

Warrior Modular System Datasheet

The Warrior Modular System is designed to address – in a plug-and-play fashion – the blood and IV fluids warming needs across the entire continuum of emergency care; namely, point of injury, critical care transports, and various emergency settings in the hospital. It includes the following configurations: (i) Warrior lite (2 battery options), (ii) Warrior and Warrior EXTREME, (iii) Warrior Hybrid, and (iv) Warrior AC.



Operating Room (OR) in Kathmandu; earthquake relief mission to Nepal; May 2015

May 2021 | Version 6



Configurations:

Part Number	Q1301S0000	Q1310S0000	Q1110S0000 (Warrior) Q1210S0000 (Warrior EXTREME)	Q2110S0000 (Warrior BU) and Q2210S0000 (EXTREME BU)	Q210000000
Where Used	Field settings: point of injury and critical care transports	Field settings: point of injury and mid-and long-haul critical care transports	Field settings: mid- and long-haul critical care transports	Emergency Departments & integrated health-care systems	Surgery & Intensive Care Units
Typical Users	Space and weight constrained rescue gears, first responders, and short-haul critical care transports	Space and weight constrained rescue gears, first responders, and short and mid-haul critical care transports	Mid- and long-haul critical care transports that require non-compromising warming performance, high battery capacity and yet utmost portability	Emergency departments, trauma units and integrated healthcare systems that require non-compromising warming performance, simplicity of operation, and seamless transition between AC and battery operable modes	Operating rooms and intensive care units that require top warming performance yet simple-to-operate device. Portability not required
Key Benefits	<ul style="list-style-type: none"> • Portable • Top warming performance • Compact design • Light weight 	<ul style="list-style-type: none"> • Unmatched balance between warming performance and operating weight • Handles push-pull transfusion methods exceptionally well • Portable 	<ul style="list-style-type: none"> • Portable • Top warming performance • Handles push-pull transfusion methods exceptionally well • High battery capacity 	<ul style="list-style-type: none"> • Portable • Handles push-pull transfusion methods exceptionally well • Top warming performance • Power source flexibility (i.e. battery and AC operable modes) 	<ul style="list-style-type: none"> • Top warming performance • Handles push-pull transfusion methods exceptionally well • Simple to use • Clear path to portability (if so needed)

Components:

Basic Configuration	<ul style="list-style-type: none"> • lite Base Unit (BU) • lite battery • Charging components • Carrying bag 	<ul style="list-style-type: none"> • lite Base Unit (BU) • Extra Power battery • Charging components • Carrying bag 	<ul style="list-style-type: none"> • Standard or EXTREME Base Unit • Enhanced battery • Charging components • Carrying bag 	<ul style="list-style-type: none"> • Standard or EXTREME Base Unit • Enhanced battery • Charging components • Carrying bag • AC Power Supply Module 	<ul style="list-style-type: none"> • Standard Base Unit • AC Power Supply Module
Disposable Units (DU)	Compact DU (Standard DU with Extension Cable)	Compact DU (Standard DU with Extension Cable)	Compact and/or Standard DU	Compact and/or Standard DU	Compact and/or Standard DU
Optional Accessories	<ul style="list-style-type: none"> • Mounting accessory • BU-DU extension cable • Additional batteries 	<ul style="list-style-type: none"> • Mounting accessory • BU-DU extension cable • Additional batteries 	<ul style="list-style-type: none"> • Mounting accessory • BU-DU extension cable • Additional batteries • Hard carrying case 	<ul style="list-style-type: none"> • Mounting accessory • BU-DU extension cable • Additional batteries • Hard carrying case 	<ul style="list-style-type: none"> • BU-DU extension cable • DU Secure Basket

For more information: info@qinflow.com

 Warrior lite (lite Battery)	 Warrior lite (Extra Power Battery)	 Warrior & Warrior EXTREME	 Warrior Hybrid	 Warrior AC
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Performance:					
Set-Point Temperature	38°C (±2°C) / 100.4°F (±3.6°F)	38°C (±2°C) / 100.4°F (±3.6°F)	38°C (±2°C) / 100.4°F (±3.6°F)	38°C (±2°C) / 100.4°F (±3.6°F)	38°C (±2°C) / 100.4°F (±3.6°F)
Warming Time	Up to 11 seconds	Up to 11 seconds	Up to 11 seconds	Up to 11 seconds	Up to 11 seconds
Minimum Delivery Rate	KVO or 2 ml/min	KVO or 2 ml/min	KVO or 2 ml/min	KVO or 2 ml/min	KVO or 2 ml/min
Maximum Delivery Rate at 4°C/39.2°F Input [1][2]	Up to 170 ml/min	Up to 180 ml/min	Up to 200 ml/min	• Battery operated: up to 200 ml/min • AC operated: up to 290 ml/min	Up to 290 ml/min
Battery Capacity at 4°C/39.2°F Input [1][2]	Up to 1.3 liters	Up to 3 liters	Up to 3.5 liters	Up to 3.5 liters	NA
Battery Capacity at 20°C/68°F Input [1][2]	Up to 2.5 liters	Up to 5.9 liters	Up to 5 liters	Up to 5 liters	NA

