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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.

Quantum™

Blood & Fluid Warming System

REVO42225

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



QUANTUM™ COMPLETE SYSTEMS

OPTION	ITEM #	NSN #
Quantum System	35-0006	6515-01-693-7810

OPERATIONAL CAPABILITIES

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**.

COMPLETE QUANTUM SYSTEM CONTENTS:

1 x Quantum™ Charger

1 x Quantum™ Battery

1 x Quantum™ Controller

2 x TTS-B Thermal Transfusion Set - Blood
(Blood, blood products & IV solutions)

SPECIFICATIONS

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

Battery: 16 oz.

Controller: 3 oz.

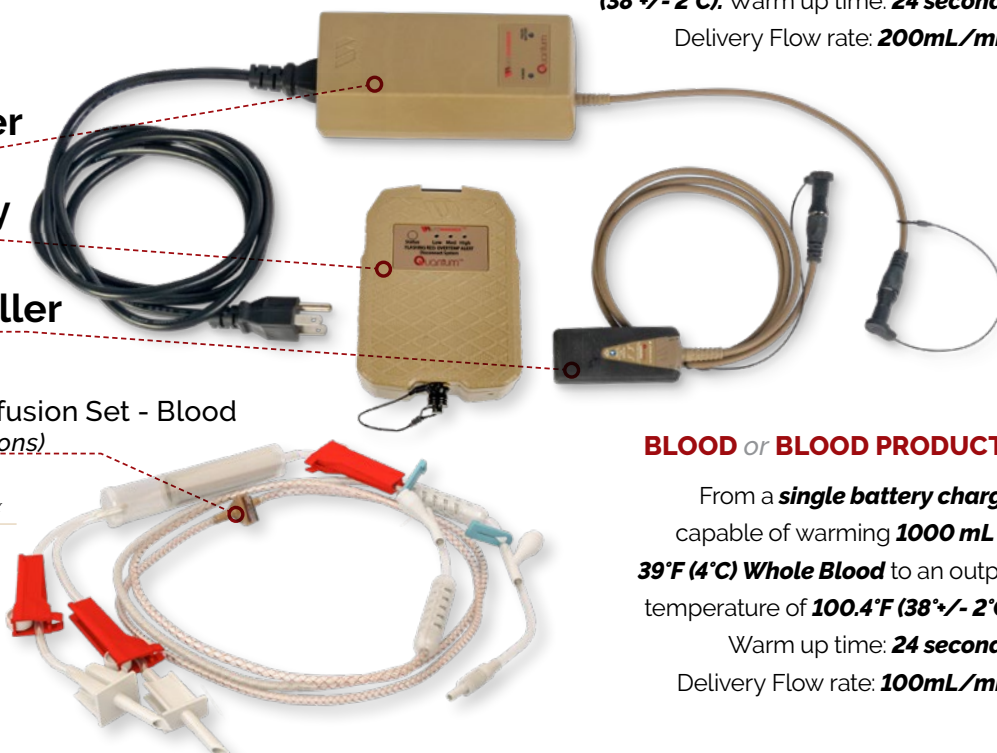
Battery Charger: 22 oz.

Controller Cover: 0.23 oz.

Thermal Transfusion Set (TTS-B): 2.7 oz.

TTS-B Drip Rate: 20 gtts/ml

R_X ONLY



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**.

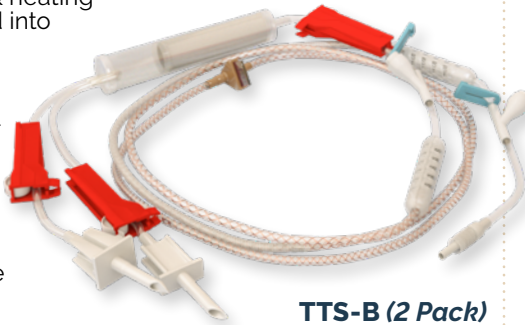
TTS-B Thermal Transfusion Set

- Compatible with whole blood, component therapy (including FDP), colloids, and isotonics
- 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

R_X ONLY

TTS-B package (each): 6.5 in. x 11 in.
Tubing Length: 85 in.
TTS-B Wgt (each): 2.6 oz
Packaged Wgt (2 TTS-B & box): 11 oz



