



TOTAL CONTROL AT YOUR FINGER-TIPS!



bronson

CLIMATE BV

INCREMENTUM 1500

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

The Incrementum 1500 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 1500 Extreme Performance Multi tier reach-in is developed because of the growing demands for Extreme Environmental Testing.

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 1500 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 Incrementum 1500



ENVIRONMENTAL RESEARCH



The Bronson Incrementum 1500 is a multi-tier cabinet with a flexible shelving system to maximise the required growth height from 150mm up to 1450mm.

Max grow height:

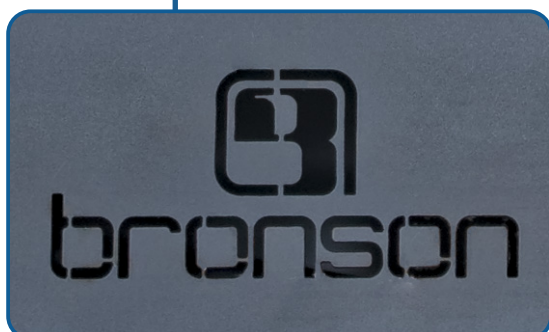
- 1 layer 1450mm.
- 2 layers 700mm.
- 3 layers 450mm.
- 4 layers 300mm.

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 1300mm wide clearance
- Double door design
- Doorlock and door switch

Options for cabinet:

- Viewport with magnetic door
- Entry port for probes
- Electronic lock with PIN or TAG



TECHNICAL SPECIFICATIONS 1500

GENERAL:

Volume	1372 Litre		
External dimensions (W x D x H mm)	1973 x 900 x 2000		
Internal dimensions (W x D x H mm)	1310 x 680 x 1540		
Exterior	White coated steel		
Interior	White coated stainless steel		
Number of doors	2		
Keylock	Yes		
Shelf and shelf size (mm)	Stainless steel 1300x610		
Number of growth layers	1 up to 4		
Growth surface per layer	1 layer =0.80m ²	2 layers =1.60m ²	3 layers =2.40m ² 4 layers =3.20m ²
Capacity 600x400mm trays	up to 12 (3 per shelf)		
Growth height	Adjustable from 150mm up to 1450mm		
Chassis	On swivel wheels		

TEMPERATURE	LIGHTS ON	LIGHTS OFF
Temperature range (permanent) ⁽³⁾	+5°C to +40°C	+5°C to +45°C
Night frost simulation up to 6 hours ⁽²⁾	-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

HUMIDITY ⁽¹⁾	LIGHTS ON	LIGHTS OFF
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

LIGHT INTENSITY LED ⁽⁴⁾	NUMBER OF SHELVES
up to 400 µmol/m ² /s (PPFD) at 150mm	4
up to 800 µmol/m ² /s (PPFD) at 150mm	3
up to 1000 µmol/m ² /s (PPFD) at 150mm	2
up to 2000 µmol/m ² /s (PPFD) at 150mm	1

TECHNICAL DATA	
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 ⁽¹⁾	Ultrasonic
Dryer ⁽¹⁾	Desiccant dehumidifier or by separate cooling coil
CO ₂ ⁽¹⁾	150-2000 ppm

INSTALLATION REQUIREMENTS	
Location	Air conditioned room controlled between 10°C and 25°C
Water (for optional humidifier ⁽¹⁾)	Demineralized or RO water 1-5 bar
Drain	Drain at floor level near the cabinet
Weight	± 550 Kg. (depending on configuration)
Electrical connection	1 Phase 16A type C 230V 50Hz (0,6 - 3,0 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.



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