



TECHNOLOGY FOR LIFE

 **Dometic**



BLOOD BANK REFRIGERATORS

Biomedical Refrigeration | BR

- Legally safe storage of blood at +4°C
- In compliance with international standards and directives

www.dometic.lu

BR range



BR 55 G

BR 110 G^G

BR 250 G / G^G

BR 410 G/G^G

BR 490 G/G^G

BR 750 G/G^G

Refrigerators for the legally safe storage of blood bags / erythrocyte concentrates at +4°C

(according to DIN 58371 & ÖNORM K 2030)

The interior temperature of the blood refrigerators is monitored via an autonomous control sensor and adjusted to +4°C. This ensures that the product temperature of the stored preparations is kept at +4°C ± 1.5°C.

The models of the BR range feature a natural defrosting system that does not affect the product temperature of the stored preparations during defrosting.

BR models are equipped with a glass door for quick checks and pre-selection of the refrigerator's content.

The transparent front panel of the ST-Drawers, which are part of the standard equipment of the BR models, minimize cold losses when the door is opened.

Models BR 250 G – 750 G are available as 220 V and 115 V version.



The BR range comprises 6 Blood Refrigerators that are built in compliance with the requirements of:

- DIN 58371 (Germany, "Blutkonserven-Kühlgeräte"/ Blood Refrigerators)
- ÖNORM K 2030 (Austria, "Blutkonserven-Kühlschränke"/ Blood Refrigerators)

In conformity with:

- AS 3864 (Australia, "Medical refrigeration equipment – for the storage of blood & blood products")
- BS 4376-1: 1991 (UK, "Electrically operated blood storage refrigerators. Specifications for closed reach-in types")
- European Directive "Guide to preparation, use and quality assurance of blood components"

Blood Bank Refrigerators I +4°C

BR 55 G



	BR 55 G
Gross volume (l)	55
Net volume (l)	37
Storage capacity (blood bags)	12 at 450 ml each
	20 at 350 ml each
Energy consumption (Kwh/24h)	0.60
Noise level (dB(A))	34

BR 110 GG



	BR 110 GG
Gross volume (l)	106
Net volume (l)	92
Storage capacity (blood bags)	54 at 450 ml each
	72 at 350 ml each
Energy consumption (Kwh/24h)	0.75
Noise level (dB(A))	41

BR 250 G / GG



	BR 250 G	BR 250 GG
Gross volume (l)	246	
Net volume (l)	167	
Storage capacity (blood bags)	120 at 450 ml each	
	160 at 350 ml each	
Energy consumption (Kwh/24h)	1.50	0.95 (37% less)
Noise level (dB(A))	49	42

BR 410 G / GG



	BR 410 G	BR 410 GG
Gross volume (l)	408	
Net volume (l)	319	
Storage capacity (blood bags)	240 at 450 ml each	
	320 at 350 ml each	
Energy consumption (Kwh/24h)	1.70	1.00 (41% less)
Noise level (dB(A))	51	42

BR 490 G / GG



	BR 490 G	BR 490 GG
Gross volume (l)	489	
Net volume (l)	395	
Storage capacity (blood bags)	300 at 450 ml each	
	400 at 350 ml each	
Energy consumption (Kwh/24h)	1.90	1.10 (42% less)
Noise level (dB(A))	51	42

BR 750 G / GG



	BR 750 G	BR 750 GG
Gross volume (l)	746	
Net volume (l)	620	
Storage capacity (blood bags)	450 at 450 ml each	
	550 at 350 ml each	
Energy consumption (Kwh/24h)	2.00	1.20 (40% less)
Noise level (dB(A))	51	42

+4°C | Dometic BR

The Safety Standards developed by Dometic define certain significant technical features of a product. These ensure the safe storage of the preparations as well as the trend-setting safety of the user.



The Dometic Gold Safety Standard efficiently complements the safety requirements of the Dometic Silver Safety Standard and therefore exceeds even the official standards. Gold models are denominated with a "G".



The new "green" models (denominated with a "G") convince by their technical optimizations in terms of economy and environmental protection. Characteristic features are:

- use of natural gases as refrigerants
- 40-60% less energy consumption
- up to 40% less power needed
- over 80% less heat ejection

In addition, the new "green" models stand out because of improved hold over times thanks to optimized door insulation and drastically reduced noise level for more workplace convenience.

