Cultiva Systems

We Help You Grow

Dedicated Indoor Agricultural System

DIAS

How We Help You Grow

Cultiva Systems provides HVAC equipment nationally and internationally for indoor agriculture. Our equipment is designed specifically to handle the varying loads that occur within the grow environment throughout the entire plant life cycle. The Cultiva Systems controls are engineered to maximize the equipment performance and capabilities with the flexibility to be customized to meet the customer's needs. Cultiva Systems works directly with engineers and contractors to understand the load requirements in a given space to ensure the equipment Cultiva Systems provides will achieve the desired conditions.

Energy efficiency is an ongoing concern and the related HVAC equipment cost can be the highest contributing factor to electrical consumption. Cultiva Systems equipment design reduces your energy consumption by providing efficient fan and compressor components and operation. The Cultiva Systems controls integrates with the equipment design and components to maximize energy efficiency while achieving the desired conditions; therefore, lowering the operating cost to the grower.

Cultiva Systems is available on your time. Our knowledge and support begin in the design phase of a project and continues through equipment startup, commissioning, owner training and beyond.

Packaged Units

Cultiva Systems packaged units are available in air cooled and water cooled from 10 to 60 tons. Installations include roof top and ground mount. Multiple air paths with bottom discharge/return, horizontal discharge/return as well as custom top discharge and horizontal return.

Introducing our Dedicated Indoor Agricultural System or **DIAS**, a complete system unlike conventional systems that utilize standard air conditioning units to control temperature and dehumidifiers to control humidity. Our **DIAS** units are built with the capacity required for late flower loads with enough turn down to handle a grow in the earliest stages of veg via Electronic Hot Gas Bypass on the lead refrigerant circuit. Powerful moisture removal capability for dry rooms with plenty of heat recovery (hot gas reheat) to keep the room where you need it.

All of our packaged units and vertical / horizontal self-contained air and water cooled units feature redundancy in each refrigerant circuit. Dual refrigerant circuits utilize fully modulating, maximum output hot gas reheat coils. Supply fan assemblies are direct drive plenum fans with integrated high efficiency EC motors.

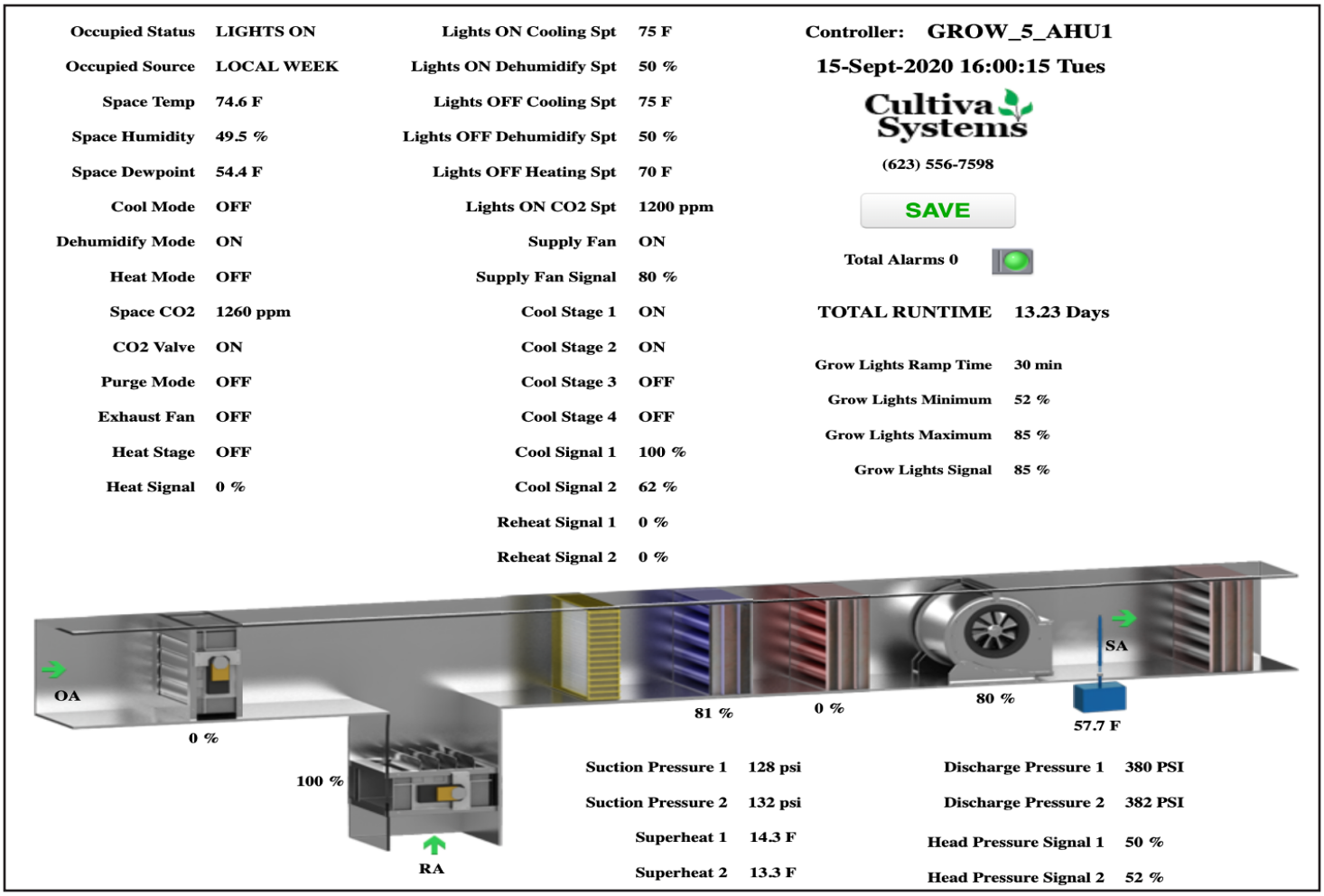
Available PCO air cleaner slot is included in each unit located between the evaporator and reheat coils. More effective than traditional UV lights and eliminates the need for HEPA and carbon filtration. Provided by Pura Vida Air Systems. We partner with them to provide the best air cleaner in the industry. Learn more about their products at www.puravidaairsystems.com.

