

# SKYDRATE™



## USER & MAINTENANCE GUIDE

**OMNI**  
DEFENSE TECH



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## IMPORTANT SAFETY INFORMATION

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Before using the Skydrate™ System in a mission setting, familiarize yourself with the components and operation of the system. **Practice** using the Skydrate™ in a chair or flight simulator before using it in an aircraft.

1. Always follow instructions when operating the device.
2. The batteries must be fully recharged at least once every 6 months.
3. The batteries must be left in fully charged state when they are not going to be used for more than 2 months.
4. Do not submerge Control Unit under water.
5. Do not use liquid cleaners (bleach, vinegar, alcohol, ammonia, etc.) or aerosol cleaners. Clean using a warm water (or a solution of 3% hydrogen peroxide) and a damp cloth.
6. Use only the type of power supply provided with the Skydrate™ System.
7. Do not attempt to service this product yourself, as opening or removing covers may damage the device and void your warranty.
8. Refer all servicing to **Omni Service Technicians** under the following conditions:
  - When the power-supply cord or plug is damaged.
  - If the product does not operate.
  - If the product has been dropped or damaged in any way.
  - When the product exhibits a distinct change in performance.
9. All servicing should be done by a certified Omni Service Technician. Unauthorized component substitutions may result in fire, electric shock, or other hazards.
10. This product should be kept away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.

## SYSTEM COMPONENTS

Control Unit



Battery Charger & Battery



Male Hose  
(Control Unit Side)



Male Cup



Hose  
Switch



Male Hose  
(Cup Side)



Collection Bag

## QUICKSTART

### Skydrate Personal Aircrew Flight Equipment

The Skydrate is a fully automatic, hands free bladder relief system designed for use in fixed and rotary wing aircraft. The system was designed to allow pilots to be hydrated during mission (in accordance with mandatory regulation for aircrew of military aircraft) and to remain fully clothed and secure in their seat harness at all times.

#### How Does The Skydrate Work?

The Skydrate system is simple to use. Worn discretely beneath the flight suit, the collection **cup** hose connector contains sensors that will detect urine once the user begins to urinate. The external control unit will automatically activate, evacuating the urine from the cup and into the attached collection bag. The Gen 3 Hose Switch has a push button for manual activation of the control unit without waiting for sensors.

*Cup worn discretely beneath the flight suit.*



Gen 3 System Configuration

# MALE SYSTEM OPERATION PROCEDURE OVERVIEW

## DON THE SYSTEM

1. Don the **Boxer Briefs**.
2. Connect the removable hose to the cup. Insert the cup into place within the briefs.
3. Insert the penis through the hole in the **Briefs**, into the cup via the **Foam Ring**.
4. Don the rest of the flight ensemble. If using the **Through Suit Connector (TSC)**, connect the hose to the inside TSC port. If not, make sure that the cup hose is accessible via the flight suit's zipper.

## BEFORE TAKE OFF

1. Ensure that the control unit is fully charged (all green lights)
2. Ensure that the system is fully connected.
3. Ensure that the collection bag drain is closed.

## SYSTEM OPERATION

1. Before urinating, ensure that the cup is in the correct position and connect the hose to the control unit.
2. The system is now **activated**, and will **automatically** drain urine into the collection bag as soon as the aircrew begins to urinate.
3. The system can remain connected for the duration of the flight.

# CONTROL UNIT KIT

## KIT CONTENTS

- 1 Control Unit
- 1 Charger
- 2 Battery Packs
- 1 Wall Power Adaptor
- 1 User Manual



Gen 3 Control Unit with QR Code for easy access to Omni's Training and Supply App.



