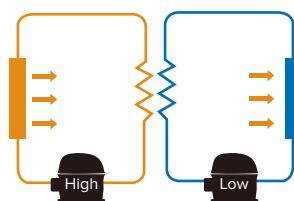


# -86°C Ultra-low Temperature Freezer

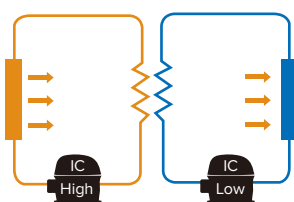
ANTECH offers advanced BioSafe ULT freezers with optimized cooling system and ergonomic design. Both upright freezers and chest freezers are available, from 88 liter compact freezer to 988 liter large volume biobanking freezer. Various of high efficiency cooling systems to meet different requirements of users. Cutting age inverter technology (BioSafe-IC) and dual compressor cooling technology (BioSafe-DUAL) are adopted on ANTECH ULT freezers, providing lowest energy consumption & highest level protection.

## BioSafe-ECO series



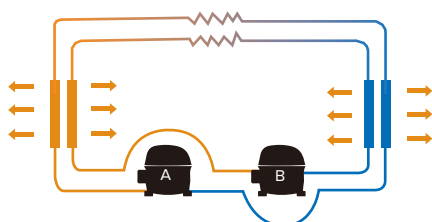
2-compressor cascade system, SECOP brand;  
Hydrocarbon refrigerant for lower power consumption;  
Capacity: 360L, 580L, 730L.

## BioSafe-IC series



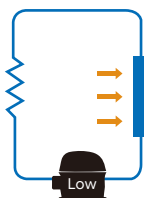
2-Inverter-compressor cascade system;  
Inverter compressors (IC) & hydrocarbon refrigerant, lowest power consumption & best temperature performance;  
Capacity: 580L, 730L, 988L.

## BioSafe-DUAL series



Independent dual compressor system:  
inner temperature maintain -75°C when one compressor fails;  
Capacity: 360L, 470L, 580L, 730L, 988L.

## BioSafe-MINI series



Single compressor cooling system:  
compact construction with high efficiency,  
reach -86°C with 1 compressor;  
Capacity: 88L.

## Upright freezers

| Capacity     | 88L        | 360L        | 470L        | 580L        | 730L        | 988L        |
|--------------|------------|-------------|-------------|-------------|-------------|-------------|
| BioSafe-MINI | MDF-86U108 | -           | -           | -           | -           | -           |
| BioSafe-ECO  | -          | MDF-86U340T | MDF-86U458T | MDF-86U588T | MDF-86U728T | -           |
| BioSafe-IC   | -          | -           | -           | MDF-86U579  | MDF-86U729  | MDF-86U969  |
| BioSafe-DUAL | -          | MDF-86U340D | MDF-86U458D | MDF-86U588D | MDF-86U728D | MDF-86U988D |

## Chest freezers

| Capacity     | 130L       | 495L       | 746L       |
|--------------|------------|------------|------------|
| BioSafe-MINI | MDF-86C118 | -          | -          |
| BioSafe-ECO  | -          | MDF-86C458 | MDF-86C728 |

# TC-300 touch screen controller

TC-300 smart control system is adopted for easy observation and convenient operation.

- 7" LCD touch screen: sensitive touch, user-friendly HIM;
- Large display of chamber temperature, easy observation at distance;
- Status icon to show freezer situation at first sight: normal or abnormal;
- Password administration to prevent unauthorized change of settings;
- Show temperature curve on touch screen;
- Temperature and event data storage and USB port for download.



LOW CO2  
EMISSIONS



NATURAL  
REFRIGERANT



CFC /HCFC  
FREE



USB PORT



POWER FAILURE  
ALARM



DIRECT  
COOLING



SAFETY DOOR  
LOCK

## PERFORMANCE

- Optimized cooling system & high efficiency hydrocarbon refrigerant.
- SECOP brand compressor & EBM brand blower.
- VIP (vacuum insulation panel) + high density polyurethane forming for insulation.
- Forming inner doors for better insulation

## ERGONOMIC DESIGN

- 7-inch touch screen for easy operation
- Forming inner doors with door seal for better insulation and less frost
- Adjustable stainless steel shelves to load different size products
- Auto heating & manual pressure release port for easy opening of outer door
- Ultra-quiet design reduces noise level
- Optional sliding drawer rack & side access rack for 2ml vials, 5ml vials or SBS boxes

## ENVIRONMENT FRIENDLY

- Natural refrigerant compliant with EPA and SNAP non-ozone depleting mandates
- CFC-Free polyurethane foaming insulation
- High efficiency cooling system for lower energy consumption and less carbon emission

## ALARMS

- High temperature
- Low temperature
- High ambient temperature
- Door ajar
- Power failure
- Sensor error

## SAFETY

- Build-in data storage and USB port for download
- Temperature quick check via temperature curve
- Password protection avoids key parameters unauthorized change
- Safety door lock, preventing unauthorized access
- Access port for additional temperature probe
- Remote alarm contacts
- Optional online monitoring system
- Optional CO2/LN2 backup system



- ▶ **USB port**  
Temperature data storage and download



- ▶ **Forming door with door seal**  
4 layer door seal for better insulation and less frost.