MODEL	BR 55 G	BR 110 G ^G	BR 250 G/G ^G	BR 410 G/G ^G	BR 490 G/G ^G	BR 750 G/G ^G
DIN 58371 & ÖNORM K 2030 ("Blood Refrigerators")	■	■	■	■	■	■
Glass door with triple insulating glazing	-	■	■	■	■	■
GMP Clean Room Class A / ISO 5 (ISO EN 14644-1)	-	■	■	■	■	■
GMP Clean Room Class B / ISO 6 (ISO EN 14644-1)	■	-	-	-	-	-
Dometic Electronic	■	■	■	■	■	■
Key-operated power switch (power ON/OFF)	■	■	■	■	■	■
Safety door lock	■	■	■	■	■	■
Digital temperature indicator (display: 0.1 digits)	■	■	■	■	■	■
Controlled fan cooling system for constant temperature and even temperature distribution across the entire refrigerating chamber. Automatic fan switch-off when front door opens	■	■	■	■	■	■
Self-contained alarm system with integrated battery takes over the alarm function and temperature value measurements in case of power failure for at least 48 hours	■	■	■	■	■	■
Acoustic/visual alarm signal in case of temperature alarm and power failure	■	■	■	■	■	■
All relevant data of temperature alarm and power failure alarm are stored in the alarm history. Such as date and time of start and end, min. max and average temperature	■	■	■	■	■	■
Alarm function test: simulation of a temperature rise or drop in order to test the alarm system functionality	■	■	■	■	■	■
Control via self-diagnostic system	■	■	■	■	■	■
Safety thermostat prevents dropping of the cold storage products' temperature below +2°C	■	■	■	■	■	■
Interior lighting	■	■	■	■	■	■
Door opening alarm	■	■	■	■	■	■
Remote transmission alarm signal (via potential-free contact) in case of temperature alarm (change-over contact)	■	■	■	■	■	■
Remote transmission alarm signal (via potential-free contact) in case of power failure (change-over contact)	■	■	■	■	■	■
Automatic closing of the front door below a door opening angle of 90°	-	-	■	■	■	■
Interior made from stainless steel	-	■	■	■	■	■
Climate class (ambient temperature range) SN (+10°C to +32°C)	■	■	■	■	■	■
Climate class (ambient temperature range) SN/T (+10°C to +43°C)	-	■	■	■	■	■
Smooth castors with stabilizers for optimum flexibility of movement	-	-	■	■	■	■
RS 485 interface for the display of all operating and control functions (hardware and software settings) via DMN monitoring software on a peripheral device (computer)	■	■	■	■	■	■
DMN software package	■	■	■	■	■	■
DCU – Dometic Communication Unit	□	□	□	□	□	□

■ standard □ optional – not available

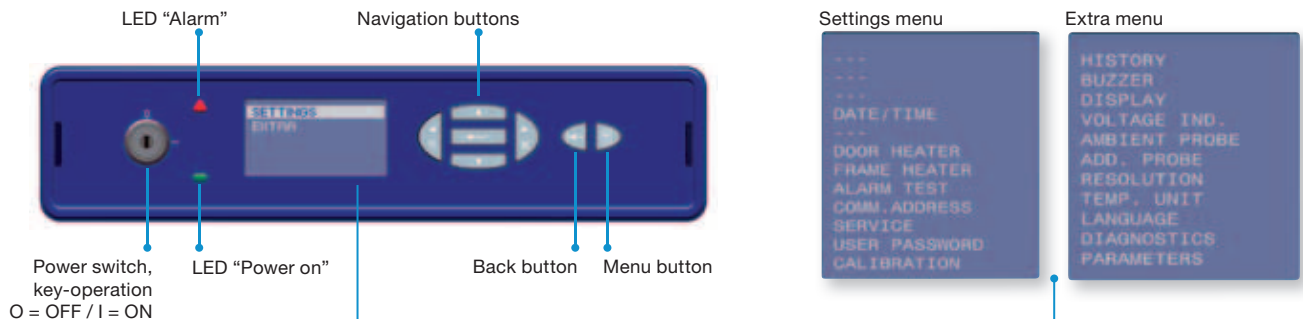


DIN 58371

ÖNORM K 2030

The new and innovative Dometic Electronic (operation and control panel) assures thanks to its password protected settings menu optimum protection for your stored preparations.

The menu structure of the modern and user-friendly graphic display offers a simple and intuitive utilization.



The new Dometic Electronic also offers:

- A wide range of adjustment and diagnostic facilities as well as additional protection / warning operations (via external alarm operations, histories and individual display signals).
- An optional PT100 sensor inlet to show the sensor's temperature data on the display as well as forwarding and further processing via a 4 ... 20 mA outlet.
- An optional 4...20 mA outlet to transmit temperature data of a sensor connected to the electronic.
- Connection facilities for additional (optional) temperature sensors.
- DMN (Dometic Monitoring Network) and the (optional) DCU (Dometic Communication Unit) allows illustration of texts on the product's display.