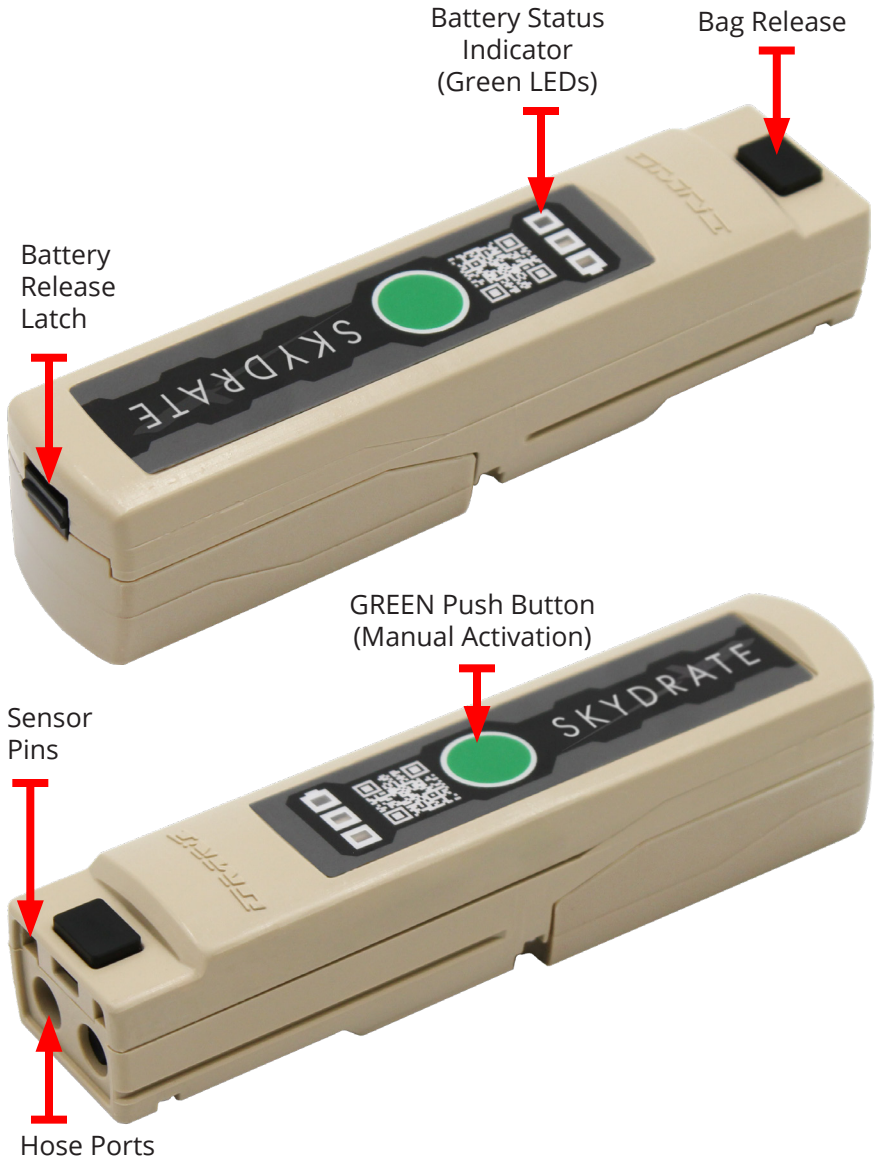
Charger with 2 Battery Packs.  
Batteries are shipped in sleep mode.



Wall Power Adapter



## CONTROL UNIT



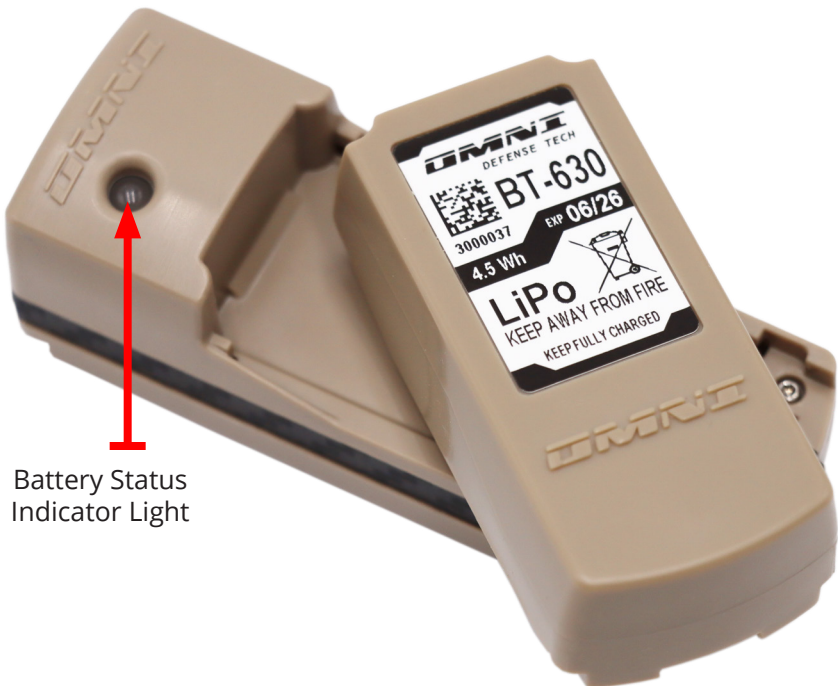
## CHARGER & BATTERIES

The battery charger is only for use with the Skydrate™ rechargeable battery packs. It must only be used with the supplied power supply.

