medical systems

Your global partner to save lives.

MADE IN LUXEMBOURG

COLD CHAIN

Solutions for safe vaccination

The Cold Chain line of products selected by the responsible international health organizations as part of the E.P.I. (Expanded Program on Immunisation) comprises an entire series of transport boxes, refrigerators and freezers adapted to various stages of the Cold Chain and taking into account climatic and technical constraints.

09/2015

292.9706.58

B Medical Systems

Your global partner to save lives.

B Medical Systems S.à r.l. is a pioneer in the medical industry. The company was founded in 1979 when the World Health Organization approached Electrolux in Vianden, Luxembourg, to provide a solution to their problems in safely storing and transporting vaccines around the world. Subsequently, the Electrolux refrigeration division became the Dometic Group.

In March 2015 Navis Capital Partners and the management team acquired the medical division from the Dometic Group under the new name B Medical Systems S.à r.l.. The name change reflects the deep conviction of the team and shareholders, to continuously deploy dedicated solutions in its customers in the healthcare field.

B Medical Systems S.à r.l. specializes in research, development and the manufacture of professional refrigerators, freezers, storage and solutions for safe transport and management of blood and vaccines. With our worldwide network of distributors, our own Research and Development capability and flexible manufacturing facilities, we will continually strive for excellence in product development, manufacturing and customer service across all of our product lines.

We are committed to exploring new technologies, increasing the variety of our products and seeking new fields of business. B Medical Systems S.à r.l. is a flexible, innovative and customer-oriented company, which has always been recognized for the excellence and performance of its products. We have always based our reputation on one rule: “never compromising on standards” to deliver the best performance these programs deserve, for humanity.

Over the past few years, we have been supported extensively and passionately by our regional consultants and country partners who dedicate themselves to our cause and have gained credibility in their own right with the regional agencies and country authorities.

COLD CHAIN

Comprehensive range of storage and active / passive transport systems for the storage and distribution of vaccines and in general of all temperature-sensitive preparations under various climatic and technical conditions.

SUMMARY

The Challenge of Vaccination

In 1974, when the WHO launched the Extended Programme on Immunization (E.P.I.), only 5% of children in the entire world were vaccinated against the basicst diseases.

Today more children than ever before are being reached with immunization which curently averts an estimated 2.5 million deaths every year in all age groups from diphteria, tetanus, pertussis (whopping cough), and measles. ... Nearly 20% of all deaths in children under 5 is vaccine preventable. But immunization coverage has still not realized its potential. Vaccine security is fundamental to meeting immunization goals.

For many countries, the delivery of safe injection practices and ensuring the quality of the vaccines is a significant challenge. A Cold Chain management, when implemented properly, can help overcome this challenge and enhance the safety and efficiency of an immunization program.

A good Cold Chain is indispensable for reducing vaccine waste and for maximizing the number of children vaccinated, even in the most deprived countries.

The effectiveness of vaccines is ensured, however, only if the specific storage conditions are maintained at each level of the Cold Chain, from the manufacturer to the child, through all the phases of storage and transport. (Global Immunization data December 2010, WHO and UNICEF homepage)

To answer all recommendations set up by the WHO, B Medical Systems has developed a comprehensive storage and transport concept to suite all stages of the Cold Chain even under difficult climatic and technical conditions.

Background information PQS certification :

The PQS system (Performance, Quality and Safety) is a WHO guideline for manufacturers of vaccine refrigerators, vaccine freezers and water-pack freezers. The QSS group within WHO’s Department of Immunization, Vaccines and Biologicals (IVB) provides technical advice and support aimed at achieving a reliable high quality cold chain for the world’s immunization programmes and publishes performance specifications and verification protocols for cold chain and other immunization-related equipment and devices. These documents have been developed over the years in consultation with end-users, with industry and with testing laboratories and are based on a long-established and rigorous procedure for evaluating and pre-qualifying suitable equipment.

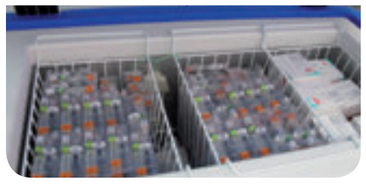
By selecting from the list of pre-qualified equipment, UN procurement agencies, governments and NGOs can be sure that they are purchasing products that are fit for purpose.

The importance of an unbroken cold chain

COLD CHAIN

Production

Vaccines from manufacturers



Storage

At the central storage / regional center

TCW 2000 SDD

TCW 2000 AC / DC

TCW 2043 SDD

TCW 3000 SDD

TCW 3000 AC / DC

TCW 3043 SDD

TFW 800

Transport

From the central storage to the district centre

Storage

At regional, district and healthcare centres

TCW 40 SDD

RCW 42 AC / DC

RCW 42 EG / EK

RCW 50 EG / EK

RCW 50 AC / DC

Distribution

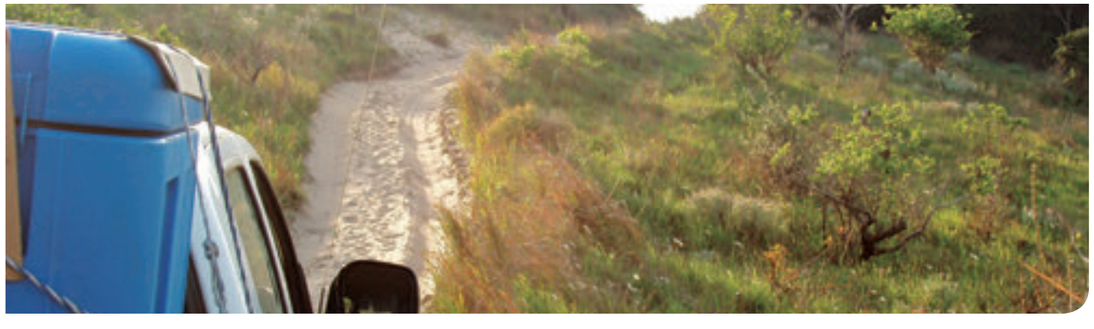
From the district centre to the child

RCW 4

RCW 8

RCW 12

RCW 25



Your global partner to save lives.

medical systems

Solar Direct Drive Refrigerators & Freezers for rapid deployment under severe conditions

> You need a quick and reliable response to store vaccines or medicines anywhere in the world!

What is the meaning of “Solar Direct Drive”?

> The Solar Direct Drive solution consists of several refrigerators and freezers for vaccines working straight from solar panels without batteries and regulatores.

> This solution provides a reliable cold chain for vitally important vaccines even in the most remoted areas. The Solar Direct Drive solution uses the only energy source that never runs dry : our sun!

What are the regulations put in place?

WHO has put in place with its PQS a new performance and quality system for the Cold Chain Equipment.

PQS performance specification for :

> Refrigerator or combined refrigerator-icepack freezer : compression cycle Solar direct drive without battery storage.

> Specification reference : E003 / RF05.3

> Product verification protocol : E003 / RF05-VP.3

What are the most important characteristics for new products?

The development of a new, successful and SAFE product according to PQS requirements has to fulfill a number of defined parameters, the most important of those are :

> Autonomy

Time in days that the device can maintain the vaccine load within a temperature range of +2°C to +8°C under low solar radiation conditions (e.g.: rain).

> Hold over time

Time in hours that the device can maintain the vaccine load within a temperature range of +2°C to +10°C without any solar power input and at the highest rated ambient temperature.

SOLAR DIRECT DRIVE I TCW
Refrigerators & Freezers

TCW 40 SDD

The new **TCW 40 SDD** is a combination of a solar direct drive vaccine & medicine refrigerator and ice pack freezer, working straight from solar panels with no batteries and no regulator. ***[patents pending]***

Solar Direct Drive

> Requests 4 x 100W / 12V panels

PQS Certified
E003/042

Performance

- Net vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time
- Autonomy

TCW 40 SDD

+43°C
+5°C

36 L
8 x 0.6 L
93 h 24 at +43°C
81 h 54 at +43°C

Designed for tropical temperatures

Advantages

> First and only solar direct drive refrigerator / freezer combination with solo body

> Works at 3,5 KWh / 24 h / m² reference period

> 1 compressor and 1 cooling system allows to work with only 4 solar panels

> Designed for tropical temperatures : +5°C to +43°C

> Simple and user friendly “1 button” operation

> Robust cooling system with Secop (Danfoss) compressor and fan cooled condenser

> Best autonomy times in the market for SDD health center refrigerators

> The quick connector allows for “plug and play” installation

> Rotomoulded body construction : rust free and extremely robust

> 100 mm PU foam insulation guarantees highest possible hold over time

> Triple silicon replaceable gaskets

> Full mice protection

> No freezing risks in the refrigeration compartment

> Newly developed B Medical Systems cold chain digital controller

> Temperature monitoring maintained in power failure periods

> Green technology means : 1. environmentally friendly refrigerant and 2. low power consumption

PERFORMANCE QUALITY SAFETY

E003: Refrigerators and freezers

PQS code:	**E003/042**
Type of appliance:	Solar direct drive combined refrigerator/freezer
Manufacturer's reference:	TCW40SDD
Manufactured in:	Luxembourg
Company:	B Medical Systems S.à r.l
Address:	17 Op der Hei L-9809 Hosingen Luxembourg
Telephone:	+ 352 92 07 31-1
Email:	*info@bmedicalsystems.com*
Web address:	*www.bmedicalsystems.com*

