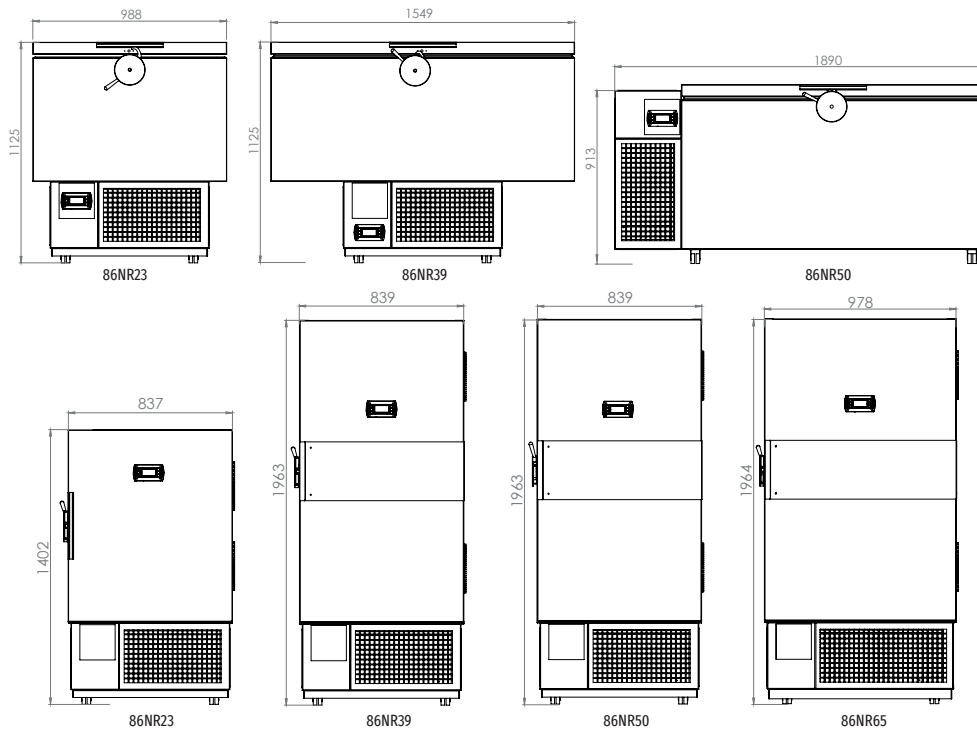


# Ultra low freezer

NV-NR Series



## EQUIPMENT



### Volume

230, 390, 500,  
650 liters



### Temperature

-45°C...-86°C



### Fluctuation

±1.5 K



### Shelves\*1

Height adjustable



### ultraFACE

Historical data  
controller



### Warmdown time

180 min



### Backup battery

Always on display



### Alarm

Always on temper-  
ature monitoring



### Compartments\*1

Internal compart-  
ments division



### Swivel wheels

4 self-lock swivel  
wheels



### Eco refrigerant

R170+R449A  
low GWP



### Electric power

230V / 50Hz

\*1 only for upright models

FDM - ENVIRONMENT MAKERS

FDM reserves the right to modify its equipment at any time without updating this manual.

