



**-86° ULTRALOW FREEZERS**

## NUAIRE MEANS ENVIRONMENTALLY SAFE

Laboratory professionals the world over depend on NuAire for safe, reliable laboratory systems that last longer and work better at a lower overall cost. NuAire has earned that professional trust with exceptional design and years of service in a world that demands the highest standards and the greatest dependability.

The people of NuAire continue to offer you the finest products, service and value in the world. They know and understand the responsibility of providing dependability in the world of the laboratory professional where reliability is not an option. And NuAire looks forward to continuing to provide the finest in the world, remembering that the world of

NuAire and the laboratory professional is part of the larger world—the most demanding environment.

### NuAire Leads with a Unique Choice

Quality and performance for the most demanding environments. Ultralow Temperature Freezers from NuAire are designed to meet your requirements for research, clinical or industrial applications.

NuAire meets and exceeds the demand for a higher level of performance and dependability with the Ultralow Freezer—designed with the most advanced features and benefits available for research and laboratory work. Ultralow Freezers

have been designed and constructed for professionals whose work requires:

- the sensitivity and accuracy of temperature controls
- the precision of microprocessor or electronic solid state controls
- the long-term reliability and protection of automated back-up systems
- exceptionally quiet operation
- the flexibility of available options and accessories

The features and benefits combined in these Ultralow Freezers offer the laboratory professional a unique choice—available only from NuAire.



## SUPERIOR CONSTRUCTION

### The Foundation of the Ultralow Freezer

is NuAire's superior cabinet design and construction. Every freezer is consistently and rigorously tested to meet or exceed NuAire's uniquely stringent standards for unequalled dependability in the laboratory.

### Design and Materials

The exterior shell and interior walls are constructed of heavy-gauge cold-rolled steel which conducts temperature more efficiently than stainless steel. This creates less stress on compressors making them run cooler and last longer than competitive cabinets.

Special V-groove gasketing provides a positive seal insuring efficient performance and product protection. The upright freezers utilize three gaskets providing maximum sealing power—the solid inner doors, the inner chamber, and the outer door. The chest freezers also use V-groove silicone gaskets for the inner chamber as well as extruded polystyrene sublids and an outer magnetic door gasket.

Heavy-duty easy-to-roll casters allow the freezers to be easily moved. Adjustable feet serve to adjust the overall height of the freezer and allow the freezer to be evenly leveled.

The exterior insulated door has heavy-gauge galvanized steel construction with a baked-on-acrylic cool gray finish. The upright freezer door incorporates an anti-spring mechanism to protect the door from damage insuring a continuous positive seal. The chest freezers have an easy-open, easy-close countered balance lid. All models have a key lock for product security.



## SUPERIOR FEATURES

### CFC-Free, HFC-Free Refrigerants\*

NuAire Ultralow Freezers use a special mixture of azeotropic gases. Azeotropes generally simplify service, are non-flammable, make maintenance easier and less expensive, allow re-charging practices to remain the same, and allow for on-site recycling. The overall cost and benefits of azeotropic systems are clearly better than other refrigeration systems that use blend-based refrigerants. Blend-based segregated refrigerants are less energy efficient, lack cooling capabilities, and are likely to require more service.

\* Meets or exceeds requirements of Montreal Protocol and Clean Air Act of 1990 for systems utilizing HCFC/HFC replacement refrigerants.

### CFC-Free Polyurethane Insulation

Special foamed-in-place polyurethane insulation has been designed to withstand extremely low temperatures. The insulation used is two layers of rigid, dense polyurethane. The insulated wall that is over 5-1/4 inches (135 mm) thick. This design prevents the insulation from distortion

or cracking due to temperature differences inside and outside the chamber.

### Microprocessor Control Precision

The integrated main microprocessor control board performs all primary functions accurately and reliably, including main temperature control, temperature set point, actual temperature, and various alarm systems. Freezer running parameters are displayed with bright red LED's and user input is easily accomplished via digit shift, figure shift, and entry touch pads. The control panel keypad gives the operator maximum flexibility and simplicity in programming and complete display of information in one convenient location.

