



BIOMEDICAL



Protection for storage
CE II 3G nA IIB T6

VTs 098

BIOMEDICAL ULT FREEZER

With a compact design, this undercounter fits perfectly beneath your workbench, providing a storage solution that is ideal for places where space is limited.



-20°C
-86°C

DIMENSIONS

Outer Dimensions HxWxD, mm	808x595x585
Depth incl. door handle	695
Height + feet/castors	808 + 22-27
Inner Dimensions HxWxD, mm	675x430x425
Weight Gross/Net, kg	87 / 61
Material inner cabinet	Stainless Steel
Material outer cabinet	Painted Steel
Packaging weight, kg	26
Packaging dimensions HxWxD, mm	1100x800x750
Insulation thickness	80
Insulation type	Polyurethane with Cyclopentane
Mobility	4 x adjustable feet
Refrigerant, Type / gram	Nature R 2/109gr

CONTROLLER

Controller language	No Language - only 3 digits
USB Connection	Yes
Datalogging	Yes
High/Low temp. Alarm	Yes
Open door alarm	Yes
Probe failure alarm	Yes
Power failure alarm	Yes

STORAGE

Volume, Gross/Net, L	92 / 92
Shelves	3
Cryoboxes "2	63

FEATURES

Lock	Yes
LED light	Yes
Battery Backup For Controller	Yes - 24h
Porthole	Yes - Ø 14,5mm
Dry contact	Yes
Castors	Optional
Door	Solid
Door reversibility	No
Vacuum valve	Yes
VIP (Vacuum panel)	Yes
Door frame heater	Hot gas loop



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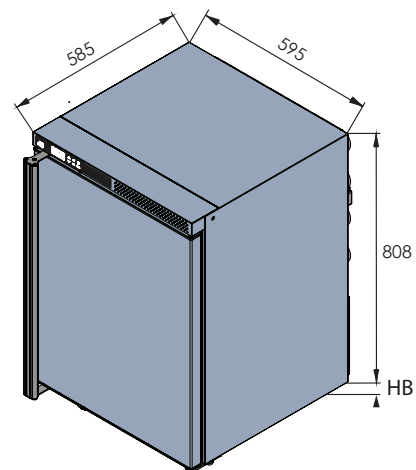
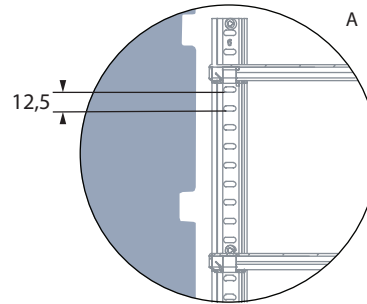
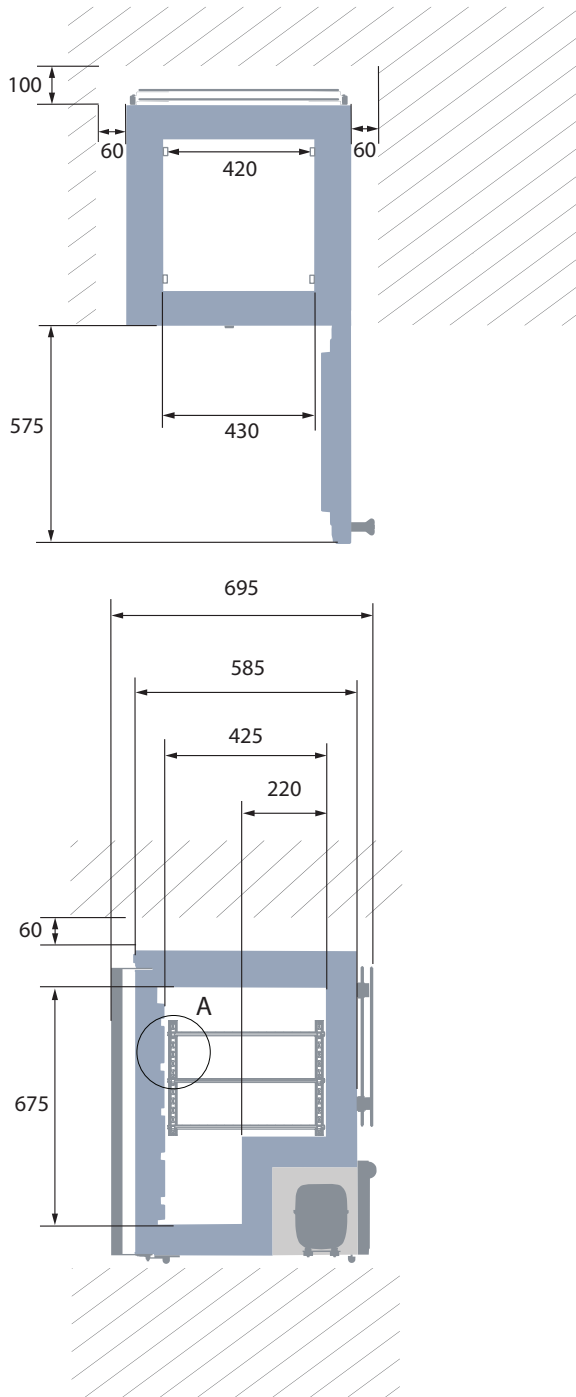
Voltage/Frequency		
Voltage/Hz		230V/50Hz
Max Ambient		
°C		25°C
Max Humidity		
% rh		65%
PERFORMANCE		
All data in RT20°C		
Temperature Range		
°C		-20 to -86
Uniformity in performance - difference between top and bottom		
°C		+/- 2,0
Pull down time		
Minutes		168 min to -75°C
Hold over time		
Minutes		102 min to -60°C
Noise		
dB		54
Energy Saving Mode		
kWh/24h		NA
Energy Consumption, kWh / 24h		
kWh/24h		6,562 kWh/24h Set -82
Energy year		
kWh/year		2395,13kWh/y Set -82°C
Instant Power Consumption		
kW		PD 0,750-0,4/Stable 0,330
Heat Rejection*		
W		300
U-Value		
W/m ² K		0,18
COOLING COMPONENTS		
Refrigerant/Amount (gram)		
		Nature R 2/109gr
Number of compressors		
pcs		1
Variable speed compressor		
Yes/No		No
Internal air distribution (type of)		
		Static
Evaporator Fan		
Yes/No/Variable		No
Condenser Fan		
Yes/No/Variable		Yes
Number of probes		
pcs		1
Defrost		
Yes/No		No

