GrowAire™ with VPDsync

Superior Solutions for Grow Rooms

Dehumidification Systems for Indoor Climate Control


Cannabis


Lettuce


Strawberries

Desert Aire's GrowAire™ HVACD (Heating Ventilation Air Conditioning and Dehumidification) products offer Controlled Environment Agriculture (CEA) in a complete indoor climate control system. Our purpose built equipment for these indoor cultivation applications will allow you to tightly control both temperature and humidity at optimal conditions in order to maximize your yields and minimize plant risk. Our energy efficient design will allow you to control your facility without breaking the bank….read on to see how!


Alfalfa

Our GrowAire™ HVACD equipment is available in a wide range of unit configurations so that we can provide equipment that best fits your indoor cultivation facility. GrowAire™ units are available in indoor or outdoor construction, air cooled or water cooled systems, and in small, medium or large units to meet your facility needs. Let Desert Aire show you how we have assisted indoor cultivators grow happy plants and maximize yields.

Optimizing Solutions Through Superior Dehumidification Technology

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GROW AIRE™ with VPDsync

ATTAINING THE PERFECT INDOOR CLIMATE

CEA facilities create very unique challenges to the design of HVACD systems. These facilities have requirements for tight tolerance humidity and temperature and require airflow distribution in order to minimize micro-climates. Everyone recognizes the need for cooling to offset the artificial lighting used in CEA facilities. However, most people struggle with the calculation of the latent moisture removal needed in an indoor grow room.

A major strength of Desert Aire is our ability to assist customers with moisture removal applications. We have been controlling indoor humidity since 1978 and entered the indoor grow HVACD market in 2014. We immediately started asking the question how do we identify the latent moisture removal requirement in a CEA application?

Figure 1 - GrowAire™ Indoor Installation

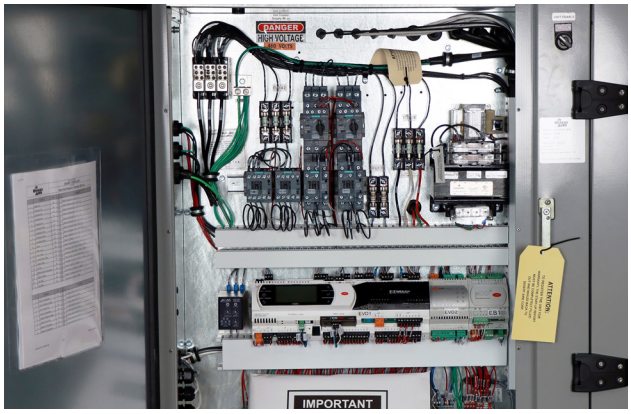

Figure 2 - GrowAire™ Electrical Panel

Rest assured, Desert Aire's process for equipment selection utilizes our research and knowledge of the evapotranspiration process and culminates with equipment that integrates temperature AND humidity control in a single system. When you select Desert Aire GrowAire™ as your HVACD provider you will be tapping into our years of knowledge and success in helping people maintain not only temperature but humidity levels for critical spaces.

