

Ætrium-4

Automated Cannabis Growth System



Grow Facility Using Ætrium-4

AUTOMATE YOUR GROW

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Ætrium-4 Automated Cannabis Growth System

The Ætrium-4 is a flowering/blooming system that can accommodate 1-20 large cannabis plants for high yield growth. It encompasses a 17 sq. ft. (1.6 m²) grow plate and is designed to be lit by one standard grow light. The compact, scalable tubs allow us to assure that all plants get the same irrigation and nutrition.



Dosing Configurations



5-tub doser



10-tub doser

Ætrium-4 Breakdown



Lighting Gantry (Optional)

Available in various lighting heights

Growth Area

Designed to accommodate various strains and growth sizes with anodized aluminum trellis supports

Growth Tub

Aeroponic system with interchangeable corrosion resistant growth trays

Ætrium Dosing Base

Fits under the Ætrium Growth Tub and can dose up to 5 or 10 tubs in a row



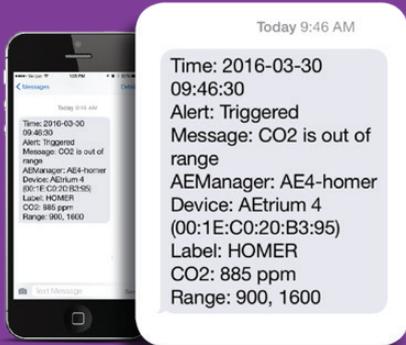
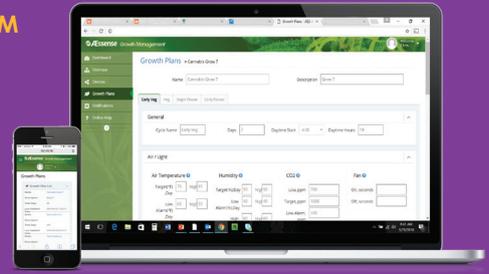
Guardian™ Grow Manager

Controls & monitors the plant growth on Ætrium-4 wirelessly on your smart device

Full Control With Guardian Grow Manager™

Our **Guardian Grow Manager** app provides 24-hour a day monitoring and control based upon a pre-configured growth plan and built-in aqueous and air sensors to measure and control the growth environment.

Our **Guardian Grow Manager** is essentially a full time "nanny". Our growers can step away from their grow securely knowing that their plants are safe.



Reduced Risk

Were something to go wrong with the AETrium System, our app can send texts and emails out to you and your team so that any issues can be quickly addressed without compromising the plants. The **Guardian Grow Manager** constantly controls plant growth and provides a user friendly centralized control console for the grower.

Users create their own grow plans that are "recipes" for all parameters during the cultivation period from nutrition to irrigation to the atmosphere. All data can be accessed from the **Guardian Grow Manager** either from the supplied tablet or via the web by computer or smart phone.

Modular & Scalable

Our AETrium System is scalable from one light to thousands of lights to meet the changing needs of cultivators.



Aeroponics System

Aeroponics is widely recognized as the most efficient form of the type of soil-less cultivation called "hydroponics" where nutrient rich water is sprayed on plant roots suspended in air. Having the damp roots in air maximizes oxygen uptake balancing the carbon dioxide uptake from the leaves to produce greater plant growth.

The AETrium System uses low pressure aeroponics which consumes less water and nutrients while producing greater yield than other cultivation techniques.



Rapid Turn Around Time

AETrium-4 allows quick cleaning and disinfection. Remove any wayward roots, drain the nutrient water, do a quick rinse of dilute bleach or hydrogen peroxide, rinse again, refill, and you're ready to go in no time. The **Guardian Grow Manager** takes over and redoses for the new grow. Fewer steps and no dirt to deal with.

