Biomedical

VTS 098

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Premium Ultra Low Temperature -86° Freezer

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

Featuring the ETR-System™ (*Extended Temperature Range*) the unit can operate within -20°C to -86°C, giving you flexibility to adjust the cooling to your specific needs, or to save energy reducing both operation costs & carbon emission. Our biomedical appliances offer a reliable solution for users seeking industry leading cooling performance and high operation stability.

- **Small footprint**
- **Vacuum release port**
- **Data logging with USB extraction**

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Construction	Value
Dimension	825x595x645 mm
Dimension inner	630x435x428 mm
Weight	87 / 61 gross/net
Package weight	N/A kg
Material inner cabinet	Stainless steel Kg. gross/net
Material outer cabinet	Painted steel Kg. gross/net
Insulation type	Polyurethane with cyclopentane
Insulation thickness	80 mm
Mobility	Feet

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Storage ULT	Value
Volume	92 / 92 Gross/net
Cryoboxes "2	63
2 ml vials	6300

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Features	Value
Lock	✔
LED light	✔
Battery backup	✔
Porthole	✔
Porthole size	15 mm
Dry contact	✔
Door reversibility	➖
Vacuum valve	✔
VIP (Vacuum Insulated Panel)	➖

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Alarms	Value
High / Low temperature	✓
Open door	✓
Power failure	✓
Probe failure	✓

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Test	Value
Voltage	220-240 V
Frequence	50 Hz
Max ambient	30 °C
Max Humidity	65 %
Test condition	20

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Operation	Value
Temperature range	-20 to -86 °C
Unifromity in performance	1,7 / -2,6 °C
Pull dowm time (from test condition to fabric setpoint)	168 Minutes
Hold over time (from fabric SP to critical point)	102 Minutes
Noise	57 dB
Energy 24 hours	6,5 kWh/24h
Instant Power Consumption	PD 0,75-0,4 / Stable 0,33 kW
Heat Rejection	393 W
K-Value	0,18 W/m^2k

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Cooling components	Value
Refrigerant/amount	Nature R / 109g Type & gram
Number of compressors	1
Variable speed compressor	⊖
Internal air distribution (Type)	Static
Evaporator fan	⊖
Condensor fan	✔
Number of probes	1
Defrost	⊖

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Controller	Value
Controller	Dixell
USB Connection	Yes
Data connection	MODBUS
Controller abilities	Logging of data & alarms
Controller languages	Digits
Log numbers	35000
Temperature graph in controller	⊖

Temperature mapping

Test overview

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

Sensor position
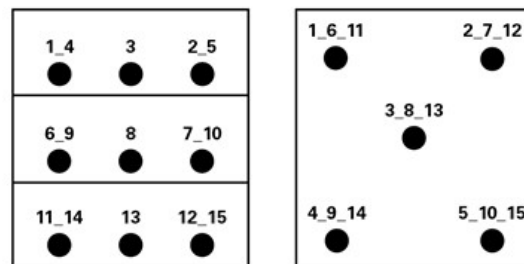
Sensor temperature

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
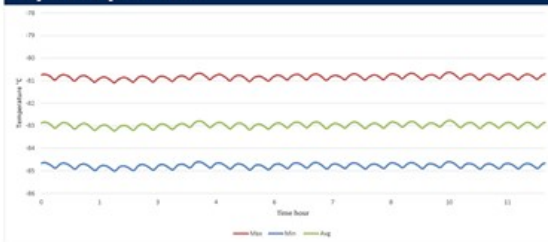
Cyclic operation
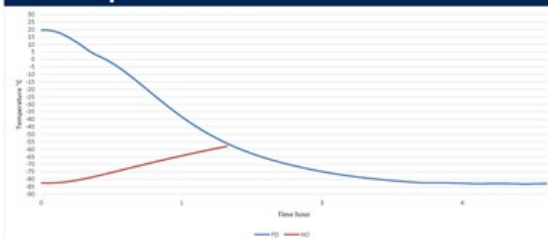
Typical Performance data

Avg. cabinet temperature	-83°C
Peak variation from set-point	+1,7/-2,6°C
Stability in avg.	?°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

Warm up & Pull down

Dimensions

100

60 · 420 · 60

575 · 430

695

585

425

220

60

675

A

12,5

A

585 · 595

808

HB

Version 1.04

Products and specifications are subject to change resulting from product development.
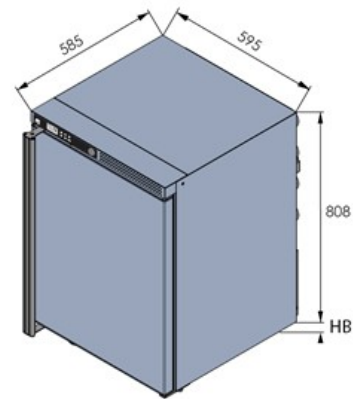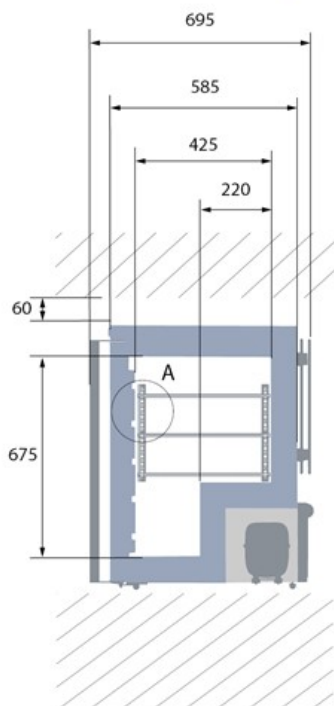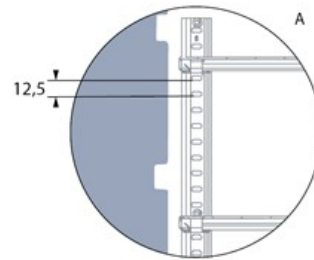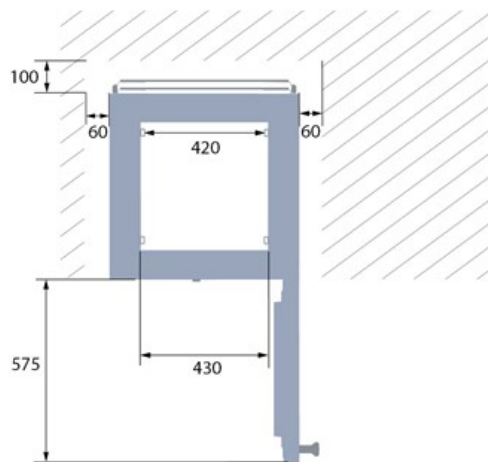
All dimensions in milimeters

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

22-27
Ajustable foot