- ▶ **Door handle with safety lock**  
For easy operation and prevent unauthorized access



- ▶ **Adjustable shelves**  
Convenient storage of different size products made in SUS304



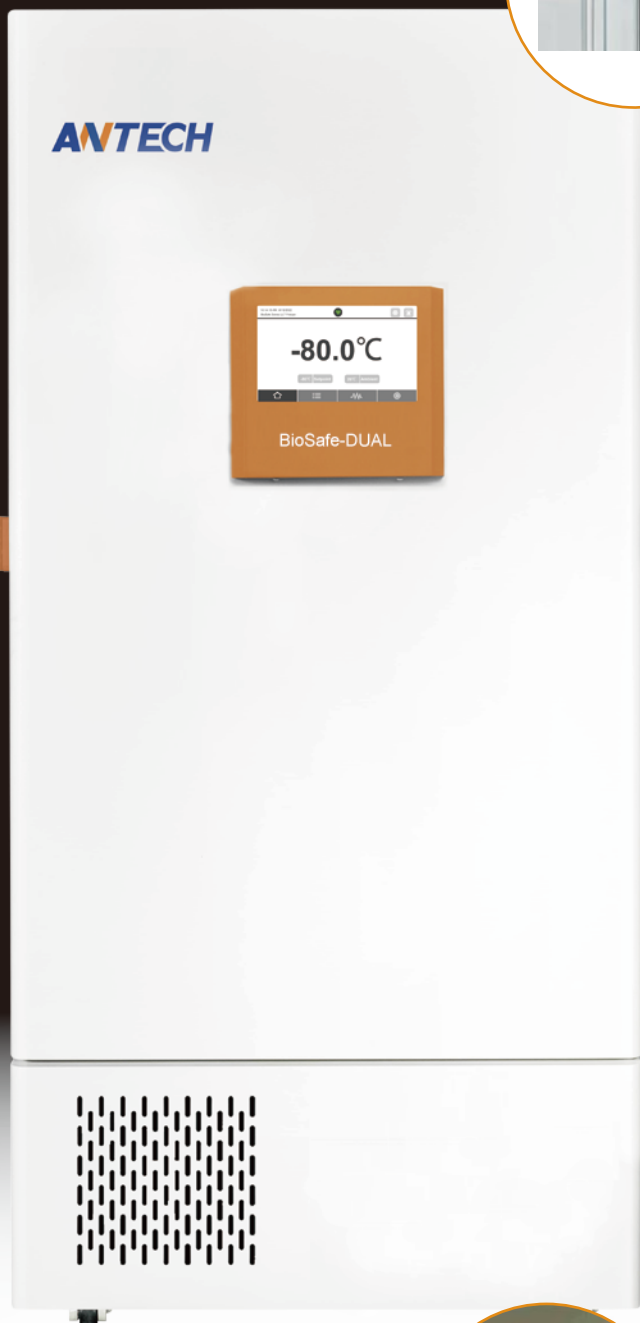
- ▶ **Dual pressure release port**  
Auto & manual pressure release port for easy re-opening of outer door in a shorter time



- ▶ **Access port**  
Two access ports at side and back of freezer, for easy access of additional temperature probe