### Automatic Alarm System Dependability

A high temperature warning system activates both audible and visual alarms when the temperature deviates 10°C from the set point or in case of power failure, interruption or irregular fluctuation of temperature. System is equipped with a remote alarm contact for external monitoring and a continuous charge battery

back-up provides control panel alarm function even if power is lost.

The freezer is provided with a Filter Check Lamp. A red LED on the control panel will automatically illuminate when the condenser filter is clogged. Condenser filter can be easily removed, cleaned, and replaced.

### Inventory Systems

The large capacity upright freezers employ stainless steel movable shelving which allows the user the opportunity to maintain better space utilization. Both the chest and upright freezers hold a variety of inventory racks to make the most efficient use of available storage space providing accurate control of stored product.

### Extremely Quiet Operation

NuAire Ultralow Freezers operate at dBA levels far below any competitive brand. Normal operation is less than 60 dBA at an ambient of 55 dBA. Hearing is believing, ultralow freezers from NuAire are the most quiet.

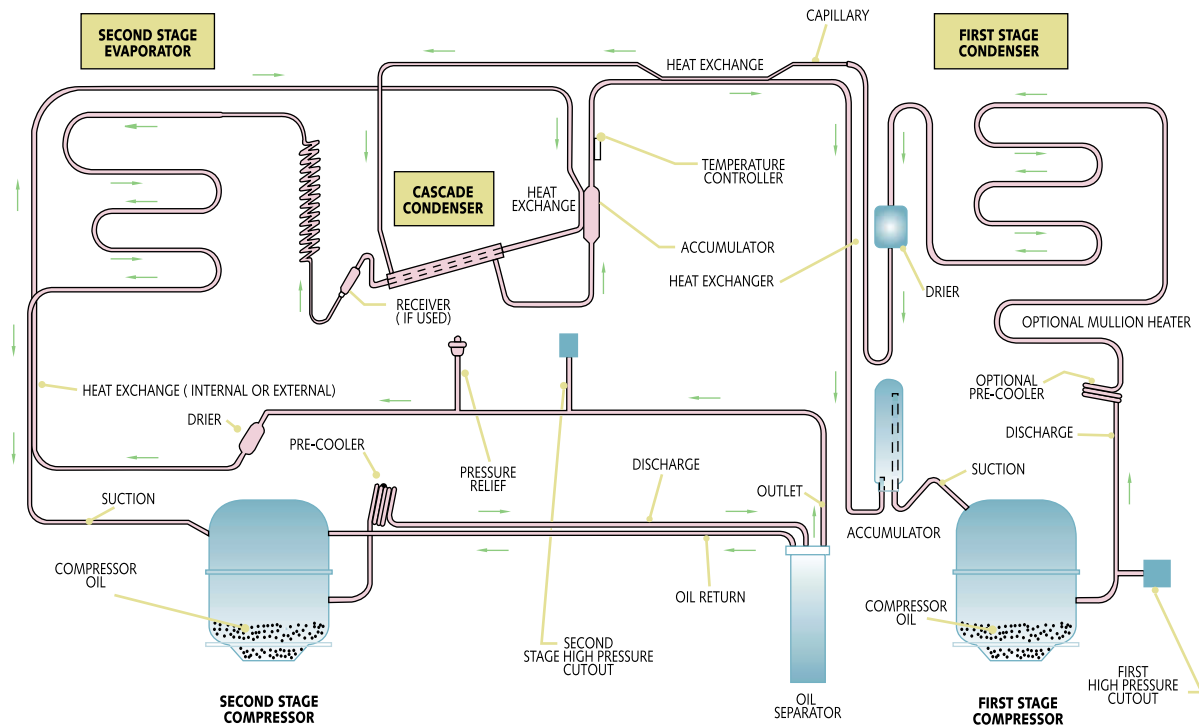
## COMPRESSOR TECHNOLOGY



A highly efficient, exclusive compressor has been specially developed and incorporated into each NuAire freezer. Each compressor is designed to be a powerful low-noise system that will deliver dependable, stable cooling. Each model is engineered to achieve optimum balance to maximize life expectancy and cooling efficiency.

