



**COMPU-AIRE INC.**

*Specialized Environmental Air Conditioning Systems*



# HIGH CAPACITY

*Floor Mount System*

**Chilled Water**

6-50 tons with EC Fans

**System 2000**

## DEDICATED TO COMPUTER SAFETY

All computers are high sensitive to their environments. To function efficiently, they require specific temperature, humidity, and filtration conditions. Failure to meet these specified conditions can result in distorted or lost data. In some cases, even complete shutdown of computer services.

Compu-Aire understands the special environmental control needs of both mainframe and minicomputer rooms.

Today, Compu-Aire has successfully installed systems to suit the needs at defense, government, industrial, and commercial facilities. Compu-Aire's modern manufacturing facilities and experienced technicians are capable of original design and production for any requirement, however technically complex.

Compu-Aire's unique air conditioners not only keep pace with rapidly changing computer technology, but offer the highest degree of reliability in component and system operation, providing reliable performance 24 hours a day, 7 days a week.

# C A C - 8 3 4

System 2000

## *Type*

C= Chilled Water Cooled

## *Nominal Tonnage*

6 - 50 Ton

## *Voltage*

2 - 208

3 - 380

4 - 460

5 - 575

## *Phase*

3 - 3 phase

# SYSTEM 2000

## Chilled Water



### Cabinet & Frame

System 2000 frame is constructed of heavy gauge 1.5 square inch heliarc-welded tubular steel for strength and protection.

Exterior cabinet System 2000 front and side access panels are constructed of heavy gauge cold-rolled steel manufactured in the USA.

Access is made easy for servicing, as the cabinet is fitted with captive 1/4" fasteners which allow controlled access for service and are positioned to enhance cabinet appearance.

Access panels are well insulated with NFPA 90A rated 1" thick 1.5 lbs. density fiberglass insulation.

The cabinet has decorative front and side panels, which are color coordinated with the decor of the computer room. Standard colors available for the System 2000 are Sky Blue or Cloud White.



### "A" frame coil

System 2000 has two Chilled Water coils provided with high efficiency fins and larger coil face area. The "A" Frame coil is designed to provide the maximum sensible heat ratio required by the application in which the system is used for. The larger coil face area and optimized circuiting arrangement not only minimize the energy consumption but also provides precise control of temperature and humidity. Air bypass is provided to prevent saturated air from being introduced into the space in which is being controlled. Air is drawn through both circuits of the coil at low velocity providing effective surface exposure with minimum turbulence.

## TURN ON THE HEAT



### Electric Reheat

System 2000 standard reheat is provided in multi-stage two, three or four stages. The low-watt density, electrically enclosed elements are surrounded by 304 stainless steel tube and fins, thus extending the life of the elements, reducing sheath temperatures and eliminating ionization. Reheat operation is protected by dual temperature limit controls. In the dehumidification mode the system selected has ample reheat capacity to maintain dry-bulb conditions. (See technical data for reheat information on system selected)

### Multi State Electric Reheat That Saves Energy

Compu-Aire is concerned about energy conservation, which is why the Compu-Aire System 2100 standard reheat is provided in two, three, or four stages. Each element is finned tubular style, with a low watt density design for extended life.

### Steam Generating Humidifier-Canister Type

System 2000 is provided with a pre-piped and pre-wired electronic, electrode self-generating steam type humidifier. The humidifier has an adjustable humidity output setting of the full rated humidifier capacity.



Furthermore, the total system never allows the leaving relative humidity to exceed 80% so that the threat of condensation beneath the application's floor is eliminated.

The pure steam method eliminates air contaminating mineral deposits and excessive humidity inherent with evaporative or infra-red humidifiers. The steam generator requires no scheduled maintenance and is completely maintenance free.

Humidifier comes standard with an automatic flush cycle that senses the current consumption of the humidifier. The humidifier is equipped with disposable cylinder and an indicator that signals when the canister is to be changed which insures reliable, trouble free operation. The humidifier is complete with supply and drain valves, electronic controls and steam distributor.