- ▶ **Remote alarm contact**  
Sending signal to a remote alarm system



# -86°C

## BioSafe-DUAL series



|                          | Model                             | MDF-86U340D              | MDF-86U458D              | MDF-86U588D              | MDF-86U728D              | MDF-86U988D              |
|--------------------------|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Main specifications      | Type                              | Upright                  | Upright                  | Upright                  | Upright                  | Upright                  |
|                          | Cooling technology                | Independent dual cooling | Independent dual cooling | Independent dual cooling | Independent dual cooling | Independent dual cooling |
|                          | Temperature setting range (°C)    | -40 ~ -86                | -40 ~ -86                | -40 ~ -86                | -40 ~ -86                | -40 ~ -86                |
|                          | Climate type                      | N                        | N                        | N                        | N                        | N                        |
|                          | Capacity (L)                      | 360                      | 470                      | 580                      | 730                      | 988                      |
|                          | 2" box storage Qty (Pcs)          | 240                      | 320                      | 400                      | 500                      | 720                      |
|                          | Net weight (KGs)                  | 230                      | 252                      | 272                      | 297                      | 356                      |
|                          | Internal W×D×H (mm)               | 460×600×1310             | 600×600×1310             | 740×600×1310             | 740×755×1310             | 880×857×1310             |
|                          | External W×D×H (mm)               | 715×854×1976             | 855×854×1976             | 995×854×1976             | 995×952×1976             | 1134×1115×1976           |
|                          | Door entrance limit (≥mm)*        | 715                      | 854                      | 854                      | 860                      | 990                      |
|                          | Cooling type                      | Direct                   | Direct                   | Direct                   | Direct                   | Direct                   |
|                          | Defrost                           | Manual                   | Manual                   | Manual                   | Manual                   | Manual                   |
|                          | Refrigerant                       | Mixed gas                | Mixed gas                | Mixed gas                | Mixed gas                | Mixed gas                |
|                          | Number of compressor              | 2                        | 2                        | 2                        | 2                        | 2                        |
| Control & display system | Controller                        | TC-300                   | TC-300                   | TC-300                   | TC-300                   | TC-300                   |
|                          | Display                           | 7" LCD touch screen      | 7" LCD touch screen      | 7" LCD touch screen      | 7" LCD touch screen      | 7" LCD touch screen      |
|                          | Password protection               | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
| Power                    | Power supply (V/Hz)               | 220V/50Hz, 220V/60Hz     | 220V/50Hz, 220V/60Hz     | 220V/50Hz, 220V/60Hz     | 220V/50Hz, 220V/60Hz     | 220V/50Hz, 220V/60Hz     |
|                          | Rated power (W)                   | 850                      | 920                      | 950                      | 1000                     | 1200                     |
| Data memory & monitoring | USB port                          | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Chart recorder                    | Optional                 | Optional                 | Optional                 | Optional                 | Optional                 |
| Alarm functions          | Visible/audible alarm             | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | High/Low temperature              | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Hot condensor                     | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Power failure                     | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Sensor failure                    | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | High ambient temperature          | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Door open                         | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Remote alarm contact              | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
| Accessories              | Inner door                        | 2                        | 2                        | 2                        | 2                        | 2                        |
|                          | Casters                           | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Test access port                  | Φ 20mm x 2               | Φ 20mm x 2               | Φ 20mm x 2               | Φ 20mm x 2               | Φ 20mm x 2               |
|                          | Adjustable shelves                | 3                        | 3                        | 3                        | 3                        | 3                        |
|                          | Safety door lock                  | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Pressure equalization port        | Auto x 1 & manual x 1    | Auto x 1 & manual x 1    | Auto x 1 & manual x 1    | Auto x 1 & manual x 1    | Auto x 1 & manual x 1    |
|                          | Freezer rack                      | Optional                 | Optional                 | Optional                 | Optional                 | Optional                 |
|                          | Rack type (LxH)                   | 4x5                      | 4x5                      | 4x5                      | 5x5                      | 6x5                      |
|                          | Rack Qty                          | 12                       | 16                       | 20                       | 20                       | 24                       |
|                          | CO2/LN2 backup system             | Optional                 | Optional                 | Optional                 | Optional                 | Optional                 |
| Material                 | Exterior                          | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         |
|                          | Interior                          | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         | Pre-coated steel         |
|                          | Insulation                        | Polyurethane             | Polyurethane             | Polyurethane             | Polyurethane             | Polyurethane             |
|                          | Vacuum insulation panel (VIP)     | Yes                      | Yes                      | Yes                      | Yes                      | Yes                      |
|                          | Cabinet insulation thickness (mm) | 90                       | 90                       | 90                       | 90                       | 90                       |
|                          | Outer door thickness (mm)         | 90                       | 90                       | 90                       | 90                       | 90                       |
| Shipping                 | Gross weight (KGs)                | 261                      | 283                      | 311                      | 332                      | 401                      |
|                          | Packing W×D×H (mm)                | 720×890×2180             | 860×900×2180             | 1000×870×2180            | 1010×1010×2180           | 1224×1173×2180           |
|                          | Volume (m <sup>3</sup> )          | 1.40                     | 1.69                     | 1.90                     | 2.22                     | 3.13                     |

\* Open outer door for 180° & remove front cover for MDF-86U728D & MDF-86U988D.