ST53SD 17 cu.ft (includes cylinder but no mask): 4.0 lbs.

**Weight for mask only**
- Single Port FM53 mask (excluding filter): 1.2 lbs.
- Dual Port FM53 mask (excluding filter): 1.3 lbs.

The FM53 respirator falls within the definition of Significant Military Equipment in the United States Munitions List, International Traffic in Arms Regulations and may only be supplied outside of the United States of America to customers who are licensed by the US Department of State, Directorate of Defense Trade Controls.

Distributed by AFC Internationa
IPO Box 894
DeMotte, IN 46310
800.952.3293 • fax 219.987.6826
www.afcintl.com • sales@afcintl.com

PROTECTING THE FUTURE
www.avon-protection.com
Avon’s revolutionary ST33 multi-role Respiratory Protective Equipment (RPE) system has been developed specifically for specialist applications where the user needs to respond to changing operational conditions.

The ST33 product range evolved from the FM33 mask (see FM33 datasheet for further details). The FM33 mask has the unique capability to operate as a negative pressure filter mask or with positive pressure supplied air devices. The ST33 range of equipment has been developed to provide the user options to select the most suitable configuration for the application. A modular design approach is adopted enabling fast and simple equipment configuration across the ST33 range.

**ST53™**

The standard ST53 with full back frame offers 30, 45 and 60 minute lightweight carbon cylinder options.

**Cylinder Valve**
The ST53 includes a nickel-plated brass cylinder valve with the option of locking and non-locking configurations.

**Cylinder Content Monitoring**
The ST53 backframe option includes a remotely accessible, chest mounted pressure gauge for monitoring of pressure and a whistle for end of service alarm which the user can turn on or off if required.

**Compact Demand Valve (CDV)**
The world’s smallest, most compact chemically hardened demand valve provides constant positive pressure.

With the option to mount on either side of the mask, it is unobtrusive and allows excellent integration with weapons and other personal equipment. The CDV is attached to the mask via the standard 40mm thread connection.

**ST-PAPR™**
The Multi-Role Respiratory Protection System

The ST-PAPR is a modular system which can be attached within a few moments using quick connect air line couplings. The addition of the ST - PAPR provides the additional levels of serviceability and comfort associated with powered air whilst still retaining the ability to switch instantly to the positive pressure SCBA mode when required.

- The ST - PAPR has a remote on/off switch located on the mask hose connector enabling the ST-PAPR to be easily switched on and off.
- A speed selector provides a high flow rate up to 185 liters per minute with a minimum flow rate of 125 Liters per minute at the lowest setting.
- Lithium Sulphur Dioxide battery option with a minimum 7 hour battery life.
- Lithium Ion rechargeable battery option with a minimum 6 hour battery life.
- With the ST - PAPR the integrated CDV enables the user to switch instantly from powered air to positive pressure SCBA mode when required.
- Incorporates two 40mm standard NATO thread filters.

**ST53SD™**
The short duration variant provides a belt or harness carry option with 1 and 2 liter cylinder options meeting the needs of law enforcement and special forces for short-term tactical operations.

**Cylinder Valve**
The ST53SD includes a nickel-plated brass cylinder valve in the non-locking configuration.

**Cylinder Content Monitoring**
The ST53SD provides the option of either a remote whistle and pressure gauge or a single pressure gauge attached directly to the regulator body.

**Compact Demand Valve (CDV)**

The world’s smallest, most compact chemically hardened demand valve provides constant positive pressure.

With the option to mount on either side of the mask, it is unobtrusive and allows excellent integration with weapons and other personal equipment. The CDV is attached to the mask via the standard 40mm thread connection.

**ST-PAPR™**
The Multi-Role Respiratory Protection System

The ST-PAPR is a modular system which can be attached within a few moments using quick connect air line couplings. The addition of the ST - PAPR provides the additional levels of serviceability and comfort associated with powered air whilst still retaining the ability to switch instantly to the positive pressure SCBA mode when required.

- The ST - PAPR has a remote on/off switch located on the mask hose connector enabling the ST-PAPR to be easily switched on and off.
- A speed selector provides a high flow rate up to 185 liters per minute with a minimum flow rate of 125 Liters per minute at the lowest setting.
- Lithium Sulphur Dioxide battery option with a minimum 7 hour battery life.
- Lithium Ion rechargeable battery option with a minimum 6 hour battery life.
- With the ST - PAPR the integrated CDV enables the user to switch instantly from powered air to positive pressure SCBA mode when required.
- Incorporates two 40mm standard NATO thread filters.

