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*The Quantum is a Game-Changing innovation that has succeeded in closing a critical capability gap previously left exposed by other commercial off-the-shelf fluid warmers currently fielded. Size, weight, performance, and ease of use are no longer collective barriers to the delivery of whole blood in far forward and near POI casualty management.*

# **LIFEWARMER™** **Quantum™** **Blood & Fluid Warming System**

REV100422

The Quantum exceeds all healthcare and logistical requirements for the delivery of warmed blood or fluids across the defined spectrum of care. The system consists of unique thermal administration sets that incorporate sensing elements with an integrated heating system that does not disrupt the fluid path. With advanced intelligence throughout the system, the lightweight Controller modulates and moderates the energy flow to the integrated heating elements to ensure consistent normothermic fluid delivery to the casualty. The 44V battery is the smallest in category,

able to rapidly adjust power distribution based on the temperature and flow rate of the input fluid. This creates a highly efficient system capable of previously unrealized performance optimizations. The Quantum system has an operational weight of just 22 total ounces yet can deliver two units of 39°F Whole Blood (WB) at 100mL/min with an output temperature of 100.4°F (38°± 2°C) with only a 24 second warm-up period. The Quantum Blood and Fluid Warmer provides the Tactical Health Care Professional with significant technological overmatch in the fight to eliminate preventable combat death.

# LIFEWARMER™ Quantum™ IV Fluid & Blood Warming System



- **Lightweight** The Quantum™ has the lightest operational weight of any portable blood & fluid warming system (Total Operational Weight: 22 oz)
- **Powerful** Warms two units of 39°F (4°C) refrigerated whole blood at 100mL/min+ on a single charge
- **Compact** Fewest components to carry (three)
- **Fast** Warm-up time of only 24 seconds
- **Intuitive** The thermal transfusion/infusion set looks, handles, and sets up/primes like any conventional IV set
- **Safe** Tested safe for blood, blood products & IV solutions

- **Effective** The system is plug-and-play for ease of setup under stressful conditions such as tactical field care (only two connection points, with no plug orientation or set-up order requirements – system status constantly visible at a glance)
- **Complete** Does not require additional standard transfusion or infusion set – all other warmers do
- **Tactical** Only system FDA cleared allowing easy disable of audible alerts to protect operators in combat

## SPECIFICATIONS

Total Operational Weight: 22 oz  
(Quantum™ Controller, Battery & TTS-B)

Battery: 16 oz  
Controller: 3 oz  
Battery Charger: 22 oz  
Controller Cover: 0.23 oz  
Thermal Transfusion Set (TTS-B): 2.7 oz

## QUANTUM COMPLETE SYSTEM

ITEM #	NSN #
35-0006	6515-01-693-7810

## COMPLETE QUANTUM IV & BLOOD WARMING SYSTEM CONTENTS:



## BLOOD or BLOOD PRODUCTS

From a **single battery charge**, capable of warming **1000 mL** of **39°F (4°C) Whole Blood** to an output temperature of **100.4°F (38±/– 2°C)**. Warm up time: **24 seconds**. Delivery Flow rate: **100mL/min**.

## IV FLUIDS

From a **single battery charge**, capable of warming **1700 mL** of **68°F (20°C) IV fluids** to an output temperature of **100.4°F (38±/– 2°C)**. Warm up time: **24 seconds**. Delivery Flow rate: **200mL/min**.

# Crēdo PROMED™ SERIES FOUR CONTAINER

- Temperature-controlled portable medical transport bags that thermally protect the integrity of valuable medical supply payloads for 48 - 96 hours
- Outer Container: Ballistic nylon fabric with durable web strapping and secure buckles
- Featuring the patented Thermal Insulation Chamber (TIC™) panels with phase change material and VIP components contained within to consistently protect medical materials such as blood and platelets within 2-8°C.
- Available in 3 capacities: 2L, 4L & 8L

## SPECIFICATIONS

**2 Units:** Volume: 2L  
Duration: 48 hours  
L 8 in. x W 9 in. x D 10 in.  
Weight: 7.64 lb

**4 Units:** Volume: 4L  
Duration: 96 hours  
L 10 in. x W 10.5 in. x D 10.5 in.  
Weight: 11.45 lb

**8 Units:** Volume: 8L  
Duration: 72 hours  
L 11 in. x W 15.5 in. x D 11 in.  
Weight: 19.6 lb

## CREDO PROMED™ SERIES FOUR CONTAINER

CAPACITY	ITEM #
2 units	35-0011
4 units	35-0012
8 units	35-0013



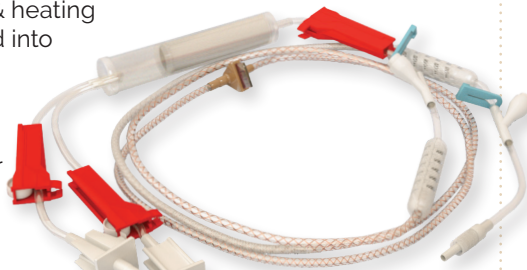
*Ideal for use with the Quantum and LifeFlow devices to provide a complete blood delivery package*

# TTS-B Thermal Transfusion Set

- Compatible with blood, blood products, and IV solutions
- Similar size and weight to traditional IV tubing
- Intelligent sensing & heating elements integrated into the walls of the tubing set
- No disruption to the fluid path or laminar flow of the fluid
- Easy bi-directional connection to the Quantum Controller
- 20 gtts/mL drip rate