The low stage compressor cycles off when the set point temperature is reached. This feature extends compressor life, protects the thermal overload system, decreases noise levels, and reduces power consumption. An oil separator effectively separates the lubricant oil from refrigerant.





## Uniform Temperature Stability

The freezer's interior temperature maintains very stable refrigeration down to  $-86^{\circ}\text{C}$  ( $-123^{\circ}\text{F}$ ), at an ambient temperature of  $32^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ). Temperature uniformity is the result of a new innovative freezer design.

Properly sized compressors, choice of CFC-free refrigerant, synthetic lubricant, locating the internally mounted platinum resistance

temperature sensor so that the digital thermometer displays the temperature of the center part of the freezing compartment, and positioning the copper refrigerant line to deliver more cooling capacity to those areas of the freezer that need additional cooling capacity. These features all combine to give the NuAire freezer uniform temperature stability.

## Low Power Consumption

NuAire's Ultralow Freezers are designed to be energy efficient.

- Quick pull-down and recovery time
- Energy efficient compressors
- Effective cooling distribution
- Electronic microprocessor control precision

Lubricant oil is essential to prevent damage to the compressor. However, when lubricant oil circulates in the refrigeration circuit, logging (sludge build-up) of the refrigeration system results and service will be required. "Oil logging" is also prevented by the use of a built-in timer which cycles the low stage compressor off every 24 hours for 5 minutes allowing the

capillary tubing to warm up and melt any ice crystals that may have formed within the system. Reliability for long-term preservation has been improved by having all the copper refrigerant lines welded, not soldered. This exclusive refrigeration design virtually eliminates gas leaks and provides a very stable ultralow temperature environment.



# -86° GLACIER BLUE



### Standard Features

- CFC-free 5" foam insulation
- Access port
- Heavy-gauge steel cabinet with long-lasting powder paint finish
- Heavy-duty swivel casters
- Key lock
- Four [4] year compressor warranty
- Two [2] air insulated inner doors
- Four [4] shelves – 3 adjustable
- Multi-point gasket seals
- Eye-level controls

### Optional Features

- Cobex® temperature recorder
- LN<sub>2</sub> back-up system
- CO<sub>2</sub> back-up system
- Stainless steel interior
- Surge suppressor
- Cryo gloves
- Floor anchor system
- Inventory system [racks and boxes]
- Low voltage boost

### Electrical Requirements

- 220V 60 Hz; 230V 50 Hz
- All single phase

### Temperature Control System

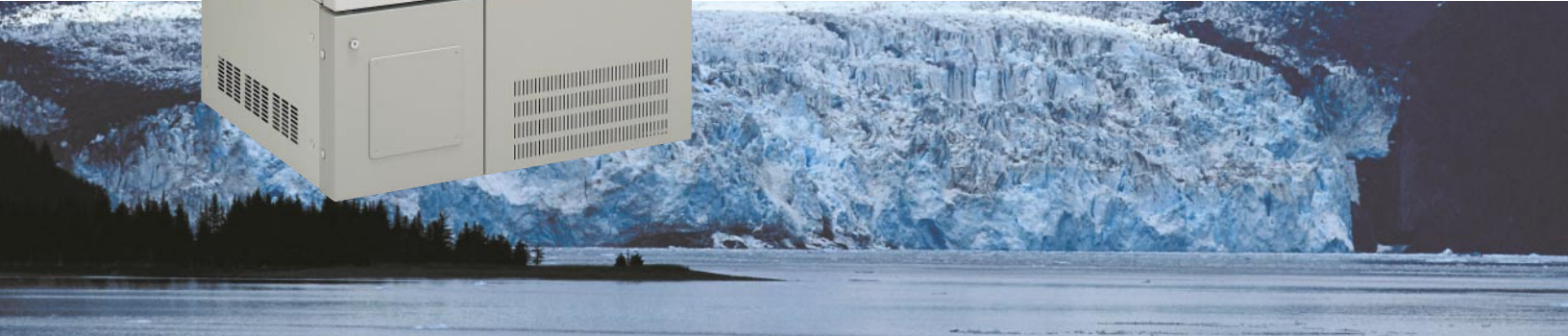
- Microprocessor control system
- Digital temperature display
- Set point security system