Vapor produced is piped directly into the bypass air for efficient moisture introduction into the air stream.

### Fully Insulated Cabinet

The Compu-Aire System 2100 is constructed of 14 gauge heliarc welded tubular steel for strength and protection. Front access is made easy for servicing via well insulated access panels. A 1" thick, 1.5lb density insulation is utilized. The cabinet has decorative front and side panels, which can be color-coordinated with the décor of the computer room.

High humidity can cause moisture to accumulate on paper media, resulting in handling problems. When the Compu-Aire System 2000 is switched to the dehumidification mode, the reheat provided has sufficient capacity to maintain computer room dry bulb conditions.

### Maintenance-Free Humidifier

Each Compu-Aire System 2000 is provided with a pre-piped and pre-wired electronic self generating steam type humidifier. Completely maintenance free, the humidifier is equipped with a disposable cylinder. The vapor produced is introduced directly into the air bypass for maximum efficiency.

Firestat is mounted in the return air section. When return air temperatures exceed 99°F, it immediately de-energizes the system and displays an alarm condition. This is required by electrical codes in certain locations.

### High Voltage Control Panel

Each Compu-Aire System 200 is equipped with a high voltage panel containing the following components:

- Contractors
- Relays
- Fuse blocks
- Fuses
- Transformers
- Branch circuit protection for all components
- Terminal blocks
- High voltage disconnect switch

### Low Noise Level Fan

The Compu-Aire System 2000 has DWDI blowers mounted on a fan deck. The blowers draw through the air flow for even air distribution.

The fan section features the following:

- Permanently lubricated ball bearings
- Dual belt variable pitch drive
- Fan deck for improved air flow

### Easy Access Filters

The Compu-Aire System 2000 has standard 2" thick pleated media high efficiency filters, which are serviceable from the top or either side.



## TECHNOLOGY & COMMUNICATIONS

### COMPU-AIRE INC. 2200 + SERIES CONTROL

*Keeping the control in your hands*

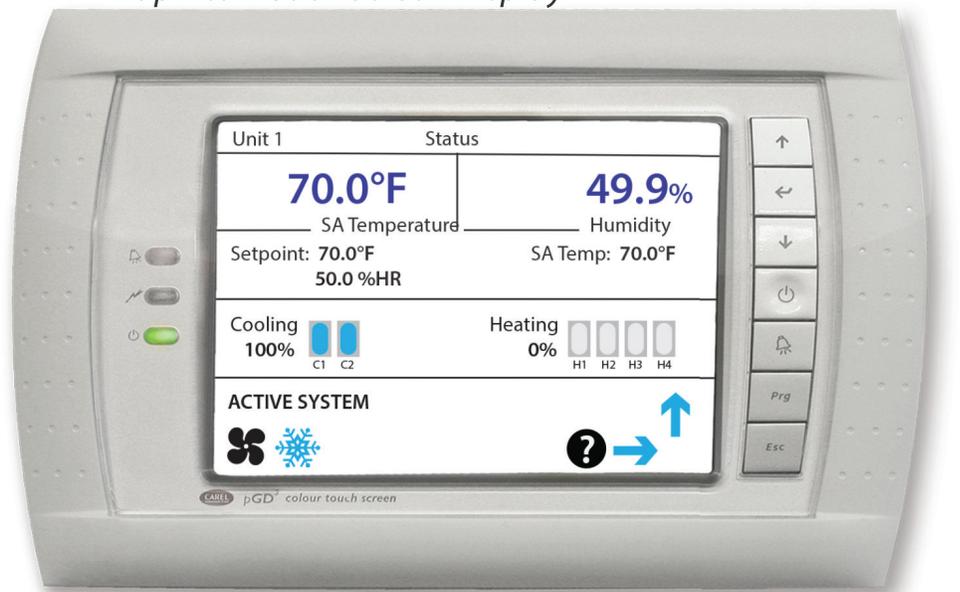
Compu-Aire Inc. has always focused special attention on simplicity of use, while at the same time fully exploiting the potential for flexibility and power offered by microprocessor technology.