Fully charged, the battery lasts for up to 12 uses within a 16 hour period.

**Long Term Storage:** Batteries are shipped in sleep mode. Once the battery is taken out of sleep mode (charged for the first time), the batteries **must be fully recharged every 6 months.**

**DO NOT submerge batteries in water.**  
**DO NOT leave batteries discharged.**



## HOSE SWITCH



### **Removable Hose Cup Side**

*Note: Tan Connector is Color Coded to the Hose Switch*

The **Hose Switch** allows for one handed operation of the system.

*Note: Tan color Code to Cup Side Hose Connector*



### **Manual Button**

Manually activates the liquid pump while held.

### **ON/OFF Switch**

Puts the system into Automatic mode (ON) or disconnects it (OFF).

It can be used to manually activate the system, as well as to completely deactivate the system without disconnecting any hoses.

*Note: Black Color Code to Control Unit Side Hose Connector*

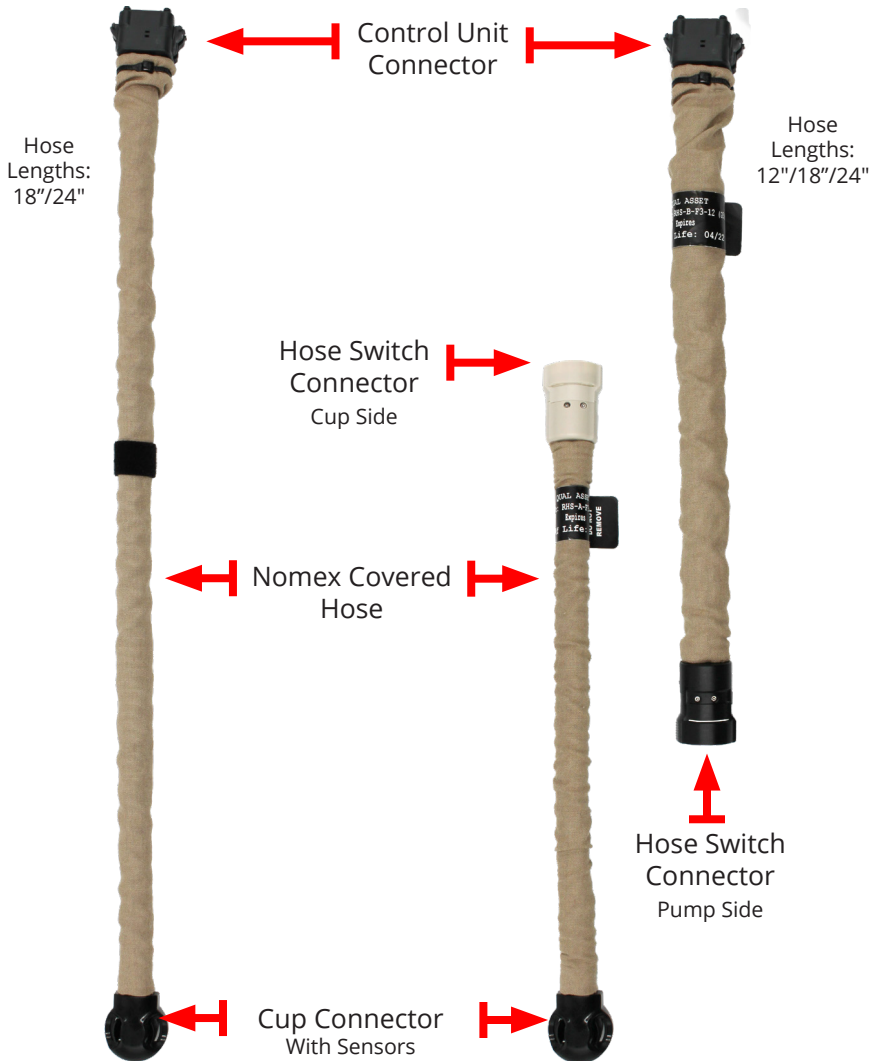


### **Removable Hose Control Unit Side**

*Note: Black Connector is Color Coded to the Hose Switch*

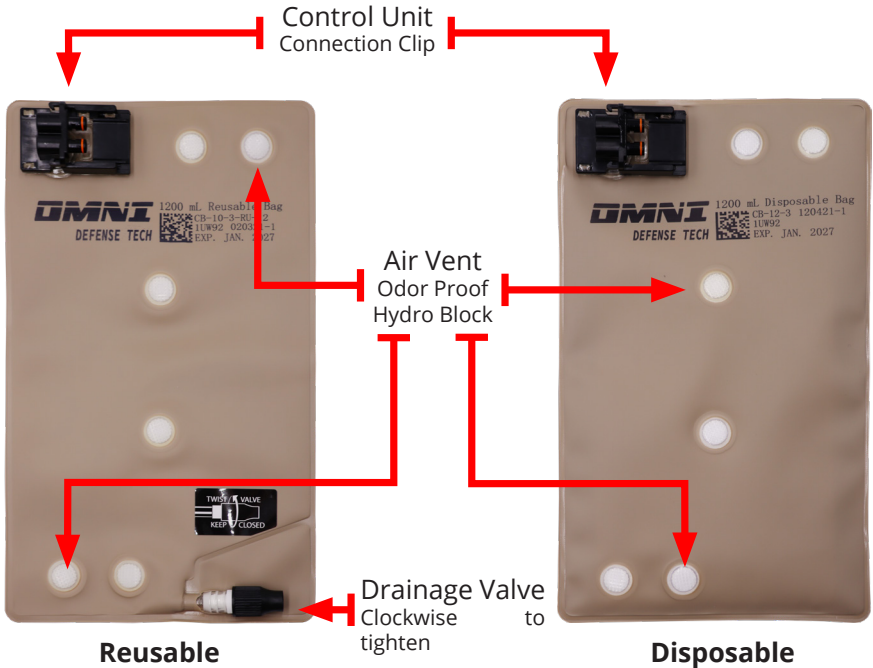
## REMOVABLE HOSES

The removable hoses connect the cup to the hose switch and/or control unit. These hoses are reusable and should be inspected and tested before each flight - replace after 25 flights.



## COLLECTION BAG

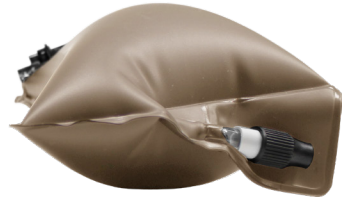
The Collection Bag is manufactured from durable, medical-grade urethane. The **standard bags have a capacity of 1200mL**. While **not recommended**, in an **emergency it can withstand up to 2200mL**.



Standard Reusable Bag  
Filled with 1200mL



Filled with 2200 mL



### **DO NOT** OVERFILL THE COLLECTION BAG

The Collection Bag has a one-time emergency 1000mL over-capacity safety factor and **must be replaced after overfilling**.

