BIOMEDICAL

F-90i

BIOMEDICAL FREEZER

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

-5°C
-25°c

DIMENSIONS	
Outer Dimensions HxWxD, mm	672x595x642
Inner Dimensions HxWxD, mm	481x475x495
Weight Gross/Net, kg	54 / 43
Material inner cabinet	ABS
Material outer cabinet	Painted Steel
Packaging weight, kg	-
Packaging dimensions HxWxD, mm	-
Insulation thickness	50
Insulation type	Polyurethane with Cyclopentane
Air distribution	Dynamic
Mobility	Standard: Adjustable Feet - Option: Castors
Refrigerant, Type / gram	R600a / 38
Variable Speed Compressor	Yes - Adaptive Cooling Technology
Number of probes	2
CONTROLLER	
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	
Volume, Gross/Net, L	90 / 76
Shelves, Full/Half	1 / 1
Shelf material	Perforated Alu
FEATURES	
Lock	Yes
LED light	Yes
Battery Backup for Controller, 24h	Yes
No-Frost System™	Yes
Perimeter Heater	Hot gas
Porthole	Yes - Ø 20 mm
Dry Contact	Yes
Door	Standard: Solid
Door Features	Automatic: Closure < 90° - Hold Closure > 90°
Door Reversibility	Yes

Updated 11/2024

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Voltage/Frequency	Voltage/Hz	230V/50-60Hz
Max Ambient	°C	35°C
Max Humidity	% rh	65%
PERFORMANCE		
All data in RT20°C		
Temperature Range	°C	-5 to -25
Uniformity in performance - difference between top and bottom	°C	+/- 1.9
Pull down time	Minutes	69 min to -20°C
Hold over time	Minutes	54 min to -10°C
Noise	dB	40
Energy Saving Mode	kWh/24h	0,94kWh/24h Set -20
Energy Consumption, kWh / 24h	kWh/24h	1,1kWh/24h Set -25
Energy year	kWh/year	401kWh/y Set -25°
Instant Power Consumption	kW	PD 0,120/Stable 0,046
Heat Rejection	W	110
U-Value	W/m^2 K	0.59
COOLING COMPONENTS		
Refrigerant/Amount (gram)		R600a/38gr
Number of compressors	pcs	1
Variable speed compressor	Yes/No	Yes
Internal air distribution (type of)		Dual Air Stream
Evaporator Fan	Yes/No/Variable	Yes
Condenser Fan	Yes/No/Variable	No
Number of probes	pcs	2
Defrost	Yes/No	Yes - automatic
FEATURES		
Safety thermostat	y/n/optional	No
Lock	y/n	Yes
LED light	y/n	Yes
Battery Back Up For Controller	y/n/optional	Yes - 24h
Porthole	y/n - Ømm	Yes - Ø 20mm
Dry contact	y/n	Yes
Castors	y/n/optional	Optional
Door	glass/solid	Solid
Door closure	y/n/optional	Yes
Door reversibility	y/n	Yes
Automatic Hold 90°C	y/n	Yes
Vacuum valve	y/n	Yes
VIP (Vacum panel)	y/n	No
Perimeter heater		Hot gas loop

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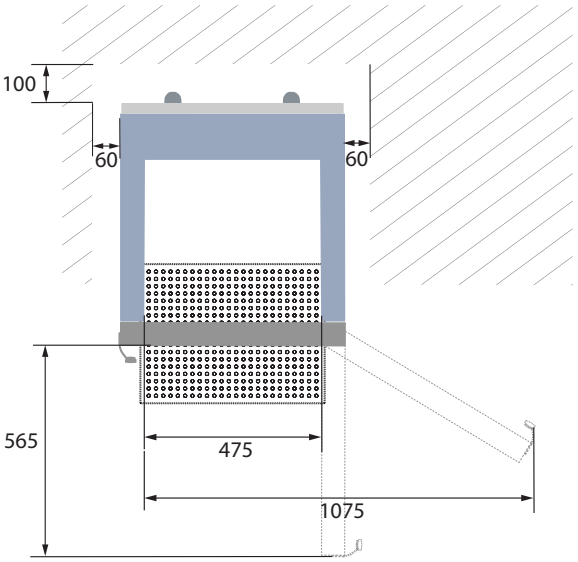

