

CONVIRON®



CONVIRON  
GROWTH HOUSE™



# CONVIRON GROWTH HOUSE™

The Conviron Growth House™ offers the large growth capacity of a research greenhouse with the tight temperature, light and humidity controls of a reach-in chamber.

Ideal for large scale plant propagation studies requiring a growth area anywhere from 300 ft<sup>2</sup> to 2000 ft<sup>2</sup> or above, the Conviron Growth House™ can be configured to fit a designated area inside your existing facility or installed outdoors as an adjacent or stand-alone structure.

## Lighting

Various lighting configurations are available. For example, units can be designed with a High Intensity Discharge (HID) lighting and support system similar to that used in a high-performance research greenhouse. This enables units to achieve light level intensities similar to those of Conviron's standard walk-in rooms. Other lighting systems, features and options can be designed to your specifications.



***“The Conviron Growth House™ offers the exceptional growth capacity of a greenhouse with precise environmental controls you find in a reach-in growth chamber.”***

### **Airflow**

Using an innovative design, a top-down airflow pattern uniformly disperses conditioned air from the top of each plenum and returns the air through conditioning coils located at the bottom of the chamber area. Filtered and adjustable fresh air intake and exhaust openings enable researchers to manage exchange air to the chamber.

### **Refrigeration**

Cooling for the Conviron Growth House™ is provided by a self-contained water-cooled condensing unit with hot gas bypass for continuous compressor operation. An electronic modulating valve provides tight temperature control while ensuring quiet operation. Pressure transducers monitor the status of the refrigeration system. Alternative refrigeration methods are available depending on site-specific and/or user defined requirements. Information on heat rejection and other refrigeration options are available upon request.

### **Experiment Protection**

User programmable alarms track the unit's operation versus user-defined set points. This allows for exceptionally accurate monitoring without the need for adjustment every time the set point is redefined.

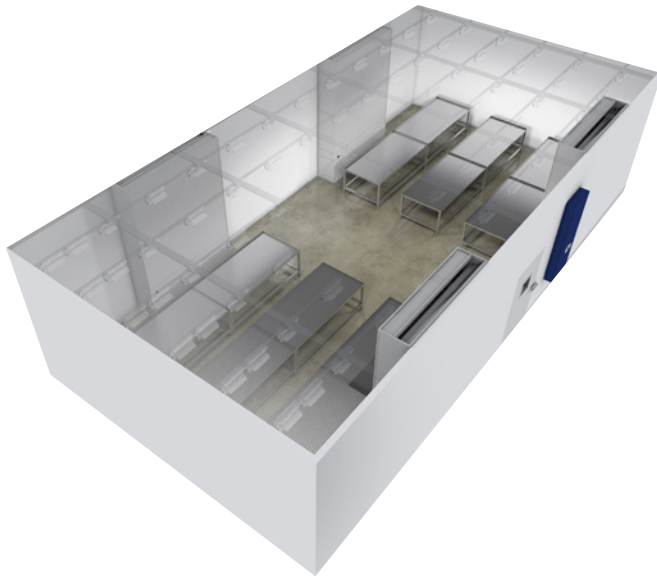
Backup “high/low” alarms provide a further level of protection while visual and audible notification is provided when any alarm is activated. Contacts for connection to a building management system are also included.



### **Irrigation, Fertigation and Phenotyping**

To maximize floor space and reduce plant handling and maintenance associated with large scale plant growth experiments, units can be equipped with a plant conveyor system and outfitted with automated irrigation and fertigation capability. For highly specialized phenotyping applications, imaging and high throughput screening systems can also be integrated.