TTS-B (2 Pack)

OPTION	ITEM #	NSN #
TTS-B	35-0005	6515-01-695-4444

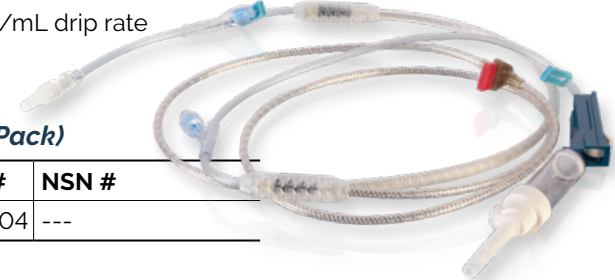
TIS Thermal Infusion Set

- 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 isotonics
- 20 gtts/mL drip rate

SPECIFICATIONS

R_X ONLY

TIS packaged (each): 6.5 in. x 11 in.
Tubing Length: 85 in.
Weight: TIS (each): 2.1 oz
Packaged (2 TIS & box): 10 oz



TIS (2 Pack)

ITEM #	NSN #
35-0004	---



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

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

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 #
Controller	35-0003
Cover (Replacement)	35-0010

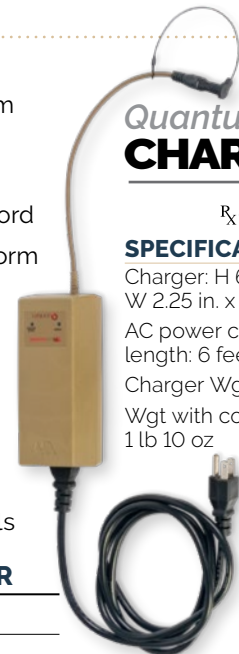
- Fully charge the Quantum Battery in <90 minutes
- Smart, safe charging
- Includes 6 ft AC power cord
- Colored LED lights to inform the user of charging and battery status
- IP 22 rated for dust and water resistance
- 100V to 264V AC input; 50Hz, 60Hz
- Minimum service life- 2500 insertions/removals

Quantum™ CHARGER

R_X ONLY

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



QUANTUM™ CHARGER

ITEM #	NSN #
35-0002	---

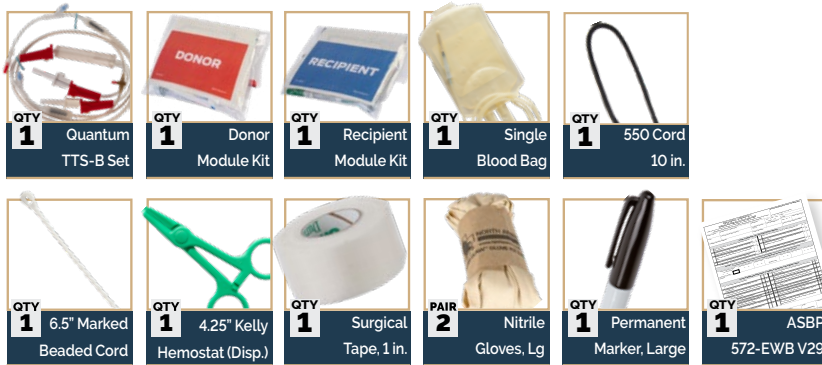
Quantum™

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 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:



SPECIFICATIONS ^{Rx ONLY}
 L 10 in. x W 7 in. x D 2.5 in.
 Weight: 1.09 lb

QUANTUM™ FIELD BLOOD TRANSFUSION KIT

ITEM #	NSN #
83-0028	---

Crêdo PROMED™ SERIES FOUR CONTAINER

- Temperature-controlled portable medical transport bags that thermally protect the integrity of valuable medical supply payloads for 48 - 96 hours
- 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.
- Outer Container: Ballistic nylon fabric with durable web strapping and secure buckles