Compu-Aire Inc. offers a diverse range of programmable controls, with state of the art user interfaces, including touch screen displays.

**Compu-Aire Inc. 2200+ Series control** provides a versatile approach to monitor the precise cooling and heating needs of your critical applications. With the latest technology available to the customer, we are able to provide reliable and flexible features to allow the customer to manage even the most intricate application.

Compu-Aire Inc. user friendly controllers support a variety of communications and protocols, including BacNet, LonWORKS, FTP, HTML, and Modbus.

### *Graphical Touch Screen Display*



Included are various animated icons and non-proportional fonts in Unicode format and trend graphs. The touch screen display functions simplify setting the control parameters, allowing the customer easy access to the System 2200+ series controller.

*Graphical status update with a touch of a button*

 *Fan On*

 *Demand for Heat*

 *Demand for Cooling*

 *Demand for Humidification*

 *Demand for Dehumidification*

 *Excess Humidity Draining*

 *Humidifier Active*

## BMS INTERFACE

*Interact and monitor remotely with the pCO web card.*

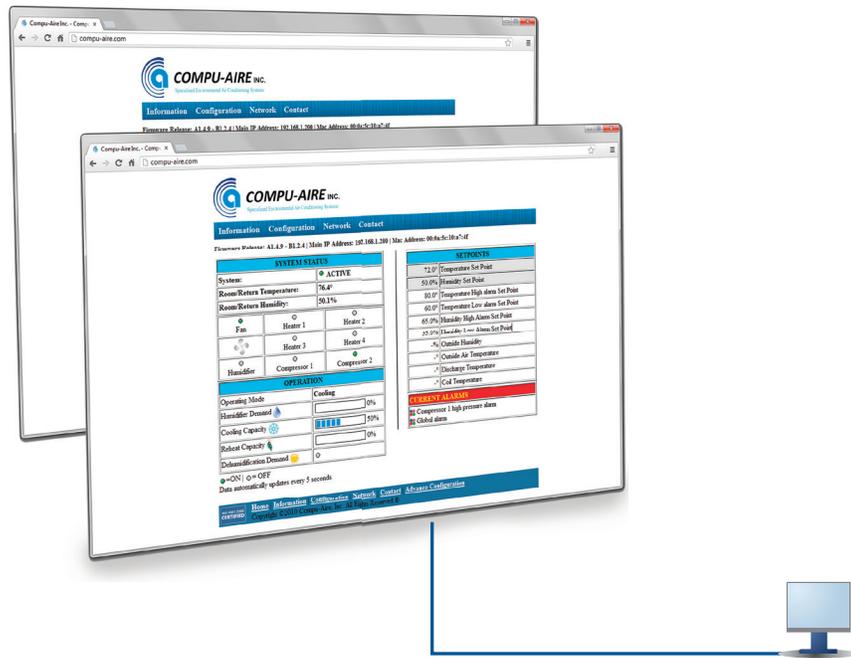
Compu-Aire Inc. advanced microprocessing control system provides access to our equipment through building management system (BMS) supporting industrial standard protocols including Modbus, BACnet, and LonWorks. This ensures easy access to the remote management of the unit via modem and internet.

### Available Communications Options

Interfacing with the emerging protocols in the HVAC sector and based on industry standards supporting the following networks:

- BACnet Over Ethernet
- BACnet Over TCP/IP
- BACnet MSTP
- SNMP v1, v2, v3 networks with trap
- Modbus
- RS-485
- LonWorks

## Stand Alone Supervision Over pCO web



## BMS Communication protocols

### BMS Interface:

Our controllers are capable to receive necessary sensor inputs from BMS and utilize it to control the equipment. The controls can monitor the BMS status and if BMS became off-line, controller can seamlessly switchover to local sensors and set points to maintain your data center cooling demand.