Cultiva Systems

PURA VIDA AIR SYSTEMS

Vertical / Horizontal Self-Contained Units

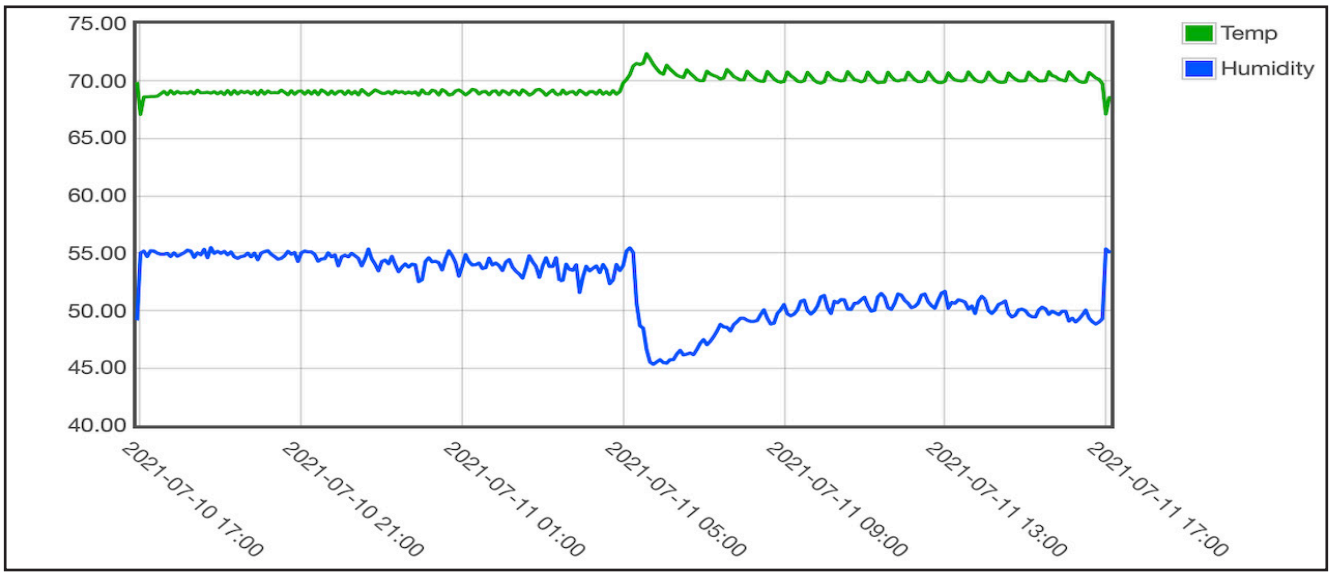
Cultiva Systems vertical and horizontal self-contained units are available in air cooled and water cooled from 10 to 45 tons. Multiple air paths with removable panels that are field configurable as top discharge, rear and front discharge with return air from the rear of the unit.



Controlling Your Environment

The FS32 controller's built-in Web Server, powered by PHP and HTML5 graphics, is multi-platform and multi-device compatible. User connectivity can be hard wired by Ethernet or is WiFi accessible if connected to the building network. A rich, informative user interface is provided for operational status, I/O monitoring, set point adjustment, configuration, internal scheduling, historical data collection and alarm reporting. Application backup and restore features are a part of the user interface utilities as well as customizable user access accounts. Integration with building automation systems is made easy with native BACnet IP / MSTP and Modbus TCP / RTU. Below is a screenshot of the Canopy Temp and Humidity graph of a Flower Room on an active job site showing a 24-hour period.

