

# SMU SERIES

## LABORATORY ULTRA LOW TEMPERATURE FREEZERS

Temperature Range from  $-40^{\circ}\text{C}$  to  $-86^{\circ}\text{C}$



**SMU50**



**SMU678**

## INTENDED USE

The appliance is designed for the preservation of laboratories and medical products, at a set temperature, for which continuous monitoring and warning are required whether sudden alterations of temperature occur.

In particular:

- Medicines, vaccines
- Laboratory samples
- Thermo-sensitive chemical reactants (not inflammable)

According to this intended use, the appliance is compliant to the current normative and equipped with appropriate CE marking.

## CONSTRUCTIVE FEATURES

### EXTERNAL

External structure made of stainless steel, coated with milky white coloured PVC film.

### INTERNAL

Internal structure made of polished stainless steel AISI 304, with rounded edges for easy cleaning.

### INSULATION

Insulation thickness of 110 mm up to 140 mm (depending on the specific model – see TABLE 1), for optimum preservation of the product and energy savings. Insulation achieved by injecting high density polyurethane foam (ecological), CFC- and HCFC-free.

### DOOR

Solid door with closing and safety handle, with a key lock and seal on all four sides to ensure a perfect hermetical sealing. 50 litres model is equipped with a superior chest-door, 678 litres model is equipped with side opening door with hinges for door opening on right side. The opening is from left to right.

### REFRIGERANT GAS

Ecofriendly refrigerant gases CFC-free. Gas R601 (20%) +R600a (26%) +R290 (23%) +R170 (12%) +R1150 (11%) +R50 (8%)

### POWER SUPPLY

Single phase 230 V – 50 Hz

TABLE 1	SMU50	SMU678
Net internal volume (l)	50	678
Temperature range	-40°C/-86°C	-40°C/-86°C
Set point accuracy	±0,1°C	±0,1°C
Controller	Microprocessor	Microprocessor
Display	LCD digital display	Touch screen 7"
USB data download	YES	YES
Data Logging interval - Recording Time	Std every 10' (2 years) up to 1'	Every 1' - 1 year
External Material	Steel plates with spraying	HQ steel plates with spraying
Inner Material	AISI 304	Stainless steel AISI 304
Door Lock with Key	YES	YES
Pass-through access port Ø 25 mm	1 Ø 40 mm	3

TABLE 1	SMU50	SMU678
Casters	4	4 + 2 leveler feet
Remote alarm free contact	YES	YES
Backup battery	YES	YES
Insulation thickness (mm)	110	130
Cooling method	Static	Static
Defrost mode	Manual	Manual
Unit external dimension WxDxH (mm)	650 x 606 x 1080	1090 x 1025 x 1965
Unit internal dimension WxDxH (mm)	430 x 305 x 425	750 x 696 x 1286
Unit weight (kg)	74	330
Packaged unit dimension (pallet+carton) WxDxH (mm)	788 x 720 x 1283	1203 x 1155 x 2171
Packaged unit weight (kg)	101	382
Standard configuration	1 chest	3 stainless steel AISI 304 shelves
Different position pace (mm)	n.a.	18,5
Shelves dimension WxDxH (mm)	n.a.	659 x 572
Noise level dB(A)	51	54
Power supply (V/Hz)	230/50	230/50
Rated power (W)	720	1729
Input power (W)	970	2525
Rated current (A)	4,49	9,1
Power consumption (kWh/24h)	8,5	11,9
Compressore	1	2
Refrigerant gas	R601+R600a+R290+R170+R1150+R50	R601+R600a+R290+R170+R1150+R50
Refrigerant gas quantity (kg)	0,28	0,45
Temp. Alarm - High/Low temperature	YES	YES
Temp. Alarm - High ambient temperature	YES	YES
Electrical Alarm - Power failure	YES	YES
Electrical Alarm - Low battery	YES	YES
System Alarm - Sensor error	YES	YES
System Alarm - Door ajar	-	YES
System Alarm - USB datalogger failure	YES	YES
System Alarm - Main board communic. error	-	YES
System Alarm - Remote alarm	-	YES
System Alarm - Condenser cooling failure	YES	YES
System Alarm - Samples out of date	-	YES

## STANDARD EQUIPMENT

Depending on the specific model, the internal chamber space is made up of anti-tip smooth shelves in stainless steel AISI 304 (adjustable for height).

All the units have unidirectional wheels, additionally as in Table 1 mentioned eventual adjustable feet, locks with key, a detachable power cord with a Schuko plug.

The electronic control panel is specifically designed to be user-friendly and indicate alarm conditions in an easy and intuitive way.

The Touch screen model is even more efficient to visualise the correct operativity of the device and eventual alarm conditions, it makes possible easy modifications for the user visualisation and easy parameter adjustments for technical assistance.

Equipment settings and switching off are only allowed by means of passwords.

Standard equipment is then completed by a potential-free contact for remote alarms and a data-logger with USB port for data downloading.

## FUNCTIONAL CHARACTERISTICS

### CONTROL SYSTEM

Digital control panel as in Table 1 described. Temperature display for continuous monitoring. Microprocessor temperature control via PT1000 sensor.

Audible and visual alarms as in Table 1.

Internal memory data record downloadable by USB key.

The control functions are determined by the available password level in order to prevent unauthorized settings of the unit (2 password levels - user / technical support).

### COOLING CIRCUIT

Silent hermetic closed circuit compressor with thermal protection and a condenser system cooling fins, equipped with a fan motor with a spiral fan (suitable for tropical climates). The evaporator is static.

### DEFROST

Manual defrost cycle.

### DOOR OPEN HANDLE

Ergonomic door open handle for anti-vacuum effect.

Additional dedicated handles are inserted in the internal cabinet, so that one of them can be singularly opened not to damage the thermal internal stability.

## AVAILABLE OPTIONS

- CO<sub>2</sub> backup system, to guarantee cooling maintaining in emergency situations
- Additional shelves for model compatible (see Table 1)

Your Local Distributor



**Camlab Ltd** · 24 Norman Way Industrial Estate · Over · Cambridge · CB24 5WE · UK  
sales@camlab.co.uk · 01954 233 110 · www.camlab.co.uk