| Model code  | 86NV23                           | 86NV39  | 86NV50  | 86NV65          | 86NR23     | 86NR39 | 86NR50 |
|---|----------------------------------|---------|---------|-----------------|------------|--------|--------|
| Temperature data  |                                  |         |         |                 |            |        |        |
| Temperature range [°C]  |                                  |         |         | -45...-86       |            |        |        |
| Temperature fluctuation at -80°C [± K]                        |                                  |         |         | 1.5             |            |        |        |
| Warm-up time during power failure from -80 °C to -60 °C [min] |                                  |         |         | 140             |            |        |        |
| Warm-down time from 0 °C to –80 °C [min]                      |                                  |         |         | 180             |            |        |        |
| Structure and insulation                                      |                                  |         |         |                 |            |        |        |
| Disposition   | Upright                          |         |         |                 | Chest      |        |        |
| Exterior material   | Phosphated sheet steel           |         |         |                 |            |        |        |
| Internal material   | AISI 304 Stainless Steel         |         |         |                 |            |        |        |
| Insulation  | CFC and HCFC free - 140 mm max.  |         |         |                 |            |        |        |
| Shelf grill   | Removable and height adjustable  |         |         |                 | no shelves |        |        |
| Alarm and security  |                                  |         |         |                 |            |        |        |
| Type alarm  |                                  |         |         | Audio-visual    |            |        |        |
| Alarm parameter   |                                  |         |         | Hot temperature |            |        |        |
| Remote connection   |                                  |         |         | •               |            |        |        |
| Security device   | Alarm system with backup battery |         |         |                 |            |        |        |
| Data Dimension  |                                  |         |         |                 |            |        |        |
| Net Interior volume [l]                                       | 230                              | 390     | 500     | 650             | 230        | 390    | 500    |
| Net weight unit (without load) [Kg]                           | 200                              | 280     | 320     | 390             | 190        | 270    | 310    |
| Interior Dimension  |                                  |         |         |                 |            |        |        |
| Width [mm]  | 610                              | 610     | 600     | 740             | 760        | 1310   | 1310   |
| Depth [mm]  | 500                              | 500     | 630     | 670             | 600        | 610    | 600    |
| Height [mm]   | 760                              | 1310    | 1310    | 1310            | 500        | 500    | 630    |
| Exterior Dimension  |                                  |         |         |                 |            |        |        |
| Width [mm]  | 840                              | 840     | 840     | 980             | 1000       | 1550   | 1890   |
| Depth [mm]  | 750                              | 750     | 880     | 900             | 840        | 840    | 840    |
| Height [mm]   | 1420                             | 1970    | 1970    | 1970            | 1000       | 1090   | 910    |
| Interior Shelves  |                                  |         |         |                 |            |        |        |
| Fixed shelves [n°]  | 1                                | 1       | 1       | 1               | -          |        |        |
| Adjustable shelves [n°]                                       | 2                                | 3       | 3       | 3               | -          |        |        |
| Total shelves [n°]  | 3                                | 4       | 4       | 4               | -          |        |        |
| Usable area, Width x Depth [mm]                               | 440x590                          | 440x590 | 570x590 | 730x660         | -          |        |        |
| Maximum load per shelf [Kg]                                   | 50                               | 50      | 50      | 50              | -          |        |        |
| Compartments  |                                  |         |         |                 |            |        |        |
| Interior compartment doors [n°]                               | 2                                | 4       | 4       | 4               | 1          | 1      | 1      |
| Rack for cryoboxes data                                       |                                  |         |         |                 |            |        |        |
| Total capacity of rack [n°]                                   | 8                                | 16      | 16      | 20              | 20         | 26     | 36     |
| Total capacity of cryoboxes 5.1 H size [n°]                   | 144                              | 240     | 320     | 400             | 160        | 288    | 360    |
| Total capacity of cryoboxes 7.7 H size [n°]                   | 96                               | 144     | 192     | 240             | 100        | 180    | 360    |

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C and a voltage fluctuation of ±10 %.

| Model code                | 86NV23                  | 86NV39 | 86NV50 | 86NV65 | 86NR23 | 86NR39 | 86NR50 |
|---------------------------|-------------------------|--------|--------|--------|--------|--------|--------|
| Sound pressure level      |                         |        |        |        |        |        |        |
| Sound pressure level [dB] | 58, from one meter away |        |        |        |        |        |        |
| Electrical Data           |                         |        |        |        |        |        |        |
| Rated Voltage [V]         | 230                     | 230    | 230    | 230    | 230    | 230    | 230    |
| Power Frequency [Hz]      | 50                      | 50     | 50     | 50     | 50     | 50     | 50     |
| Nominal Power [kW]        | 0.8                     | 1.55   | 1.55   | 1.55   | 0.8    | 1.55   | 1.55   |
| Unit Fuse [A]             | 10                      | 10     | 10     | 10     | 10     | 10     | 10     |
| Phase (Nominal voltage)   | 1~                      | 1~     | 1~     | 1~     | 1~     | 1~     | 1~     |

## Main Options

- **AP100** - Open door alarm
- **ASMS100** - Remote notification alarm via text message
- **CT100** - Audible and visual alarm system independent of the control system
- **DPS100** - Surge protection device for regulating and circuit control
- **ST100** - Incorporated voltage stabilizer system
- **UPS100** - Uninterruptible power supply
- **BA0188** - Weekly circular chart temperature recorder, including 50 papers and 2 pens
- **UDB100** - USB port for storage data
- **RS485** - RS485 Serial interface for remote connection
- **RS485/USB** - RS485/USB interface converter
- **RS232** - RS232 Serial interface for remote connection
- **ETH100** - Ethernet interface for remote connection
- **SND20T** - additional Pt 100, with flexible cable installed with external connection
- **CO200** - Security backup system with CO2
- **LN200** - Security backup system with LN2
- **RFG100** - Security refrigerant system
- **RFID100** - Restricted access door with traceability by smart card
- **86NV-S2** - Double access door
- **VRACK** - Chamber stainless steel rack for cryoboxes
- **IQ-OQ-100** - Qualification IQ/OQ
- **PAC00** - Wooden crate packaging
- **PAW00** - Wooden boxes packaging
- **FA100C** - Access cables port with plug
- **GP100** - Additional shelf
- **GP100R** - Additional reinforced shelf
- **TE110** - Power supply 110 V 50-60 Hz

For the full options availability go to: [bit.ly/2n93xRT](https://bit.ly/2n93xRT)

For further information go or click to:

 [bit.ly/2mIQexh](https://bit.ly/2mIQexh)

All technical data are specified for units with standard equipment at an ambient temperature of +24 °C and a voltage fluctuation of ±10 %.