

## USER MANUAL

# PHANTOM CMh

DUAL 315W CMH 120/240V SYSTEM (3100K AND 4200K)



PHMH601013 and PHMH601014

## OVERVIEW

Thank you for purchasing the **PHMH601013/PHMH601014**. This Phantom Dual CMh System is a highly versatile lighting system that allows you to operate a single 315W CMh lamp or both 315W CMh lamps at the same time. The system can be used in a standard vertical configuration (see cover image) or the reflectors can be rotated 90 degrees upward (and then the system turned so the reflectors face down) to give a low-profile hanging configuration that is ideal for tight spaces. Two intermediate reflector angles can also be set, for a total of four different configurations.

The reflectors feature multifaceted 95% reflective European hammertone aluminum, giving excellent light uniformity and diffusion.

The attached Phantom Dual CMh 315W ballast features low frequency, square-wave technology and is silent, reliable, and energy-efficient. It has two discrete channels and power switches, and a USB port for Autopilot PX1 Digital Lighting Controller\* compatibility. Input voltage options are 120V, 208V, and 240V(120V power cord included with system).

For information on additional Phantom products please visit [PhantomBallasts.com](http://PhantomBallasts.com).

*\*Compatible with Autopilot PX Series Controller, running version 1.63 software or later ONLY. To check the version of software running on your controller press the UP and DOWN keys simultaneously, the version will be displayed on your home screen.*

# PHANTOM CMh

## DUAL CERAMIC METAL HALIDE LIGHTING SYSTEM

Supply power for the ballast is based on typical commercial or residential input. This ballast must be used only with double jacketed 315W ceramic metal halide lamps for safety and proper operation.

### **ALWAYS DISCONNECT THE BALLAST'S POWER CORD BEFORE MOVING UNIT OR CHANGING LAMPS**

#### **WARNINGS**

- Use this Phantom Dual CMh system indoors only. Position it in an area away from excessive heat or contact with liquids.
- The ballast does not rely on the luminance enclosure for protection against accidental contact with live parts.
- Disconnect the power supply before performing any maintenance, lamp changes, or other modifications.
- Opening the ballast will void the warranty.
- Do not use lamps of any type other than the 315W (T12 38 mm PGZX18 base) with this ballast. Not for use with external ignitors.
- Do not use Hydrofarm's TM01240 240V timer with this system. The TM01240 timer is not designed for use with electronic ballasts, and using it may cause the ballast to fail.
- The CMh ballast included with this system is designed to be used with Hydrofarm power cords ONLY. Using it with other power cords, or modifying the power cord, will void the warranty

## PARTS LIST - (WHAT'S IN THE BOX)

**A** - Dual 315W CMh System

**B** - CMh Lamp (x2) *\*depending on model*

*\*PHMH601013 - 3100K*

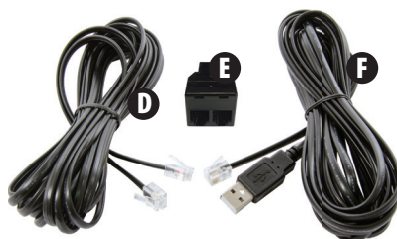
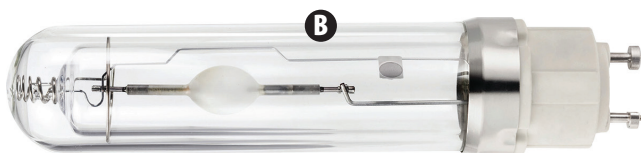
*\*PHMH601014 - 4200K*

**C** - Power Cord

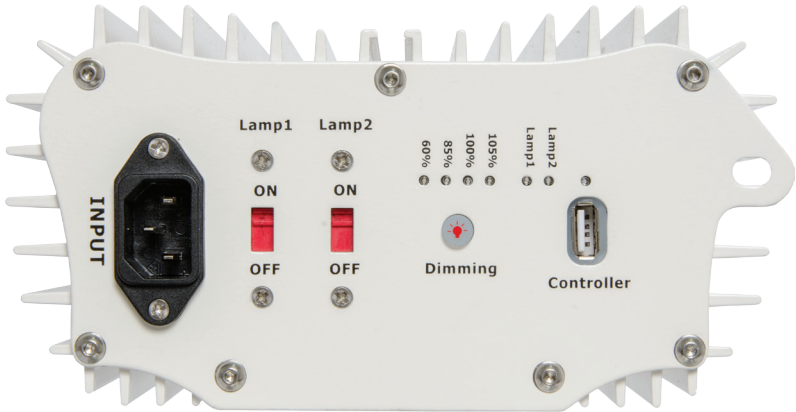
**D** - RJ12 to RJ12 Cable

**E** - RJ Splitter

**F** - USB to RJ12 Cable



## ELECTRICAL SPECIFICATIONS



### PHBMH6010 - BALLAST SPECIFICATIONS

Watts	Main Voltage	Operating Voltage Range	Max Input Power	Output Power Settings	Power Factor	Ignitor Voltage	OCV	THD	CF	ta	tc
315W (x2)	120-240V	110-265V	764W(382W x2)	60%-85%-100%-105%	≥ 0.97	3-5 kV	250V	< 8%	1.414-1.6	40°C/104°F	80°C/176°F