## MALE CUP

The Male Cup has a removable hose which attaches to the bottom of the cup. It is designed for optimal use in all aircraft, including aircraft with the 5-point harness. The cup is reusable, at the user's discretion, for up to **20 flights** or **30 days** with proper cleaning.



## UNDERGARMENT

### UNDERGARMENT

The undergarments are used to hold the Cup in place. They should be sized for a snug fit.

Features:

- **No-melt, no-drip construction**
- **Lightweight and Breathable**
- **Machine washable**



SIZE	WAIST
<b>S</b>	<b>32-34"</b>
<b>M</b>	<b>36-38"</b>
<b>L</b>	<b>40-42"</b>
<b>XL</b>	<b>44-46"</b>

### MALE GARMENT

MG-XX-MF



## MALE SYSTEM OVERVIEW

The Male System consists of the **Male Cup**, **Male Hose**, **In-Line Hose Switch**, **Control Unit**, and **Collection Bag**. They are connected together as pictured below. These are the only components required on a mission. Additional batteries and bags may be taken as needed.



Green Status LEDs will Flash Battery Status continuously when system is ON, activated and ready for use.



## CHARGING THE SYSTEM

The battery pack **must be charged prior** to the first use.  
It make take up to 2.5 hours.



Connect a **Rechargeable Battery** to the **Charger**.



Connect the cord from the **Power Supply** to the **Charger**.



A solid **GREEN** light indicates that the battery is charged.

A flashing **YELLOW** light indicates that the battery is charging.

A flashing **RED** light indicates that the battery is completely discharged.

If it does not change to yellow after an hour, the battery must be replaced.

## DONNING THE MALE SYSTEM (REMOVABLE HOSE)



### Attach Hose

Attach the hose to the cup. Ensure that the hose snaps securely in place. Rotate hose for desired location.



