



# Warrior Hybrid

(Q2110S0000)

Battery and AC operable blood and IV fluid warmer for emergency departments, trauma units and integrated healthcare systems (combined prehospital & in-hospital emergency settings) featuring non-compromising warming performance, simplicity of operation, and seamless transition between AC and battery operable modes to address trauma and medical emergency resuscitation protocols, inter- and intra-facility transports, mass casualty events, and more

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## Key Benefits:

- **Simple to Operate:** Fail-safe assembly; one-button operation that minimizes the likelihood of human errors and enables consistent care in mass casualty event
- **Hybrid Power Source:** Equipped with both battery and AC Power Supply Module, the Warrior Hybrid is uniquely positioned to address the blood and IV warming needs across the entire continuum of emergency care. Seamless transitions between both operating modes
- **Immediate Warming:** Warm fluids in less than 11 seconds
- **At Any Input Temperature:** Even at 4°C / 39°F fluid input temperature
- **Even At High Flow Rates:** Up to 290ml/min (AC) for the full warming range (4°C-38°C / 39.2°F-100.4°F)
- **Superb Handling of Push-Pull / Bolus / Intermittent Resuscitation Method:** Fast reaction to flow changes and unmatched intermittent flows handling (e.g. hand pump, syringe, etc.)
- **Highly Efficient Technology:** 3-5 liters of warmed fluids with a single battery
- **Highest Regulatory Envelope:** IEC 60601-1-12 certified and MIL-STD 461G RE102 & RS103 compliant with Warrior EXTREME Base Unit (battery mode)
- **Mountable:** To pole, rail or stretcher
- **Communicative:** Built-in display and audio indications
- **No Calibration:** No need for periodic calibration
- **Practically Zero Maintenance:** 5 years between service cycles
- **Patent-Protected Smart Warming Technology:**  
Microprocessor-controlled smart warming technology that measures fluids temperature 100s of times a second and automatically adjusts warming to maintain 38°C / 100.4°F output



*Note: the Warrior Hybrid image is for illustrative purposes only*

- **Safe Technology:** Gradual warming; real-time temperature sensing with auto-adjustments and audio and visual indications; aluminum free (heat exchanger using medical grade stainless steel)
- **Field Proven Technology:** In clinical use since early 2014 with hundreds of end users and thousands of field utilizations
- **Affordable Consumables:** Cost effective consumable design
- **Multipurpose Consumables:** The same consumable fits all protocols
- **Unique Continuum of Emergency Care Proposition:** Same consumable can be used across the entire continuum of emergency care, simplifying patient handoff between emergency settings and reducing costs. Additional benefits for integrated healthcare services (prehospital and in-hospital settings): reduced overheads (no maintenance; no calibration; no spare parts; no dedicated staff; streamlined training) and improved care (e.g. warm fluids during inter- and intra-facility transports, preparedness to mass-casualty event, and more)

