

# PERSONALTHERMALTECHNOLOGY

















## COMPCOOLER TECHNOLOGY Personal Thermal Technology

Cooling & Heating Systems, Micro Refrigeration Chillers and Air Conditioning Units. It has established its resume as a manufacturer of Thermal Products for Military, Medical, Racing, and Outdoor applications. The employees at Compcooler's states of the art manufacturing facility has been producing Cooling and Heating Units over 15 years.

Compcooler has a long and proud history of performing "build to specification" sub-contract manufacturer for larger defense contractors, facility has the excellent capacity to handle R&D (Controller, Mechanical, Electronics) of Cooling and Heating Units, Metal Parts Manufacturing, Heating and Cooling Garment, System Assembly and Testing. Compcooler has established a wellmanaged supply chain for thermal systems and is an ISO9100 and AS9100 certified

## **Products Categories**



## PERSONAL ICE WATER COOLING SYSTEM

- QR Bladder Circulation System
- ICE Station Circulation System
- Liquid Cooling Garment



## **MICRO REFRIGERATION COOLING SYSTEM**

- Microclimate Cooling System
- Racing Driver Cooling System
- Medical Rapid Cooling System



## LIQUID HEATING SYSTEM

- Backpack Liquid Heating Garment
- Portable Liquid Heating Blanket
- Home Liquid Heating Pad



## **GRAPHENE HEATING GARMENT**

- Graphene Heating Vest
- Graphene Heating Jacket



## ACCESSORIES

- Bladder
- Battery and Charger
- Extension Tubing
- Cooler



## **CUSTOMIZED SYSTEMS**

- Chiller Units
- Air Conditioning Units
- Liquid Circulation Garments



## BACKGROUND OF PERSONAL COOLING SYSTEM

In conditions of extreme heat, people may be at risk of heat stress where body under stress from overheating. Heat stress is not only a serious condition for workers, but it can result in occupational illnesses and injuries, heat related discomforts and illnesses include heat exhaustion, heat cramps, heat rash or even heat stroke. Symptoms can range from profuse sweating to dizziness, cessation of sweating and collapse. At greatest risk of heat stroke are the elderly, children and people with medical conditions, however, even young and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. It will need immediate action to cool the person

until help arrives.

Heat is also a serious health threat within military armored vehicle and racing car where the air temperature can exceed 150°F (66°C), compounded by high humidity, tolerance time of the crew ranged from 1-2hours without cooling, a warfighter will succumb to heat stress in 60-90 minutes if no cooling protect according to the research of US Army Natick Soldier Center. Many countries have realized how important it is to use personal cooling systems for their people to against heat stress.



## LIQUID CIRCULATION COOLING SYSTEM

Liquid circulation cooling system is an active cooling solution, it can cool the body temperature immediately to decrease incidence of thermal stress and heat stroke while increase comfort, safety, focus and endurance. Liquid circulation system includes a liquid circulation unit and a cooling garment. Mini pump circulates cold water from chiller or ICE bladder to cooling channels embedded in liquid cooling garment, and



continuously flow around the body, this may keep the user's body temperature at a comfort and safety range.



## Benefits of cooling system

- Reduction in body core temperature, increased duration.
- Reduction in skin temperature, decrease in hydration need
- Reduction in heart rate, improve mental acuity
- Reduction in sweat rate, maintain physical performance

## COMPCOOLER PERSONAL THERMAL TECHNOLOGY

COMPCOOLER TECHNOLOGY has been working for personal thermal systems over 15



years. CT has worked closely with customers to develop many cooling & heating products for various applications, such as: Military, Medical, Racing car, Outdoor workers and Electronics cooling. The major cooling technologies are ICE Water Circulation Cooling and Mini Chiller Circulation Cooling. COMPCOOLER ICE water circulation system used a detachable quick release bladder from 1.5L to 3L for different cooling time requests. COMPCOOLER mini chiller used micro refrigeration technology with

compact, lightweight, rugged and high cooling performance features, could be used for single or multi-users in ground, aircraft and vehicles

## Liquid Thermal Garment (LTG)

Liquid Thermal Garment is designed to circulates cold or hot liquid from system, it could be called liquid cooling vest or liquid heating garment. Micro tubing cooling channel is embedded on the garment be approved with reliable and better heat exchange performance. COMPCOOLER Liquid Thermal Garments were designed with 4 zones cooling channels what provides even body cooling or warming, sides adjustable devices with ergonomic body fit design, soft stretch fabric provides comfortable skin touch feeling.









