QinFLOW
NO MORE COLD BLOOD & FLUIDS

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[1], (ii) Warrior EXTREME, (iii) Warrior Hybrid, and (iv) Warrior AC.

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.

November 2018 | Version 1

JEMS HOT PRODUCT EMS TODAY 2018

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

Warrior lite

Warrior EXTREME

Warrior Hybrid

Note: the Warrior Hybrid image is for illustrative purposes only

Warrior AC

Configurations

	Warrior lite	Warrior EXTREME	Warrior Hybrid	Warrior AC
Part Number	Q1301S0000	Q1210S0000	Q221010000	Q210010000
Where Used	Field settings: point of injury and critical care transports	Field settings: mid- and long-haul critical care transports	Hybrid settings: field & hospital	Hospital settings
Typical Users	Space and weight constrained rescue gears, first responders, and 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
Key Benefits	• Portable • High performance • Compact design • Light weight	• Portable • Top warming performance • High battery capacity	• Portable • Top warming performance • Power source flexibility (i.e. battery and AC operable modes)	• Top warming performance • Simple to use • Clear path to portability (if so needed)

Components

	Warrior lite	Warrior EXTREME	Warrior Hybrid	Warrior AC
Basic Configuration	• lite Base Unit (BU) • lite battery • Charging components • Carrying bag	• EXTREME Base Unit [2] • Enhanced battery • Charging components • Carrying bag	• EXTREME Base Unit [2] • Enhanced battery • Charging components • Carrying bag • AC Power Supply Module	• Base Unit • AC Power Supply Module
Disposable Units (DU)	Compact DU	Compact and/or Standard DU	Compact and/or Standard DU	Compact and/or Standard DU
Optional Accessories	• Mounting accessory • BU-DU extension cable • Additional batteries	• Mounting accessory • BU-DU extension cable • Additional batteries • Hard carrying case	• Mounting accessory • BU-DU extension cable • Additional batteries • Hard carrying case • Battery holder	

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	Warrior lite	Warrior EXTREME	Warrior Hybrid	Warrior AC
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)
Warming Time	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
Maximum Delivery Rate at 4˚C/39.2˚F Input [3] [4]	Up to 120 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 liters	3 liters	3 liters	NA
Battery Capacity at 20˚C/68˚F Input	2 liters	5 liters	5 liters	NA
Physical Characteristics – Reusable Components				
Dimension (W x L x H)	8.2 x 13.6 x 8.3 cm 3.23" x 5.35" x 3.27"	7.8 x 15.6 x 23.2 cm 3.07" x 6.14" x 9.13"	• Battery operated: 7.7 x 13.8 x 23 cm | 3.03" x 5.43" x 9.05" • AC operated: 30 × 19 × 18 cm | 11.8" × 7.5" × 7.1"	30 × 19 × 18 cm 11.8" × 7.5" × 7.1"
Weight	700 g / 1.54 lb	1,720 g / 3.79 lb	• Battery operated: 1,720 g / 3.79 lb • AC operated: 3,700 g / ~8 lb	3,700 g / ~8 lb
Physical Characteristics – Disposable Units				
Compact DU	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)			
Standard DU	NA	Size: 15.90 x 21.00 x 4.40 cm / 6.26" x 8.27" x 1.73" | Weight: 120 g / 0.26 lb (135 g / 0.30 lb in sterile pack)		
Electrical Characteristics				
Battery Characteristics	Rechargeable, Li-ion, 18VDC (nominal), 3,000mAh	Rechargeable, Li-ion, 22.2VDC (nominal), 4,600mAh	Rechargeable, Li-ion, 22.2VDC (nominal), 4,600mAh	NA
Battery Charging Input Voltage	110-120 or 220-240 VAC; 50-60 [Hz] | 12/24V	110-120 or 220-240 VAC; 50-60 [Hz] | 12/24V	110-120 or 220-240 VAC; 50-60 [Hz] | 12/24V	NA
Electrical Specifications	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
IEC	• IEC 60601-1 • IEC 60601-1-12 • IEC 60601-1-2 4th edition	• IEC 60601-1 • IEC 60601-1-12 • IEC 60601-1-2 4th edition	• IEC 60601-1 • IEC 60601-1-12 (battery mode) • IEC 60601-1-2 4th edition	• IEC 60601-1 • IEC 60601-1-2 4th edition
Compliance	• EN1789 • MIL-STD 461G RE102 & RS103	• EN1789 • MIL-STD 461G RE102 & RS103	• EN1789 • MIL-STD 461G RE102 & RS103	
Environmental Specifications				
Storage Conditions	-30°C to 70°C (-22°F to 158°F)[5]	-30°C to 70°C (-22°F to 158°F)[5]	• Battery operated: -30°C to 70°C (-22°F to 158°F)[5] • 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
Operation after Storage	-5°C to 40°C (23°F to 104°F)[5] [6]	-5°C to 40°C (23°F to 104°F)[5] [6]	• Battery operated: -5°C to 40°C (23°F to 104°F)[5] • 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)[7]	549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft)[7]	• Battery operated: 549 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 15,000 ft)[7] • AC operated: 700 to 1,060 hPa/ -400 to 4,572 meter (-1,312 to 10,499 ft)	700 to 1,060 hPa / -400 to 4,572 meter (-1,312 to 10,499 ft)
Ingress Protection (IP)	IP56	IP56	• Battery operated: IP56 • AC operated: IP22	IP22

[1] General availability: Q1 2019.
[2] Standard Base Unit configuration available as well; contact your QinFlow representative for details.
[3] Using standard IV kit and a 14G Venflon; blood products' flow rate may differ to their viscosity.
[4] 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.
[5] Under EN1789:2007 +A2:2014.
[6] The benchmark tests were performed after storage at extremely cold temperature of -30˚C (-22˚F).
[7] In compliance with IEC60601-1-11:2010 section 4.2.2c.

˚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)
IEC = International Electrotechnical Commission
IFU = Instructions for Use
IP = Ingress Protection rating
IV = Intravenous
KVO = Keep Vein Open
lb = Libra (Pound)
MIL-STD = Military Standard
ml/min = milliliter per minute
RH = Relative Humidity
W x L x H = Width x Length x Height

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