# LED PLANT GROWTH CHAMBERS

## CARON®

# NOW NATURE HAS COMPETITION

**Vary both light wavelengths and intensity, for total experimental control. Caron's new gBrite™ LED technology helps you model the natural world better than ever before.**

Traditional plant growth lighting has been defined by the fixed light quality available from fluorescent bulbs, limiting researchers' ability to accurately model seasonal or experimental growth conditions. Caron's new 7310 Series Chambers provide the best of both worlds.

*\*Optional viewing window shown.*

Caron's new 7310 Series Chambers provide a cool efficient light source for general experiments, and selectable spectra for maximum experimental control.

## FACILITY FRIENDLY

**Keeping costs low even when light levels are high.**

- No bulbs to replace; commercial-grade LED's have lifespan of over 73,000 hours.
- Durable all stainless steel interior resists corrosion, for long unit life.
- Wide range of chamber volumes, from 22 to 75 cubic feet, and number of shelves, from 1 to 12.
- Heavy on performance, but light on energy usage, gROD Refrigeration On Demand only turns on when needed.

## POWERFUL LIGHTING

**Superior everyday performance meets unique experimental flexibility.**

- Light spectra and intensity variable by shelf and over time.
- Choice of standard full-range white or optional 4-color LED elements.
- Cool gBrite LED lights reduce heat stress on plants.
- Unlike fluorescents, LED light output unaffected by operating temperature.
- Max output High Intensity and Seedling chambers ideal for light-intensive plants such as Cannabis and Corn
- Economical LED consumes half the power per watt of output as conventional fluorescent bulbs, reducing long-term cost of ownership.







## EASY TO MAINTAIN & USE

**Because a light chamber shouldn't be a heavy user burden.**

- Optional full-length 6" X 36" *(15 X 91cm)* viewing window; check on plant status without disturbing their growth.
- Intuitive touchscreen controls make even complex environmental modeling simple, with optional 50 step, 5 program ramp and soak.
- Snap-out interior removable within three minutes for quick and easy cleaning.
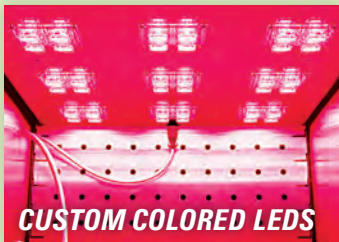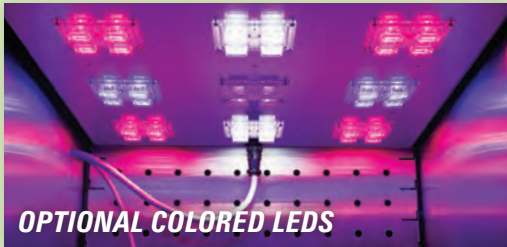
# MORE SIZES TO FIT YOUR FACILITY

Whether you need a compact single-door unit for small quantities of plants, or a large triple-door chamber for full-scale growth studies, Caron has capacity options to fit into your floor space and application volume requirements.

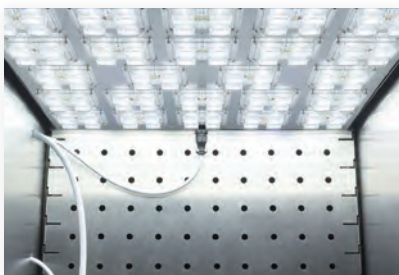**75ft³ MODELS**

**50ft³ MODELS**

**22ft³ MODELS**

# MORE OPTIONS TO FIT YOUR APPLICATION

Custom-mix lighting colors, including white, blue, red, far-red and full-range shelves. Add in a humidity control system, or digital or analog outputs to monitor conditions remotely.