## pLAN Stand alone network

*Stand alone supervision over web browser*

### pCO Web card interface provides:

- Unit status with virtual information
- Room temperature/humidity
- Current set points for temp/humidity
- Mode of operation
- Current status for vital components such as compressors humidifiers, fan and reheat
- current active alarms
- Setpoint control for alarms

The pCO web card configuration interface provides limited access to control room temp/humidity a log with the ability to reset alarms

**NOTE: Critical alarms will require manual reset at the unit level.**

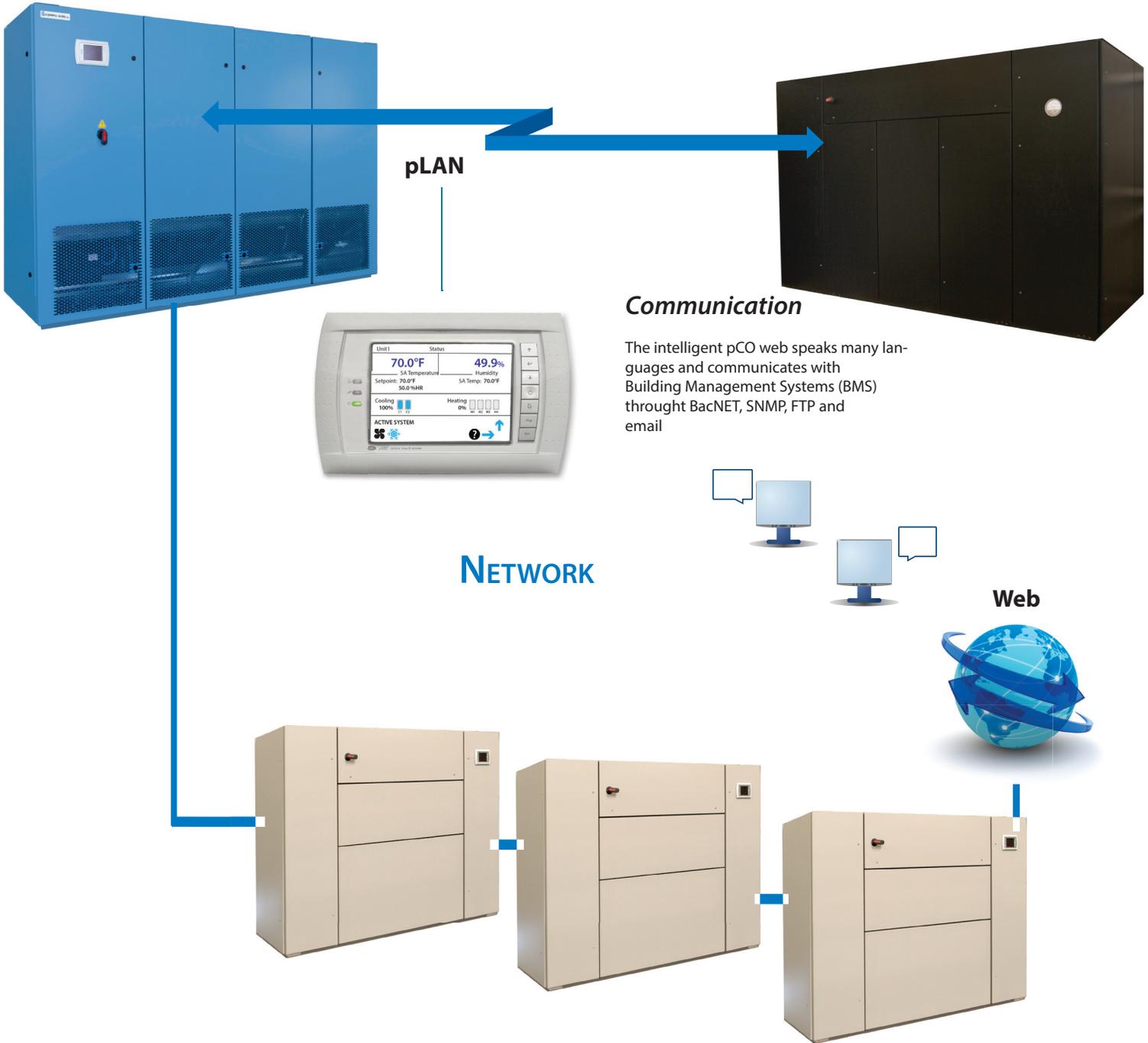
# pLAN Stand Alone Network

## Programmable Local Area Network

Local and remote monitoring can be achieved with our advanced microcontroller. Based systems are used to provide standalone supervision and control over a pLAN network giving the flexibility of a BMS system at the fraction of the cost.

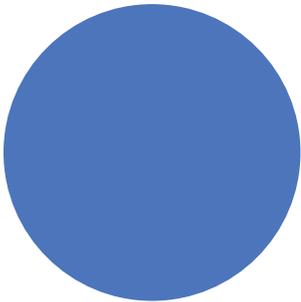
The p-LAN communication option allows two or more systems to talk to each other, p-LAN can be programmed for system rotation and for system failure over redundancy.