## DESCRIPTION

COMPCOOLER ICE Water Cooling System includes liquid circulation unit and liquid cooling garment. Mini pump circulates the cold ICE water from bladder or ICE Cooler into micro-tubing cooling channel embedded on the liner of garment, continuously flow around the body, this will keep user's body temperature at a comfortable range in hot conditions.

### SPECIFICATIONS

Quick Release Bladder: 1.5L, 2L, 3L and 3L (Hydration) ICE Station: 6L, 15L, 25L Cooler Liquid Temperature: 2°C-10°C (36 °F -50 °F) Cooling Time: 2-10 hours depend on ICE volume Operation Ambient: 10°C-65°C (36 °F -148 °F)

## Key Features:

- Quick Cooling Performance
- Comfortable Cool Feeling
- Fast Replacement to Extend Cooling Time
- Easy Operation
- Safety and Healthy

#### Backpack Ice Water Cooling System

#### COMP-BPIC-7418V

Backpack Circulation System (7.4V/5V), Liquid Cooling Vest 3L QR Bladder, 7.4V 2200mAh battery 3-5 hours Cooling





#### UniVest ICE Water Cooling System



UniVest Circulation System (7.4V/5V) Cooling Channel Liner 2L QR Bladder, 7.4V 2200mAh Battery 2-4 hours Cooling



Backpack Full Body Cooling System

#### COMP-BBCS-743LF

Backpack Circulation System (7.4V/5V) Full Body Cooling Garment 3L QR Bladder, 7.4V 2200mAh Battery 3-5 hours Cooling

#### Hydration Cooling Backpack

#### **COMP-BBHC-74HZ**

Backpack Circulation System (7.4V/5V) Cooling Channel Liner 3L Hydration Bladder, 7.4V 2200mAh battery

3-5 hours Cooling

Single layer Double layers

Waistpack ICE Water Cooling System

#### COMP-BWCS-7415V

Wasitpack Circulation System (7.4V 5V) Liquid Cooling Vest 1.5L QR Bladder, 7.4V 2200mAh Battery 1-3 hours Cooling





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Handheld ICE Water Cooling System

#### **COMP-BHCS-742LV**

Handheld Pack Circulation System (7.4V/5V) Liquid Cooling Vest, 2M Extension Tubing 2L QR Bladder, 7.4V 2200mAh Battery 2-4 hours Cooling



#### Thighpack ICE Water Cooling System

#### **COMP-BTCS-7415V**

Thighpack Circulation System Liquid Cooling Vest 1.5L QR Bladder, 7.4V 2200mAh Battery 1-3 hours Cooling

#### ICE Station Cooling System

#### **COMP-BXCS-746LV**

ICE Cooler Circulation System (7.4V/5V) Liquid Cooling Vest, 2 Meter Extension Tubing 6L ICE Cooler, 7.4V 2200mAh Battery

#### Motorcycle Rider Cooling System

#### **COMP-BMCS-126LV**

Motorcycle Pack Circulation System (7.4V/12V) Liquid Cooling Vest, 2 Meters Extension Tubing 6L ICE Cooler, No Battery, SAE power connection 4-6 hours Cooling







## Liquid Cooling Garment

Body fit design, Comfortable skin touch



#### Mesh Liquid Cooling Vest

#### COMP-MLCV-801

Front zipper, reversible with Dark Green and black mesh, Left and right fitting connection, Four zones Silicon micro tubing cooling channel, sides adjustable device, double lines stitching tubing embedded color : Black, Green, Blue, white, Yellow Size : XS/S, M/L, XL/2XL, 3XL/4XL

