



BIOMEDICAL



Protection for storage  
CE II 3G nA IIB T6

# R-90i Glass

## BIOMEDICAL REFRIGERATOR

With the smallest footprint, this unit is perfect for storing biomedical content in a room with limited space. The unit can be placed on a table for easy access in your work environment.

+2°C  
+20°C



DIMENSIONS		VALUE
Outer Dimension HxWxD		672x595x642
Inner Dimension HxWxD		481x475x495
Weight Gross/Net, kg		52 / 42
Material inner cabinet		ABS
Material outer cabinet		Painted Steel
Insulation thickness		50
Insulation type		Polyurethane with Cyclopentane
Air distribution		Dynamic
Mobility		Standard: Adjustable Feet - Option: Castors
Refrigerant, Type / gram		R600a / 39
Variable Speed Compressor		Yes - Adaptive Cooling Technology
Number of probes		4
CONTROLLER		VALUE
Controller		i-Care, Touch screen
Controller language		EN, DE, FR
USB Connection		Yes
Logging		Data, Alarms & Events
Temperature graph		Yes
High/Low temp. Alarm		Yes
Open door alarm		Yes
Probe failure alarm		Yes
Power failure alarm		Yes
STORAGE		VALUE
Volume, Gross/Net, L		90 / 76
Shelves, Full/Half		1 / 1
Shelf material		Perforated Alu
FEATURES		VALUE
Lock		Yes
LED light		Yes
Battery Backup for Controller, 24h		Yes
Safety Thermostat		Yes
Porthole		Yes - Ø 20 mm
Dry Contact		Yes
Reference bottle		Yes
Door		Glass
Door Features		Automatic: Closure < 90° - Hold Closure > 90°
Door Reversibility		Yes



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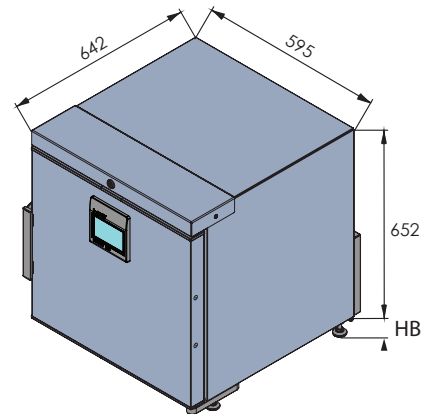
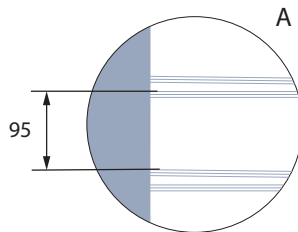
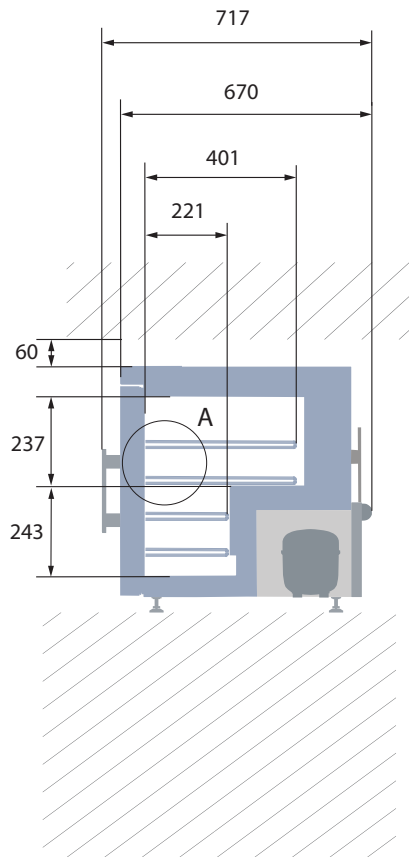
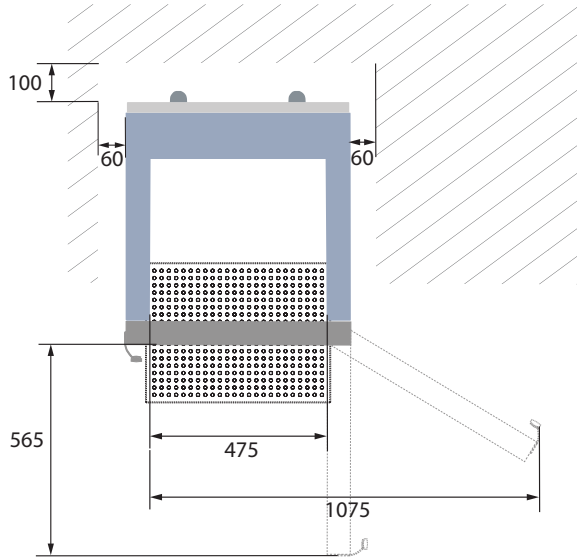
<b>Voltage/Frequency</b>	Voltage/Hz	230V/50-60Hz
<b>Max Ambient</b>	°C	32°C
<b>Max Humidity</b>	% rh	65%
PERFORMANCE		
PERFORMANCE	UNIT	VALUE
<b>All data in RT20°C</b>		
<b>Temperature Range</b>	°C	2 to 20
<b>Uniformity in performance - difference between top and bottom</b>	°C	+/- 1,2
<b>Pull down time</b>	Minutes	40 min to 6°C
<b>Hold over time</b>	Minutes	75 min to 10°C
<b>Noise</b>	dB	46
<b>Energy 24 hours</b>	kWh/24h	0,336 kWh/24h set 5°C
<b>Energy year</b>	kWh/year	122,6kWh/y set 5°C
<b>Instant Power Consumption</b>	kW	PD 0,068/Stable 0,028
<b>Heat Rejection</b>	W	50
<b>U-Value</b>	W/m <sup>2</sup> K	0,69
COOLING COMPONENTS		
COOLING COMPONENTS		VALUE
<b>Refrigerant/Amount (gram)</b>		R600a/39gr
<b>Number of compressors</b>	pcs	1
<b>Variable speed compressor</b>	Yes/No	Yes
<b>Internal air distribution (type of)</b>		Mono Air Stream
<b>Evaporator Fan</b>	Yes/No/Variable	Yes
<b>Condenser Fan</b>	Yes/No/Variable	No
<b>Number of probes</b>	pcs	4
<b>Defrost</b>	Yes/No	Yes - automatic
FEATURES		
FEATURES		VALUE
<b>Safety thermostat</b>	y/n/optional	Yes
<b>Lock</b>	y/n	Yes
<b>LED light</b>	y/n	Yes
<b>Battery Back Up For Controller</b>	y/n/optional	Yes - 24h
<b>Porthole</b>	y/n - Ømm	Yes - Ø 20mm
<b>Dry contact</b>	y/n	Yes
<b>Castors</b>	y/n/optional	Optional
<b>Door</b>	glass/solid	Glass
<b>Reference Bottle</b>	y/n/optional	Yes
<b>Door closure</b>	y/n/optional	Yes
<b>Door reversibility</b>	y/n	Yes
<b>Automatic Hold 90°C</b>	y/n	Yes
<b>Vacuum vent + VIP (Vacuum panel)</b>	y/n	No