- Supports up to 16 units
- Lead/lag with multiple active & standby
- Unit rotation and auto changeover
- Alarm switchover to standby
- Assisted cooling
- Assisted heating
- Assisted humidification
- Dehumidification

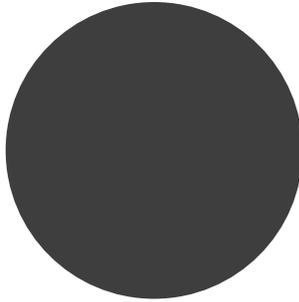




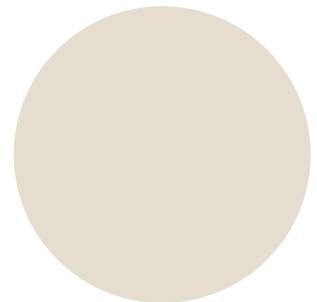
## Standard Color Selections



*Sky Blue*



*Black*



*Off White*



## PLUG FAN WITH EC MOTOR TECHNOLOGY

Standard Backward inclined direct drive Plug Fans with EC Motor, single inlet, single width, centrifugal wheel with an electronic commutated external rotor motor, shall have static and dynamic balance of the complete assembly.

 **GREEN TECHNOLOGY**  
**MINIMAL MAINTENANCE**  
**LOW ENERGY**

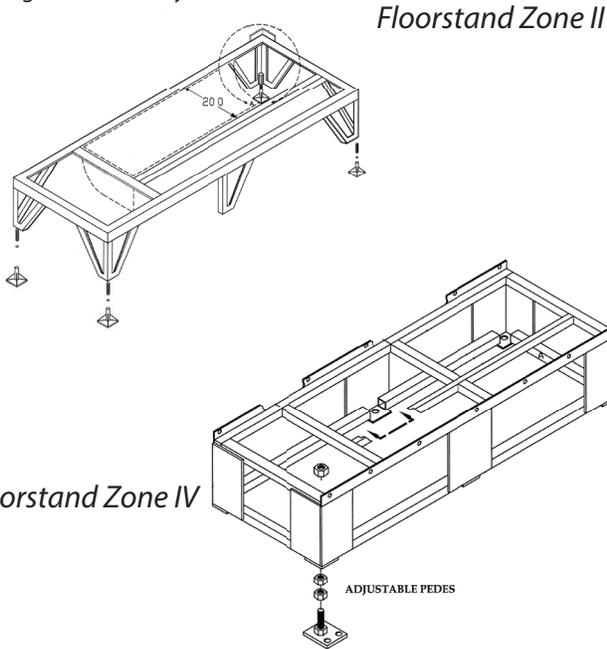
## OPTIONAL EQUIPMENT

### UPFLOW

The upflow version of the unit is available for installations where computer floors are not required and/or not available. The upflow unit can be provided with an insulated discharge plenum equipped with 4 way grilles for free air delivery in the room. Alternately, the unit can be provided with a duct flange for ducted supply air distribution.