Specifications

Climate zone:	Hot	**Min rated ambient temp:**	+5°C
Refrigerant:	R600a	**Energy source:**	Solar direct drive
Appliance tested at:	+43°C	**Ext dimensions (HxLxD)**	78 x 103 x 90 cm
Performance at:	**+43°C**	**Fuel and cycle type:**	Electric - compression
SOLAR DIRECT DRIVE REFRIGERATOR AND / OR FREEZER			
Vaccine storage capacity: (Liters)	36	**Gross volume (Liters):**	4.8
Gross volume (Liters):	46.6	**Waterpack freezing capacity:**	1.8 kg
		Waterpack storage capacity:	5.2kg
Autonomy as per WHO/PQS protocols	81 hours 54 min	**At a solar radiation reference period of:**	3.5 kWh/m2/day
Warning !	*For solar direct drive units, the correct sizing of the solar panel array for a specific site is complex and critical. It must be agreed with both the appliance manufacturer and with the Qualified Supplier of the solar energy system at the time of ordering.*		
Comments:	prices include the solar system: Generator 1 = roof fixed; Generator 2 = roof adjustable; Generator 3 = ground packed casing nominal 12 V DC solar electric array. Minimum power 250 watts at solar radiation reference period 3.5 kWh/m2/day		
Accessories:	1 basket; 8 waterpacks 0.6 L; 8 waterpack holders; 2 keys; 1 brush; 1 pan for drain; documentation		
Spare parts (ref.):	Compressor: 296.9702.09 E Box: 296.9705.24 Controller board: 296.9769.82 Sensor cooler: 296.9804.73 Sensor heater: 296.9804.72 Fan compressor; 292.9960.06 Main switch: 292.2044.11 Display board: 296.9769.81		
Shipping volume:	0.88m3	**Shipping weight:**	120kg
		Incoterms	EXW
Quality standard:	- ISO 9001:2008 - ISO 13485 - ISO 14001 -		
Verification report:	WHO 13-024	**Verification laboratory:**	CEMAFROID GIE
Current PQS status:	*pre-qualified: 27 Mar 2014*	**Validity until:**	*May, 2016*

Solar Direct Drive I B Medical Systems TCW SDD

TCW 2000 & 2043 SDD

The new **TCW 2000 & 2043 SDD** are double compartment solar direct drive vaccine & medicine refrigerator and Icepack freezer with two cooling systems, working straight from solar panels with no batteries and no regulator. ***[patents pending]***

Solar Direct Drive

> Requests 8 x 100W / 12V panels

PQS Certified
E003/035 & E003/043

Performance

- Net vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time
- Autonomy

TCW 2000 SDD
99 L
16 x 0.6 L
92 h at +32°C
85 h 24 at +32°C

+32°C / +5°C

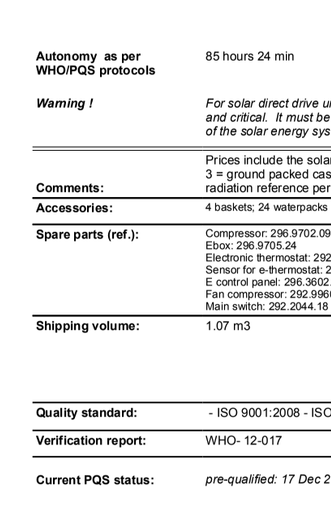
TCW 2043 SDD
70 L
16 x 0.6 L
79 h at +43°C
73 h 54 at +43°C

+43°C / +5°C

Designed for tropical temperatures

Advantages

> Ice pack freezer for the storage of 16 x 0.6 L ice-packs
> Works at 3,5 KWh / 24 h / m² reference period
> The quick connector allows for "plug and play" installation
> Rotomoulded body construction : rust free and extremely robust
> 100 mm PU foam insulation guarantees highest possible hold over time
> 4 heavy duty rollers for easy transport
> 4 hinges for adequate lid support
> Double silicon replaceable gaskets
> Full mice protection
> No freezing risks in the refrigeration compartment
> 2 electronic controllers with integrated digital temperature monitoring
> Temperature monitoring maintained in power failure periods
> Green technology means : 1. environmentally friendly refrigerant and 2. low power consumption



Your global partner to save lives.

B medical systems

Icelined Vaccine Refrigerator & Icepack Freezer

TCW 2000 SDD

PERFORMANCE QUALITY SAFETY

+32°C / +5°C

E003: Refrigerators and freezers

PQS code:	**E003/035**
Type of appliance:	Solar direct drive combined refrigerator/freezer
Manufacturer's reference:	TCW2000 SDD
Manufactured in:	Luxembourg
Company:	B Medical Systems S.à r.l
Address:	17 Op der Hei L-9809 Hosingen Luxembourg
Telephone:	+ 352 92 07 31-1
Email:	*info@bmedicalsystems.com*
Web address:	*www.bmedicalsystems.com*

Specifications

Climate zone:	Temperate	**Min rated ambient temp:**	+5°C
Refrigerant:	R600a	**Energy source:**	Solar direct drive
Appliance tested at:	+32°C	**Ext dimensions (HxLxD)**	127 x 78 x 91 cm
Performance at:	**+32°C**	**Fuel and cycle type:**	Electric - compression
SOLAR DIRECT DRIVE REFRIGERATOR AND / OR		**FREEZER**	
Vaccine storage capacity: (Liters)	99	**Gross volume (Liters):**	42
Gross volume (Liters):	118	**Waterpack freezing capacity:**	2.4 kg per 24 h
		Waterpack storage capacity:	14.4 kg
Autonomy as per WHO/PQS protocols	85 hours 24 min	**At a solar radiation reference period of:**	3.5 kWh/m2/day
Warning !	*For solar direct drive units, the correct sizing of the solar panel array for a specific site is complex and critical. It must be agreed with both the appliance manufacturer and with the Qualified Supplier of the solar energy system at the time of ordering.*		
Comments:	Prices include the solar system: Generator 1 = roof fixed; Generator 2 = roof adjustable; Generator 3 = ground packed casing. Nominal 12V DC solar array, minimum power 500Watts at solar radiation reference period 3.5 kWh/m2/day		
Accessories:	4 baskets; 24 waterpacks 0.6L; 4 keys; documentation and instructions		
Spare parts (ref.):	Compressor: 296.9702.09 Ebox: 296.9705.24 Electronic thermostat: 292.2009.05 Sensor for e-thermostat: 2969804.20 E control panel: 296.3602.82 Fan compressor: 292.9960.06 Main switch: 292.2044.18		
Shipping volume:	1.07 m3	**Shipping weight:**	125 kg
		Incoterms	EXW
Quality standard:	- ISO 9001:2008 - ISO 14001 -		
Verification report:	WHO- 12-017	**Verification laboratory:**	CEMAFROID GIE
Current PQS status:	*pre-qualified: 17 Dec 2012*	**Validity until:**	*May, 2016*

TCW 2043 SDD

PERFORMANCE QUALITY SAFETY

+43°C / +5°C

E003: Refrigerators and freezers

PQS code:	**E003/043**
Type of appliance:	Solar direct drive combined refrigerator/freezer
Manufacturer's reference:	TCW 2043 SDD
Manufactured in:	Luxembourg
Company:	B Medical Systems S.à r.l
Address:	17 Op der Hei L-9809 Hosingen Luxembourg
Telephone:	+ 352 92 07 31-1
Email:	*info@bmedicalsystems.com*
Web address:	*www.bmedicalsystems.com*

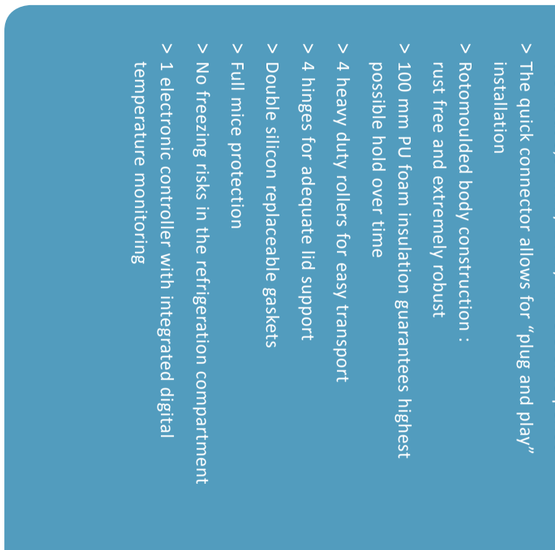
Specifications

Climate zone:	Hot	**Min rated ambient temp:**	+5°C
Refrigerant:	R600a	**Energy source:**	Solar direct drive
Appliance tested at:	+43°C	**Ext dimensions (HxLxD)**	91 x 127 x 78 cm
Performance at:	**+43°C**	**Fuel and cycle type:**	Electric - compression
SOLAR DIRECT DRIVE REFRIGERATOR AND / OR		**FREEZER**	
Vaccine storage capacity: (Liters)	70	**Gross volume (Liters):**	42
Gross volume (Liters):	79	**Waterpack freezing capacity:**	2.5kg
		Waterpack storage capacity:	10.5 kg
Autonomy as per WHO/PQS protocols	73 hours 54 min	**At a solar radiation reference period of:**	3.5 kWh/m2/day
Warning !	*For solar direct drive units, the correct sizing of the solar panel array for a specific site is complex and critical. It must be agreed with both the appliance manufacturer and with the Qualified Supplier of the solar energy system at the time of ordering.*		
Comments:	prices include the solar system: Generator 1 = roof fixed; Generator 2 = roof adjustable; Generator 3 = ground packed casing; nominal 12 V DC solar electric array. Minimum power 500 watts at solar radiation reference period 3.5 kWh/m2/day		
Accessories:	2 baskets; 16 waterpacks 0.6 L; 4 keys; documentation; 1 pan for drain		
Spare parts (ref.):	Compressor: 296.9702.09 E Box: 296.9705.24 Electronic thermostat: 292.2009.05 Sensor for e-thermostat: 296.9804.20 Electronic control panel: 296.3602.82 Fan compressor; 292.9960.06 Main switch: 292.2044.18		
Shipping volume:	1.07m3	**Shipping weight:**	160kg
		Incoterms	EXW
Quality standard:	- ISO 9001:2008 - ISO 13485 - ISO 14001 -		
Verification report:	WHO 13-025	**Verification laboratory:**	CEMAFROID GIE
Current PQS status:	*pre-qualified: 27 Mar 2014*	**Validity until:**	*May, 2016*