The refrigeration system of the BR models is optimally adjusted with regard to power consumption, waste heat and noise development. The autonomous display sensor – located in a reference body defined by standards (for models BR 250 G/G6 – BR 750 G/G6) – shows the temperature changes on the operation and control panel, in analogy to the temperature within the preparation to be cooled.

This ensures that the entire product still has the allowed temperature ($+4^{\circ}\text{C} \pm 2^{\circ}\text{C}$) if an alarm is triggered.

The (subsequent) control of the product temperature and the documentation of the temperature changes can be carried out via an optional temperature recorder (in form of a circular chart recorder) or via the optional DCU via the Monitoring & Visualization software DMN.



Reference body for control sensor with reference fluid 100 ml DOW coming 200-5CST (Silicon Oil). Simulates the temperature inertia of the stored product.

Technical Data

BR 55 G

BR 110 G^G



Gross volume	55 l	106 l
Net volume	37 l	92 l
Storage capacity: blood bags at 450 ml each / approx.	12	54
Storage capacity: blood bags at 350 ml each / approx.	20	72
External dimensions (H x W x D)	645 x 486 x 475 mm	820 x 560 x 580 mm
External dimensions (H x W x D) with mounted temperature recorder	820 x 486 x 475 mm	-
Inner dimensions (H x W x D)	487 x 416 x 295 mm	495 x 470 x 455 mm
Net weight with standard equipment	33 kg	76 kg
Set temperature (preset - not changeable, l by DIN 58371)	+4°C	+4°C
Temperature cold alarm limit (preset - not changeable, l by DIN 58371)	+2°C	+2°C
Temperature warm alarm limit (preset - not changeable, l by DIN 58371)	+6°C	+6°C
Control sensor	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B
Precision (from -80°C to +180 °C)	± 0,2°C	± 0,2°C
Display sensor	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B
Precision (from -80°C to +180 °C) in reference body with reference fluid 100 ml DOW corning 200-5CST (Silicon Oil)	± 0,2°C	± 0,2°C
Frequency 220-240V	50 Hz	50 Hz
Frequency 115V	-	-
Power 220-240V	85 W	80 W
Power 115V	-	-
Energy consumption 220-240V	0.60 kWh/24h	0.75 kWh/24h
Energy consumption 115V	-	-
Heat emission 220-240V	65 kcal/h	18 kcal/h
Heat emission 115V	-	-
Compressor running time 220-240V	31%	26%
Compressor running time 115V	-	-
Noise level at 1m height & 1m distance 220-240	34 dB(A)	41 dB(A)
Noise level at 1m height & 1m distance 115	-	-
Accu data / function time of the control panel when power failure	12V -7 AH / 48 hours	12V -7 AH / 48 hours
Climate class (ambient temperature range)	SN (+10°C to +32°C)	SN / T (+10°C to +43°C)
Relative humidity at ambient temperature	≤ 75%	≤ 75%
Defrosting technique	natural	natural
Refrigerant type	R134a	R600a
Door insulation	85 mm	65 mm, with triple insulating glazing
Casing insulation (polyurethane)	33 - 46 mm	25 mm PU + 20 mm VIP
Hold over time (from +4°C to +10°C)	105 min	102 min
Safety class	I	I
EMC directive	2004 / 108 / EC	2004 / 108 / EC
Low voltage directive	2006 / 95 / EC	2006 / 95 / EC
GMP - clean room classification	B / ISO 6	A / ISO 5
Material inner body	PS (Polystyrene)	Stainless steel (V2A - 1.4301)
Material outer casing & door	Galvanized sheet steel (STO2Z-AZ150)	Galvanized sheet steel (STO2Z-AZ150)
Material (Drawers)	-	Stainless steel (V2A - 1.4301)
Material (Wire Shelves)	SAN (Styrol)	Wire DIN 172-2, PA11 coated
Material (N-Rack)	Polycarbonate, transparent	Polycarbonate, transparent
Color outer casing	White (similar RAL 9010)	White (similar RAL 9010)
Color contrasts	Blue (similar RAL 5002)	Blue (similar RAL 5002)

Interior Equipment & Options (Concerning further information on accessories please see our separate leaflet "Racking & Storage Systems")