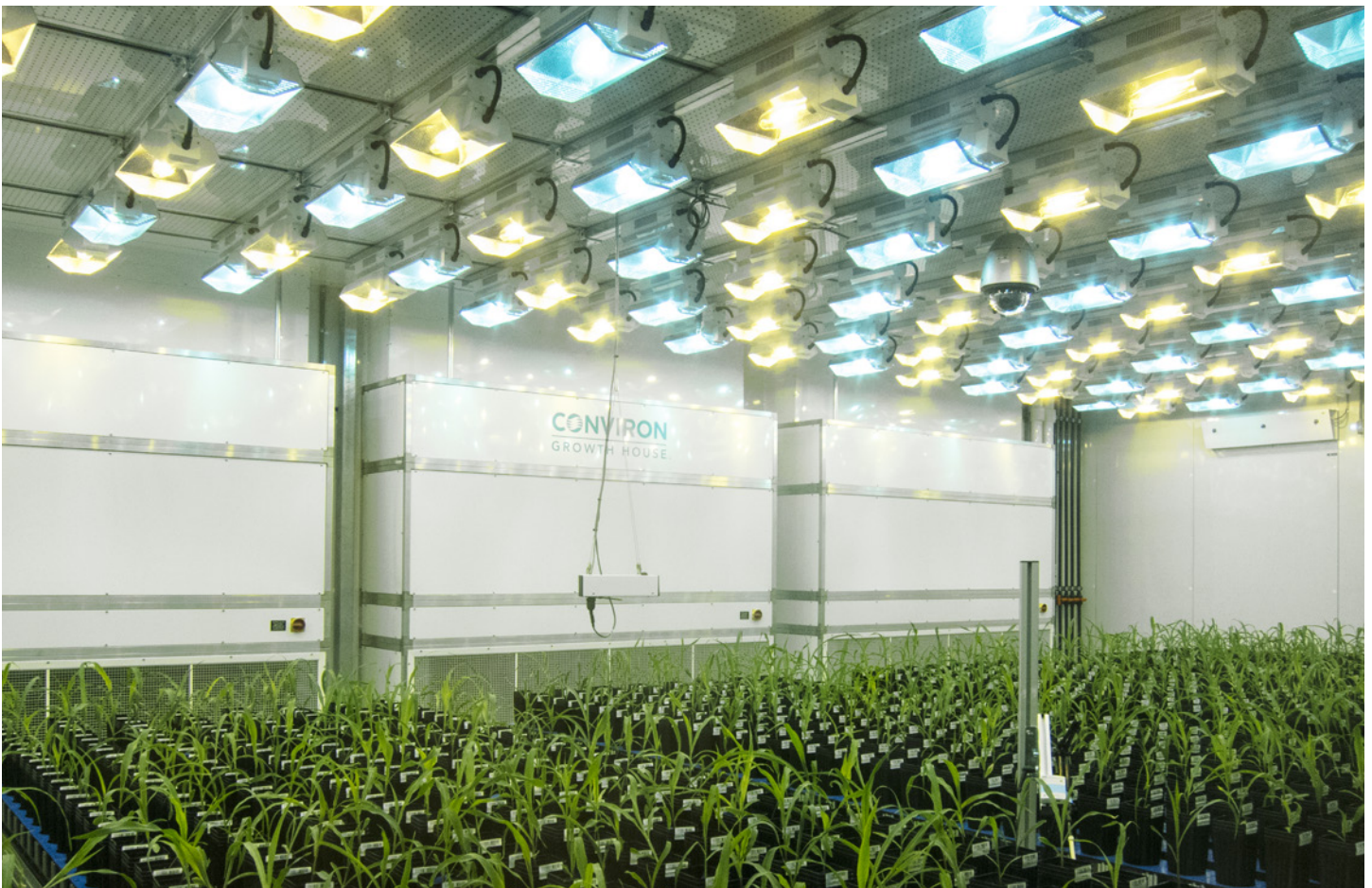




## Interior Installation

The Convirion Growth House™ offers a compelling alternative for scaling up research experiments compared to what has historically required a greenhouse or multiple controlled environment rooms. Installed indoors, the Convirion Growth House™ can make use of available space and integrate seamlessly into the research facility. Available in many size configurations, the Convirion Growth House™ ensures available space within your facility is fully utilized - maximizing your growth area.

Overhead view of Convirion Growth House™  
(ceiling not shown)





## Exterior Installation

Should space be a limitation at your facility, the Conviron Growth House™ can be constructed at a suitable location outdoors - adjacent, near your lab or on a rooftop.

Constructed with bonded paneling, the interior of the growth house is not visually exposed as it is with a greenhouse and therefore light pollution is eliminated and the security of the facility and the experiment is enhanced.

Aerial view of Conviron Growth House™ installed adjacent to existing lab.