Physical Characteristics – Compact Disposable Unit (CDU):					
Dimension (H x W x L)	8.4 x 8.8 x 11.5 cm 3.3" x 3.46" x 4.52"	10.5 x 8.8 x 11.5 cm 4.13" x 3.46" x 4.52"	23.2 x 15.6 x 7.8 cm 9.13" x 6.14" x 3.07"	• Battery operated: 23.2 x 15.6 x 7.8 cm 9.13" x 6.14" x 3.07" • AC operated: 30 x 19 x 18 cm 11.81" x 7.48" x 7.08"	30 x 19 x 18 cm 11.81" x 7.48" x 7.08"
Weight	0.8 kg / 1.76 lb	1.1 kg / 2.4 lb	1.7 kg / 3.8 lb	• Battery operated: 1.7 kg / 3.8 lb • AC operated: ~3.7 kg / 8 lb	~3.7 kg / 8 lb

Compact Disposable Unit (CDU):	
CDU	Size: 7.22 x 11.75 x 6.85 cm / 2.84" x 4.63" x 2.70" Weight: 106 g / 0.23 lb (117 g / 0.26 lb in sterile pack)

Electrical Characteristics:					
Battery Characteristics	Rechargeable, Li-ion, 18.0V, 3.0Ah, 54.0Wh	Rechargeable, Li-ion, 18.0V, 5.5Ah, 99Wh	Rechargeable, Li-ion, 21.6V, 4.6Ah, 99.36Wh	Rechargeable, Li-ion, 21.6V, 4.6Ah, 99.36Wh	NA
Battery Charging Input Voltage	100–240 VAC 50–60 Hz Max 1.0 A	100–240 VAC 50–60 Hz Max 2.0 A	100–240 VAC 50–60 Hz Max 2.0 A 12/24V	100–240 VAC 50–60 Hz Max 2.0 A 12/24V	NA
Electrical Specifications	NA	NA	NA	Input: 110VAC 7A RMS 240VAC 3.5A RMS 50-60 Hz	Input: 110VAC 7A RMS 240VAC 3.5A RMS 50-60 Hz

Target Regulatory Envelope:					
Certifications	CE, FDA & Health Canada	CE, FDA & Health Canada	CE, FDA & Health Canada	CE, FDA & Health Canada	CE, FDA & Health Canada
IEC	• IEC 60601-1 • IEC 60601-1-2:2014 ^[3] • IEC 60601-1-12	• IEC 60601-1 • IEC 60601-1-2:2014 ^[3] • IEC 60601-1-12	• IEC 60601-1 • IEC 60601-1-2:2014 ^[3] • IEC 60601-1-11 (Warrior) and • IEC 60601-1-12 (Warrior EXTREME)	• IEC 60601-1 • IEC 60601-1-2:2014 ^[3] • IEC 60601-1-11 (Warrior) and • IEC 60601-1-12 (Warrior EXTREME)	• IEC 60601-1 • IEC 60601-1-2:2014 ^[3]
Compliance	MIL-STD 461G RE102 & RS103	MIL-STD 461G RE102 & RS103	• EN1789 • MIL-STD 461G RE102 & RS103 (Warrior EXTREME)	• EN1789 (battery operable) • MIL-STD 461G RE102 & RS103 (Warrior EXTREME BU)	

Environmental Specifications:					
Storage Conditions	-20°C to 70°C (-4°F to 158°F) & 93% RH	-20°C to 70°C (-4°F to 158°F) & 93% RH	-30°C to 70°C (-22°F to 158°F) ^[4]	• Battery operated: -30°C to 70°C (-22°F to 158°F) ^[4] • AC operated: -20°C to 60°C (-4°F to 140°F) & 93% RH	-20°C to 60°C (-4°F to 140°F) & 93% RH
Operating conditions	• -5°C to 50°C (23°F to 122°F) & 93% RH • Transient operating conditions: -20°C to 50°C (-4°F to 122°F) & 90% RH	• -5°C to 50°C (23°F to 122°F) & 93% RH • Transient operating conditions: -20°C to 50°C (-4°F to 122°F) & 90% RH	• -5°C to 40°C (23°F to 104°F) [4] [5] • Transient operating conditions (EXTREME version): -20°C to 50°C (-4°F to 122°F) & 90% RH	• Battery operated: -5°C to 40°C (23°F to 104°F) ^[4] • AC operated: 5°C (41°F) & 15% RH to 40°C (104°F) and 93% RH	5°C (41°F) & 15% RH to 40°C (104°F) and 93% RH
Atmospheric Pressure / Altitude	549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft)	549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft)	549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft) ^[6]	• Battery operated: 549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft) ^[6] • AC operated: 700 to 1,060 hPa / -400 to 3,200 meter (-1,312 to 10,499 ft)	700 to 1,060 hPa / -400 to 3,200 meter (-1,312 to 10,499 ft)
Ingress Protection (IP)	IP56	IP56	IP56 (Warrior EXTREME) and IP22 (Warrior)	IP56 (EXTREME BU), IP22 (standard BU or AC operable)	IP22

[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 adjusted to CE spec; for exact performance of the USA-cleared version, please refer to the relevant IFU or contact your QinFlow representative.

[3] EMC standard 4th edition.
[4] Under EN1789:2007 +A2:2014.
[5] The benchmark tests were performed after storage at extremely cold temperature of -30°C (-22°F).
[6] 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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