Standard interior equipment	ST-Drawers	2 Containers ■	2 ST-Drawer with Front Cover ■
	Wire shelves	1 ■	-
DCU LAN/WLAN		<input type="checkbox"/>	<input type="checkbox"/>
RS 485 interface		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DMN Software package		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ambient temperature sensor		<input type="checkbox"/>	<input type="checkbox"/>
Potential-free contact in case of power failure		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Integrated inlet for external sensor (installed by customer)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Display sensor in reference bottle with reference fluid		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Condenser filter		-	-
Smooth castors with stabilizers for optimum flexibility of movement		-	-
Interior lighting		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature recorder in form of a circular chart recorder / Measuring / recording range: -10°C to +20°C		Mounted for 24h or 7 days <input type="checkbox"/>	Integrated for 24h or 7 days <input type="checkbox"/>
External water cooling		-	-
Door hinge right		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Door hinge left		<input type="checkbox"/>	<input type="checkbox"/>
Wooden packaging for ocean transport / export		<input type="checkbox"/>	<input type="checkbox"/>

■ standard / □ optional / - not available

All values were measured at +25°C ambient temperature and without load (with inertial mass).

BR 250 G / G6

BR 410 G / G6

BR 490 G / G6

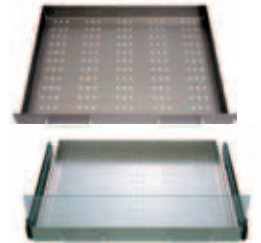
BR 750 G / G6

Equipment / Options (extract)



246 l	408 l	489 l	746 l
167 l	319 l	395 l	620 l
120	240	300	450
160	320	400	550
1305 x 850 x 785 mm	1735 x 850 x 785 mm	1950 x 850 x 785 mm	1990 x 910 x 985 mm
655 x 680 x 552 mm	1085 x 680 x 552 mm	1300 x 680 x 552 mm	1352 x 730 x 760 mm
145/142 kg	187/180 kg	209/203 kg	262/256 kg
+4°C	+4°C	+4°C	+4°C
+2°C	+2°C	+2°C	+2°C
+6°C	+6°C	+6°C	+6°C
PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B
± 0,2°C	± 0,2°C	± 0,2°C	± 0,2°C
PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B	PT1000 2-WIRE 1/3DIN CL.B
± 0,2°C	± 0,2°C	± 0,2°C	± 0,2°C
50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
60 Hz	60 Hz	60 Hz	60 Hz
215 W	240 W	265 W	280 W
295 W	285 W	320 W	330 W
1.50 kWh/24h	1.70 kWh/24h	1.90 kWh/24h	2.00 kWh/24h
0.95 kWh/24h	1.00 kWh/24h	1.10 kWh/24h	1.20 kWh/24h
1.40 kWh/24h	1.65 kWh/24h	2.00 kWh/24h	2.10 kWh/24h
31 kcal/h	43 kcal/h	48 kcal/h	58 kcal/h
22 kcal/h	24 kcal/h	27 kcal/h	29 kcal/h
36 kcal/h	49 kcal/h	58 kcal/h	62 kcal/h
18%	21%	23%	26%
14%	20%	21%	22%
49 dB(A)	51 dB(A)	51 dB(A)	51 dB(A)
42 dB(A)	42 dB(A)	42 dB(A)	42 dB(A)
55 dB(A)	55 dB(A)	55 dB(A)	55 dB(A)
12V -7 AH / 48 hours	12V -7 AH / 48 hours	12V -7 AH / 48 hours	12V -7 AH / 48 hours
SN / T (+10°C to +43°C)	SN / T (+10°C to +43°C)	SN / T (+10°C to +43°C)	SN / T (+10°C to +43°C)
≤ 75%	≤ 75%	≤ 75%	≤ 75%
natural	natural	natural	natural
R134a	R600a	R134a	R600a
100 mm, with triple insulating glazing	100 mm, with triple insulating glazing	100 mm, with triple insulating glazing	85 mm, with triple insulating glazing
85 - 95 mm	85 - 95 mm	85 - 95 mm	90 mm
192 min	204 min	210 min	168 min
2004 / 108 / EC	2004 / 108 / EC	2004 / 108 / EC	2004 / 108 / EC
2006 / 95 / EC	2006 / 95 / EC	2006 / 95 / EC	2006 / 95 / EC
A / ISO 5	A / ISO 5	A / ISO 5	A / ISO 5
Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)
Galvanized sheet steel (STO2Z-AZ150)	Galvanized sheet steel (STO2Z-AZ150)	Galvanized sheet steel (STO2Z-AZ150)	Galvanized sheet steel (STO2Z-AZ150)
Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)	Stainless steel (V2A - 1.4301)
Wire DIN 172-2, PA11 coated	Wire DIN 172-2, PA11 coated	Wire DIN 172-2, PA11 coated	Wire DIN 172-2, PA11 coated
Polycarbonate, transparent	Polycarbonate, transparent	Polycarbonate, transparent	Polycarbonate, transparent
White (similar RAL 9010)	White (similar RAL 9010)	White (similar RAL 9010)	White (similar RAL 9010)
Blue (similar RAL 5002)	Blue (similar RAL 5002)	Blue (similar RAL 5002)	Blue (similar RAL 5002)