AETrium-4 tub right after harvest



Harvest



Clean



Refill

Ætrium Growth Tub

- **Outside Dimensions:** 57" (1448 mm) x 43.5" (1105 mm) x 12" (305mm) W x D x H
 - Final height on legs (without casters) is 33.7" (856 mm) (casters included)
 - Made of impact-resistant, easy to clean, non-corrosive materials
- **Growth Trays:** 42" (1080 mm) x 54.5" (1386 mm) interchangeable corrosion-resistant powder white colored coated aluminum tray with 5 rows of 4 holes for 3.75" net pots 10.6" (270mm) and 11.2" (285mm) on center. Each net pot will be surrounded by aeroponic spray heads delivering fresh nutrient mixture from manifolds intrinsic to the growth plate.
- **Options:**
 - **Trellis supports:** 3' straight anodized aluminum provide solid mounting point for user supplied trellising material
 - **Trellis bars:** span between trellis supports to allow for highly tensioned trellising
 - **Light Gantries:** 8' or 10' high light gantries allow users to hang a light above the grow tray and stay centered above the grow tray even when an Ætrium tub or rows of Ætrium tubs are moved.
- **Connections:** Growth tubs solidly connect together to form a row that can be dosed by one Ætrium Dosing Base and moved as a row of 1-5 to 10 tubs.

Guardian Grow Manager

- **Guardian Grow Manager:** Provides a user friendly centralized control console for the grower. All data can be accessed from the Guardian Grow Manager either from the supplied tablet or even via the web from your smart phone when you are away from your grow. Guardian Grow Manager constantly controls plant growth and provides cloud based alerts to the grower when critical issues arise.
- **Automatically Doses Nutrients & pH Based on Customers' Nutrition Plan:** As technical malfunctions can lead to plant death and loss of a crop, redundancy, sensing and alarms have been implemented in the Ætrium such that any failure will, at a minimum, cause a system alarm.
- **Datalogging:** Analysis of data is the key to improving plant health and yields. Parameters are logged by the Guardian Grow Manager.
 - Local datalogging using the Grow Manager logs 2 weeks of data
 - Unlimited secure data collection in the cloud when connected to the customer's internet connection
- **Data manipulation:** the Guardian Grow Manager can easily export data for further manipulation using your favorite software like Microsoft Excel.

Ætrium Dosing Base

- Located under the Ætrium Growth Tub and can dose up to 5 tubs, one above and 4 additional in a row.
- **Automatic Nutrient Monitoring:** readouts come through the Guardian Grow Manager.
 - **Water Temperature:**
 - Range: 32-122°F (0-50°C)
 - Resolution: 1°F (0.1°C)
 - Response time: 30 seconds
 - **pH of water:**
 - Range: 0-14 pH
 - Resolution: 0.01 pH
 - Response time: 15 seconds
 - **Total Dissolved Solids (TDS) in water:**
 - Range: 10 µS/cm – 30 mS/cm
 - Response Time: 15 seconds
- **Automatic Nutrient Dosing:**
 - **Liquid Nutrients dosed:** pH up and down along with up to 5 other nutrients
 - **Nutrient Capacity:** The Dosing Module can contain up to seven bottles (7x 2 liter for 5-tub, 4 x 20 liter and 3 x 4 liter for 10 tub doser) that are automatically dosed to the reservoir by peristaltic pumps when called for by the Guardian App based upon the sensor readings.
 - **Total reservoir capacity:** 50 gallons
 - **Power Requirements:** The Ætrium Dosing Base and 10 Ætrium Growth Tub will draw less than 1000 watts.

Ætrium Air Monitoring Module

- The air sensors are provided in a separate package and can be positioned strategically in the growth environment to communicate with the Guardian Grow Manager.
- **Sensors:**
 - **Air Temperature:**
 - Range: 32-122°F (0-50°C)
 - Resolution: 1°F (0.1°C)
 - Response time: 30 seconds
 - **Humidity in Air:**
 - Range: 0-100 %RH
 - Resolution: 1%RH
 - Response time: 10 seconds
 - **Carbon Dioxide (CO₂) in Air:**
 - Range: 0-10,000ppm
 - Resolution: 50ppm
 - Response time: 2 minutes

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