**FILTER OPTIONS**
- The FM33 system includes a unique close fitting filter design, giving the user greater visibility and improved weapon sighting and ergonomics.
- The general purpose filter provides protection from a wide range of CBRN hazards.
- The lower inhalation resistance particulate filters can be used specifically for particulate challenges.
- Filter mounted left or right side – 40mm standard NATO connection.

**ACCESSORIES**

**OPTIONAL EXTRAS**
- Airline / decontamination attachments are available with the ST33™.
- Operator replaceable spare parts available, easy to maintain with access to key components.
- A wide range of fully compatible accessories such as hydration canteens, communication connections, vision correction system, clear and sunlight outserts and a range of storage and carry bags.
- Rapid Intervention Coupling (RIC), allowing a rescue team to attach a rescue cylinder to the SCBA.

**COMMUNICATION**

- For enhanced voice amplification, an optional Voice Projection Unit (VPU) with internal microphone can be connected via the Electronic Communication Port (ECP).
- Additional external communication systems can be attached via the ECP using an appropriate lead.

**FILTER OPTIONS**

**ST53SD™**
The short duration variant provides a belt or harness carry option with 1 and 2 liter cylinder options meeting the needs of law enforcement and special forces for short-term tactical operations.

**Cylinder Valve**
The ST53SD includes a nickel-plated brass cylinder valve in the non-locking configuration.

**Cylinder Content Monitoring**
The ST53SD provides the option of either a remote whistle and pressure gauge or a single pressure gauge attached directly to the regulator body.

**Compact Demand Valve (CDV)**
The world’s smallest, most compact chemically hardened demand valve provides constant positive pressure.

With the option to mount on either side of the mask, it is unobtrusive and allows excellent integration with weapons and other personal equipment. The CDV is attached to the mask via the standard 40mm thread connection.

**ST-PAPR™**
The Multi-Role Respiratory Protection System

The ST-PAPR is a modular system which can be attached within a few moments using quick connect air line couplings. The addition of the ST - PAPR provides the additional levels of serviceability and comfort associated with powered air whilst still retaining the ability to switch instantly to the positive pressure SCBA mode when required.

- The ST - PAPR has a remote on/off switch located on the mask hose connector enabling the ST-PAPR to be easily switched on and off.
- A speed selector provides a high flow rate up to 185 liters per minute with a minimum flow rate of 125 Liters per minute at the lowest setting.
- Lithium Sulphur Dioxide battery option with a minimum 7 hour battery life.
- Lithium Ion rechargeable battery option with a minimum 6 hour battery life.
- With the ST - PAPR the integrated CDV enables the user to switch instantly from powered air to positive pressure SCBA mode when required.
- Incorporates two 40mm standard NATO thread filters.

**FILTER OPTIONS**

**ST53SD™**
The short duration variant provides a belt or harness carry option with 1 and 2 liter cylinder options meeting the needs of law enforcement and special forces for short-term tactical operations.

**Cylinder Valve**
The ST53SD includes a nickel-plated brass cylinder valve in the non-locking configuration.

**Cylinder Content Monitoring**
The ST53SD provides the option of either a remote whistle and pressure gauge or a single pressure gauge attached directly to the regulator body.

**Compact Demand Valve (CDV)**
The world’s smallest, most compact chemically hardened demand valve provides constant positive pressure.

With the option to mount on either side of the mask, it is unobtrusive and allows excellent integration with weapons and other personal equipment. The CDV is attached to the mask via the standard 40mm thread connection.

**ST-PAPR™**
The Multi-Role Respiratory Protection System

The ST-PAPR is a modular system which can be attached within a few moments using quick connect air line couplings. The addition of the ST - PAPR provides the additional levels of serviceability and comfort associated with powered air whilst still retaining the ability to switch instantly to the positive pressure SCBA mode when required.

- The ST - PAPR has a remote on/off switch located on the mask hose connector enabling the ST-PAPR to be easily switched on and off.
- A speed selector provides a high flow rate up to 185 liters per minute with a minimum flow rate of 125 Liters per minute at the lowest setting.
- Lithium Sulphur Dioxide battery option with a minimum 7 hour battery life.
- Lithium Ion rechargeable battery option with a minimum 6 hour battery life.
- With the ST - PAPR the integrated CDV enables the user to switch instantly from powered air to positive pressure SCBA mode when required.