Figure 3 - AireGuard™ Cloud-Based Remote Access

Figure 4 - GrowAire™ Rooftop Installation

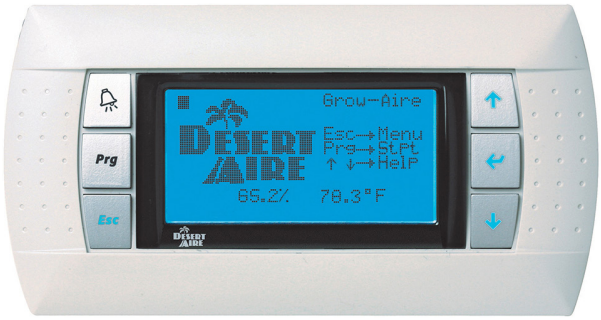

Figure 5 - GrowAire™ Controller Remote Display

Features and Benefits

Feature	Benefit
Integrated Temperature and Humidity Control	Desert Aire controls both the cooling and dehumidification needs in the room. Eliminates the need to add independent dehumidifiers.
VPDsync™	VPDsync™ environmental control operates on four dimensions of control to perfectly match the loads in an indoor plant environment. The controls in a GrowAire™ unit with VPDsync™ command the stages, airflow and valve positions to provide full modulation of the refrigerant system. This provides the optimal temperature from the machine at all times to maintain both temperature and humidity.
Desert Aire Questionnaire	Allows Desert Aire to identify ideal equipment configuration and sizes to meet cultivator's needs. Eliminates the guesswork in determining how much moisture removal you need.
Optimal Air Volume	Air flow is adjusted in response to the dehumidification and cooling requirements. In addition to tight control, this provides fan energy savings.
Microprocessor Operating Control	GrowAire™ units include factory provided operating controls that will activate refrigeration stages, adjust airflow, activate CO_2 injection (option), and record Alarm history. No need to rely on others to determine when and how to activate cooling or dehumidification.
AireGuard™ – Cloud-Based Access	GrowAire™ installations include remote access. This secure system allows approved users to access the system through the internet. Alarm notification via SMS and email are included. With AireGuard™, customers also receive our industry best technical support. Our ability to see controller inputs and outputs and view data trend graphs allows us to provide valuable input for tuning of equipment and equipment diagnostics.
Full Sized, Modulating Hot Gas Reheat Coils	A Hot Gas Reheat Coil allows a unit to warm the air to the proper temperature after moisture removal without using new energy. A modulating hot gas reheat system allows for precise leaving air temperature that will prevent wild swings of the zone temperature.
Year Round Operation	GrowAire™ units feature low temperature operation and include refrigerant receivers and other components not normally found in comfort cooling HVAC equipment that allow our equipment to operate in extreme climates: Indoor installed units with outdoor remote air cooled condensers: -40F/-40C Outdoor air cooled packaged units: -20F/-29C
Adjustable Control Parameters	Every grow room is slightly different. Once plants are put into a room, control algorithms can be tuned by tech support team to provide tight control of the room VPD (Vapor Pressure Deficit), temperature and humidity to improve plant growth.
Indoor, Outdoor, Air Cooled or Water Cooled Equipment Configurations	Some providers only offer you a single choice. Our superior refrigeration designs and flexible offerings allow you to decide what is best for your building type.
Desert Aire Zone Sensors or Network Sharing of Zone Conditions	Our operating controller will accept Network sharing of the Zone Temp and Humidity if you wish to use your fertigation sensors as the main sensor. Desert Aire would use our sensors as a backup in the event that network communication fails.
Unit Filtration	GrowAire™ units include 4 inch pleated filters at the intake. Our filters are available in any commercially available MERV rating in a 4 inch size.
BACnet, Modbus, and Lon Communication Protocols	Multiple options for connecting GrowAire™ units to your automation system.

For more information visit www.desert-aire.com

GrowAire™ with VPDsync

Dehumidification Schematic

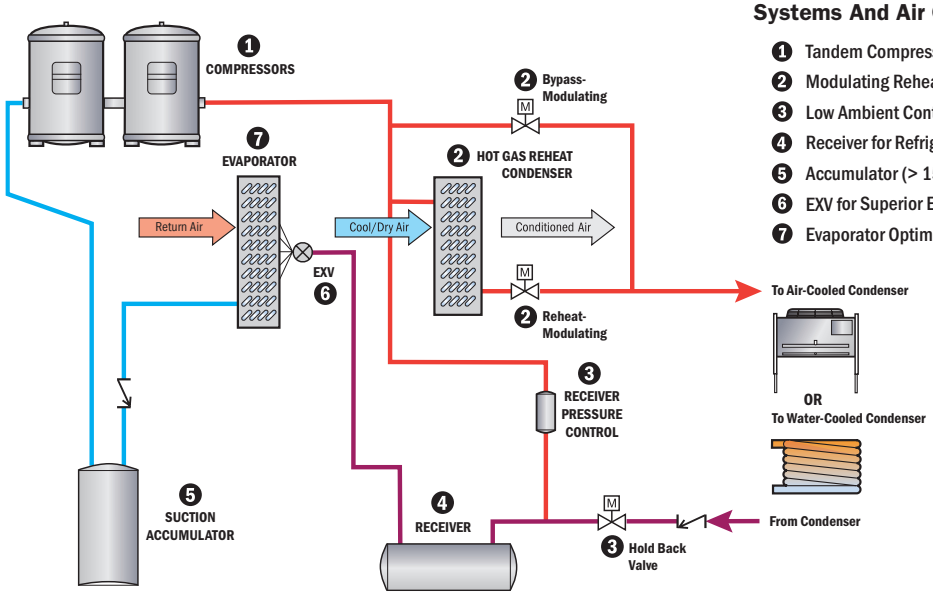

Figure 6 - GrowAire™ HVACD System Schematic

Major Differences Between GrowAire™ Systems And Air Conditioners

1. Tandem Compressors
2. Modulating Reheat Valves and Hot Gas Reheat Coil
3. Low Ambient Control (Receiver Pressure and Hold Back Valves)
4. Receiver for Refrigerant
5. Accumulator (> 15 Ton)
6. EXV for Superior Evaporator Control
7. Evaporator Optimized for Humidity Removal

Installation Options

Not only does Desert Aire offer an extensive list of options we also have the most diverse list of installation options of any HVACD supplier.

Selectable Options

- Power options of: 460/3/60, 230/3/60, 208/3/60, 575/3/60, 400/3/50, 380/3/50.
- Low Voltage/Phase Monitors
- Condensate Overflow Sensor
- CO_2 Injection
- Aux Heat options to supplement Hot Gas Reheat on projects with heat loss from the grow room.
  - Modulating Electric resistance
  - Modulating Hot Water Coil (GA & GS units)
  - Modulating indirect gas furnaces (GA & GS units)
- Unit mounted disconnects
- ElectroFin® coated coils for corrosion protection or for use on condensate reclamation programs

Figure 7 - GrowAire™ HVACD Unit and Remote Outdoor Condenser

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N120 W18485 Friestadt Road, Germantown, WI 53022 sales@desert-aire.com

Ph: (262) 946-7400 - www.desert-aire.com

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WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov