



**TOTAL CONTROL AT YOUR FINGER-TIPS!**



**bronson**

**CLIMATE BV**

## INCREMENTUM 3000

This extreme performance multi-tier dual compartment reach-in is designed to push beyond the performance envelope limits where others stop performing.

The Incrementum 3000 can be used for a broad range of research & test applications Plant Growth, Tissue Culture, Environmental testing, Stress testing, Seed Germination, Insect-breeding, Product testing & various applications for life sciences.



# ENVIRONMENTAL RESEARCH

The Bronson Incrementum 3000 Extreme Performance Multi tier dual compartment reach-in is developed because of the growing demands for Extreme Environmental Testing with maximum growth surface.

To see how plants behave and grow in extreme conditions we need to be able to simulate extreme conditions without limits.

With the Bronson Incrementum 3000 this is now possible, you can create a wide range of extreme climate conditions from tropical heat stress experiments to arctic nightfrost simulations all in one reach-in.

Temperature and humidity alone are not sufficient to create your controlled environment. We need to combine it with high light intensities.

This cabinet is designed to cope with a huge heat load and is capable of delivering up to  $2000 \mu\text{mol}/\text{m}^2/\text{s}$  (PPFD) at 150mm from light source.

Cooling 3 layers with  $600 \mu\text{mol}/\text{m}^2/\text{s}$  (PPFD) at 150mm from light source is also no problem for the Bronson





# ENVIRONMENTAL RESEARCH



The Bronson Incrementum 3000 is a multi-tier dual compartment cabinet with a flexible shelving system to maximise the required growth height from 150mm up to 1450mm.

### Max grow height:

- 1 layer  $\pm$ 1450mm.
- 2 layers  $\pm$ 700mm.
- 3 layers  $\pm$ 450mm.
- 4 layers  $\pm$ 300mm.

### Cabinet Benefits:

- White coating for good reflection
- Shelves are made of stainless steel
- Shelves are adjustable in height
- Shelves are removeable (plug and play)
- Surface is easy to clean
- Removable backwall for cleaning
- No column 1600mm wide clearance
- Double door design
- Doorlock and door switch

