

USER MANUAL

PHANTOM

DE

LOW PROFILE 1000W LIGHTING SYSTEMS[®] (ENCLOSED and OPEN)



Phantom DE Low Profile Enclosed Lighting System PHDESK12L



Phantom DE Low Profile Open Lighting System PHDEOK12L

(FR) INSTRUCTIONS EN FRANÇAIS 12

(ES) INSTRUCCIONES EN ESPAÑOL 24

OVERVIEW


The Phantom DE Low Profile Lighting System is a high-intensity horticultural lighting system that is an excellent choice for a range of applications. It combines a Phantom double-ended reflector with a variable-wattage Phantom DE Low Profile ballast and a PHANTOM PRO DE high-pressure sodium lamp. This powerful and versatile commercial-grade system allows users to select the most appropriate light intensity level for their particular setup.

This system is able to be operated remote or attached, and is available in both open and enclosed reflector configurations. Both are made from multifaceted 95% reflective European hammertone aluminum.

- **Enclosed System (PHDESK12L):** The enclosed-form reflector provides downward-focused output that maximizes light intensity. This provides ideal canopy illumination and uniformity of coverage, making it the ideal reflector for many applications.
- **Open System (PHDEOK12L):** The open-form reflector delivers uniform growth over a broad footprint. The louvered top effectively dissipates heat while operating DE bulbs at ideal temperatures for maximum light output and lamp life.

For information on additional Phantom products please visit Hydrofarm.com.

⚠ WARNING: FAILURE TO FOLLOW OUR GUIDELINES COULD RESULT IN ELECTRICAL SHOCK.
Do not touch, move, spray, or clean your light fixture when it is plugged in. Allow it to cool down before handling. Recommended mounting clearance for your fixture is 8"–12" on all sides. Do not mount directly to any surface. Make sure to disconnect the power when changing the lamp.

	<p>⚠ WARNING-POSSIBLE RISK OF INJURY TO EYES AND SKIN</p> <p>Hazardous UV, HEV, and IR radiation may be emitted from light source. Always wear personal protective equipment ensuring complete shielding of skin and eyes. Avoid prolonged exposure and looking directly at light source.</p>
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PHANTOM DE LOW PROFILE BALLAST ELECTRICAL SPECIFICATIONS

Model	Watts	Main Voltage	Operating Voltage Range	Max Input Power	Output Power Settings	Power Factor	Ignitor Voltage	THD	CF	ta	tc
PHB5010L	1000W	120–240V	108–264V	1210W	600W-750W-825W-1000W-1150W	0.97–0.99	4 kV	<10%	<1.7	40°C/104°F	75°C/167°F

BALLAST INPUT AMPERAGE REFERENCE

Model	BALLAST INPUT AMPERAGE REFERENCE					
PHB5010L	Imax 120V	1150W 120V	1000W 120V	825W 120V	750W 120V	600W 120V
	10.20A	10.20A	9.3A	7.67A	6.98A	5.6A
	Imax 208V	1150W 208V	1000W 208V	825W 208V	750W 208V	600W 208V
	5.85A	5.85A	5.30A	4.5A	4.02A	3.3A
	Imax 240V	1150W 240V	1000W 240V	825W 240V	750W 240V	600W 240V
	5.06A	5.06A	4.6A	3.91A	3.48A	2.86A

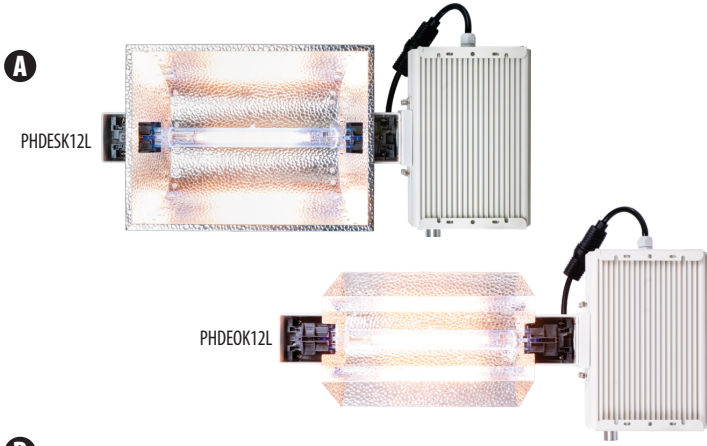
TOOLS NEEDED (FOR HANGING)



PARTS LIST (WHAT'S IN THE BOX)

PARTS LIST

- A** - Phantom DE LP Lighting System (enclosed or open)
- B** - Phantom Pro 2100 $\mu\text{mol/s}$ DE Lamp (excluding NL systems)
- C** - 120V Power Cord (240V power cord BACD10 available separately)
- D** - RJ14 Cables (x2)
- E** - RJ Splitter
- F** - Wire Hanger (x2)



LAMP INSTALLATION

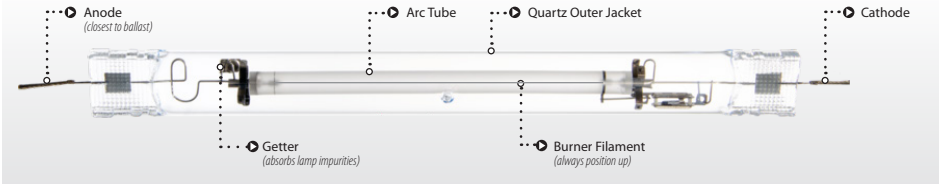
NOTE: Please wear gloves in order to protect the DE lamp envelope from skin oils, which can be damaging to the lamp.

⚠ Do not apply excessive force when installing lamp.