Solar Direct Drive I B Medical Systems TCW SDD

TCW 3000 & 3043 SDD

The new **TCW 3000 & 3043 SDD** are large capacity solar direct drive vaccine & medicine refrigerator or freezer, working straight from solar panels with no batteries and no regulator. ***[patents pending]***



Solar Direct Drive

> Requests 4 x 100W / 12V panels

PQS Certified
E003/030 & E003/045

Performance

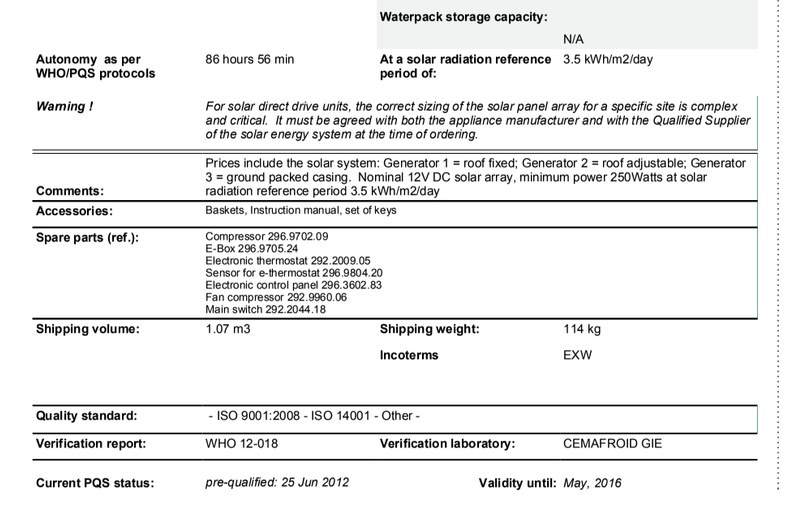
- Net vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time
- Autonomy

	TCW 3000 SDD	TCW 3043 SDD
	+32°C / +5°C	+43°C / +5°C
	156 L	89 L
	-	-
	94 h 05 at +32°C	124 h 48 at +43°C
	86 h 56 at +32°C	116 h 41 at +43°C

Designed for tropical temperatures

Advantages

> Works at 3,5 KWh / 24 h / m² reference period
> The quick connector allows for "plug and play" installation
> Rotomoulded body construction : rust free and extremely robust
> 100 mm PU foam insulation guarantees highest possible hold over time
> 4 heavy duty rollers for easy transport
> 4 hinges for adequate lid support
> Double silicon replaceable gaskets
> Full mice protection
> No freezing risks in the refrigeration compartment
> 1 electronic controller with integrated digital temperature monitoring
> Temperature monitoring maintained in power failure periods
> Green technology means : 1. environmentally friendly refrigerant and 2. low power consumption



TCW 3000 SDD

PERFORMANCE QUALITY SAFETY

+32°C / +5°C

E003: Refrigerators and freezers

PQS code:	**E003/030**
Type of appliance:	Solar direct drive refrigerator
Manufacturer's reference:	TCW3000 SDD
Manufactured in:	Luxembourg
Company:	B Medical Systems S.à r.l
Address:	17 Op der Hei L-9809 Hosingen Luxembourg
Telephone:	+ 352 92 07 31-1
Email:	*info@bmedicalsystems.com*
Web address:	*www.bmedicalsystems.com*

Specifications

Climate zone:	Temperate	**Min rated ambient temp:**	+5°C
Refrigerant:	R600a	**Energy source:**	Solar direct drive
Appliance tested at:	+32°C	**Ext dimensions (HxLxD)**	91 x 127 x 78 cm
Performance at:	**+32°C**	**Fuel and cycle type:**	Electric - compression
SOLAR DIRECT DRIVE REFRIGERATOR AND / OR		**FREEZER**	
Vaccine storage capacity: (Liters)	156	**Gross volume (Liters):**	N/A
Gross volume (Liters):	187	**Waterpack freezing capacity:**	N/A
		Waterpack storage capacity:	N/A
Autonomy as per WHO/PQS protocols	86 hours 56 min	**At a solar radiation reference period of:**	3.5 kWh/m2/day
Warning !	*For solar direct drive units, the correct sizing of the solar panel array for a specific site is complex and critical. It must be agreed with both the appliance manufacturer and with the Qualified Supplier of the solar energy system at the time of ordering.*		
Comments:	Prices include the solar system: Generator 1 = roof fixed; Generator 2 = roof adjustable; Generator 3 = ground packed casing. Nominal 12V DC solar array, minimum power 250Watts at solar radiation reference period 3.5 kWh/m2/day		
Accessories:	Baskets, Instruction manual, set of keys		
Spare parts (ref.):	Compressor 296.9702.09 E-Box 296.9705.24 Electronic thermostat 292.2009.05 Sensor for e-thermostat 296.9804.20 Electronic control panel 296.3602.83 Fan compressor 292.9960.06 Main switch 292.2044.18		
Shipping volume:	1.07 m3	**Shipping weight:**	114 kg
		Incoterms	EXW
Quality standard:	- ISO 9001:2008 - ISO 14001 - Other -		
Verification report:	WHO 12-018	**Verification laboratory:**	CEMAFROID GIE
Current PQS status:	*pre-qualified: 25 Jun 2012*	**Validity until:**	*May, 2016*

TCW 3043 SDD

PERFORMANCE QUALITY SAFETY

+43°C / +5°C

E003: Refrigerators and freezers

PQS code:	**E003/045**
Type of appliance:	Solar direct drive refrigerator
Manufacturer's reference:	TCW3043SDD
Manufactured in:	Luxembourg
Company:	B Medical Systems S.à r.l
Address:	17 Op der Hei L-9809 Hosingen Luxembourg
Telephone:	+ 352 92 07 31-1
Email:	*info@bmedicalsystems.com*
Web address:	*www.bmedicalsystems.com*

Specifications

Climate zone:	Hot	**Min rated ambient temp:**	+5°C
Refrigerant:	R600a	**Energy source:**	Solar direct drive
Appliance tested at:	+43°C	**Ext dimensions (HxLxD)**	91 X 127 X 78
Performance at:	**+43°C**	**Fuel and cycle type:**	Electric - compression
SOLAR DIRECT DRIVE REFRIGERATOR AND / OR		**FREEZER**	
Vaccine storage capacity: (Liters)	89	**Gross volume (Liters):**	N/A
Gross volume (Liters):	111	**Waterpack freezing capacity:**	0
		Waterpack storage capacity:	0
Autonomy as per WHO/PQS protocols	116 hours 41 min	**At a solar radiation reference period of:**	3.5 kWh/m2/day
Warning !	*For solar direct drive units, the correct sizing of the solar panel array for a specific site is complex and critical. It must be agreed with both the appliance manufacturer and with the Qualified Supplier of the solar energy system at the time of ordering.*		
Comments:	prices include the solar system: Generator 1 = roof fixed; Generator 2 = roof adjustable; Generator 3 = ground packed casing		
Accessories:	5 baskets; 33 waterpacks 0.6 L; 2 keys; documentation		
Spare parts (ref.):	Compressor: 296.9702.09 E Box: 296.9705.24 Electronic thermostat: 292.2009.05 Sensor for e-thermostat: 296.9804.20 Electronic control panel: 296.3602.83 Fan compressor; 292.9960.06 Main switch: 292.2044.18		
Shipping volume:	1.07 m3	**Shipping weight:**	169 kg
		Incoterms	EXW
Quality standard:	- ISO 9001:2008 - ISO 13485 - ISO 14001 -		
Verification report:	WHO 13-026 V2	**Verification laboratory:**	CEMAFROID GIE
Current PQS status:	*pre-qualified: 01 Sep 2014*	**Validity until:**	*May, 2016*

Solar Direct Drive I Installation

Solar Generator – Plug & play Installation

The new B Medical Systems Solar Generators are unique. It connects to the TCW 40, 2000, 2043, 3000 or 3043 SDD by quick connectors. The TCW 40, 3000 & 3043 SDD needs one generator (= 4 x 100W / 12V) and the TCW 2000 & 2043 SDD requieres two generators (= 8 x 100W / 12V).

fig. Solar Generator G2 (with declination variation) 4 x 100W / 12V

Easy setting-up

- Quick connectors, only one way works!

Performance

- Net vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time
- Autonomy

TCW 2000 SDD

+32°C
+5°C

99 L
16 x 0.6 L
92 h at +32°C
85 h 24 at +32°C

> Requests 8 x 100W / 12V panels

PQS Certified E003/035

Plug & play

Easy activation

- Length of cable : 25 meters each generator
- Quick connectors, only one way works!