### Floor Stand

The floor stand is constructed of heliarc welded angle steel with or without vibration isolation pads. It can also be provided with turning vane assembly.



Floorstand Zone IV

### Filters

Upgrade filters for various requirements are available in lieu of standard 2" 30% efficient filters. Also offered are 2" to 4" thick deep pleated filters, 30% - 60% efficient ASHRAE standard 52-76.

### Locking Type Disconnect Switch

Mounted on the high voltage section of the electrical panel, access to the high voltage panel is permitted after the switch is in the OFF position.



### Condensate Pump

Provided for field installations, a separate power source is required for the condensate pump.

### Smoke Detector

The smoke detector is activated upon sensing smoke in the room and automatically shuts down the system. It is located in the return air stream.

### Water Sensors

The sensors will detect any moisture underneath the floor. Upon sensing any moisture, it will activate an alarm and will de-energize the system if desired.

## REHEAT OPTIONS

The coils are copper tube and aluminum fins of sufficient capacity to maintain dry bulb during the de-humidification cycle.

### Hot Water Reheat

The hot water reheat is factory piped with a 2 way on/off control valve. A modulating valve is also available.

### Steam Reheat

The steam reheat is a coil that is factory piped with a 2 way on/off control valve. A strainer/trap is provided for field installation outside the unit.

### Extra Electric Heat

Additional electric reheat can be added to unit provided with any other optional reheat source.

### Humidifier Dry Steam

The dry steam is a double jacketed type that is piped with a solenoid valve. Upon detecting moisture, it will activate an alarm and will de-energize the system if desired.

### Infrared Humidifier

The infrared humidifier is provided with an infrared quartz lamp mounted of the water supply in a stainless steel pan. The humidifier is equipped with a float valve assembly and auto flush system.

### Electric Immersion Humidifier

The electric immersion humidifier is provided with low watt density heating elements in a stainless steel pan. The humidifier is equipped with a float valve assembly and auto flush system.