### PHBMH6010 - BALLAST INPUT AMPERAGE

I <sub>max</sub> 120/240V	SUPER(105%) 120/240V	100% 120/240V	85% 120/240V	60% 120/240V
6.6A(3.3 x2)/3.4A(1.7 x2)	6.2A(3.1 x2)/3.0A(1.5 x2)	5.8A(2.9 x2)/3.0A(1.5 x2)	5.0A(2.5 x2)/2.4A(1.2 x2)	3.4A(1.7 x2)/1.8A(0.9 x2)

x2 - Amperage for single lamp use



### BALLAST LED STATUS INDICATORS

STATUS	LED (LAMP 1/LAMP 2)
Ballast Locked	Flash X 1
Output Error	Flash X 2
Low Input Voltage	Flash X 3
Over Temperature	Flash X 4
High Input Voltage	Flash X 5

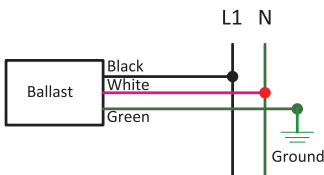
## DEFINITION OF TERMS

- **Main Voltage** – Rated input voltage for the ballast
- **Watts** – Input power
- **Amps** – Input current or draw
- **Power Factor** – A measurement of how effectively the ballast converts electrical current to useful power output, in this case, output to the lamp. Power factor is measured between 0-1; the closer you get to 1, the more effective the circuit is said to be. The Phantom's power factor is greater than 0.97.
- **Working Voltage** – The acceptable operating range for input voltage to the ballast. Deviations from the rated numbers may result in decreased ballast performance and additional case generated heat.
- **Ignitor Voltage** – Ballast output during ignition sequence
- **THD (Total Harmonic Distortion)** – A measurement of all harmonics present in a circuit. The higher the number, the more stress is applied to internal parts, the lamp, and the power grid. Generally, a number below 10% is considered desirable in an electronic ballast application.
- **CF (Crest Factor)** – A measurement of how "clean" the ballast power output wave is. A perfectly clean output sine wave would have a CF of 1.414. Given that some harmonics must exist in an electrical system, the crest factor must always be higher than 1.414. Therefore, the closer the ballast is to a CF of 1.414, the easier it is on the lamp.
- **ta (Ambient Temperature)** – Maximum rated ambient temperature for the ballast area. Excessive ambient temperature can result in ballast failure, safety shutdown, or lamp failure.
- **tc (Case Temperature)** – Maximum temperature that the case of the ballast should reach. If the case temperature exceeds this number, the ballast may be malfunctioning or the ambient temperature may exceed the rating.

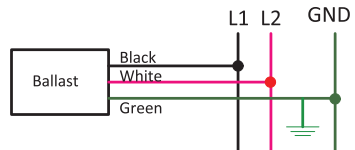
## RECOMMENDED WIRING DIAGRAMS

### RESIDENTIAL VOLTAGES - SINGLE PHASE POWER

**120/208V**  
(Supply voltage 120V/208V)



**240V**  
(Supply voltage 120V x 2) N or GND

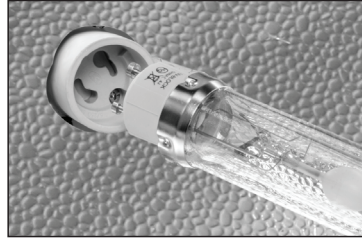


Each ballast **MUST** be wired to the main's neutral line back to the circuit.  
**DO NOT** "daisy-chain" a neutral line with any other ballast.

### INSTALLING THE LAMPS

Power must be turned off and lamp allowed to cool prior to inserting or removing the lamp.

1. Install the lamps firmly into the lamp sockets.
  - Hold onto the metal band at the base of the lamp to install or remove the lamp.
  - Insert the bi-pins in the lamp base into the matching holes in the lamp socket.



- Twist the lamp base a quarter turn in a clockwise rotation to securely seat it into the socket. When the lamp is properly installed, the base will stop turning and the lamp will feel firmly seated.