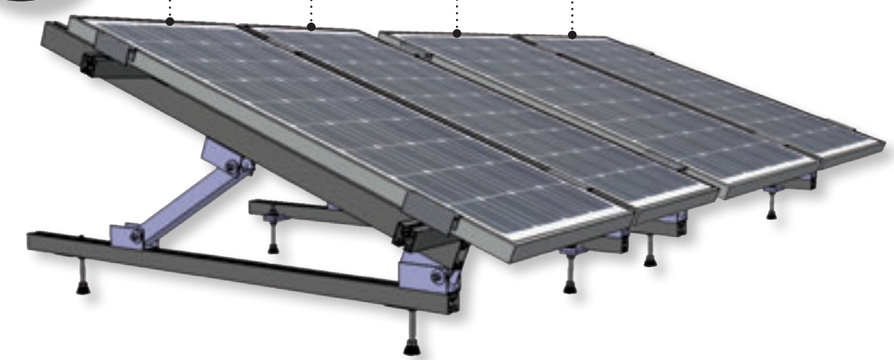


fig. Solar Generator G2 (with declination variation) 4 x 100W / 12V

Options

Basic Tool Kit

Contains different basic tools as wrenches, screwdrivers, pencil, tape measure and protractor.

Tool Kit

Includes « **Basic Tool Kit** » and different tools in a special backpack and a roll-up case as well as a digital voltmeter.

Premium Tool Kit

Includes « **Tool Kit** » and a drilling machine and a solar converter.

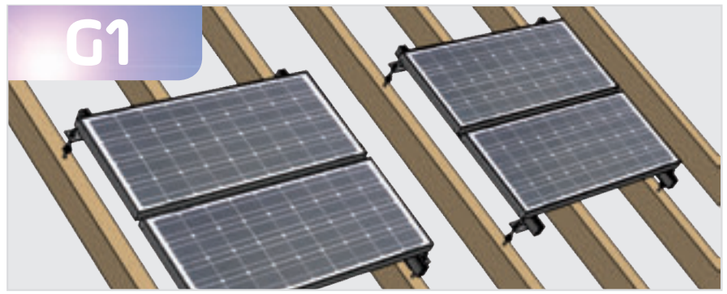
Your global partner to save lives.

medical systems

Solar Direct Drive I Variations Solar Generator

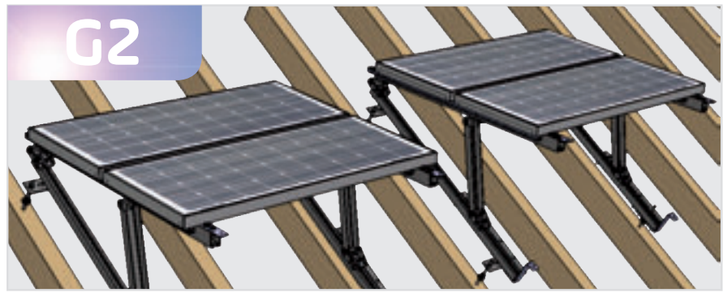
G1 – Roof installation without panel adjustment

Solar panels on fixed roof installation. This solution is easy to install and ideal for high sunshine levels.



G2 – Roof installation with panel adjustment

Solar panels on inclinable (adjustable) roof installation. This solution optimizes the energy collection and enables the positioning anywhere.



G4 – Pole mounts

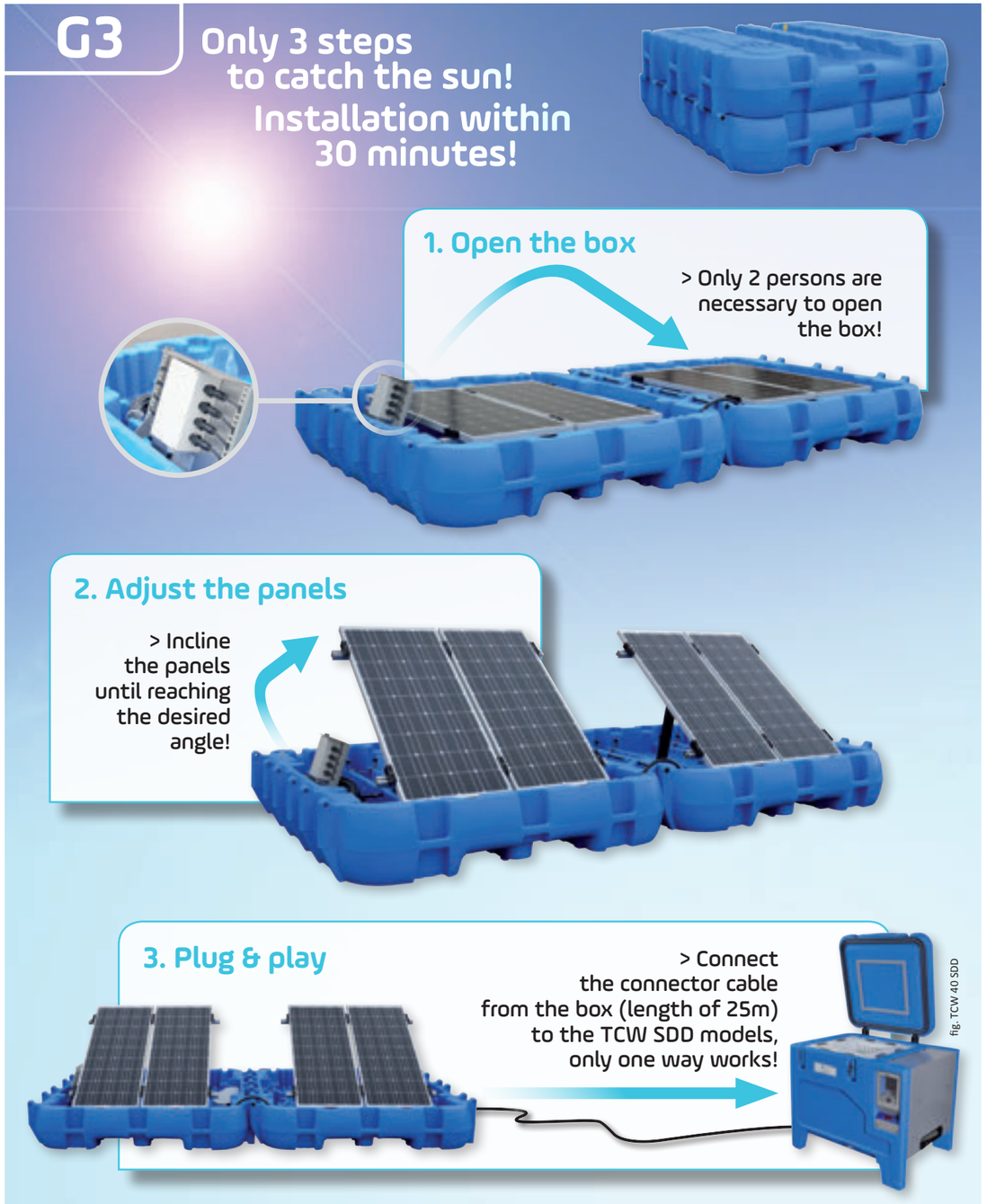
Easy panel lifting and orientation system. Delivered with panels and solar arise structure. Not included : pole and lifting system (available upon request).

Model	G1- Fixed (on roof)	G2 - Adjustable (on roof)	G3 - Movable (on ground)	G4 - Pole mounts (on ground)	
				TCW 40/3000/3043	TCW 2000/2043
Number nad type of solar panels	4 x 100 W / 12 V	4 x 100 W / 12 V	4 x 100 W / 12 V	4 x 100 W / 12 V	8 x 100 W / 12 V (= 2 generators)
DIMENSIONS / WEIGHTS					
Outer dimensions H x W x D (mm)	-	-	400* x 3690 x 1760	895 x 3000 x 1550	1580 x 3000 x 2750
Shipping dimensions H x W x D (mm)	552 x 1290 x 700	552 x 1290 x 700	745 x 1885 x 1765	840 x 1550 x 700	1380 x 1550 x 700
Net weight (kg)	65	80	240	165	245
Shipping weight (kg)	108	124	240	239	365
Volume	0.50 m³	0.50 m³	-	0.911 m³	1.497 m³
TECHNICAL DETAILS					
Minimum solar radiation required	250 W/m²				
Maximum power output at STC	400 W				800 W
Solar radiation reference period	PQS ref. 3.5 KWh / 24 h / m²				
Output voltage range	12 V / 21.2 V				
Type of connector	1 x Erich-Jäger				2 x Erich-Jäger
ACCESSORIES (standard)					
Anti-theft	-	-	1	-	-

* with horizontal solar panels

G3 – Ground installation, rotomoulded box

The new B Medical Systems Solar Generator is unique. It is a pre-assembled system that only needs to opened and adjusted to work. It requires no professional assistance for the installation. It connects to the TCW 40, 2000, 2043, 3000 or 3043 SDD by quick connector. Its packing is at the same time its body which is rotomoulded.



Remark : The TCW 2000 & 2043 SDD requires 2 generators.
The TCW 40, 3000 & 3043 SDD needs one generator.

Your global partner to save lives.