Cross section view



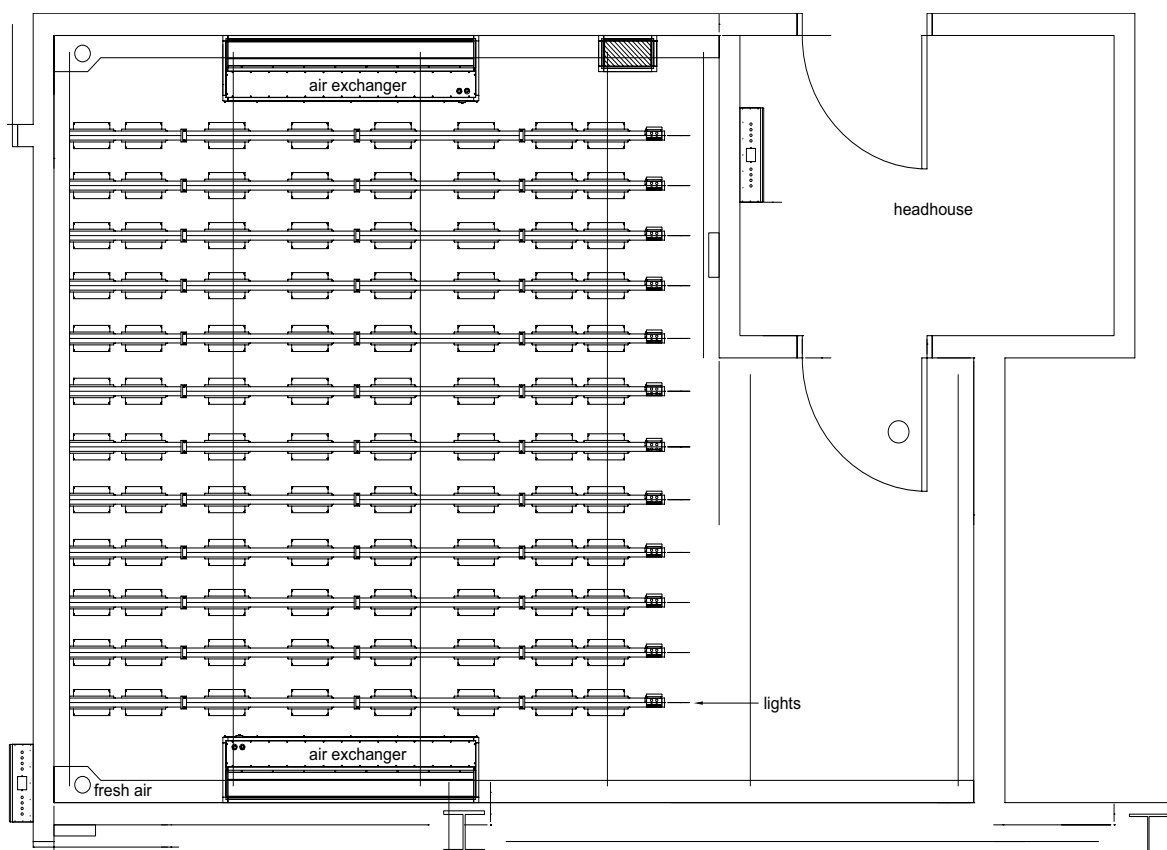
## Key Product Attributes

- Exceptionally large growth area
- Precise and repeatable environmental control including Temperature, Light and Humidity
- Customizable options include lighting, refrigeration, additive CO<sub>2</sub>, irrigation, fertigation, and construction method
- Optional construction for outdoor use
- Integration with plant conveyor and high throughput plant phenotyping systems



## Customizable Dimensions

The length, width and height of a Conviron Growth House™ are fully customizable. A typical plan view is shown below.



## Performance Data

Sample Sizes (ft <sup>2</sup> )	Temperature Range (°C)	Light Intensity (~1m from lamp)	Relative Humidity (%)
300	15 – 35 lights on 12 – 35 lights off	up to 1100 $\mu\text{moles}/\text{m}^2/\text{s}$ @ 25°C	$\leq 75$
600			
1200			
2000			

\*Designs in excess of 2000 ft<sup>2</sup> also available.





## GROUP OF COMPANIES

Founded in 1964, CEL Group of Companies (CEL) comprises Conviron Canada, Conviron USA, Conviron Europe and Conviron Australia together forming the world's leading designer and supplier of controlled environments for plant growth. CEL Group also includes Argus Controls, one of the leading suppliers of plant-centric environmental controls and automation systems used in greenhouse and indoor growing facilities. Together, Conviron and Argus provide technologies to our clients in the plant science research, commercial horticulture, and plant-derived pharmaceutical industries in over 90 countries around the world.




# CONVIRON®

Winnipeg, Manitoba, Canada  
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# ARGUS® CONTROLS

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CE  Management System Certified to ISO 9001

REF: Growth House Brochure, Rev. 02, July 2021, MK0178

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