



CONTROLLED ENVIRONMENTS

For Plant Research, Phytopharma & Cannabis Production

AUSTRALASIA

CONVIRON



GEN1000 Reach-In

Single chamber uniquely adaptable to four different applications:

- Plant Growth
- Arabidopsis
- Tissue Culture
- Incubation
- Entomology

Precisely designed airflow and lighting configurations for each application.



REACH-IN CHAMBERS

For applications requiring precise control of environmental parameters provided within flexible and space-efficient chamber designs.



GEN1000 Reach-In

PROVIDING SOLUTIONS

For Plant Research, Phytopharma & Cannabis Production

Conviron's controlled environments provide precise, uniform, and repeatable control of critical environmental parameters including temperature, light, humidity, CO₂ and other gases. All environmental conditions can be remotely programmed, monitored and analyzed with accuracy and convenience. Numerous other options are available to meet your requirements, such as:

- Extended temperature range
- Increased growth height
- Air and water cooled refrigeration
- Fluorescent, HID and LED lighting
- Dehumidification
- HEPA filtration



Walk-In Rooms

WALK-IN ROOMS

For larger scale, higher throughput applications that demand uniformity of environmental conditions throughout a larger growth space.



Conviron Growth House™

CONVIRON GROWTH HOUSE™

For applications that require the capacity of a greenhouse with the precision of a growth chamber.



Custom Room with LED lights

CUSTOM SOLUTIONS

Our team of designers and engineers specialize in custom designing controlled environments to meet your unique research, production and facility layout requirements.

Established in 1964, Conviron is the world's largest supplier of controlled environment systems. Applications include:

- Tall and short plants
- Incubation, germination
- Seed storage
- Tissue culture
- Entomology
- Phytopharma Production
- Cannabis Production

INTEGRATING TECHNOLOGIES For High Performance Facilities

ADVANCED CONTROL SYSTEMS BY ARGUS

An advanced control system is critical to translate your expertise into action accurately and reliably. Acquired by Conviron in 2013, Argus (Canada) has over thirty years' experience specializing in the design and manufacture of integrated control systems for greenhouses and plant growth chambers and rooms.

Argus offers proven solutions for plant-centric central management of entire research and production facilities, including growth rooms and building systems. In addition to precision temperature and humidity control, Argus offers:

- Sophisticated programs for managing light intensity, photoperiods and CO₂
- Precision hydroponic feed recipes tailored for each plant using advanced irrigation scheduling and the Argus Multi-Feed nutrient injection system
- 24/7 monitoring of all equipment and facility conditions with local, remote alarm annunciation and custom email alerts to allow rapid response to alarms
- Monitoring of crop conditions and development with integrated camera imagery
- Tracking of all production parameters over time with extensive data acquisition and graphing capabilities
- Secure remote system access via LAN/Internet
- Comprehensive remote service and support



Argus Control System



LED Lighting Solutions



Argus Multi-feed Injectors



Automated Plant Imaging System

LIGHTING SOLUTIONS

Optimizing Spectrum and Energy-Savings

The selection of lighting depends on your requirements for light spectrum and energy-usage. Most Conviron plant growth rooms and chambers have primary and secondary lighting or a mix of types – fluorescent, halogen incandescent, high pressure sodium, metal halide and ceramic metal halide, and LED – to deliver a range of intensity from 100 to 1,400 μmol .

As an exclusive distributor for Valoya (Finland), Conviron offers continuous wide spectrum LEDs that have been developed specifically for high volume plant growth applications and can reduce energy consumption by nearly 40% compared to fluorescent T5. Conviron also integrates LEDs from other manufacturers to provide you with LEDs most suited to their application.

STREAMLINING WORKFLOW AND IMPROVING CONTROL

Controlled Irrigation

Conviron's automated irrigation systems eliminate the inaccuracies of manual watering of plants. "Flood and drain" systems for trays or drip systems for individual plants are available depending on the plant requirements and size of growth room.

Automated Nutrient Supply

Argus Multi-Feed injectors offer advanced fertigation capabilities including full single-element dosing options and on-the-fly delivery of multiple stock concentrates regardless of the system flow rate. The same dosing equipment is capable of delivering numerous recipes, which can be modified to suit changing environmental conditions. Fully integrated with the Argus control system, Multi-Feed injection systems enable you to simply dial in a precision feeding program for every crop.

Space-Efficient Benching

Conviron provides various shelving and benching solutions, including rolling benches with integrated irrigation trays, expanded metal tops, or solid tops mounted on the bench.

Plant Imaging

The Conviron Growth House™ is easily configured to work seamlessly with commercially available imaging and automated plant handling and production systems.



With installations in more than 90 countries, Conviron's projects range from small single-chamber installations to large scale, multi-chamber facilities in some of the most prestigious corporate, university and research institutions around the world. In the Australasia region alone, Conviron has successfully installed over 2,500 controlled environments since 1974.