#### Camouflage Liquid Cooling Vest

#### COMP-CLCV-702

Front and back quick release design, Velcro stretch adjustable device, 3D interlayer, Camouflage water proof fabric and mesh liner, four zones cooling channel, double lines stitching tubing embedded. color : Camouflage, Black Size : XS/S, M/L, XL/2XL, 3XL/4XL

#### Hoodie Cooling Vest

#### COMP-HLCV-901

Mesh fabric and liner, Four zones microtubing cooling channel, Front zipper and sides adjustable device with hood cooling. color : Black, Green, Blue, white, Yellow Size : XS/S, M/L, XL/2XL, 3XL/4XL

#### Full Body Liquid Cooling Garment

#### COMP-FBLG-DB01

Full Body Cooling design with hood assembly, front zipper, blue cotton stretch fabric, layer base four zones cooling channel, double lines stitching tubing embedded, color : Blue Size : XS/S, M/L, XL/2XL, 3XL/4XL









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## Description

COMPCOOLER Micro Refrigeration Cooling System is made up of liquid chiller unit and liquid cooling garment, mini pump circulates the cold water from chiller reservoir to cooling channel embedded on cooling vest liner and continuously flow around the body. Chiller unit deliver 100-800W cooling capacity powered by battery, vehicle power or AC plug. Temperature control range -5°C to 30°C (23°F to 86°F), accuracy +/-1°C (+/-2 °F), once circulation liquid reaches to set point temperature, system intellectually control the cooling capacity to that temperature.

## **Specifications**

- System Voltage: DC12V, DC24V
- Power: Rechargeable Battery, Vehicle Power AC/DC Power supply
- Cooling Capacity: 100W to 800W (341BTU to 2728BTU)

## Key Features:

- Small Size and Light Weight Cooling Unit
- High Ambient Operation 60 °C (140°F)
- Lower Liquid Temperature Control -5°C to 30 °C (23 °F to 86°F)
- High Cooling Performance, Lower Power Consumption
- Precise Temperature Control, Accuracy +/-1°C (+/-2 °F)
- Mil Specs or Medical Specs Chiller
- Power By AC/DC Power Supply or Battery



#### Backpack Individual Cooling System

#### COMP-BICS-12100V

Mini Chiller Unit and Temp Controller (12V) Cooling Capacity: 150W, Liquid Cooling Vest 12V 14A Battery and Charger 2-3 hours Cooling, Temp range: +5 to +30C



#### Portable Chiller Cooling System

#### COMP-CPCS-24400V

Portable Chiller Unit (24V), Power supply (110/240V) Cooling Capacity: 400W, Liquid Cooling Vest 2 Meters Extension Tubing Temp Range: -5C to +30C



## COMP-VMCS-24350V

MIL Chiller Unit (20-32V) with Temp Controller Cooling Capacity: 350W, Liquid Cooling Vest 3 Sets 3 Meters Extension Tubing for 3 Persons Temp Range: +5C to +30C



Racing Driver Air/ Liquid Cooling System (PRO)

#### COMP-BRAL-1215T

Air/Liquid Cooling Unit (12V 10A) and Controller 2 Meters AC and Liquid Tubing Liquid Cooling T-Shirt, 15L ICE Cooler 2-4 hours Cooling



Racing Driver Liquid Cooling System

#### COMP-CRLC-12150T

Racing Chiller Unit (12V) with Temp Controller Cooling Capacity: 200W, Liquid Cooling T-shirt 2 Meters Extension Tubing Temp Range: +5C to 30C

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COMPCOOLER Liquid Heating System includes liquid heating unit, hot water circulation garment or pad, power supply. Liquid heating unit pumps hot water to heating channel embedded on garment and continuously flow around the body, precise temperature control 30 °C -45 °C(86 °F -113 °F), accuracy +/- 1°C (+/-2 °F). Once the circulation liquid reaches to set point temperature, system intellectually control the heating capacity to that temperature.