SPECIFICATIONS

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

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

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



*Ideal for
use with the
Quantum™
and LifeFlow®
devices*

CRÊDO PROMED™ SERIES FOUR CONTAINER

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

PAX COOLER BAG For the Crêdo ProMed™ Series Four 2L



- Features the non-porous PAX Tech material that provides an easy-to-clean and decontaminate exterior
- Has a detachable section that is ideal for storing the Quantum™ Blood & Fluid Warming System and other essential IV access equipment
- Compatible with the Thermal Insulation Chamber - TIC™ and VIP components from the 2 Liter Crêdo cooler panels (*sold separately*)

Quantum™
sold separately

PAX COOLER BAG

Option	ITEM #
PAX Cooler	35-0032
2L Crêdo Thermal Chamber*	35-0021

*Add'l Thermal Chamber Sizes available at NARescue.com



SPECIFICATIONS

Volume: 2L
H 7.5 in. x W 11.5 in. x D 10 in.
Weight: 2 lb. 1.6 oz.

*Crêdo ProMed™ Thermal Chamber
sold separately*

APRU - 6L AUTONOMOUS PORTABLE REFRIGERATION UNIT - 6 LITER

Features

- FDA Listed & AABB Certified
- Complies with Blood Bank requirements
- Rugged design, easily transportable
- Waterproof and dustproof
- **Authorized** for use on board UH-60L, UH/HH-60M, and UH-60V Army helicopters in battery powered mode

Storage

- Internal temperature: $4.5^{\circ}\text{C} \pm 0.8^{\circ}\text{C}$
- Duration: 95 hrs @ 24°C (@ 75°F) on single battery charge
- Volume: 4 L (4.4 qt)
- Unit capacity: Six 500 ml bags

Temperature Recording

- Frequency: 4 hours
- Duration: 72 days
- Accuracy: $\pm 1^{\circ}\text{C}$, class 2 (k=2)
- Calibration: NIST Traceable



APRU VEHICLE MOUNT

- Compatible with the Autonomous Portable Refrigeration Unit (APRU) - *sold separately*
- Does not include strap



APRU BATTERY BB2590

- Rechargeable Lithium-Ion Battery
- Compatible with the Autonomous Portable Refrigeration Unit (APRU) - *sold separately*
- Designed and manufactured in the USA
- **Nominal Voltage:** 14.4V, 28.8V
- **Ah:** In 24V Mode: 7.5 Ah, In 12V Mode: 15 Ah
- **Maximum Voltage:** 16.8V



APRU BACKPACK CARRIER WITH POUCHES

- Adds carrying capability by hand or as a backpack
- Compatible with the Autonomous Portable Refrigeration Unit (APRU) - *sold separately*
- Includes two extra battery pouches and a power cable storage pouch



SPECIFICATIONS

Dimensions: H 19 in. x W 9.5 in. x L 10.5 in.
Weight: 3.2 lbs.

BACKPACK

ITEM

35-0037



APRU SOFT SHOULDER CARRIER



- Adds carrying capability by hand
- Provides additional impact protection
- Compatible with the Autonomous Portable Refrigeration Unit (APRU) - *sold separately*

SPECIFICATIONS

Dimensions: H 19.5 in. x W 10 in. x L 11 in.
Weight: 3 lbs.

SHOULDER CARRIER

ITEM

35-0038

DELTA ICE - 2L SMART BLOOD COOLER - 2 LITER



DELTA ICE

OPTION	ITEM #
Black	35-0040
Blue	35-0041
Red	35-0042
Insert Only	35-0043



Contents not included

- Durable, rugged design, wipeable and easy to clean
- Insulation protected from drops and punctures
- Records & Stores Internal Temperature
- Displays Real-Time Temperature Reading
- Bluetooth and Cellular Connectivity. Alerts warn you of temperature excursions
- Aluminum insert featuring integrated, built-in NIST traceable sensors
- Maintains two 500 ml of whole blood for 48 hours at 35.6 - 42.8°F, and eliminates the need for glycol



SPECIFICATIONS

Dimensions: H 9.5 in. x W 9.7 in. x L 11.5 in.
Weight (unloaded): 10.5 lbs.

Insert Only:

Dimensions: H 5.75 in. x W 6.25 in. x D 8.24 in.
Weight: 5 lbs.



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with **CAPACITY** vs.
CAPABILITY
anymore...

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