### Options for cabinet:

- Viewport with magnetic door
- Entry port for probes



# TECHNICAL SPECIFICATIONS 3000

| <b>GENERAL:</b>                                     |  |                              |   |                   |  |
|---|--|------------------------------|---|-------------------|--|
| Volume  | 2x 1372 Litre  |                              |   |                   |  |
| External dimensions (W x D x H mm)                  | 3576 x 925 x 2000  |                              |   |                   |  |
| Internal dimensions (W x D x H mm)                  | 2x 1310 x 680 x 1540   |                              |   |                   |  |
| Exterior  | White coated steel   |                              |   |                   |  |
| Interior  | White coated stainless steel   |                              |   |                   |  |
| Number of doors                                     | 4  |                              |   |                   |  |
| Keylock   | Yes  |                              |   |                   |  |
| Shelf and shelf size (mm)                           | Stainless steel 1300x610   |                              |   |                   |  |
| Number of growth layers                             | 1 up to 4  |                              |   |                   |  |
| Growth surface per layer                            | 2 layer =1.60m <sup>2</sup>  | 4 layers =3.20m <sup>2</sup> | 6 layers =4.80m <sup>2</sup> 8 layers =6.40m <sup>2</sup> |                   |  |
| Capacity 600x400mm trays                            | up to 24 (3 per shelf)   |                              |   |                   |  |
| Growth height                                       | Adjustable from 150mm up to 1450mm                                     |                              |   |                   |  |
| Chassis   | On 10 swivel wheels  |                              |   |                   |  |
| <b>TEMPERATURE</b>                                  |  | <b>LIGHTS ON</b>             |   | <b>LIGHTS OFF</b> |  |
| Temperature range (permanent) <sup>(3)</sup>        | +5°C to +40°C  |                              | +5°C to +45°C   |                   |  |
| Night frost simulation up to 6 hours <sup>(2)</sup> | -4°C   |                              | -10°C   |                   |  |
| Temperature precision controller                    | 0,1°C  |                              | 0,1°C   |                   |  |
| Temperature variation setpoint chamber              | < ± 0,2°C  |                              | < ± 0,2°C   |                   |  |
| Temperature uniformity per shelf                    | < ± 1,0°C  |                              | < ± 0,3°C   |                   |  |
| <b>HUMIDITY<sup>(1)</sup></b>                       |  | <b>LIGHTS ON</b>             |   | <b>LIGHTS OFF</b> |  |
| Humidity range at +5°C to +40°C                     | 40 to 80% RH   |                              | 30 to 95% RH  |                   |  |
| Humidity precision controller                       | 1% RH  |                              | 1% RH   |                   |  |
| Humidity variation setpoint chamber                 | ± 5% RH  |                              | ± 2% RH   |                   |  |
| Humidity uniformity per shelf                       | ± 5% RH  |                              | ± 2% RH   |                   |  |
| <b>LIGHT INTENSITY LED<sup>(4)</sup></b>            |  | <b>NUMBER OF SHELVES</b>     |   |                   |  |
| up to 400 µmol/m <sup>2</sup> /s (PPFD) at 150mm    | 4  |                              |   |                   |  |
| up to 800 µmol/m <sup>2</sup> /s (PPFD) at 150mm    | 3  |                              |   |                   |  |
| up to 1000 µmol/m <sup>2</sup> /s (PPFD) at 150mm   | 2  |                              |   |                   |  |
| up to 2000 µmol/m <sup>2</sup> /s (PPFD) at 150mm   | 1  |                              |   |                   |  |
| <b>TECHNICAL DATA</b>                               |  |                              |   |                   |  |
| PLC Controller                                      | Siemens S7-1200 controller   |                              |   |                   |  |
| Touchscreen   | Siemens SIMATIC Unified 7 inch comfort panel                           |                              |   |                   |  |
| Temperature sensor                                  | PT1000   |                              |   |                   |  |
| Humidity sensor                                     | Hygrometric  |                              |   |                   |  |
| Airflow   | Horizontal; 0,1 to 0,3 m/s (adjustable at touchscreen 50% up to 100%)  |                              |   |                   |  |
| Humidifier <sup>(1)</sup>                           | Ultrasonic   |                              |   |                   |  |
| Dryer <sup>(1)</sup>                                | Desiccant dehumidifier or by separate cooling coil.                    |                              |   |                   |  |
| CO <sub>2</sub> <sup>(1)</sup>                      | 50-5000 ppm  |                              |   |                   |  |
| <b>INSTALLATION REQUIREMENTS</b>                    |  |                              |   |                   |  |
| Location  | Air conditioned room controlled between 10°C and 25°C                  |                              |   |                   |  |
| Water (for optional humidifier <sup>(1)</sup> )     | Demineralized or RO water 1-5 bar                                      |                              |   |                   |  |
| Drain   | Drain at floor level near the cabinet                                  |                              |   |                   |  |
| Weight  | ± 1250 Kg. (depending on configuration)                                |                              |   |                   |  |
| Electrical connection                               | 3 Phase 16A type C 230V 50Hz (0,6 - 7,0 kW depending on configuration) |                              |   |                   |  |
| Connection  | Potential alarm contact / internet UTP                                 |                              |   |                   |  |

(1) Optional

(2) Nightfrost simulation depends on the heatload and moisture levels, no humidity control below +5°C

(3) Depending on heatload, moisture levels, evaporation and surrounding conditions.

(4) There are different light intensities available, the maximum light intensity depends on the number of shelves and heatload.



[www.bronsonclimate.nl](http://www.bronsonclimate.nl)



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**Bronson Climate Grows**