### Refrigeration System

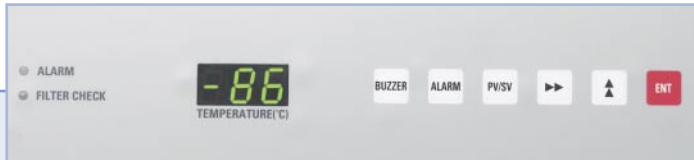
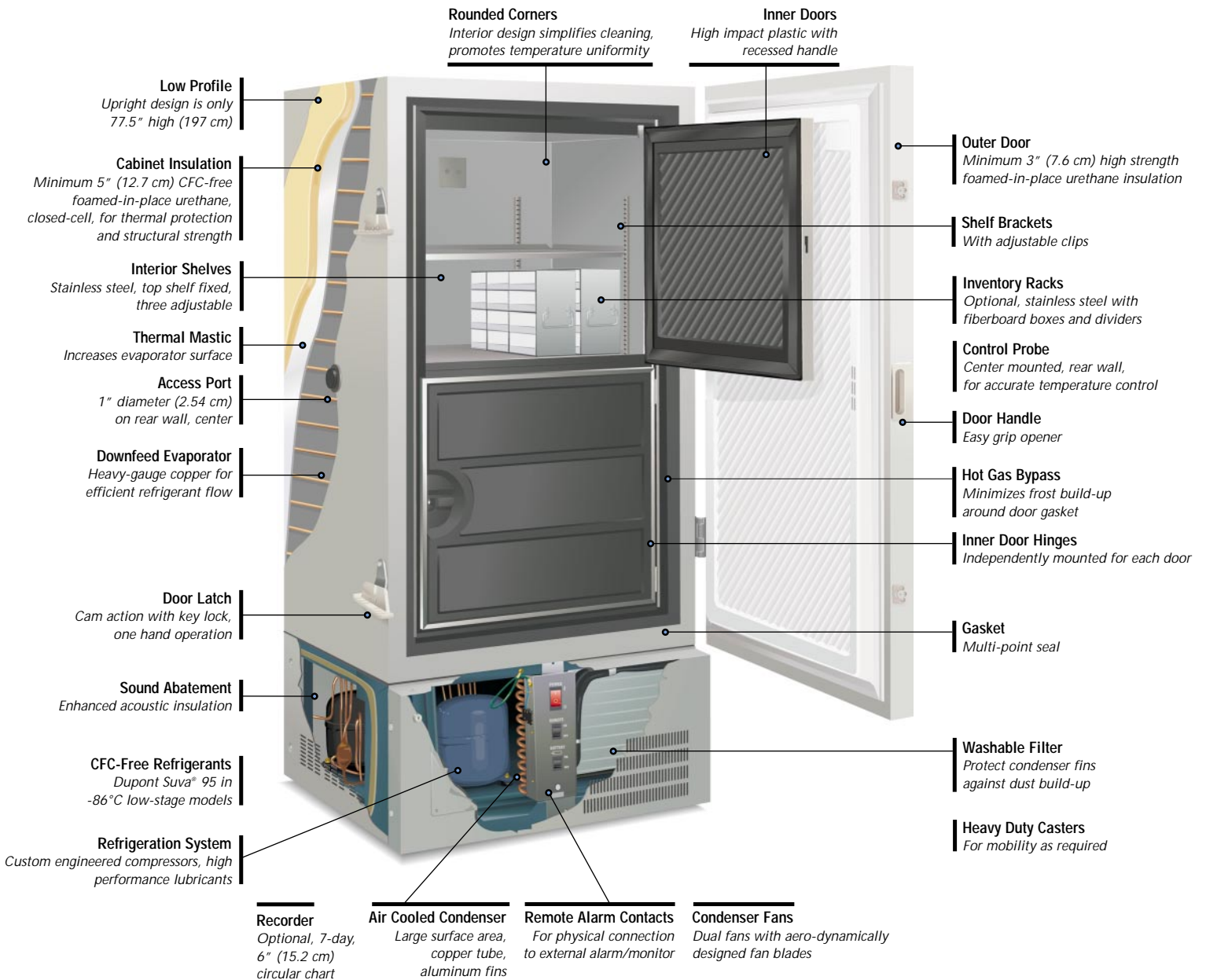
- Air-cooled cascade refrigeration system
- [2] 1 hp air-cooled compressors
- Temperature range -20°C to -86°C
- 100% HFC CFC-free refrigerants
- Efficient downfeed evaporator
- High capacity air-cooled condenser