Temperature recorder (in form of a circular chart recorder), mounted for model BR 55 G and integrated for models BR 110 G6 - 750 G/G6



ST-Drawer with/without Front Cover, on telescopic runners with safety stop (partly standard or optional, for models BR 110 G6 - 750 G/G6)



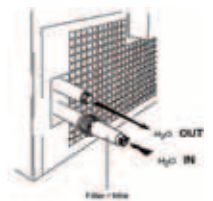
Wire Shelf



N-Racks with/without Front Cover can be equipped with Rilsan Separator (optional, for models BR 250 G/G6 - 750 G/G6)



Remote temperature and power failure alarm



Water cooling, external (ex factory) (optional, for BR model range)

1 ST-Drawer with Front Cover incl. 5 N-Racks without Front Cover	2 ST-Drawer with Front Cover incl. 5 N-Racks without Front Cover	3 ST-Drawer with Front Cover incl. 5 N-Racks without Front Cover	3 ST-Drawer with Front Cover incl. 5 S-Racks without Front Cover
1	2	2	2
incl. 5 N-Racks with Front Cover	incl. 5 N-Racks with Front Cover	incl. 5 N-Racks with Front Cover	incl. 5 S-Racks with Front Cover
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrated for 24h or 7 days	Integrated for 24h or 7 days	Integrated for 24h or 7 days	Integrated for 24h or 7 days
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DMN – Dometic Monitoring Network

Universal software for collection, long-term recording and visualization of temperature data.

- Complete activity list (password protected).
 - Integrated event and activity history of all appliance components.
 - Graphical visualisation of all temperature curves.
 - Connection to existing or third-party appliances via network technology (LAN, WLAN, WAN).
 - Simultaneous data monitoring and recording.
 - Possibility for specific and individually configurable alarm forwardings, e. g. via email, SMS (with optional GSM module) or via DECT.
 - Simple and intuitive utilization.
 - Essential price advantage compared to a traditional circular chart recorder and its spare parts.
- Free of charge for all Dometic Gold & Silver ranges
 - Real-time temperature output for third-party software

Your essential advantages:

- Access to the data within your entire network via one central database
- Economy of time and money as regular changes of recorder paper, ink and battery is not necessary.



DCU – Dometic Communication Unit

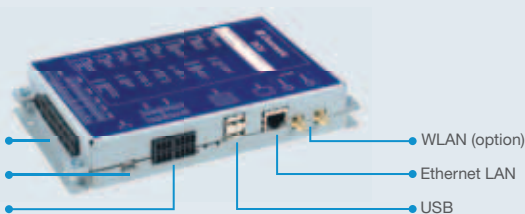
Hardware module that notes all operating conditions and passes them through to a central data base – via local network, to which devices are connected.

- Interface connection of Dometic appliances to an existing network.
 - The DCU offers direct connection to the Ethernet, even wireless, to the serial BUS RS 485, as well as to the central building control system (4 ... 20 mA).
 - Possibility of connection of actors (4 ... 20 mA out).
 - Digital IN/OUT (customer-specific use of these connections is programmable).
 - The integrated USB port allows stored data to be written to an external memory stick.
 - Recording and storage of relevant data of the appliance.
 - The DCU replaces the paper temperature recorder.
 - The DCU works with all Gold electronics from 2000 on
 - All data are recorded and saved in the data base of the DMN and are available for analysis at any time.
- Possibility of connection of several additional self-sufficient temperature sensors (up to 4 PT1000 & 2 PT100).

Your essential advantages:

- One integrative system for collecting all temperature relevant appliances and ambients.
- Many different connection facilities allow flexible upgrades for individual projects.

CON1: DC inlet
CON2: Electronic
CON3: -----
CON4-6: Add. sensors
CON7: 4-20mA / RS 232
CON8: RS 485



DMN & DCU in combination offer a highly flexible system that is adaptable to specific customer requirements

- **Complete & legally safe documentation of temperature data**
- **Comprehensive applications and diagnostic possibilities**