Periodically inspect the lamp's outer protective envelope. Replace any lamp that shows scratches, cracks or damage. Failure to replace a damaged lamp could lead to damage to other components or cause a fire if the lamp experiences a catastrophic failure.

**NOTE:** For proper break-in on new lamps, we recommend that you run the ballast and lamp for at least 12 straight hours after initial startup. This will improve lamp life and performance.

### DETERMINE REFLECTOR POSITION

The Dual CMh System can be set in four different configurations. Depending on the amount of space in your grow area, the system can be configured to hang with the ballast positioned vertically or horizontally. The vertical configuration shown at right is designed for overhead hanging, when you have ample headroom above the canopy; while the horizontal configuration (see fig. 2 on opposite page) is designed for low-profile situations with less vertical space above the fixture.

In addition to those two main configurations, two additional angles are available. The reflector pair can be locked into two angles between the vertical and horizontal configurations (see images at right and below right). These are useful for aisle-end and side lighting situations where you need the system's output directed in one direction rather than spreading out.

The angle of the reflectors can be selected by pulling up on the release pin located near the integrated hanger on the armature. When setting a reflector angle, be sure the release pin clicks back down into place to secure the reflectors in that position.



## HANGING THE SYSTEM

Find a suitable location for the system with sufficient cooling and distance from any heat source.

Securely install J-hooks or other appropriate means of hanging support to your grow room ceiling, grow tent overhead support rods, or greenhouse truss.

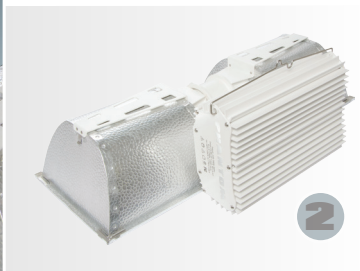
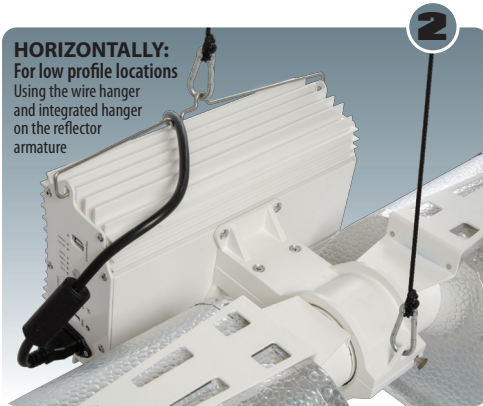
**NOTE:** If installing into drywall or plaster, use wall anchors and hooks rated to hold at least 50 lbs each.

The system can be hung two different ways: **VERTICALLY**, using the included eye hooks; or **HORIZONTALLY**, using the included wire hanger hardware.

- To hang **VERTICALLY**, screw the eye hooks fully into the threaded holes in the center channel of the top of the ballast (fig. 1).



- To hang **HORIZONTALLY**, insert the ends of the wire hanger into the two holes built into the side of the ballast and also use the integrated hanger (hole) on the reflector armature between the two reflectors (fig. 2).



Using Hydrofarm item LULIFT or other reliable hanging method, suspend the system from your overhead support.

## POWER UP THE SYSTEM

1. Plug the power cord into the power input on the main panel of the ballast.
2. Plug the power cord into your power source (electrical outlet, 120/240V only).



## WARRANTY



### LIMITED WARRANTY

Hydrofarm warrants the **Phantom Dual CMh Lighting System** to be free from defects in materials and workmanship. The warranty term is for 3 years (on the ballast only) 1 year on the lamps, beginning on the date of purchase. Misuse, abuse, or failure to follow instructions is not covered under this warranty. Hydrofarm's warranty liability extends only to the replacement cost of the product. Hydrofarm will not be liable for any consequential, indirect, or incidental damages of any kind, including lost revenues, lost profits, or other losses in connection with the product. Some states do not allow limitation on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above limitations or exclusions may not apply to you. Hydrofarm will, at our discretion, repair or replace the **Phantom Dual CMh Lighting System** covered under this warranty if it is returned to the original place of purchase. To request warranty service, please return the **Phantom Dual CMh Lighting System**, with original sales receipt and original packaging, to your place of purchase. The purchase date is based on your original sales receipt.



Thank you for choosing Phantom by Hydrofarm. For further information about Phantom products, videos, and technical information, please visit [PhantomBallast.com](http://PhantomBallast.com)

ADDITIONAL LANGUAGES OF THESE INSTRUCTIONS CAN BE FOUND AT [Hydrofarm.com](http://Hydrofarm.com)



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PHANTOM DUAL CMH LIGHTING SYSTEMS Instructions revised - November 17, 2017 9:42 AM



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