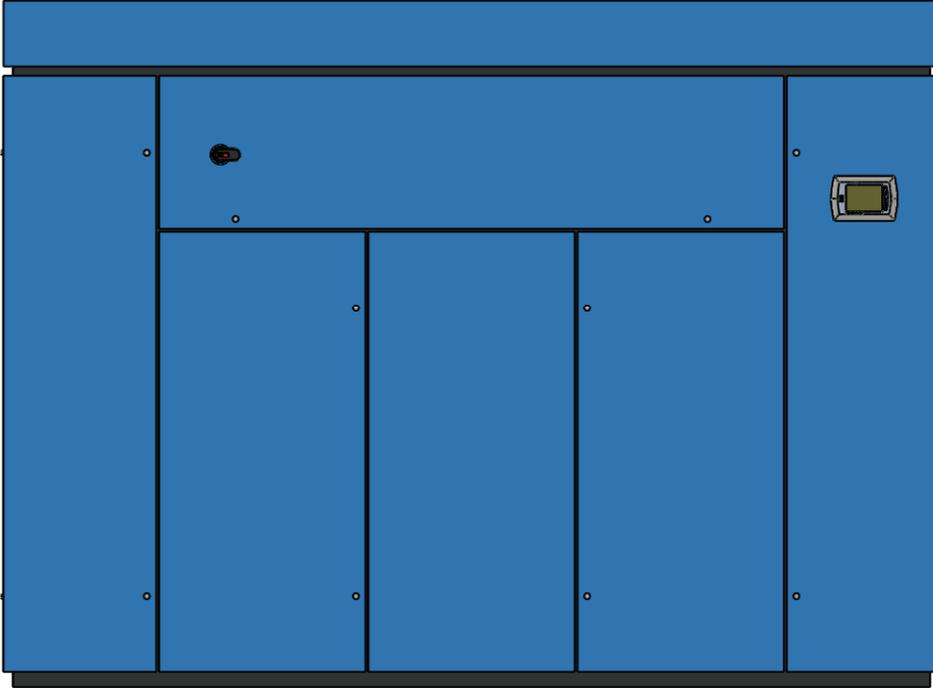
### Single Phase Unit

When 3 phase power is not available, a single phase unit can be provided.

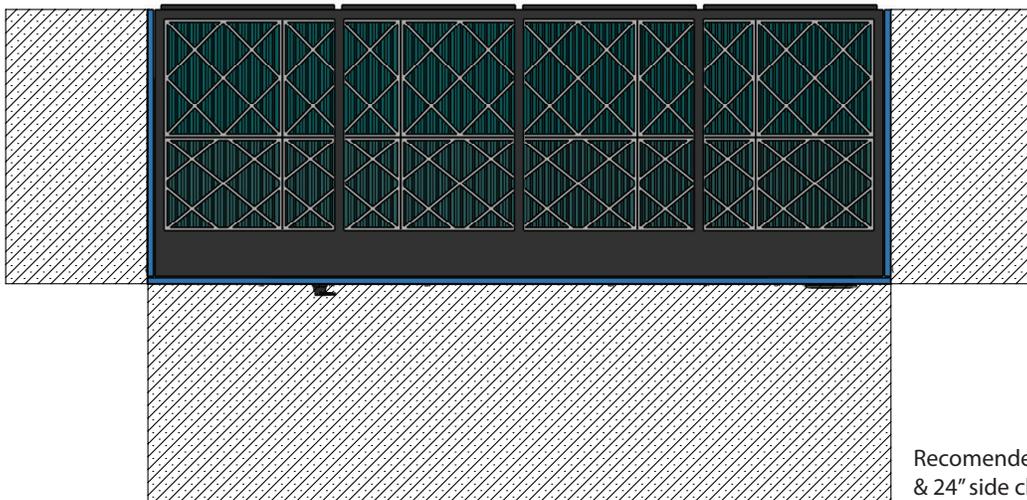
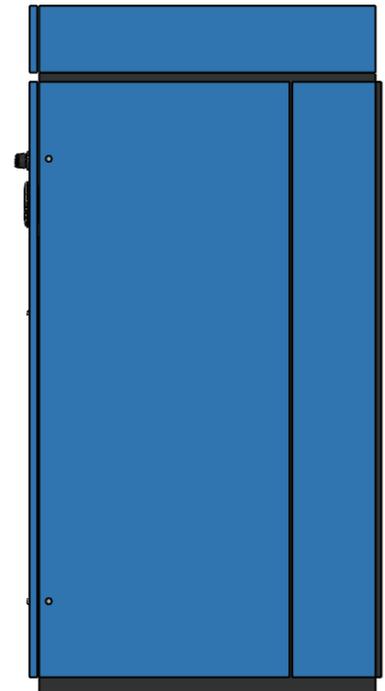
# DOWNFLOW