SOLAR DIRECT DRIVE I TCW
Refrigerator's & Freezers

Solar Direct Drive I B Medical Systems TCW SDD

TCW SDD

Model	TCW 40 SDD Vaccine Refrigerator & Icepack Freezer	TCW 2000 SDD Icelined Vaccine Refrigerator & Icepack Freezer	TCW 2043 SDD Icelined Vaccine Refrigerator & Icepack Freezer	TCW 3000 SDD Icelined Vaccine Refrigerator or Freezer	TCW 3043 SDD Icelined Vaccine Refrigerator or Freezer
PERFORMANCE					
Net vaccine storage capacity (l)	36	99	70	156	89
Ice-pack storage capacity	8 x 0.6 L	16 x 0.6 L	16 x 0.6 L	-	-
Freezing Ice-pack capacity	1.89 kg / 24 h at +43°C	4.8 kg / 24 h at +32°C	2.5 kg / 24 h at +43°C	-	-
Hold Over Time	93 h 24 min. at +43°C	92 h at +32°C	79 h at +43°C	94 h 05 min. at +32°C	124 h 48 min. at +43°C
Autonomy time (+2°C to +8°C)	81 h 54 min. at +43°C	85 h 24 min. at +32°C	73 h 54 min.at +43°C	86 h 56 min. at +32°C	116 h 41 min. at +43°C
Cool down time	36 h	12 h	56 h	36 h	145 h
Power consumption : Stable running	0.57 KWh / 24 h at +43°C	0.78 KWh / 24 h at +32°C	0.73 KWh / 24 h at +43°C	0.25 KWh / 24 h at +32°C	0.68 KWh / 24 h at +43°C
Cool down	0.67 KWh / 24 h at +43°C	0.74 KWh / 24 h at +32°C	0.79 KWh / 24 h at +43°C	0.34 KWh / 24 h at +32°C	0.68 KWh / 24 h at +43°C
During freezing	0.69 KWh / 24 h at +43°C	0.96 KWh / 24 h at +32°C	1.05 KWh / 24 h at +43°C	-	-
Climate Zone	Hot zone (+43°C)	Temperate zone (+32°C)	Hot zone (+43°C)	Temperate zone (+32°C)	Hot zone (+43°C)
Recommended number and type of solar panels	4 x 100 W / 12 V	8 x 100 W / 12 V (= 2 generators)	8 x 100 W / 12 V (= 2 generators)	4 x 100 W / 12 V	4 x 100 W / 12 V
DIMENSIONS / WEIGHTS					
Inner dimensions H x W x D (mm)	410 x 325 x 350	Refrigerator : 585 x 470 x 425 Freezer : 340 x 250 x 505	Refrigerator : 530 x 365 x 410 Freezer : 330 x 250 x 510	(340 x 330 x 420) + (555 x 600 x 420)	(240 x 350 x 340) + (475 x 515 x 340)
Outer dimensions H x W x D (mm)	900 x 1030 x 780	910 x 1270 x 780	910 x 1270 x 780	910 x 1270 x 780	910 x 1270 x 780
Shipping dimensions H x W x D (mm)	1060 x 1040 x 800	1030 x 1300 x 800	1030 x 1300 x 800	1030 x 1300 x 800	1030 x 1300 x 800
Shipping weight (kg)	120	149	160	143	169
Gross volume (l)	Refrigerator : 46.6 / Freezer : 4.8	Refrigerator : 118 / Freezer : 42	Refrigerator : 79 / Freezer : 42	187	111
TECHNICAL DETAILS					
Insulation material and thickness	PU foam / 100 mm	PU foam / 100 mm	PU foam / 100 mm	PU foam / 100 mm	PU foam / 100 mm
Evaporator type and material	Aluminium rollbond	Aluminium rollbond	Aluminium rollbond	Aluminium rollbond	Aluminium rollbond
Ice lining quantity of packs	4 x 4.8 L & 4 x 0.6 L PCM+4	4 x 3.8 L & 16 x 0.6 L	4 x 3.8 L & 24 x 0.6 L	6 x 3.8 L & 9 x 0.6 L	6 x 5.6 L & 33 x 0.6 L
Operating voltage range	12 - 20 V	12 - 20 V	12 - 20 V	12 - 20 V	12 - 20 V
Minimum starting voltage	12 V	12 V	12 V	12 V	12 V
Minimum starting power	80 W	80 W	80 W	80 W	80 W
Minimum power for continious running	70 W	Refrig. : 66 W / Freezer : 60 W (à 20 V)	Refrig. : 66 W / Freezer : 60 W (à 20 V)	70 W	70 W
Minimum solar radiation for continious running	250 W/m² (PQS ref. 3.5 KWh / 24 h / m²)	250 W/m² (PQS ref. 3.5 KWh / 24 h / m²)	250 W/m² (PQS ref. 3.5 KWh / 24 h / m²)	250 W/m² (PQS ref. 3.5 KWh / 24 h / m²)	250 W/m² (PQS ref. 3.5 KWh / 24 h / m²)
Refrigerant type and quantity	R600a 60g	R600a Refrig. : 45g / Freezer : 40 g	R600a Refrig. : 45g / Freezer : 40 g	R600a 58g	R600a 70g
Compressor type	1 x BD35K	2 x BD35K	2 x BD35K	1 x BD35K	1 x BD35K
Electronic type	1 x B Medical Systems / DC solar	2 x B Medical Systems / DC solar	2 x B Medical Systems / DC solar	1 x B Medical Systems / DC solar	1 x B Medical Systems / DC solar
Sensor type	NTC 10kOhm	NTC 10kOhm	NTC 10kOhm	NTC 10kOhm	NTC 10kOhm
CERTIFICATION					
WHO test procedure	E003 / RF05-VP.3	E003 / RF05-VP.2	E003 / RF05-VP.3	E003 / RF05-VP.2	E003 / RF05-VP.3
WHO specifications	E003 / RF05.3	E003 / RF05.2	E003 / RF05.3	E003 / RF05.2	E003 / RF05.3
PQS Code	E003 / 042	E003 / 035	E003 / 043	E003 / 030	E003 / 045
Low Voltage Directive	2006 / 95 / CE	2006 / 95 / CE	2006 / 95 / CE	2006 / 95 / CE	2006 / 95 / CE
ACCESSORIES (standard)					
Vaccine storage basket	1	4	2	5	5
Lockable lid	1	2	2	1	1
Spacers	2	2	2	2	2
Waterpacks 0.6 L	8	16	16	-	-
Waterpacks holders	8	-	-	-	-
Compass	1	1	1	1	1

Your global partner to save lives.

SOLAR DIRECT DRIVE I TCW
Refrigerators & Freezers

For national, district and urban centres provided with a supply of electric power (minimum 8 h / day)

RCW / TCW compression

Electricity (AC / DC) / Solar energy

Compression Refrigerators, Freezers & Ice Liners

> in compliance with WHO guidelines & PQS certified (TCW models)

The compression icelined refrigerators and freezers for national and regional centres are designed to deal with the demanding conditions found in hot and humid environments. Made of rotomoulded polyethylene, these products are really robust for intensive use. Polyurethane foam and silicon gasket provide optimal insulation.

Special features at a glance :

> Rotomoulded with polyethylene

> Lockable lid

> Silicon Gasket ensures tight sealing

Model	RCW 42 AC / DC	RCW 50 AC / DC	TCW 2000 AC / DC	TCW 3000 AC / DC
Rotomoulded with polyethylene	■	■	■	■
Lockable lid	■	■	■	■
Silicon Gasket ensures tight sealing	■	■	■	■
Defrost drainage outlet		■	■	■
Fan inside the lid for inner air circulation		■		
Easy removable cooling unit cover		■		
1 dial thermometer to control the temperature		■		

■ standard

RCW 42 AC / DC

The **RCW 42** AC (220 V / 50 Hz - 115 V / 60 Hz) and RCW 42 DC (12/24 V) refrigerators offer the advantage of an ice-pack freezing capacity twice that of absorption system equipment (2.4 l of ice within 24 hours at +32°C).

Provided with a freezing function actuated by a simple switch, the RCW 42 AC and DC are especially suitable for vaccines against measles and polio, where long-term storage necessitates freezing.

Performance	RCW 42 AC	RCW 42 DC
• Vaccine storage capacity	14 L	14 L
• Ice-pack storage capacity	4 x 0.6 L	4 x 0.6 L
• Hold Over Time	6 h at +32°C 4 h at +43°C	5.5 h at +32°C 2.5 h at +43°C

RCW 50 AC / DC

The **RCW 50** has 2 separate storage compartments, each with a capacity for 12 litres of vaccines, and a freezer compartment capable of freezing 4.8 kg of ice in 27 hours at an ambient temperature of +43°C (AC version), making it the perfect unit for distant areas.

This model is available as AC or DC version. Equipped with a sealed watertight compressor, the RCW 50 can be used at currents of 12 V to 24 V DC.

Performance	RCW 50 AC	RCW 50 DC
• Vaccine storage capacity	24 L	24 L
• Ice-pack storage capacity	8 x 0.6 L	8 x 0.6 L
• Hold Over Time	16 h at +32°C 8 h at +43°C	9 h at +32°C 5 h at +43°C

COMPRESSION I RCW / TCW
Refrigerators & Freezers

TCW 2000 AC / DC

The **TCW 2000** AC / DC is designated for urban health centres and district stores. The refrigerator part of the TCW 2000 has an ice bank inside the cabinet. The ice bank consists of frozen icepacks during its operation. During periods of power failure and load procedures, the ice bank acts as cold storage to protect the vaccines.

The TCW 2000 can function as icepack freezer and/or as refrigerator.

PQS Certified
E003/014 & E003/001

+43°C
+5°C

Performance

- Vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time

TCW 2000 AC

60 L
20 x 0.6 L
39.4 h at +43°C

TCW 2000 DC

76 L
26 x 0.6 L
13.58 h at +43°C

TCW 3000 AC / DC

The **TCW 3000** AC exists as icelined vaccine refrigerator. It works at a preset setpoint of +5°C that can not be changed by the user. If the customer would like to use it as vaccine or waterpack freezer a service technician has to change the setpoint from +5°C to -20°C and the technician has to remove the icelining waterpacks. Furthermore the loading plan on top of the lid has to be changed/ turned around. The other way round is also possible: if the customer would like to switch from freezer to refrigerator, the above described procedure has to be affected only by a service technician.