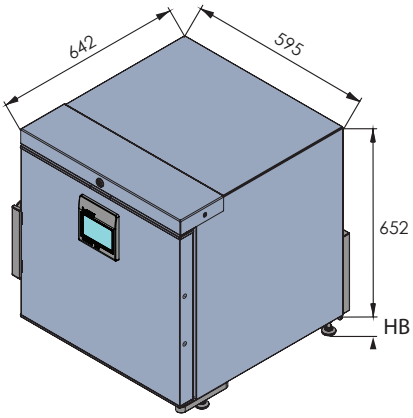

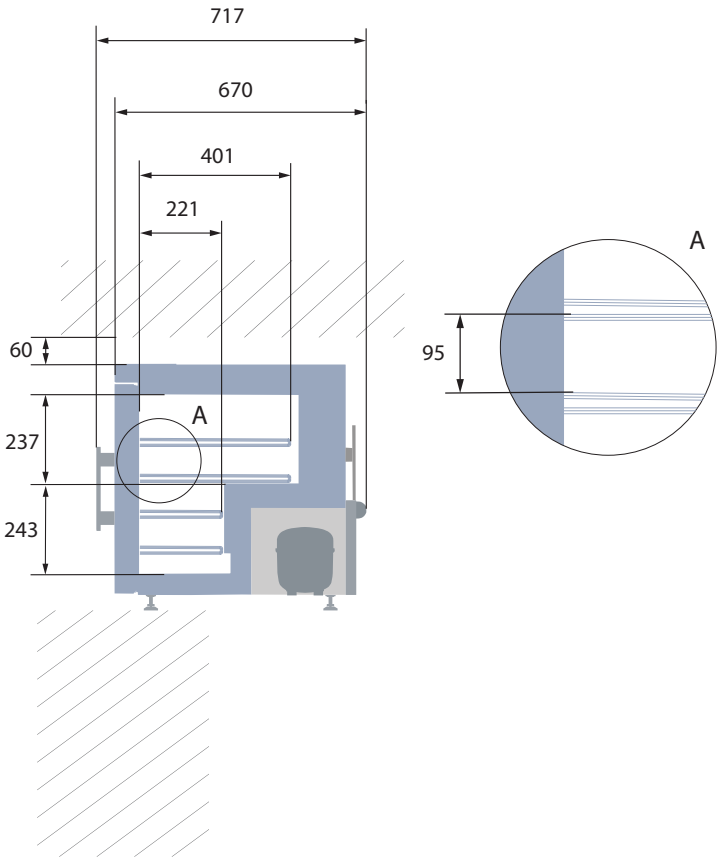

All measurements in mm.

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

69 Wheel

20-58 Adjustable foot

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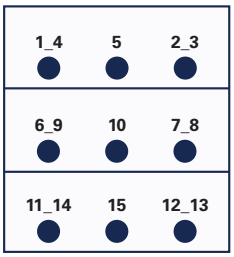
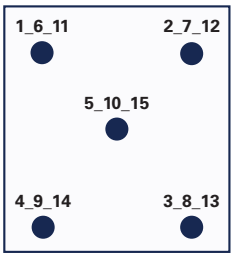
SENSOR POSITION

FRONT VIEW



TOP VIEW



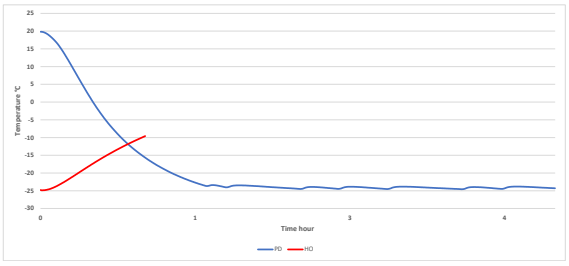
MODEL F-90I

Test type	15-point test
Test environment	Controlled conditions, empty cabinet
Ambient temperature	20°C
Humidity	60%
Set-point	-25°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	R600a

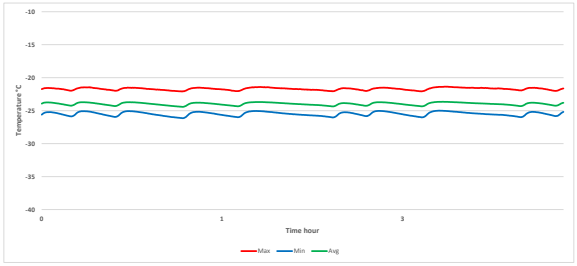
SENSOR TEMPERATURE

Sensor position	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Max	-22	-22,4	-22,9	-21,5	-22,6	-22,4	-23,5	-23,5	-22,4	-23,4	-22,6	-23,5	-23,6	-22,5	-23,5
Avg.	-22,9	-23,3	-24,1	-22,2	-23,2	-23,4	-24,3	-24,3	-23,5	-24,4	-23,6	-24,6	-24,7	-23,3	-24,6
Min.	-24	-24,6	-25,3	-23,1	-24	-24,6	-25,2	-25,3	-24,8	-25,5	-24,8	-25,9	-25,9	-24,4	-26

WARM UP & PULL DOWN



CYCLIC OPERATION



TYPICAL PERFORMANCE IN AMBIENT 20°C - EMPTY CABINET

Avg. cabinet temperature	-24°C
Uniformity	+/- 1,9°C
Stability in avg.	0,3°C
1 min. door open recovery to -20°C avg. temperature	9 min.
Cycle rate on/off	5,1 / 13,9 min.
Duty cycle	25,2%
Energy consumption - Normal mode	1,1 kWh/day
Energy consumption - Energy saving mode (-20)	0,94 kWh/day
Pull down time to -20°C avg. temperature	69 min.
Hold over time from -25°C to -10°C	54 min.
Sample temperature does not exceed	-15°C
Heat rejection	100

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