## SPECIFICATIONS

TTS-B package (each): 6.5 in. x 11 in.  
Tubing Length: 80 in.  
TTS-B Wgt (each): 2.6 oz  
Packaged Wgt (2 TTS-B & box): 11 oz



TTS-B (2 Pack)

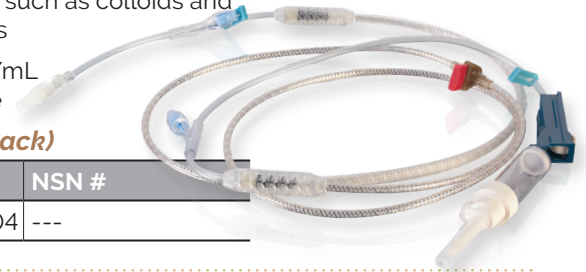
ITEM #	NSN #
35-0005	6515-01-695-4444

# TIS Thermal Infusion Set

- Similar size and weight to traditional IV tubing
- Intelligent sensing and heating elements integrated into the walls of the tubing set
- No disruption to the fluid path or laminar flow of the fluid
- Easy bi-directional connection to the Quantum Controller
- Compatible with standard IV fluids such as colloids and isotonic
- 20 gtts/mL drip rate

## SPECIFICATIONS

TIS packaged (each): 6.5 in. x 11 in.  
Tubing Length: 80 in.  
Weight: TIS (each): 2.1 oz  
Packaged (2 TIS & box): 10 oz



TIS (2 Pack)

ITEM #	NSN #
35-0004	---



## Quantum BATTERY

- Designed for the tactical environment- water resistant, subdued color, and the option to disable the audible alarm
- 44V Lithium-Polymer Battery
- Intelligent, state-of-the-art battery technology senses charge demand and will charge as needed but never overcharge\*
- Status button to check charge state at any time

\*Retain a ready charge by keeping Battery plugged into Charger. Always re-charge after each use, even if not fully discharged.

## QUANTUM BATTERY

ITEM #	NSN #
35-0001	---

## SPECIFICATIONS

H 4.5 in. x W 3.25 in. x D 1.25 in.  
Weight: 16 oz

## Quantum HARDCASE



## SPECS

L 10.63 in.  
x W 9.63 in.  
x D 6.73 in.  
Weight: 3.22 lb

- Rugged hard case designed to protect your Quantum from dust, dirt, and moisture
- Features pressure relief valve for automatic pressure equalization
- Custom laser cut high density foam holds components securely in place
- Flexible storage capacity for multiple batteries, controllers and thermal tubing sets

## QUANTUM HARDCASE

ITEM #	NSN #
35-0008	---

## Quantum CONTROLLER

- Moderates the energy flow from the Quantum Battery to the Thermal Tubing
- Designed for ease of connecting and durability
- Colored LED lights constantly show during administration of blood/fluid to show status
- Lightweight & durable
- IP53 rated for dust & water resistance with jacket



Replacement cover is also available

- Minimum service life - 1000 insertions/removals

## SPECIFICATIONS

Controller Body: W 1.25 in. x H 3 in. x D 0.75 in.  
Controller Total Length: 51.25 in.  
Weight (Controller only): 2.5 oz  
Packaged Weight: 5 oz

## QUANTUM CONTROLLER

OPTION	ITEM #	NSN #
Controller	35-0003	---
Cover (Replacement)	35-0010	---

## Quantum CHARGER



## SPECIFICATIONS

Charger: H 6 in. x W 2.25 in. x D 1.75 in.  
AC power cord length: 6 feet  
Charger Wgt: 1 lb 4 oz  
Wgt with cord: 1 lb 10 oz

- Fully charge the Quantum Battery in <90 minutes
- Smart, safe charging
- Includes 6 ft AC power cord
- Colored LED lights to inform the user of charging and battery status
- IP 22 rated for dust and water resistance
- 100V to 264V AC input; 50Hz, 60Hz
- Minimum service life- 2500 insertions/removals

## QUANTUM CHARGER

ITEM #	NSN #
35-0002	---

# Quantum™

## Field Blood Transfusion Kit

- Comprehensive kit designed for use with the Quantum Blood & Fluid Warming System allowing rapid, consistent normothermic field blood transfusion in far forward and near point of injury (POI) prehospital casualty management.
- Includes the Quantum Thermal Transfusion Set - (Blood) that incorporates an integrated heating system that does not disrupt the fluid path
- Equipped with Donor/Recipient Modules to verify blood types of the donor and recipient
- Also allows collecting of blood samples from the donor for additional surveillance testing

### QUANTUM FIELD BLOOD TRANSFUSION KIT

ITEM #	NSN #
83-0028	---

#### SPECIFICATIONS

L 10 in. x W 7 in. x D 2.5 in.  
Weight: 1.09 lb



### QUANTUM FIELD BLOOD TRANSFUSION KIT CONTENTS:



#### Each Donor Module Kit contains:



All the needed supplies to allow the user to rapidly perform a field blood transfusion as outlined in the **Joint Theater Trauma System Clinical Practice Guidelines**

#### Each Recipient Module Kit contains:



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