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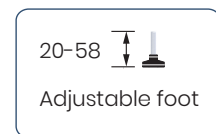
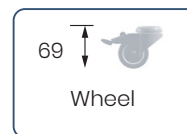
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All measurements in mm.

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



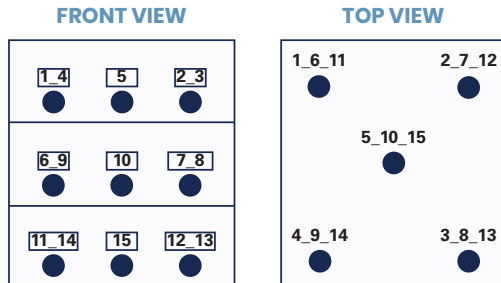


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### SENSOR POSITION



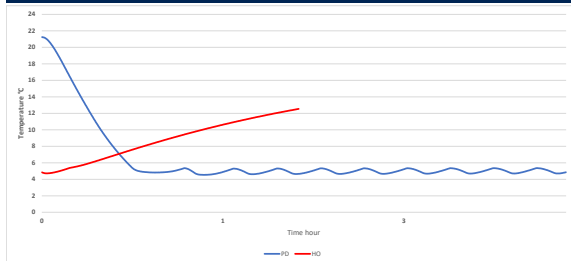
### MODEL R-90I GLASS

<b>Test type</b>	15-point test
<b>Test environment</b>	Controlled conditions, empty cabinet
<b>Ambient temperature</b>	20°C
<b>Humidity</b>	60%
<b>Set-point</b>	5°C
<b>Sensor used</b>	25gr tinned brass formed as a cylinder with a diameter of 15,2 mm
<b>Installation</b>	Appliance installed according to instruction manual conditions
<b>Refrigerant</b>	R600a

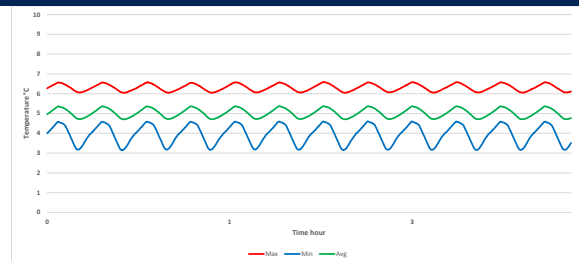
### SENSOR TEMPERATURE

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

### WARM UP & PULL DOWN



### CYCLIC OPERATION



### TYPICAL PERFORMANCE IN AMBIENT 20°C - EMPTY CABINET

<b>Avg. cabinet temperature</b>	5°C
<b>Uniformity</b>	+/- 1,2°C
<b>Stability in avg.</b>	0,3°C
<b>1 min. door open recovery to 6°C avg. temperature</b>	10 min.
<b>Cycle rate on/off</b>	7,7 / 10 min.
<b>Duty cycle</b>	41,7%
<b>Energy consumption - Normal mode</b>	0,33 kWh/day
<b>Pull down time to 6°C avg. temperature</b>	40 min.
<b>Hold over time from 5°C to 10°C</b>	40 min.
<b>Sample temperature does not exceed</b>	8°C
<b>Heat rejection</b>	40 W