Air Flow Configuration

*Front View*

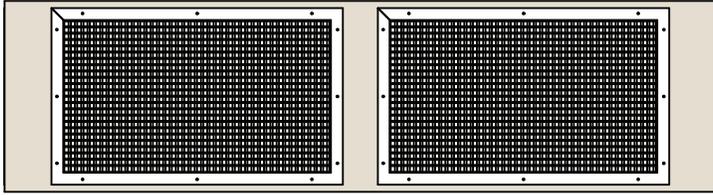


*Side View*

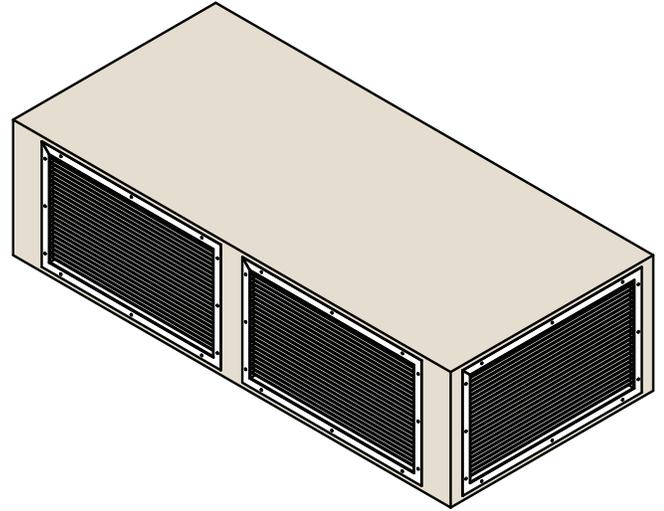


Recommended 36" front clearance  
& 24" side clearance

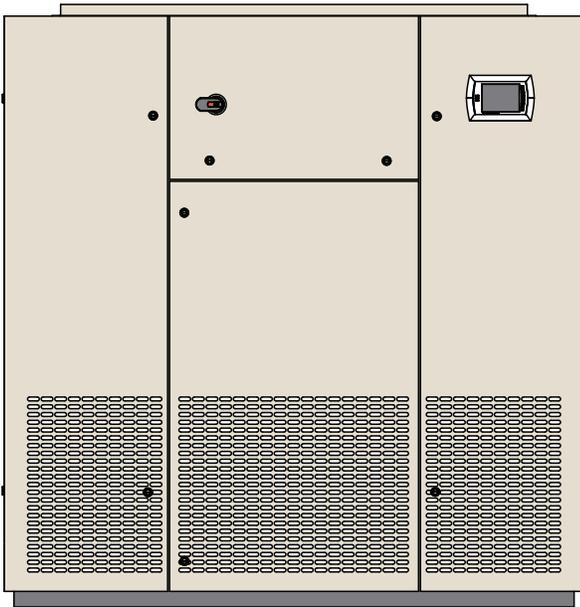
**UPFLOW**  
◇ Air Flow Configuration



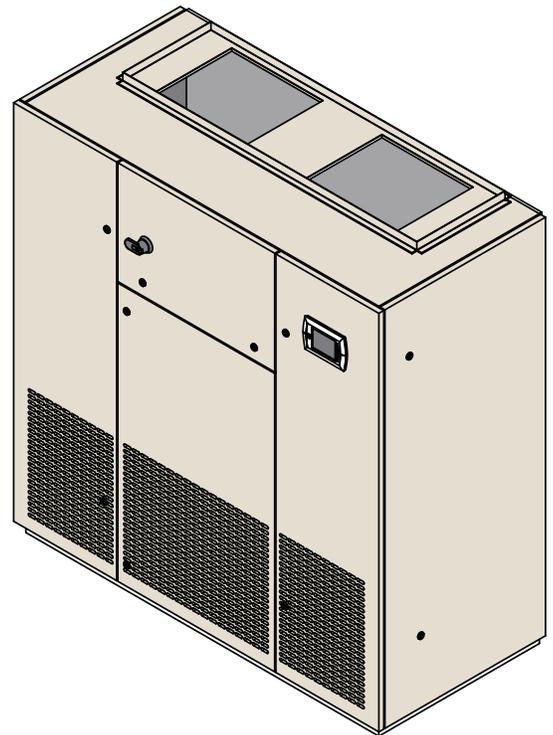
*Front View*



◇ *Air Distribution Plenum*



*Front View*



◇ optional



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