AUSTRALASIA REGION

MAJOR INSTALLATIONS

AUSTRALIA

- Australian National University
32 Reach-In
- Charles Sturt University
15 Reach-In, 9 Walk-In
- CSIRO Black Mountain
111 Reach-In, 7 Walk-In
- CSIRO Perth
7 Reach-In
- Curtin University
2 Reach-In, 2 Walk-In
- Department of Fisheries and Forestry
8 Reach-In, 2 Walk-In
- Flinders University
2 Walk-In
- Queensland University of Technology
10 Reach-In, 3 Walk-In
- University of Adelaide
7 Reach-In, 6 Walk-In

- University of Newcastle
11 Reach-In
- University of Western Australia
19 Reach-In, 12 Walk-In

CHINA

- Beijing Academy of Agricultural and Forestry Sciences
8 Reach-Ins, 3 Walk-Ins
- Fujian Academy of Agricultural Sciences
6 Reach-Ins, 2 Walk-Ins
- Guangzhou University
20 Reach-Ins
- Huazhong Agricultural University
26 Reach-Ins, 9 Walk-Ins
- Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
7 Reach-Ins

- Jilin Academy of Agricultural Sciences
8 Walk-Ins
- Shanghai JiaoTong University
4 Walk-Ins

INDIA

- International Crops Research Institute for the Semi-Arid Tropics (I.C.R.I.S.A.T.)
13 Reach-Ins, 4 Walk-Ins
- Indian Agricultural Research Institute (IARI)
19 Reach-Ins, 14 Walk-Ins
- National Institute of Plant Genome Research (NIPGR)
11 Reach-Ins, 8 Walk-Ins
- University of Delhi-South Campus
16 Reach-Ins, 4 Walk-Ins
- Punjab Agricultural University
12 Reach-Ins
- ICAR Research Complex
7 Walk-Ins

MALAYSIA

- Crops for the Future Research Centre
12 Reach-In, 11 Walk-In
 - University of Nottingham
9 Reach-In, 13 Walk-In
- #### NEW ZEALAND
- Lincoln University
9 Walk-In
- #### PHILIPPINES
- International Rice Research Institute (IRRI)
25 Reach-In, 5 Walk-In

OTHER INSTALLATIONS

AUSTRALIA

- BSES
- CSIRO-Adelaide
- CSIRO-Brisbane
- CSIRO-Narrabri
- CSIRO-Perth
- DAFF
- Deakin University
- DEEDI
- DPI-Bundoora
- Ecocatalysts
- Enza Zaden
- Intergrain
- Jurlique
- La Trobe University
- Murdoch University
- Nuseed
- RMIT
- Royal Botanic Gardens
- Seasol
- Southern Cross University
- University of Melbourne-City Campus
- University of Melbourne-Dookie
- University of New South Wales
- University of Queensland
- University of Sydney
- University of Tasmania

CHINA

- Beijing Academy Biotechnology Research Institute
- Chinese Academy
- Guangdong Academy
- Guangxi University
- Hebei Academy
- Henan University
- Henan Academy
- Huazhong Agricultural University
- Institute of Cotton Research
- Jiangsu Academy
- Nanjing University
- Northwest A&F University
- Oil Crops Research Institute
- Qinghai University
- Shaanxi Normal University
- South China Agricultural University
- Southwest Minzu University
- Xi'an Jiaotong Liverpool University
- Xinjiang Institute
- Xishuangbanna Tropical Botanical Garden
- Yangzhou University
- Yunnan University
- Yunnan Academy
- Zhengzhou Fruit Research Institute
- Zhejiang Normal University

INDONESIA

- Denpasar Centre of Plant Quarantine
 - Hasanuddin University
 - Research Centre for Biogenetics
 - SMART
 - Wilmar Seed
- #### MALAYSIA
- Applied Agricultural Resources
 - Forest Research Institute Malaysia
 - Kustem University
 - Malaysian Palm Oil Board
 - Malaysian Rubber Board
 - MARDI
 - National University of Malaysia
 - Putra University, Malaysia
 - Sime Darby Technology Center
 - Sultan Zainal Abidin University
 - University of Malaya
 - University of Malaysia, Terengganu

NEW ZEALAND

- AgResearch
- Auckland University of Technology
- Massey University-Auckland
- Massey University - Palmerston North
- NIWA-Hamilton Plant & Food Research

PHILIPPINES

- BASF
- Philippine Atomic Energy Commission
- Philippine Tobacco Administration
- San Miguel Corporation
- U.P. Los Banos Institute of Plant Breeding

SINGAPORE

- Institute of Molecular and Cell Biology
- Sembang Field Research Centre
- National University of Singapore

THAILAND

- Monsanto
- Botanical Gardens
- Ubon Ratchathani University

VIETNAM

- Hanoi Agricultural University
- Hanoi National University
- Hanoi Department of Standardization Metrology & Quality Control
- Ho Chi Minh City Vegetable Project
- Institute of Biotechnology
- Institute of Agricultural Genetics



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 phytopharmaceutical industries in over 90 countries around the world.



CONVIRON[®]

ARGUS[®]
CONTROLS

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