*OPTIONAL COLORED LEDS*

*CONTROLLED HUMIDITY*

*CUSTOM COLORED LEDS*

*DIGITAL & ANALOG OUTPUTS*

# NATURAL CONDITIONS
## COOL LIGHT

### Cool White Standard LEDs

- Full-spectrum white lighting
- Low heat emission
- Dimmable from 100% to 15%
- Superior light uniformity
- Available in high-intensity, general-purpose, and tissue-culture configurations

### Flexible Colored LEDs

- Four colors: white, blue, red, and far-red
- Replace white LED shelves with colored emitters
- Light levels independently settable by color and shelf *

### Easy Parameter Programming

- Big bright 7" color display
- Intuitive touchscreen interface with breadcrumb navigation
- Even complex light cycle programming is easy, no manual or expert assistance required

### Low Cost of Ownership

- 73,000 hour LED emitters cut out bulb replacement costs
- LED consumes less than half the power of fluorescent
- gROD Refrigeration On Demand only on when needed
- Plugs into a single standard wall outlet

*Not available on all models.*

# TIER CONFIGURATIONS

Caron's type 304 stainless steel 22, 50 and 75 cubic foot chambers are available in multiple tier configurations.

| 7310 | 7311 | 7312 | 7314 | 7315 | 7317 |
|------|------|------|------|------|------|
| General | General | General | Seedling | Tissue Culture | High Intensity |

## LIGHTING & SHELVING

| Model | 7310 | | | 7311 | | |
|---|---|---|---|---|---|---|
| Size | 22 | 50 | 75 | 22 | 50 | 75 |
| Light Intensity | 600 $\mu$moles/m²/s | | | | | |
| Number of Tiers | 1 Tier | | | 2 Tiers | | |
| Growth Height | 50.3" | | | 22.3" / 24.3" | | |
| Light Modules per Shelf | 9 | | | 9 | | |
| Shelves Total | 1 | 2 | 3 | 2 | 4 | 6 |
| Shelf Area Total | 4 ft² | 8 ft² | 12 ft² | 8 ft² | 16 ft² | 24 ft² |
| Shelf Dimensions | 21.6"W x 26.5"D *(55 cm x 67 cm)* | | | | | |

| Model | 7312 | | | 7314 | | |
|---|---|---|---|---|---|---|
| Size | 22 | 50 | 75 | 22 | 50 | 75 |
| Light Intensity | 600 $\mu$moles/m²/s | | | 300 $\mu$moles/m²/s | | |
| Number of Tiers | 3 Tiers | | | 4 Tiers | | |
| Growth Height | 14.3" | | | 8.3" / 10.3" | | |
| Light Modules per Shelf | 9 | | | 4 | | |
| Shelves Total | 3 | 6 | 9 | 4 | 8 | 12 |
| Shelf Area Total | 12 ft² | 24 ft² | 36 ft² | 16 ft² | 32 ft² | 48 ft² |
| Shelf Dimensions | 21.6"W x 26.5"D *(55 cm x 67 cm)* | | | | | |

| Model | 7315 | | | 7317 | | |
|---|---|---|---|---|---|---|
| Size | 22 | | | 22 | 50 | 75 |
| Light Intensity | 150 $\mu$moles/m²/s | | | 1500 $\mu$moles/m²/s | | |
| Number of Tiers | 6 Tiers | | | 1 Tiers | | |
| Growth Height | 4.3" | | | 50.3 | | |
| Light Modules per Shelf | 2 | | | 24 | | |
| Shelves Total | 6 | | | 1 | 2 | 3 |
| Shelf Area Total | 24 ft² | | | 4 ft² | 8 ft² | 12 ft² |
| Shelf Dimensions | 21.6"W x 26.5"D *(55 cm x 67 cm)* | | | | | |

# SPECIFICATIONS

## DIMENSIONS & WEIGHTS

| Model | 7310 / 7311 / 7312 / 7314 / 7315 / 7317 |
|---|---|
| Size | 22 |
| Interior Dimensions | 22.5"W x 28.5"D x 57.8"H *(57 cm x 72 cm x 146 cm)* |
| Exterior Dimensions | 30"W x 35.1"D* x 81.5"H *(76 cm x 89 cm x 207 cm)* |
| Shipping Weight | 625 Lbs. *(775 Lbs. with export shipping crate)* |

| Model | 7310 / 7311 / 7312 / 7314 / 7317 |
|---|---|
| Size | 50 |
| Interior Dimensions | 51"W x 28.5"D x 59"H *(130 cm x 72 cm x 150 cm)* |
| Exterior Dimensions | 57"W x 35.1"D* x 81.5"H *(145 cm x 89 cm x 207 cm)* |
| Shipping Weight | 950 Lbs. *(1,250 Lbs. with export shipping crate)* |

| Model | 7310 / 7311 / 7312 / 7314 / 7317 |
|---|---|
| Size | 75 |
| Interior Dimensions | 79.5"W x 28.5"D x 59"H *(202 cm x 72 cm x 150 cm)* |
| Exterior Dimensions | 85.5"W x 35.1"D* x 81.5"H *(217 cm x 89 cm x 207 cm)* |
| Shipping Weight | 1,350 Lbs. *(1,850 Lbs. with export shipping crate)* |