* Heat Rejection is defined as average power based on energy consumption, rounded up to nearest 50W.




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All measurements in mm.

HB: Height of base
(HB is adjustable when given value is xx-xx)

22-27 
Adjustable foot

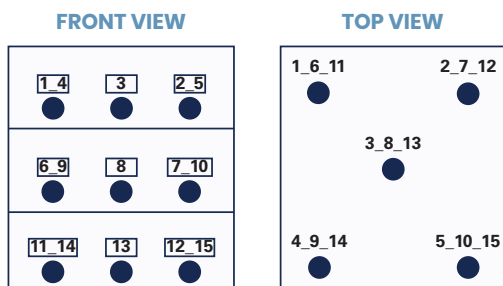


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SENSOR POSITION



MODEL

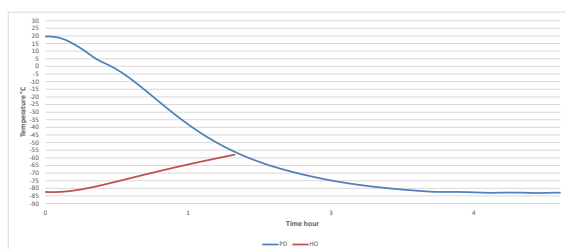
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Test type	8-point test
Test environment	Controlled conditions, empty cabinet
Ambient temperature	20°C
Humidity	60%
Set-point	-82°C
Sensor used	25gr tinned brass formed as a cylinder with a diameter of 15,2 mm
Installation	Appliance installed according to instruction manual conditions
Refrigerant	Nature R

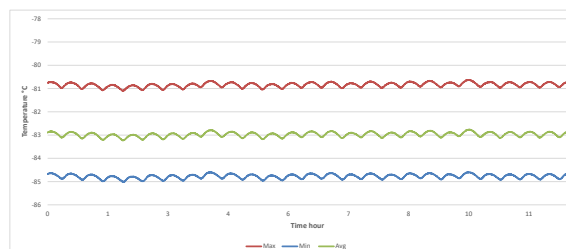
SENSOR TEMPERATURE

Sensor position	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Max	-80,9	-81,2	-81,1	-80,9	-80,6	-84,6	-84,2	-83,5	-83,4	-83,2	-83,6	-83,4	-83,8	-83,8	-83,6
Avg.	-81,1	-81,4	-81,3	-81,2	-80,8	-84,8	-84,4	-83,7	-83,6	-83,4	-83,8	-83,6	-84,1	-84,1	-83,9
Min.	-81,3	-81,6	-81,6	-81,4	-81,1	-85	-84,6	-83,9	-83,9	-83,6	-84,1	-83,8	-84,4	-84,4	-84,1

WARM UP & PULL DOWN



CYCLIC OPERATION



TYPICAL PERFORMANCE IN AMBIENT 20°C – EMPTY CABINET

Avg. cabinet temperature	-83°C
Peak variation from set-point	+1,7/-2,6°C
Stability in avg.	±0,1°C
1 min. door open recovery to -75°C avg. temperature	32 min.
Cycle rate on/off	22,7/4,7 min.
Duty cycle	82,4%
Energy consumption	6,56 kWh/day
Pull down time to -75°C avg. temperature	168 min.
Hold over time from -82°C to -60°C	102 min.
Sample temperature does not exceed	-70°C