### Insert Cup

Place the cup into the garment pocket and insert the male anatomy through the foam ring. Secure the pocket.



### Position Hose

The hose exits the garment at the bottom, and can be positioned as desired.



### Alignment Flaps

If necessary, the alignment flaps can be cut off and discarded to provide a more comfortable fit.

Depending on which provides a better fit, future supplies can be ordered with or without flaps as desired.



### Connect to System

Leave hose accessible via garment zipper or other access point. Connect to Skydrate Control Unit and Bag for use.

## DONNING THE MALE SYSTEM



*The Cup may be inserted into the Undergarment either before or after donning.*

Open the cup pocket flaps on the front of the Male garment.

Insert the **Male Cup** (with hose attached) into the cup pocket , making sure that the foam ring is aligned with the hole.



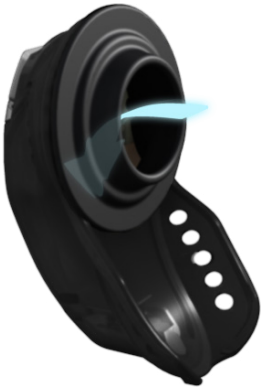
If the garment is currently donned, insert the penis through the hole in the fabric and through the foam ring of the cup.

While keeping the cup in place, fasten the pocket flaps shut with the Velcro strip.



Make sure that the cup is secure in the cup pocket.

## DONNING THE MALE SYSTEM



After the cup has been placed into the boxer briefs, insert the penis **through the foam ring** of the cup while donning the boxer briefs.



The boxer briefs should be a comfortable, snug fit to properly hold the Male Cup in place. Ensure that the hose can be retrieved through the bottom zipper after donning flight gear.

After entering the aircraft, but **before securing the harness**, retrieve the hose and zip the flight suit to capture the hose. **Ensure that the hose is not kinked, crimped or pinched.**



Once seated in aircraft, adjust the cup for comfort and ensure that the tip of the cup is **down and between the legs**.

## PREPPING THE SYSTEM

Press the GREEN push button for 1 second and release to display the battery charge status. Recommended to start mission with a fully charged battery.

100%-80%



80%-20%



**CHARGE**  
Below 20%



**CHARGE**  
0%



Slide the Control Unit onto the Collection Bag clip.  
There will be an audible click when the connection is made.

Roll the Control Unit up in the Collection Bag and store in an available pocket that is accessible during flight.

## MALE SYSTEM OPERATION

The Male System allows the user the option of connecting the Cup Hose to the Control Unit at the **beginning of flight** and **remain connected for the mission duration**.

Connect the Cup Hose to the Control Unit:



Align hose connector with clip and slide it into place.



When connected, there will be an audible click, and the control unit will beep twice.

To avoid leaks, the user should ensure that the cup orientation is correct before using the system.

The urine sensor is located in the hose, in the cup connector. **If the cup is tilted too far back, a leak can occur at the foam ring.**



**INCORRECT**



**CORRECT**

**Before use, always tuck the cup down into a VERTICAL position so sensors are at the lowest position and will detect urine.**

When the user urinates, the sensors in the Hose Connector **automatically detect** urine and activate the Control Unit pump, transferring the urine from the cup and into the Collection Bag.



## AFTER MISSION



At the end of mission, pinch the sides of the hose connector and slide it away from the Control Unit.

To remove the Control Unit from the Bag, press the release button and slide the unit away from the clip.



Remove battery from control unit and recharge.



Drain reusable collection bag.

Either dispose of Collection Bag and Male Cup, or clean for reuse. See Care and Maintenance for Cleaning instructions, or visit **omni-defense.com** to view the Skydrate™ Instructional Video

# CARE, MAINTENANCE AND STORAGE

## **WARNING:**

**NEVER SUBMERGE THE CONTROL UNIT WITH BATTERY ATTACHED**

## **Cleaning**

1. Attach all components (Control Unit, Cup, Hoses, and Bag) of the Skydrate™ system together.
2. Fill Male Cup with warm water OR a solution of 3% Hydrogen Peroxide. The Control Unit should turn on automatically. If the system does not automatically turn on, press and hold the “M” button. Repeat this process twice.
3. Once all the water is pumped out of the Cup and into the Bag, move the Bag around to rinse it on the inside.
4. Open the drainage valve and empty the bag.
5. **REMEMBER TO CLOSE THE VALVE AFTER DRAINING.**
6. Dip the connector end of the Control Unit into warm water. DO NOT submerge past the release button.
7. Press and hold the “M” push button for 5 seconds, then remove the Control Unit from the water and hold the button for an additional 5 seconds to dry out the Control Unit pump.
8. DO NOT USE BLEACH, VINEGAR, OR HEAVY DETERGENTS.

