

# Biomedical

ULTF-C296i



## ULTF-C296i

**-20°C to -86°C Ultra Low temperature freezer**

The chest design is an economical choice, that preserves cold well due to the horizontal lid.

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.

 **Complexity made simple**

 **Info center**



## ULTF-C296i | Gallery



## ULTF-C296i |

Construction	Value
Dimension	831x1260x608 mm
Dimension inner	624x1100x440 mm
Weight	100 / 78 gross/net
Package weight	22 kg
Material inner cabinet	Painted steel Kg. gross/net
Material outer cabinet	Painted steel Kg. gross/net
Insulation type	Polyurethane with cyclopentane
Insulation thickness	80 mm
Type of packaging	Wooden box with a wooden pallet
Mobility	4x casters with brakes

## ULTF-C296i |

Storage ULT	Value
Volume	296 / 284 Gross/net
Cryoboxes "2	216
2 ml vials	21.600

## ULTF-C296i |

Features	Value
Lock	<input checked="" type="checkbox"/>
LED light	<input type="checkbox"/>
Battery backup	<input checked="" type="checkbox"/>
Porthole	<input checked="" type="checkbox"/>
Porthole size	12,5 mm
Dry contact	<input checked="" type="checkbox"/>
Vacuum valve	<input type="checkbox"/>
VIP (Vacuum Insulated Panel)	<input type="checkbox"/>

## ULTF-C296i |

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

## ULTF-C296i |

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

## ULTF-C296i |

Operation	Value
Temperature range	-20 to -86 °C
Unifromity in performance	1,2 °C
Pull down time (from test condition to fabric setpoint)	130 Minutes
Hold over time (from fabric SP to critical point)	72 Minutes
Noise	55 dB
Energy 24 hours	9,8 kWh/24h
Energy year	3597 kWh/anno
Instant Power Consumption	PD 0,710 - 0,550 / 0,520 kW
Heat Rejection	642 W
K-Value	0,2 W/m <sup>2</sup> k

## ULTF-C296i |

Cooling components	Value
Refrigerant/amount	Nature R 2 / 143 Type & gram
Number of compressors	1
Variable speed compressor	—
Internal air distribution (Type)	Static
Evaporator fan	—
Condensor fan	✓
Number of probes	1
Defrost	—

## ULTF-C296i |

Controller	Value
Controller	i-CARE
USB Connection	Yes
Data connection	Modbus
Controller abilities	Logging of data & alarms, touch screen
Controller languages	EN, DE, FR
Log numbers	More than a year
Temperature graph in controller	✓

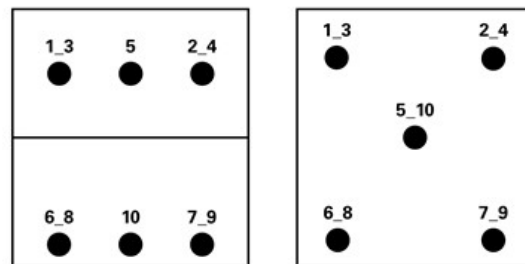


## Temperature mapping

### Test overview

Test type	10-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 2

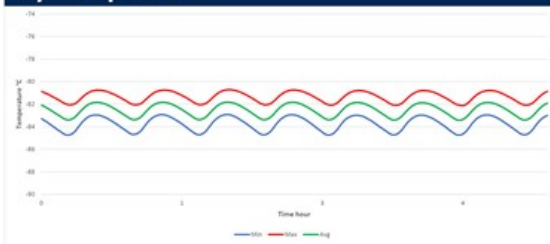
### Sensor position



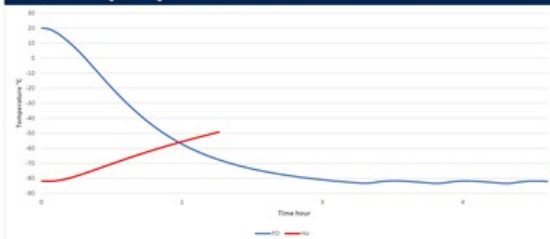
### Sensor temperature

Sensor position	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Max.	-81,5	-82,7	-82,9	-82,3	-82,1	-80,7	-81,6	-80,9	-82	-81,3
Avg.	-82,4	-83,5	-83,8	-83,2	-82,7	-81,4	-82,2	-81,5	-82,7	-82,1
Min.	-83,3	-84,5	-84,7	-84,2	-83,5	-82,1	-82,9	-82,3	-83,6	-83