### Alarm Systems

- Microprocessor controlled alarms
- Battery back-up
- Audible/visual overtemperature alarm
- Remote alarm contacts



	Ft. <sup>3</sup> / Liters	Electrical	Amps / Breakers	Dimensions (Exterior)	Dimensions (Interior)	Ship Weight	Inventory Systems
NU-6382G	13.5 / 382	220V 60 Hz	7.5 / 15	30.25 x 30.75 x 74 in.	24.5 x 20.25 x 47.25 in.	660 lbs.	16 Racks — 240, 2" Boxes or 144, 3" Boxes
NU-6382E	13.5 / 382	230V 50 Hz	7.5 / 15	87 x 78 x 188 cm	62 x 51.5 x 120 cm	300 Kg.	16 Racks — 240, 2" Boxes or 144, 3" Boxes
NU-6518G	18.3 / 518	220V 60 Hz	8.5 / 15	35.5 x 35.5 x 79 in.	25 x 24.5 x 51 in.	770 lbs.	16 Racks — 320, 2" Boxes or 256, 3" Boxes
NU-6518E	18.3 / 518	230V 50 Hz	8.5 / 15	90 x 90 x 201 cm	64 x 62.5 x 130 cm	350 Kg.	16 Racks — 320, 2" Boxes or 256, 3" Boxes
NU-6580G	20.5 / 580	220V 60 Hz	8.5 / 15	39 x 34.5 x 79.25 in.	29 x 23.5 x 51.5 in.	825 lbs.	20 Racks — 400, 2" Boxes or 320, 3" Boxes
NU-6580E	20.5 / 580	230V 50 Hz	8.5 / 15	99 x 87.5 x 201.5 cm	74 x 60 x 131 cm	375 Kg.	20 Racks — 400, 2" Boxes or 320, 3" Boxes



Eye-Level Control Center



## ACCESSORIES



### Cryo Safety Gloves

Protection for Hands and Arms



### Surge Suppressor

Tough, Safe Metal Housing



### 2" or 3" Fiberboard Boxes



### Inventory Rack

Accommodates 2" or 3" Boxes



### Temperature Recorder

Easily Installed into the Freezer Control Panel



### CO<sub>2</sub> or LN<sub>2</sub> Back-up Systems

Maintains a Safe Environment for your Freezer

Accessories are available online at [www.scientificvisions.com](http://www.scientificvisions.com)

## TESTING, WARRANTY, CUSTOMER SALES AND SERVICE

### TESTING

Full factory testing is your assurance of reliability in the laboratory. Each NuAire product is thoroughly inspected in our factory prior to final shipment, and that's just the final step in a rigorous system of quality control—from superior designs and materials, to finished product and final testing for certified performance. Whenever quality cannot be fully assessed in final assembled form, products are thoroughly inspected during sub-assembly fabrication. All electrical components are UL and CSA approved.

### WARRANTY

We continually believe our customers deserve the best equipment available in terms of performance, safety, and service. We have implemented this objective by offering our customers the strongest warranty in the market. NUAIRE wants you to have the best. you have purchased the best... now we want you to have a warranty that is the best. We want you to know that your confidence is well placed in NUAIRE products.

### CUSTOMER SALES AND SERVICE

Our customers say the nicest things about us. NUAIRE has redefined customer service, as exemplified by our expertly trained staff who have happily created strong relationships with our customers. NUAIRE service extends throughout the world. We extend to you, our valued customer, a service concept unique in the market,

**"we give you consistently the best we have to offer."**



[www.nuaire.com](http://www.nuaire.com)





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