## Key Features:

- Precise Liquid Heating Temperature Control
- Quiet Operation System 38DBA
- Comfortable Body Warming Feeling
- Ergonomic Design for Garment and Pad
- DC12V Operated by AC/DC Power Supply and Battery
- Safety and Healthy, Liquid Warming

## **Specifications**

Voltage: DC12V Power: Rechargeable Battery, AC/DC Power Supply



#### Backpack Liquid Heating Garment

#### COMP-RBLH-12100G

Liquid Heating Unit (12V) with Temp Controller Heating Capacity: 100W, 12V 14A Battery and Charger Backpack Style, Liquid Heating Garment, Temp Range: +30C to +45C, 2-5 hours Heating



Home Liquid Heating Blanket

#### COMP-RLHB-12150B

Home Liquid Heating Unit (12V) with Front Panel Controller

Heating Capacity: 150W, Power Supply(110/240V) Desktop design, Liquid Heating Blanket Temp Range: +30C to 45C



Handheld Liquid Heating System

#### COMP-RHLH-12100C

Liquid Heating Unit (12V) with Temp Controller Heating Capacity: 100W, 12V 14A Battery and Charger

Handheld pack, Liquid Heating Cover Temp Range: +30C to +45C, 2-5 hours Heating

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COMPCOOLER Graphene Heating Garment using 5-7 pcs smart graphene heating pads to warm body. One touch 3 levels intelligent temperature control, automatically reduce the power as it reaches its operation temperature. High heating performance with lower power consumption, water proof design allows machine wash, soft and reliable graphene pads provides comfortable warm feeling.

## Key Features:

- Soft Graphene Heating Pad
- 99% Electrothermal Conversion Efficiency
- Smart Control One Touch 3 Levels
- Ergonomic Heating Design for Back and Hand
- Water Proof, Machine Washable

## **Specifications**

Voltage: 7.4V, USB5V, 12V Power: Rechargeable battery, Vehicle Power Graphene pads: 5pcs for vest, 7pcs for jacket



#### Note: Garment size has 15-30% expansion by stretch fabric or sides adjustable device.



#### Easy Replace and Quick Assembly

#### **DIY or Extend Operation Time**







#### **COMP-RB7422**

Battery 7.4V 2200 mAh Battery and Charger Max output 3A 7.4V battery with 4017 plug

Battery 7.4V 4400mAh

COMP-RB7444





#### COMP-QRB-1.5L

1.5L freezable bladder with quick release fitting, TPU film



Battery 7.4V 4400 mAh Battery and Charger, Max output 3A



TPU Quick Release Bladder 2L

#### **COMP-QRB-2L**

2L freezable bladder with quick release fitting, TPU film



Battery 12V 10A

7.4V battery with 4017 plug

#### COMP-RB1210

Battery and Charger, Max output 20A 12V Battery with EC5 Connection



#### Quick Release Bladder 3L

#### **COMP-QRB-3L**

3L freezable bladder with quick release fitting, TPU film



#### 2M Extension Tubing

#### **COMP-ET2M**

2 Meters Extension Tubing with quick fitting



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#### TPU Quick Release Bladder 3L Hydration

#### COMP-DHB-3L

Double layers 3L freezable quick release bladder TPU film

#### 25L ICE Cooler

#### **COMP-ICS25L**

25L Cooler for ICE storage Size:52.5x39.2x38.7 Weight:9.5kg



#### 6L ICE Cooler

**COMP-ICS**6L 6L Cooler for ICE storage Size:32.4x21x20.8 Weight:1.1kg

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COMPCOOLER has an excellent engineering & manufacturing team to deal with OEM or ODM thermal projects for worldwide customers. Compcooler team has a better understanding to design and make thermal products to meet Mil, Medical, Industrial, Aero standards.

Standard:

MIL-STD-810G, MIL-STD-1275D,

GJB150, SAE-AMS-QQXXX,

ANSI/ASHRAE 15b-2006,

## **Customized Systems**

- Personal ICE Cooling System
- Micro Refrigeration Chiller Unit
- Micro Air Conditioning Unit
- Personal Liquid Heating System
- Graphene Heating Garment

## Applications:

Military, Medical, Outdoor Sports, Home, Electronics





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