For the DC version it's the same, except that the freezer model works at a setpoint of -12°C and it's only usable for waterpack-freezing, not for vaccine.

PQS Certified
E003/017 & E003/008

+43°C
+10°C

Performance

- Vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time

TCW 3000 AC

150 L
187 x 0.6 L
53.17 h at +43°C

TCW 3000 DC

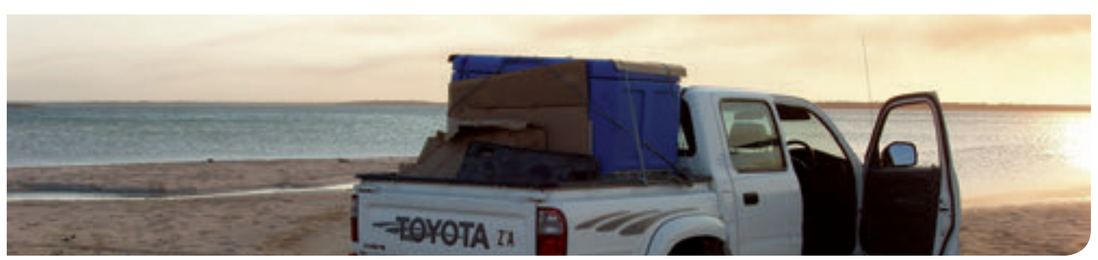
109.5 L
80 x 0.6 L
23.4 h at +43°C

RCW compression

+43°C
0°C

+43°C
0°C

Model	RCW 42 AC / DC Vaccine Refrigerator & Icepack Freezer		RCW 50 AC / DC Vaccine Refrigerator & Icepack Freezer	
	AC version	DC version	AC version	DC version
PERFORMANCE				
Net vaccine storage capacity (l)	14		24	
Ice-pack storage capacity	4 x 0.6 L		8 x 0.6 L	
Freezing Ice-pack capacity	2.1 kg / 24 h at +32°C (without vaccine) 2.4 kg / 24 h at +43°C	2.4 kg / 12 h at +32°C 2.4 kg / 24 h at +43°C	2.4 kg / 14.5 h at +32°C 4.8 kg / 29 h at +43°C	2.4 kg / 10 h at +32°C 4.8 kg / 27 h at +43°C
Hold Over Time	6 h at +32°C 4 h at +43°C	5.5 h at +32°C 2.5 h at +43°C	16 h at +32°C 8 h at +43°C	9 h at +32°C 5 h at +43°C
Energy consumption / 24 h	2.04 KWh at +32°C	0.61 KWh at +32°C	0.90 KWh at +32°C 1.69 KWh at +43°C (without IP Freezer)	0.64 KWh at +32°C 1.08 KWh at +43°C (without IP Freezer)
Climate Zone	Hot zone (+43°C)		Hot zone (+43°C)	
DIMENSIONS / WEIGHTS				
Inner dimensions H x W x D (mm)	Refrigerator compartment : 260 x 480 x 185 Freezer compartment : 250 x 480 x 50		Refrigerator compartments : 2 x (325 x 240 x 365) Freezer compartment : (396 x 130 x 85) + (225 x 240 x 85)	
Outer dimensions H x W x D (mm)	500 x 920 x 550		830 x 980 x 720	
Shipping dimensions H x W x D (mm)	515 x 960 x 560		955 x 1015 x 755	
Shipping weight (kg)	74 (with packaging for ocean transport)	72 (with packaging for ocean transport)	74	71
TECHNICAL DETAILS				
Insulation material and thickness	PU foam / 100 mm		PU foam / 100 mm	
Operating voltage range	220 V - 50 Hz or 115 V - 60 Hz	12 or 24 V	230 V - 50 Hz or 115 V - 60 Hz	12 or 24 V
Refrigerant type and quantity	R134a 97g	R134a 90g	R134a 240g	R134a 210g
CERTIFICATION				
WHO test procedure	E3 / PROC / 3	E3 / PROC / 7	E3 / PROC / 3	E3 / PROC / 7
WHO specifications	E3 / RF.1	E3 / RF.4	E3 / RF.1	E3 / RF.4
ACCESSORIES (standard)				
Cooling element at 0.6 l	-		8	
Aluminium angle for vaccine storage	1		-	
Plastic separation wall	1		-	
Aluminium Icepack holder	-		2	
Water separation wall	-		2	
Crystal thermometer	1		-	
Spirit level	-		1	



TCW compression

Model	TCW 2000 AC / DC Icelined Vaccine Refrigerator & Icepack Freezer		TCW 3000 AC / DC Icelined Vaccine Refrigerator or Waterpack Freezer	
	AC version	DC version	AC version	DC version
PERFORMANCE				
Net vaccine storage capacity (l)	60	76	150	109.5
Ice-pack storage capacity	20 x 0.6 L	26 x 0.6 L	187 x 0.6 L	80 x 0.6 L
Freezing Ice-pack capacity	10 kg / 24 h at +43°C	3.4 kg / 24 h at +43°C	-	
Hold Over Time	39.4 h at +43°C	13.58 h at +43°C	53.17 h at +43°C	23.4 h at +43°C
Energy consumption / 24 h	1.95 KWh at +43°C (Freezer ON)	0.99 KWh at +43°C (Freezer ON)	1.37 KWh at +43°C (Refrigerator mode)	1.01 KWh at +43°C (Refrigerator mode)
	1.87 KWh at +43°C (Freezer OFF)	0.58 KWh at +43°C (Freezer OFF)	3.83 KWh at +43°C (Freezer mode)	1.82 KWh at +43°C (Freezer mode)
Power consumption : Stable running / 24 h	1.35 KWh at +43°C	-	1.37 KWh at +43°C	1.01 KWh at +43°C (Refrigerator mode)
				1.82 KWh at +43°C (Freezer mode)
Cool down / 24 h	4.34 KWh at +43°C	1.23 KWh at +43°C	1.32 KWh at +43°C	2.15 KWh at +43°C (Refrigerator mode)
				2.13 KWh at +43°C (Freezer mode)
During freezing / 24 h	1.95 KWh at +43°C	0.99 KWh at +43°C	-	2.35 KWh at +43°C
Climate Zone	Hot zone (+43°C)		Hot zone (+43°C)	
Recommended number and type of solar panels	-	8 x 100 W / 12 V	-	4 x 100 W / 12 V
DIMENSIONS / WEIGHTS				
Inner dimensions H x W x D (mm)	Refrigerator : 585 x 470 x 425 Freezer : 340 x 250 x 505		(350 x 930 x 420) + (250 x 600 x 420)	
Outer dimensions H x W x D (mm)	910 x 1270 x 780		910 x 1270 x 780	
Shipping dimensions H x W x D (mm)	1030 x 1300 x 800		1030 x 1300 x 800	
Shipping weight (kg)	128	120	123	115
TECHNICAL DETAILS				
Insulation material and thickness	PU foam / 100 mm		PU foam / 100 mm	
Operating voltage range	230 V - 50 Hz or 110 V - 60 Hz	12 or 24 V	230 V - 50 Hz or 110 V - 60 Hz	12 or 24 V
Refrigerant type and quantity	R134a 2 x 100g	R134a 100g + 85g	R134a 142g	R134a 100g
CERTIFICATION				
WHO test procedure	E003 / RF03-VP.2	E003 / RF04-VP.1	E003 / RF03-VP.2	E003 / RF04-VP.1
WHO specifications	E003 / RF03.2	E003 / RF04.1	E003 / RF03.2	E003 / RF04.1
PQS Code	E003 / 014	E003 / 001	E003 / 017	E003 / 008
ACCESSORIES (standard)				
Cooling element at 0.6 l	24		38	
Vaccine storage basket	4		5	
Keys	4		2	
Spacers	2		2	
Manual / document	1		1	
Voltage protector	1	-	1	-

For optimal adaption to power constraints at health centres

RCW absorption

Electricity / Gas / Kerosene / Solar energy

Absorption Refrigerators & Freezers

> in compliance with WHO guidelines

Absorption refrigerators and freezers for health centres use different energy sources (electricity, liquefied gas, kerosene, solar energy) and ensure constant operation, even in the absence of reliable electric power. Models EG work with electricity or gas, EK models with electricity or kerosene.

Made of rotomoulded polyethylene, these models offer the durability and robustness required for intensive use, as well as heavy-duty insulation and physical resilience. Polyurethane foam and silicon gasket provide additional insulation guarantee.

Special features at a glance :

> Rotomoulded with polyethylene

> Lockable lid with 2 catches

> Silicon Gasket ensures tight sealing

Model	RCW 42 EG	RCW 42 EK	RCW 50 EG	RCW 50 EK
Rotomoulded with polyethylene	■	■	■	■
Lockable lid with 2 catches	■	■	■	■
Silicon Gasket ensures tight sealing	■	■	■	■
Safety distance spacer bar			■	■
Burner lighting instruction on the lid		■		■
1 dial thermometer to control the temperature	■	■	■	■
2 handels	■	■		
Gas converter kit		□		□
Pressure regulator	□		□	

■ standard □ optional

RCW 42 EG / EK

The **RCW 42 EG / EK** perform a double function : an optimal vaccine storage at the appropriate temperature and a freezing of ice packs. The equipment has been designed and developed for tropical conditions.

Performance
- Energy source
- Vaccine storage capacity
- Hold Over Time

RCW 42 EG
Electricity / Gas
18.2 L
12 h 30 at +32°C

RCW 42 EK
Electricity / Kerosene
10.5 L
12 h 30 at +32°C

Options

RCW 42 EK

Gas converter kit
To modify the RCW 42 EK to work with gas

RCW 42 EG

Pressure regulator
30 mb, non adjustable, with bottom connection

Pressure regulator
30 mb, non adjustable, with side connection

RCW 50 EG / EK

The **RCW 50 EG / EK** also perform a double function as a vaccine storage box and icepack freezer, optimally adapted to tropical conditions.