*\*Add 2.75" for handle. Fits through a 33.5" standard door opening with door assembly and front panel removed.*

## TEMPERATURE

| Model | 7310 / 7311 / 7312 / 7314 / 7315 / 7317 |
|---|---|
| Lights On | 15℃ to 45℃ Temp Range |
| Lights Off | 10℃ to 45℃ Temp Range |
| Sensor / Control | 3-wire RTD / ± 0.2℃ |

## ELECTRICAL

| Model | 7310 / 7311 / 7312 / 7314 / 7315 / 7317 | | |
|---|---|---|---|
| Size | 22-1 | 22-2 | 22-3 |
| Voltage | 115V | 208 / 230V | 230V |
| Frequency | 60 Hz | 60 Hz | 50 Hz |
| Current | 12 A | 8 A | 8 A |

| Model | 7310 / 7311 / 7312 / 7314 / 7317 | | | |
|---|---|---|---|---|
| Size | 50-2 | 75-2 | 50-3 | 75-3 |
| Voltage | 208 / 230V | | 230V | |
| Frequency | 60 Hz | | 50 Hz | |
| Current | 12 A | | | |

# ACCESSORIES

| Part No. | Description |
|---|---|
| **FACTORY INSTALLATION** | |
| CO2C302 | $CO_2$ Control / Ambient to 20% |
| DLOG301 | USB Data Logger |
| DOOR315 | Door With Chamber Viewing Window *(For 22cu.ft. Models)* |
| DOOR316 | Doors With Chamber Viewing Window *(For 50cu.ft. Models)* |
| DOOR317 | Doors With Chamber Viewing Window *(For 75cu.ft. Models)* |
| HUMD313 | Humidity Control / Ambient to 85%RH / Actively Humidifies with gVapor / Dehumidifies with Refrigeration *(For 7310 50ft³ Series)* |
| HUMD314 | Humidity Control / Ambient to 85%RH / Actively Humidifies with gVapor / Dehumidifies with Refrigeration *(For 7310 75ft³ Series)* |
| HUMD316 | Humidity Control / Ambient to 85%RH / Actively Humidifies with gVapor / Dehumidifies with Refrigeration *(For 7310 22ft³ Series)* |
| LGHT329 | Replace All Lights / Single Shelf / Combination of White/Blue/Red Far-Red LED Lighting / Ratio for Each Color 2:2:4:1 Respectively *(For Models 7310, 7311, & 7312)* |
| LGHT330 | Replace All White Lights / Single Shelf / Combination of White Blue/Red/Far-Red LED Lighting / Ratio for Each Color 8:4:11:1 Respectively *(For Models 7317)* |
| LGHT331 | Variable Spectrum Independent Lights / 9 LED Modules / Single Shelf White/Blue/Red/Far-Red *(For Model 7310-22 / Requires 1 LGHT329)* |
| LGHT332 | Variable Spectrum Independent Lights / 9 LED Modules Each Shelf 2 Shelves / White/Blue/Red/Far-Red *(For Models 7310-50 & 7311-22 Requires 2 LGHT329)* |