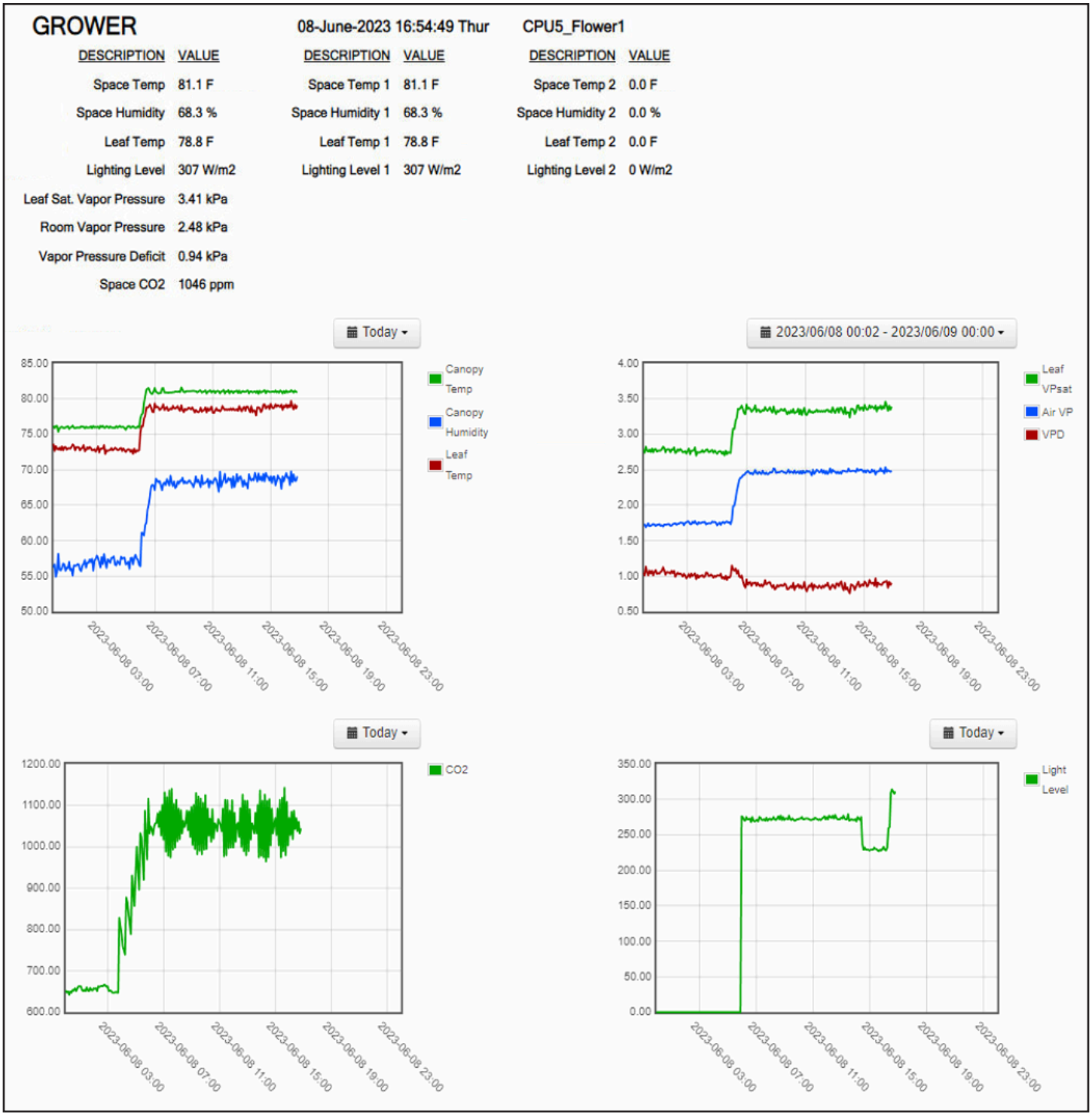
Our standard sequence of operations includes space temp/humidity control, CO2 injection, purge, high CO2 alarm strobes and lighting.



Graphics built for the GROWER

Utilizing Agrowtek Canopy Sensors, we not only monitor the Space Temperature and Humidity but through the passive IR sensors we also measure the temperature at the surface of the plant leaf. Because we can do this, we are also able to calculate the true Vapor Pressure Deficit between the Space Conditions and the plants. We trend and graph the leaf temperature and the calculated Vapor Pressures as well as the Deficit for easy viewing on the GROWER tab of our interface. Another key feature the Agrowtek Canopy sensors provide are Light Level sensors so we can automatically detect when the lights turn on/off and adjust set points accordingly. Below is a screenshot of the GROWER page of an actively running and operating Cultiva Systems unit.

*Note that this facility only uses one Agrowtek Canopy sensor on each unit but we have the ability to support more.



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