Performance
- Energy source
- Vaccine storage capacity
- Ice-pack storage capacity
- Hold Over Time

RCW 50 EG
Electricity / Gas
24 L
4 x 0.6 L
6 h 30 at +32°C

RCW 50 EK
Electricity / Kerosene
24 L
4 x 0.6 L
6 h 30 at +32°C

Options

RCW 50 EK

Gas converter kit
To modify the RCW 50 EK to work with gas

RCW 50 EG

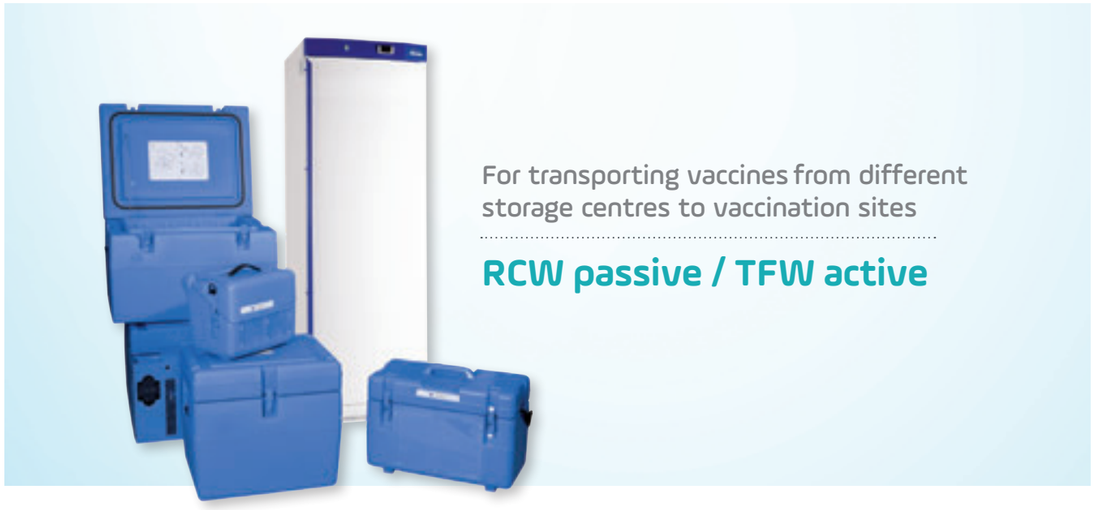
Pressure regulator
30 mb, non adjustable, with bottom connection

Pressure regulator
30 mb, non adjustable, with side connection

RCW absorption




Model	RCW 42 EG Refrigerator or Refrigerator & Freezer	RCW 42 EK Refrigerator or Refrigerator & Freezer	RCW 50 EG Refrigerator & Icepack Freezer	RCW 50 EK Refrigerator & Icepack Freezer
PERFORMANCE				
Energy source	Electricity / Gas	Electricity / Kerosene	Electricity / Gas	Electricity / Kerosene
Vaccine storage capacity (l)	18.2	10.5	24	24
Ice-pack storage capacity	-	-	4 x 0.6 L	4 x 0.6 L
Freezing Ice-pack capacity	0.4 kg / 8.5 h at +32°C	0.37 kg / 9 h at +32°C	2.4 kg / 26 h at +32°C	2.4 kg / 24 h at +32°C
Hold Over Time	12 h 30 at +32°C	12 h 30 at +32°C	6 h 30 at +32°C	6 h 30 at +32°C
Energy consumption (KWh)	1.9 KWh / 24 h at +32°C	1.6 KWh / 24 h at +32°C	2.46 KWh / 24 h at +32°C	2.46 KWh / 24 h at +32°C
Gas consumption (kg)	0.38 kg / 24 h at +32°C	-	0.43 kg / 24 h at +32°C	-
Kerosene consumption (l)	-	0.7 L / 24 h at +32°C	-	0.77 L / 24 h at +32°C
Climate Zone	Temperate zone (+32°C)	Temperate zone (+32°C)	Hot zone (+43°C)	Temperate zone (+32°C)
DIMENSIONS / WEIGHTS				
Outer dimensions H x W x D (mm)	500 x 830 x 550	720 x 830 x 550	830 x 980 x 820	830 x 980 x 820
Shipping dimensions H x W x D (mm)	515 x 840 x 560	515 x 890 x 560	955 x 1015 x 755	955 x 1015 x 755
Shipping weight (kg)	34	41	66	73
TECHNICAL DETAILS				
Outer / Interior material	Polyethylene	Polyethylene	Polyethylene	Polyethylene
Material of interior container	Polyethylene	Polyethylene	Polyethylene	Polyethylene
Insulation material and thickness	PU foam / 100 mm	PU foam / 100 mm	PU foam / 100 mm	PU foam / 100 mm
Operating voltage range AC	220-240 V - 50/60 Hz or 115 V / 60 Hz	220-240 V - 50/60 Hz or 115 V / 60 Hz	220-240 V - 50/60 Hz or 115 V / 60 Hz	220-240 V - 50/60 Hz or 115 V / 60 Hz
DC	12 V	12 V	-	-
CERTIFICATION				
WHO test procedure	E3 / PROC / 6	E3 / PROC / 6	E3 / PROC / 5	E3 / PROC / 5
WHO specifications	E3 / RF.6	E3 / RF.6	E3 / RF.2	E3 / RF.2
ACCESSORIES (standard)				
Cooling element at 0.3 l	4	4	-	-
User manual	1	1	1	1
Spirit level	1	1	1	1
Burner jet	1	-	1	-
Gas hose + 2 clips	1	-	1	-
Plastic separation wall	-	1	2	2
Aluminium separation wall	1	1	-	-
Aluminium Icepack holder	-	-	2	2
Mesh ring kit	-	1	-	-
Filling funnel and brush	-	1	-	1
Cosmos 8 burner + 2 wicks	-	1	-	1
Aladin 32 burner with glass + 2 wicks	-	-	-	1
Kerosene tank	-	1 (with tank support)	-	1
Heating element	-	-	1	1
Reflector	-	-	-	1
Aluminium angel for vaccine storage	-	1	-	-
Screwdriver + combination wrench	-	1	-	-



For transporting vaccines from different storage centres to vaccination sites

RCW passive / TFW active

Vaccine Transport Boxes

> in accordance with ADR / RID / IMDG / ICAO-TI / IATA-DGR, in compliance with WHO guidelines & PQS certified

Designed for transporting vaccines from different storage centres to the various vaccination sites (regional centres, health centres or as part of vaccination campaigns), these passive transport containers ensure an unbroken Cold Chain for transport periods between 24 hours and 8 days.

The boxes are made of rotomoulded polyethylene – a virtually indestructible plastic – and are characterised by an strength for protection against drops and knocks (as proven by drop test), as well as a perfect withstand against corrosion.

The polyurethane foam injected between the double walls of these boxes ensures perfect insulation of the contents and thus preservation of vaccine quality even over longer periods of transport. Used with frozen ice packs, they are fully self-sufficient with respect to the ambient environment and therefore ideal for transport stages.

The lid ensures a perfect seal for these containers and is equipped with rotomoulded grooves for facilitating stacking of the boxes, while the hinges are recessed to prevent getting caught on other boxes during handling.

Declaration of Conformity (in accordance with ADR / RID / IMDG / ICAO-TI / IATA-DGR)

> European agreement concerning the international carriage of dangerous goods by road (ADR) and by railway (RID), directive 2008 / 68 / EC.

> European agreement concerning the international carriage of dangerous goods by sea transport (IMDG), directive 2002 / 84 / EC.

> International agreement for air transport (ICAO-TI / IATA-DGR).

RCW 4 and RCW 12 may contain goods of packing groups I, II and III

RCW 8 and RCW 25 may contain goods of packing groups II and III

Test reports of the accredited test laboratory IBE-BVI, Belgium.

RCW 4

The **RCW 4** is the smallest model in this range. It is easy to handle, thanks to its shoulder strap. The RCW 4 is fitted with a liquid crystal thermometer to monitor the inside temperature, with a polystyrene interior container and with a synthetic separation wall to prevent direct contact between the temperature-sensitive materials and the ice-packs.

PQS Certified E004/002

+43°C / +5°C

Performance	RCW 4
• Cooling	Passive
• Vaccine storage gross volume	3.61 L
• Required Ice-packs (for vaccine)	1 x 0.6 L 6 x 0.3 L

Cold Life (up to +10°C) at +43°C = 30.3 h
Cool Life (up to +20°C) at +43°C = 6.7 h
Warm Life (down to 0°C) at -20°C = 12.9 h

RCW 8

The **RCW 8** is perfectly suited for the transport of vaccine. Its internal polystyrene compartment protects the vaccine against direct contact with the frozen icepacks. Transparent folders containing identification documents at the front of the RCW 8 allow the contents to be identified without having to open the lids. The internal temperature can be displayed by an optional temperature recorder located in the container.

PQS Certified E004/003

+43°C / +5°C

Performance	RCW 8
• Cooling	Passive
• Vaccine storage gross volume	7.05 L
• Required Ice-packs (for vaccine)	10 x 0.6 L 2 x 0.3 L

Cold Life (up to +10°C) at +43°C = 57.9 h
Cool Life (up to +20°C) at +43°C = 12 h
Warm Life (down to 0°C) at -20°C = 21.6 h

PASSIVE SYSTEM I RCW
Vaccine Transport Boxes

RCW 12

The **RCW 12** is sufficiently large to accommodate up to 9.23 L of vaccine. Transport is done on short distances by the RCW 12 type. The one latch of the lid can be lead-sealed to prevent any unauthorised handling of the contents during transport. Standard equipment that comes with the RCW 12 includes a removable steel compartment as well as 14 icepacks (of 600 ml).

