

# CORE UNDERSUIT

INTELLIGENT

## OPERATION CAPABILITY

### Overview

Global Militaries are realizing the impact of Non-Freezing Cold Injury and its effect to both training and operations. In the diving sphere the prevalence and diagnosis of this injury is on the rise, particularly with the adoption of diver propulsion systems and underwater vehicles.

Avon Protection's Core Intelligent Undersuit is a heated undersuit designed specifically to combat Non-Freezing Cold Injuries for air, land and sea, and in turn, protects a diver's operational effectiveness. Powered by a 7-volt battery, the undersuit is unique in its capability to provide controlled heating to the diver, regulating the user's body temperature across the undersuits major autonomous heating zones (torso, hands and feet) at all times.

Compatible with both wet and drysuit diving systems or for use as a surface under-garment (small boat work etc.), Core Intelligent's capability is the result of close collaboration with key military users and our partnership with market leading industry manufacturer Santi.

## SYSTEM FEATURES

### Characteristics and Components

- The unique combination of a 7-volt battery and over-current protection in the Core Intelligent Undersuit removes the risk of the overheating.
- Thermistors actively control the heating of individual panels based on diver skin and panel temperature.
- The system temperature setpoints are:
  - Torso = 39°C +/- 1°C
  - Glove = 19°C +/- 1°C
  - Sock = 27°C +/- 1°C
- Specifically designed panels reduce the risk of overlapping and compression of the heating elements.
- Detachable gloves and integrated socks for optimum fitting. (Socks can be separated from the main garment to allow for repair/resizing).
- Detachable heating panels reduce burden of maintenance.
- Approx. 2 hour battery endurance (if constantly heating all zones).
- Super flexible, low profile, cable system.





- MIL STD 810G compliant transport/storage case available (sold separately).
- Proven wet-connector technology suitable for long-duration deep diving.
- Compatible with both wetsuits or drysuits (via the in-built custom drysuit port).
- **Warranty:**  
18 months for textiles and 24 months for electronics.

## PERFORMANCE

### Testing and configurations

The Core Intelligent Undersuit has undergone rigorous internal testing and field trials, for further information please contact Avon Protection Customer Services.

Batteries certified to UN 38.3.

Configured with 7-volt battery.

### Sizes (Undersuit, Gloves and Socks):

S, M, L, XL, XXL.

### Weight:

4.27kg (9.410lbs).

Includes all connectors and penetrators, and battery.

### Operating Temperature:

Air = -2°C to 48.8°C (28°F to 120°F).

Water = -2°C to 21°C (28°F to 70°F).

The export of the commodities described herein may be subject to U.S. export laws and regulations including but not limited to the Arms Export Control Act or the Export Administration Act.

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## TECHNICAL SPECIFICATION

Specifications	
<b>Coverage and Setpoints</b>	<p>The sock heating element covers the top and bottom of the foot and toes.</p> <p>The setpoint of the sock is 27°C +/- 1°C.</p> <p>The glove heating element covers the palm, heel pad, back of the hand, thumb and fingers.</p> <p>The setpoint of the glove is 19°C +/- 1°C.</p> <p>The torso is split into three panels each containing a heating element, the heating elements cover the chest, sides and back.</p> <p>The setpoint of the torso panels is 39°C +/- 1°C.</p>
<b>Zone Autonomy and Power</b>	<p>Each heating zone operates independently and is not affected by the condition of any other zone.</p> <p>The Garment provides the following wattage to each zone:</p> <p><b>Hand:</b> 36 Watts per hand (Back - 15 Watts, Palm - 21 Watts).</p> <p><b>Sock:</b> 14.4 Watts per foot.</p> <p><b>Torso:</b> 36 Watts left side, 36 Watts right side.</p>
<b>Operating Temperatures</b>	<p><b>Air:</b> -2°C to 48.8°C (28° to 120°F).</p> <p><b>Water:</b> -2°C to 21° C (28°F to 70°F).</p>
<b>Storage Temperature</b>	-31°C to 54°C (-24°F to 130°F).
<b>Supply Connector &amp; Voltage</b>	<p><b>Supply connector:</b> A single wet mate-able connector with embedded power indicator external to the suit and visible to the diver is present to disconnect the system from the power supply.</p> <p><b>Supply voltage:</b> 7V max, 6V nominal.</p>