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Performance:	
Set-Point Temperature	38°C (±2°C) / 100.4°F (±3.6°F)
Warming Time	Up to 11 seconds
Minimum Delivery Rate	KVO or 2 ml/min
Maximum Delivery Rate at 4°C/39.2°F Input <sup>[1]</sup> [2]	<ul style="list-style-type: none"> <li>Battery operated: up to 200 ml/min</li> <li>AC operated: up to 290 ml/min</li> </ul>
Maximum Delivery Rate at 20°C/68°F Input <sup>[1]</sup> [2]	<ul style="list-style-type: none"> <li>Battery operated: up to 290 ml/min</li> <li>AC operated: up to 500 ml/min</li> </ul>
Battery Capacity at 4°C/39.2°F Input	Up to 3.5 liters
Battery Capacity at 20°C/68°F Input	Up to 5 liters
Physical Characteristics:	
Dimension (H x W x L)	<ul style="list-style-type: none"> <li>Battery operated: 23.2 x 15.6 x 7.8 cm   9.13" x 6.14" x 3.07"</li> <li>AC operated: 30 x 19 x 18 cm   11.81" x 7.48" x 7.08"</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Battery operated: 1,720 g / 3.79 lb</li> <li>AC operated: ~3,700 g / 8 lb</li> </ul>
Electrical Characteristics:	
Battery Characteristics	Rechargeable, Li-ion, 21.6V, 4.6Ah, 99.36Wh
Battery Charging Input Voltage	100–240 VAC   50–60 Hz   Max 2.0 A   12/24V
Electrical Specifications	Input: 110VAC 7A RMS   240VAC 3.5A RMS   50–60 Hz
Target Regulatory Envelope:	
Certifications	CE, FDA & Health Canada
IEC	<ul style="list-style-type: none"> <li>IEC 60601-1</li> <li>IEC 60601-1-2:2014 (EMC standard 4th edition)</li> <li>IEC 60601-1-11 (Warrior Base Unit) and IEC 60601-1-12 (Warrior EXTREME Base Unit) (battery mode)</li> </ul>
Compliance	<ul style="list-style-type: none"> <li>EN1789 (battery mode)</li> <li>MIL-STD 461G RE102 &amp; RS103 (battery mode; Warrior EXTREME Base Unit)</li> </ul>
Environmental Specifications:	
Storage Conditions	<ul style="list-style-type: none"> <li>Battery operated: -30°C to 70°C (-22°F to 158°F) [3]</li> <li>AC operated: -20°C to 60°C (-4°F to 140°F) &amp; 93% RH</li> </ul>
Operating Conditions	<ul style="list-style-type: none"> <li>Battery operated: -5°C to 40°C (23°F to 104°F) [3]</li> <li>AC operated: 5°C (41°F) &amp; 15% RH to 40°C (104°F and 93% RH)</li> </ul>
Atmospheric Pressure/Altitude	<ul style="list-style-type: none"> <li>Battery operated: 549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft) [5]</li> <li>AC operated: 700 to 1,060 hPa / -400 to 3,200 meter (-1,312 to 10,499 ft)</li> </ul>
Ingress Protection (IP)	<ul style="list-style-type: none"> <li>Battery operated: IP56 (EXTREME BU) and IP22 (standard BU)</li> <li>AC operated: IP22</li> </ul>

## Core Components:

**Standard** (QPORT1100) or **EXTREME Base Unit** (QPORT110012)  
Hosts the control module and user indications (audio, visual). Connects with the battery and the Disposable Unit

**Enhanced Battery** (QPORT1180)  
Rechargeable, Li-ion, 21.6V, 4.6Ah, 99.36Wh

## Disposable Unit:

**Compact Disposable Unit** (QPORT0500)  
Compact sterile disposable unit

## Charging Components:

**Charger** (FY-17036-ADT)

**Adapter** (QPORT1330)

## Accessories:

**Mounting** (QPORT1010)  
Mounting option to pole, rail or stretcher

**Extension Cable** (QIF-CBL00019)  
To extend the connection between the base unit and the disposable unit

**Soft Carrying Bag** (QPORT1410)

**Hard Carrying Case** (QPORT1400)

**12-24V Charger** (MASCOT-2544Li6C)

[1] Using standard IV kit and a 14G catheter. Blood products' flow rate may differ due to their viscosity. Output temperature and volume may differ based on ambient temperature, flow rate and battery condition.

[2] This document is based on EU-approved spec. For the USA-cleared version, please refer to the IFU or to your QinFlow representative.

[3] Under EN1789:2007 +A2:2014.

[4] The benchmark tests were performed after storage at extremely cold temperature of -30°C (-22°F).

[5] In compliance with IEC60601-1-11:2010 section 4.2.2c.

Note: the information provided in the Instructions For Use (IFU) shall govern in case of conflict. This document is adjusted to CE approvals; for exact specifications of the USA-cleared version, please refer to the relevant IFU or contact your QinFlow representative.

°C = degree in Celsius  
°F = degree in Fahrenheit Standard  
" = Inch  
AC = Alternate Current  
BU = Base Unit  
CDU = Compact Disposable Unit

cm = centimeter  
DU = Disposable Unit  
EN = European Norms  
FDA = Federal Drug Administration  
Ft = Feet  
g = gram

hPa = hecto Pascal (100 Pascal)  
HxWxL = Height x Width x Length  
IEC = International Electrotechnical Commission  
IFU = Instructions for Use  
IP = Ingress Protection rating  
IV = Intravenous

Kg = kilogram  
KVO = Keep Vein Open  
lb = Libra (Pound)  
MIL-STD = Military Standard  
ml/min = milliliter per minute  
RH = Relative Humidity



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