PQS Certified E004/004

+43°C / +5°C

Performance

- Cooling
- Vaccine storage gross volume
- Required Ice-packs (for vaccine)

RCW 12

Passive
9.23 L
14 x 0.6 L

Cold Life (up to +10°C) at +43°C = 114.9 h
Cool Life (up to +20°C) at +43°C = 26.4 h
Warm Life (down to 0°C) at -20°C = 40.9 h

RCW 25

Foreseen for a transport of larger quantities, the **RCW 25** is sufficiently large to accommodate up to 20.66 L of vaccine. A plastic reinforcement at the bottom of the RCW 25 allows the removable steel compartment to be held in place. The latches of the lid can be lead-sealed to prevent any unauthorised handling of the contents during transport. Standard equipment that comes with the RCW 25 includes a removable steel compartment as well as 24 icepacks (of 600 ml).

PQS Certified E004/005

+43°C / +5°C

Performance

- Réfrigération
- Volume brut : stockage de vaccins
- Nombre d'Icepacks* requis (pour vaccins)

RCW 25

Passive
20.66 L
24 x 0.6 L

Cold Life (up to +10°C) at +43°C = 134.6 h
Cool Life (up to +20°C) at +43°C = 34.4 h
Warm Life (down to 0°C) at -20°C = 49.5 h

RCW passive

Model	RCW 4 Vaccine carrier, long range	RCW 8 Small cold box, short range	RCW 12 Small cold box, long range	RCW 25 Large cold box, long range
PERFORMANCE				
Cooling	Passive	Passive	Passive	Passive
Gross volume (l)	8	20	24	44
Vaccine storage gross volume (l)	3.61	7.05	9.23	20.66
Required Ice-packs (for vaccine)	1 x 0.6 L + 6 x 0.3 L	10 x 0.6 L + 2 x 0.3 L	14 x 0.6 L	24 x 0.6 L
Cold life (up to +10°C) at +43°C	30.3 h	57.9 h	114.9 h	134.6 h
Cool life (up to +20°C) at +43°C	6.7 h	12 h	26.4 h	34.4 h
Warm life (down to 0°C) at -20°C	12.9 h	21.6 h	40.9 h	49.5 h
DIMENSIONS / WEIGHTS				
Outer dimensions H x W x D (mm)	299 x 362 x 283	437 x 588 x 288	499 x 550 x 475	499 x 710 x 550
Inner dimensions H x W x D (mm)	186 x 260 x 156	245 x 460 x 180	270 x 340 x 260	264 x 496 x 334
Dimensions of interior container H x W x D (mm)	135 x 245 x 90	167 x 345 x 132	192 x 310 x 237	192 x 390 x 237
Shipping dimensions H x W x D (mm)	320 x 380 x 300	470 x 610 x 310	530 x 570 x 490	530 x 730 x 570
Shipping weight (kg)	4.2	11	17	23
Net weight - empty (kg)	3.1	6.8	11.7	15.9
Gross weight - fully stocked (kg)	7.3	16.4	23.3	38.9
TECHNICAL DETAILS				
Outer / Interior material	Polyethylene	Polyethylene	Polyethylene	Polyethylene
Material of interior container	Polystyrene	Polystyrene	Stainless Steel	Stainless Steel
Insulation material and thickness	PU foam / 23-27 mm	PU foam / 50-60 mm	PU foam / 90-105 mm	PU foam / 90-105 mm
CERTIFICATION				
WHO test procedure	E004 / VC01-VP.1	E004 / CB01-VP.1	E004 / CB01-VP.1	E004 / CB01-VP.1
WHO specifications	E004 / VC01.1	E004 / CB01.1	E004 / CB01.1	E004 / CB01.1
PQS Code	E004 / 002	E004 / 003	E004 / 004	E004 / 005
ACCESSORIES (standard)				
Cooling element at 0.3 l	6	2	-	-
Cooling element at 0.6 l	1	10	14	24
Vial Insert PPI	1	-	-	-
Polystyrene interior container	-	1 (with lid)	-	-
Stainless steel interior container	-	-	1 (with lid)	1 (with lid)
Document compartment (front)	2	1	-	-
Document compartment (back)	1	-	-	-
Carrying strap (adjustable)	1	1	-	-
Securing plastic frame for interior container	-	-	-	1

TFW 800

The **TFW 800**, designed exclusively for freezing waterpacks for the Cold Chain models, can accommodate up to 187 waterpacks, and freeze up to 36 kg of ice within 24 hours at an ambient temperature of +43°C. It is equiped with a LED display, for the internal temperature, a visual alarm, a thermostat and a quickfreeze function.

PERFORMANCE	
Cooling	Active (Compressor)
Gross volume (l)	290
Waterpack storage capacity (l)	187 x 0.6 L
Freezing ice-pack capacity	60 x 0.6 L / 24 h at +43°C
Hold Over Time	14 h at +32°C
Energy consumption	3.35 KWh / 24 h at +43°C
Power consumption : Ice-pack freezing	6.35 KWh / 24 h
Cool down	3.98 KWh / 24 h
Climate Zone	Hot zone (+43°C)
DIMENSIONS / WEIGHTS	
Outer dimensions H x W x D (mm)	1830 x 725 x 595
Inner dimensions H x W x D (mm)	1498 x 435 x 460
Shipping dimensions H x W x D (mm)	2130 x 830 x 710
Shipping weight (kg)	109
TECHNICAL DETAILS	
Insulation material and thickness casing / door	PU foam 35 - 85 mm / 67.5 - 75 mm
Refrigerant type and quantity	R134a 245g
Operating voltage range	220-240 V - 50/60 Hz or 110-120 V - 60 Hz
CERTIFICATION	
WHO test procedure	E003 / FZ01-VP.1
WHO specifications	E003 / FZ01.1
PQS code	E003 / 004

Eutectic Cooling System

For RCW models during long-term, temperature controlled transport without power supply (e.g transport by air or rail)

B Medical Systems's Eutectic Cooling Elements are heat accumulation elements, containing a so-called phase change material (PCM). The PCM stores latent heat at the required temperature at phase change (liquid / solid). The stored product will therefore remain at a near constant temperature for a specific period of time, without requiring active temperature control. The Eutectic Cooling Elements must be charged for the specified temperature prior to each use.

The phase change material (PCM) allow a safe transport during all seasons. From winter to summer, the PCM have the same „melting point" which is :

- **-32°C : Transport of plasma**
- **+4°C : Transport of RBC**
- **+22°C : Transport of unscreened blood**
- **+37°C : Transport of whole blood**

B Medical Systems's Eutectic Cooling Elements are available in 2 sizes : 0.3 l and 0.6 l

Please contact us for details.

Cooling Element	PCM -32	PCM +4	PCM +22	PCM +37
Color	Orange	Blue	Green	Yellow
Nominal Temperature	-32°C	+4°C	+22°C	+37°C
Application	under -30°C	+2°C to +8°C	+15°C to +25°C	over +35°C
Preconditioning Temperature / Time	-40°C / > 24 h	+4°C / > 24 h	+22°C / > 24 h	+37°C / > 24 h

Temperature Data Loggers

For perfect temperature control

fig. RCW 8

Testo 174T mini data logger, 1-channel

- incl. wall bracket, battery (2 x CR 2032 lithium) and calibration protocol
- High data integrity, even with empty battery
- Large data memory
- Watertight in accordance with IP65
- Temperature range -30°C to +70°C
- Starter set including logger, interface and software also available

Testo 176 T2, 2-channel temperature logger

- with connections for highly accurate external sensor (Pt100) incl. wall holder, lock, battery and calibration protocol
- Large memory for 2 million measurement values - large, easily legible display up to 8 years battery life
- Standard battery (AA) replaceable by user
- SD card slot
- Temperature range -50°C to +400°C

LogTag temperature data logger TRID30-7R

- For continious, tamper-proof temperature recording
- With 30 days statistic display
- Temperature range -30°C to +60°C

LogTag temperature data logger TRID30-7FW

- Vaccine Refrigerator Temperature Recorder with 30 day summary display compliant to WHO PQS specification E006/TR06.3

LogTag temperature data logger TRED30-7R

- For continious, tamper-proof temperature recording
- With 30 days statistic display and connector for remote temperature control
- Temperature range -40°C to +99°C

LogTag Remote probe

- 1.5 m cable, 140 mm tipped sensor

LogTag USB interface cradle

- For reading out the data recordings via PC

B Medical Systems

Your global partner to save lives.

BIOMEDICAL REFRIGERATION

Special purpose refrigerators and deep freezers, storage and transport concepts for Laboratory, Medicine, Research, Biotechnology and Life Sciences.

BLOOD SAFETY

For a reliable cold chain within the scope of safety of blood transfusions.

COLD CHAIN

Comprehensive range of storage and active / passive transport systems for the storage and distribution of vaccines and in general of all temperature-sensitive preparations under various climatic and technical conditions.

BLOOD CHAIN

Storage and active / passive transport systems dedicated to the military for the supply of blood, vaccines and medicines to the front line.

For more information :

B Medical Systems S.à r.l
17, Op der Hei
L - 9809 Hosingen, Luxembourg
Tel. : + 352 92 07 31-1
Fax : + 352 92 07 31-300
info@bmedicalsystems.com
www.bmedicalsystems.com