### Cyclic operation



### Warm up & pull down



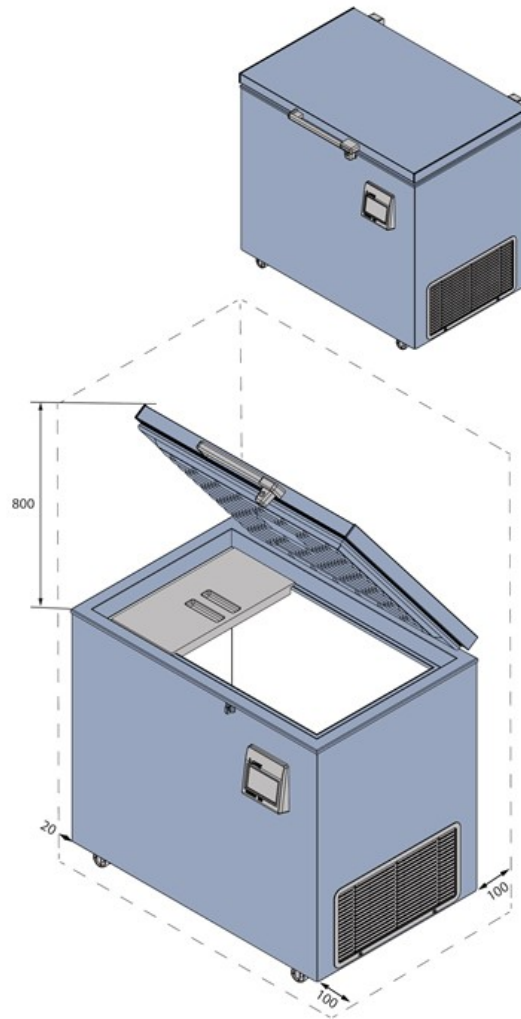
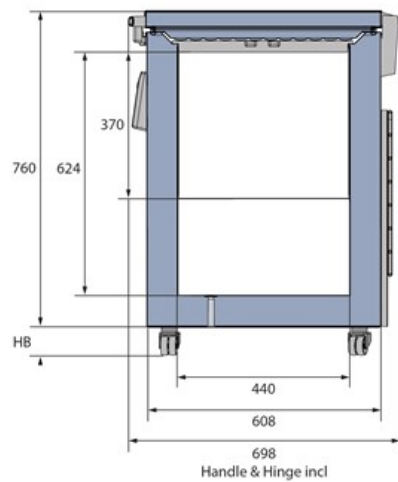
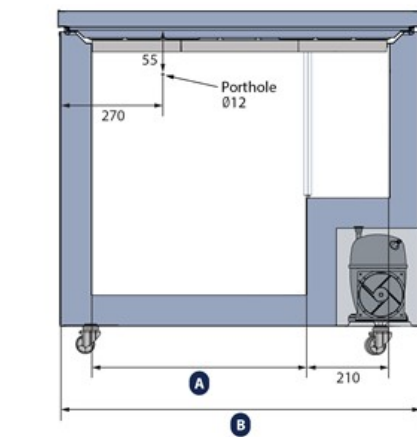
### Typical performance data

Avg. cabinet temperature	-82,5°C
Peak variation from set-point	+/- 1,2°C
Stability in avg.	0,8°C
1 min. door open recovery to -75°C avg. temperature	<1 min.
Cycle rate on/off	30 / 7 min.
Duty cycle	77,3 %
Energy consumption - Normal mode	9,85 kWh/day
Energy consumption - Energy saving mode	7,04 kWh/day
Pull down time to -75°C avg. temperature	130 min.
Hold over time from -82°C to -60°C	72 min.
Heat rejection	642 W

## Dimensions

Model	A	B
ULTF-C198i	550	920
ULTF-C296i	890	1260
ULTF-C383i	1190	1560

All dimensions in millimeters



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

