

# Biomedical




R-427i

## R-427i

### +2°C to +20°C Refrigerator

Our upright design is a great choice when you need a storage solution for larger quantities.

Featuring the ETR-System™ (*Extended Temperature Range*) the unit can operate within +2°C to +20°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**
-  **Adaptive Cooling Technology™**
-  **Info center**



## R-427i | Gallery



## R-427i |

Construction	Value
Dimension	2002x595x642 mm
Dimension inner	1827x475x495 mm
Weight	86/ 72 gross/net
Package weight	14 kg
Material inner cabinet	ABS Kg. gross/net
Material outer cabinet	Painted steel Kg. gross/net
Insulation type	Polyurethane with cyclopentane
Insulation thickness	50 mm
Type of packaging	Cardboard, EPS, vinyl bag, wooden pallet
Mobility	4 x Adjustable feet

## R-427i |

Storage	Value
Volume	427 / 361
Shelves	5
Half shelf	1

## R-427i |

Features	Value
Safety thermostat	Optional
Lock	✓
LED light	✓
Battery backup	Optional
Porthole	✓
Porthole size	20 mm
Dry contact	✓
Reference bottle	✓
Door closure	✓
Door reversibility	—
Automatic hold 90°	✓



## R-427i |

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

## R-427i |

Test	Value
Voltage	220 V
Frequence	50 / 60 Hz
Max ambient	35 °C
Max Humidity	75 %
Test condition	20

## R-427i |

Operation	Value
Temperature range	+2 to +20 °C
Unifromity in performance	1,4 °C
Pull down time (from test condition to fabric setpoint)	58 Minutes
Hold over time (from fabric SP to critical point)	90 Minutes
Noise	40 dB
Energy 24 hours	0,4 kWh/24h
Energy year	159,9 kWh/anno
Instant Power Consumption	PD 0,075 / Stable 0,025 kW
Heat Rejection	61 W
K-Value	0,44 W/m^2k

## R-427i |

Cooling components	Value
Refrigerant/amount	R600x / 60 Type & gram
Number of compressors	1
Variable speed compressor	✓
Internal air distribution (Type)	Dual air stream
Evaporator fan	✓
Condensor fan	—
Number of probes	4
Defrost	✓

## R-427i |

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	✓

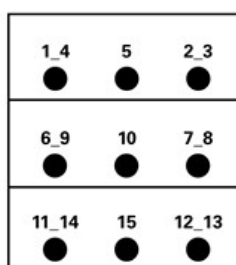
## Temperature mapping

### Test overview

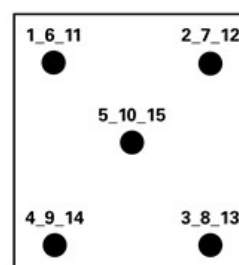
Test type	15-point test
Test environment	Controlled conditions, empty cabinet
Ambient temperature	20°C
Humidity	60%
Set-point	5°C
Sensors used	25gr tinned brass formed as a cylinder with a diameter of 15,2mm
Installation	Appliance installed according to instruction manual conditions
Refrigerant	R600a

### Sensor position

Front View



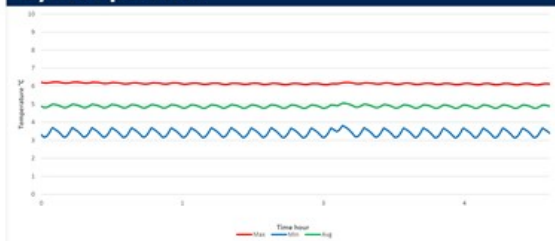
Top View



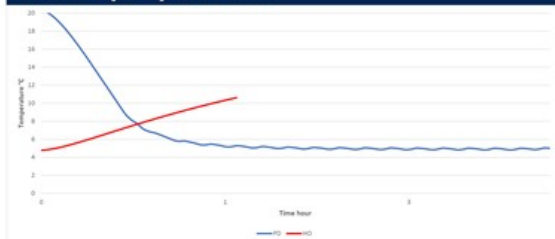
### Sensor temperature

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

### Cyclic operation



### Warm up & pull down



### Typical performance data

Avg. cabinet temperature	4,9°C
Peak variation from set-point	1,4°C
Stability in avg.	0,3°C
1 min. door open recovery to 6°C avg. temperature	10 min.
Cycle rate on/off	6,5/4,4 min.
Duty cycle	59%
Energy consumption	0,438 kWh/day
Pull down time to 6°C avg. temperature	58 min.
Hold over time from 5°C to 10°C	90 min.
Sample temperature does not exceed	8°C
Heat rejection	61 W

## Dimensions