## **Storage**

1. *Short Term Storage:* Always fully recharge batteries before storing.
2. *Long Term Storage:* The batteries must be recharged and left fully charged every 6 months.
3. Always store the Skydrate™ Control Unit in a dry place with temperatures between -4F and 158F (-20° - 70° C).
4. Keep the Skydrate™ system away from heat, humidity or harmful chemicals and avoid long term exposure to sunlight.

## **Maintenance Tips**

Omni recommends that the Male Cup, Control Unit, Hoses, and Bag are cleaned after each use to maintain their functionality.

## **Disposal**

The Male Cup and Collection Bag can be disposed of in any trash receptacle.



## **TROUBLESHOOTING**

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### **Having trouble?**

Try these simple tips, email us at [support@omnimedicalsys.com](mailto:support@omnimedicalsys.com) or call 1 (802) 497-2253.

### **The Control Unit does not start ...**

1. Check that the battery is charged by pressing the “M” button.
2. The unit should beep twice and flash battery status indicator lights.
3. If the Control Unit does not emit an audible beep or does not display a green light, remove the battery and replace with a charged battery.
4. If the battery fails to charge, please contact an Omni Service Technician.

### **The Control Unit doesn't automatically start pumping ...**

1. Disconnect and re-connect the Male Cup connector to the Control Unit.
2. The Control Unit should beep twice.
3. If the Control Unit does not emit an audible beep, press and hold the “M” button to activate the pump. If the user needs to manually operate the pump by pushing the “M” button, this indicates the cup is not automatically sensing urine, and needs to be replaced.
4. If the battery status indicator shows that the battery is charged and the Control Unit fails to start pumping when pressing the GREEN push button, please contact an Omni Service Technician.

### **The charger indicator light is not working ...**

1. Check that power supply is plugged in and is securely connected to the charger.
2. Remove and connect the rechargeable battery to the charger.
3. If the charger indicator light is not lit or is RED, please contact an Omni Service Technician.

## TECHNICAL SPECIFICATIONS

### **Control Unit Specifications**

Flow rate	2.25 LPM	
Operating Temp	-10C/14F to 50C/122F	
Operation Cycles/Time	12 Relief Cycles on Full Charge	
Power	7.6V DC, 1200mA	
Weight	3	oz.
Dimensions	5"L X 1.75"W X 1"H	

### **Rechargeable Battery Specifications**

Chemistry	Lithium Polymer
Voltage	7.6V
Capacity	680 mAh
Charge Cycles	500
Storage	See page 24
Weight	1 oz.
Dimensions	2.32"L X 1.2"W X 0.6"H

### **Battery Charger Specifications**

Battery Chemistry	Lithium Polymer
Charging Voltage	8.4 V
Charging Current	350 mA
Charging Time	2.5 hours
Dimensions	2.3"L X 1.2" w X 0.5" H
Wall Pack	Input ~ 100-240VAC (50/60Hz), 0.30A Output ~ 12V DC, 500mA

## **WARRANTY**

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### **WARRANTY**

Omni warrants its system to the original purchaser, against defects in material and workmanship for a period of one year from the date of original purchase. Omni will, at our option, replace or repair defective parts without charge. Omni will, replace or repair any part found to be defective upon inspection by Omni. The purchaser will be responsible for freight to Omni. Omni will be responsible for freight, via UPS Ground, to purchaser after repairs. This warranty does not apply in the event of misuse or abuse or failure by the user to maintain the system in accordance with Omni instructions or as a result of unauthorized alteration or repairs. Damage occurring during transit is not covered by this warranty. No other warranty expressed or implied shall apply and in no event shall Omni be liable for consequential economic damage or consequential damage to property.

### **OMNI DEFENSE TECHNOLOGIES DISCLAIMER**

Buyer assumes all risk and liability whatsoever from the installation and use of Omni products. Omni products are sold as bodily fluid collection and storage devices and should not be relied upon as protection from bodily fluids exposure to the body, clothing or other items such as flight deck. Omni assumes no liability for injury, loss, incidental or consequential damages in the event of an accident.

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**To re-order supplies please contact:**

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