# ACCESSORIES

## FACTORY INSTALLATION

| Part No. | Description |
|---|---|
| LGHT333 | Variable Spectrum Independent Lights / 9 LED Modules Each Shelf 3 Shelves / White/Blue/Red/Far-Red *(For Models 7310-75 & 7312-22 Requires 3 LGHT 329)* |
| LGHT334 | Variable Spectrum Independent Lights / 9 LED Modules Each Shelf 4 Shelves / White/Blue/Red/Far-Red *(For Model 7311-50 / Requires 4 LGHT 329)* |
| LGHT335 | Variable Spectrum Independent Lights / 9 LED Modules Each Shelf 6 Shelves / White/Blue/Red/Far-Red *(For Models 7312-50 & 7311-75 Requires 6 LGHT 329)* |
| LGHT336 | Variable Spectrum Independent Lights / 9 LED Modules Each Shelf 9 Shelves / White/Blue/Red/Far-Red *(For Model 7312-75 / Requires 9 LGHT 329)* |
| LGHT337 | Variable Spectrum Independent Lights / 24 LED Modules / Single Shelf White/Blue/Red/Far-Red *(For Model 7317-22 / Requires 1 LGHT 330)* |
| LGHT338 | Variable Spectrum Independent Lights / 24 LED Modules / 2 Shelves White/Blue/Red/Far-Red *(For Model 7317-50 / Requires 2 LGHT 330)* |
| LGHT339 | Variable Spectrum Independent Lights / Control of Four Colors 24 LED Modules / 3 Shelves / White/Blue/Red/Far-Red *(For 7317-75 Requires 3 LGHT 330)* |
| PORT304 | Additional 2" Access Port |
| RAMP301 | Ramp & Soak Controls / Programmable |

## ON-SITE INSTALLATION

| Part No. | Description |
|---|---|
| ALRM302 | Remote Alarm Contact / Provide NO/NC Dry Contacts |
| OUTP302 | Two Universal Analog Outputs / 0-5V or 4-20mA |
| OUTP303 | Three Universal Analog Outputs / 0-5V or 4-20mA |
| OUTP304 | Four Universal Analog Outputs / 0-5V or 4-20mA |
| OUTP307 | Five Universal Analog Outputs / 0-5V or 4-20mA |
| OUTP308 | Six Universal Analog Outputs / 0-5V or 4-20mA |
| PUMP301 | Condensate Drain Pump |
| RCDR316 | 6" Door Mounted Chart Recorder / Temperature Only |
| RCDR317 | 6" Door Mounted Chart Recorder / Temperature & Humidity |

# ACCESSORIES

## ANALOG OUTPUT

| Model | | 7310 | |
|---|---|---|---|
| **Size** | 22 | 50 | 75 |
| OUTP302 | Temp/Light | *N/A* | *N/A* |
| OUTP303 | Temp/Light RH *or* CO$_2$ | Temp/Lights | *N/A* |
| OUTP304 | Temp/Light RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ | Temp/Lights |
| OUTP307 | *N/A* | Temp/Lights RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ |
| OUTP308 | *N/A* | *N/A* | Temp/Lights RH/CO$_2$ |

| Model | | 7311 | |
|---|---|---|---|
| **Size** | 22 | 50 | 75 |
| OUTP302 | *N/A* | *N/A* | *N/A* |
| OUTP303 | Temp/Lights | Temp/Lights | *N/A* |
| OUTP304 | Temp/Lights RH *or* CO$_2$ | Temp/Lights RH *or* CO$_2$ | Temp/Lights |
| OUTP307 | Temp/Lights RH/CO$_2$ | Temp/Lights RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ |
| OUTP308 | *N/A* | *N/A* | Temp/Lights RH/CO$_2$ |

| Model | | 7312 | |
|---|---|---|---|
| **Size** | 22 | 50 | 75 |
| OUTP302 | *N/A* | *N/A* | *N/A* |
| OUTP303 | *N/A* | Temp/Lights | *N/A* |
| OUTP304 | Temp/Lights | Temp/Lights RH *or* CO$_2$ | Temp/Lights |
| OUTP307 | Temp/Lights RH *or* CO$_2$ | Temp/Lights RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ |
| OUTP308 | Temp/Lights RH/CO$_2$ | *N/A* | Temp/Lights RH/CO$_2$ |

| Model | 7314 / 7315 / 7317 | 7314 / 7317 | |
|---|---|---|---|
| **Size** | 22 | 50 | 75 |
| OUTP302 | Temp/Light | *N/A* | *N/A* |
| OUTP303 | Temp/Lights RH *or* CO$_2$ | Temp/Lights | *N/A* |
| OUTP304 | Temp/Lights RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ | Temp/Lights |
| OUTP307 | *N/A* | Temp/Lights RH/CO$_2$ | Temp/Lights RH *or* CO$_2$ |
| OUTP308 | *N/A* | *N/A* | Temp/Lights/RH/CO$_2$ |