IMPORTANT: The lamp must be oriented so that the high voltage wire end/lead (the end near the getter, which is the small square tab attached to the wire loop) is installed in the socket end closest to the ballast as seen in **DIAGRAM A**.

NOTE: Lamp shown below is for general reference only; actual lamp included may vary.

DIAGRAM A



1. Before installing the lamp, make sure it is oriented so that the burner filament (the long wire that runs along the full length of the arc tube) is positioned upward, facing the top inside surface of the reflector, as seen in **DIAGRAM A**.
2. Ensure that the wire ends/leads are not bent or frayed, as this will prevent proper installation. The wire ends should be straight as shown in **PHOTO A**.
3. Open both lamp holders by sliding them outwards and away from the center of the fixture, as shown in **PHOTO B**.
4. Install the double-ended lamp within the lamp holders shown below in **PHOTOS B, C & D**.



PHOTO A

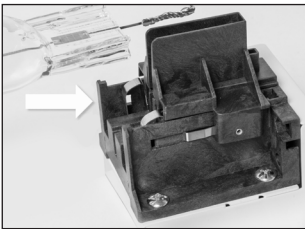


PHOTO B

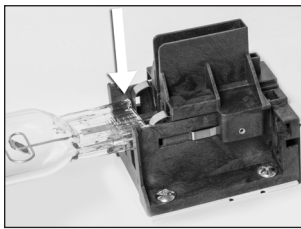


PHOTO C

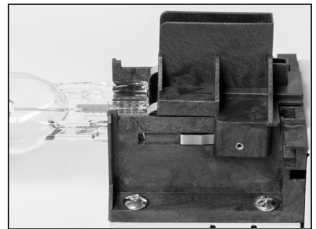


PHOTO D

5. The wire ends/leads must be fully seated as shown (**PHOTOS E & F**) before sliding each socket end closed.



PHOTO E

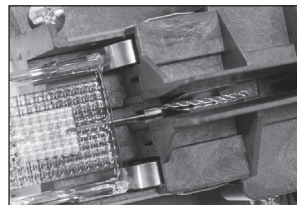


PHOTO F

LAMP INSTALLATION, *continued*

- After sliding the socket ends closed, be certain that there is no gap between the edge of the sliding section and the part it meets at the end of the slide path. Once lamp is positioned correctly, slide the lamp holder inward toward the center of the bulb to secure and lock the lamp in place as shown in **PHOTOS G & H**.

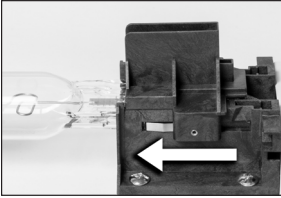


PHOTO G



PHOTO H

PLEASE NOTE: Do not force the lamp holders closed. This could cause damage to both the lamp and lamp holders. Do not handle lamp with bare hands. Always wear surgical or cloth gloves whenever possible when handling lamp to minimize fingerprints and oils left on the lamp. If the lamp needs cleaning after installation, use a soft dry cotton cloth to wipe off fingerprints/skin oils.

HANGING YOUR FIXTURE

⚠ IMPORTANT: Before you begin, make sure your light system is unplugged.

IN A GREENHOUSE SETTING

- Simply place the hook-like curved end of the included wire hanger through the eye bolt in the top rear part of the ballast housing with wire end facing inward toward reflector.
- Then place the curved end of the other wire hanger through the hole in the nose of the armature with wire end facing inward toward reflector and ballast. Hang the truss hangers and system on the truss in the desired location.



Continued >

IN A GROW ROOM SETTING

We recommend using the ratchet/carabiner method of hanging.

1. Install two eye screws or J-hook screws (not included) approximately 24" apart in a stable ceiling or structural surface. If available, ceiling joists are best. If you can't use joists, insert expansion anchors into the ceiling. Be sure to use anchors and hooks rated to hold at least 50 lbs each.
2. Tie the ends of the hangers' lines to your hooks in the ceiling, then hook the carabiners through the eye bolt in the ballast housing (1) and the hole in the armature nose (2).
3. Adjust the hanging height of the fixture to your desired height using the ratchet. We recommend our Hydrofarm heavy Duty Light Riser (item HLH1002).



TIPS

- The lamp may require 10–30 minutes cooling time before restarting.
- After you plug the reflector in, the bulb may require several minutes to reach its full brightness. In the event of a momentary power interruption, the bulb will not restart immediately.
- Some variation in the color of light emitted by the bulb is not unusual, especially in the first 100 hours of operation.
- Never pull the cord to unplug the reflector, pull the plug only.
- Avoid scratching the bulb, subjecting it to undue pressure, or getting it wet when it is hot; these actions may cause the bulb to break.
- In the event of bulb breakage, immediately unplug the reflector to prevent exposure to ultraviolet energy, which may be harmful to eyes and skin.
- Keep room temperature below 95°F, with adequate air circulation by fan in the growing area.
- The DE lamp produces very high-intensity light and was originally designed for commercial growing operations. Please take care to consider proximity to plants when installing your fixture. You may want to allow more vertical space between the plant canopy and the fixture to mitigate the high-intensity light and heat in the plant area.
- Always use a heavy-duty 3-pronged grounded timer, rated for at least 15 amps. Many 7-day digital timers are not rated for 1000W lamps. Unplug ballast when changing or removing the lamp. Failure to do so can cause ballast failure or improper diagnosis.

When setting restrike delays with your environmental controller, it is best to set a restrike delay at 20 minutes or longer to prevent constant restrikes throughout the day.

When installing your controller, it is best to program the controller for a staggered start with 40 luminaires or fewer on each start.

It is best to use special HID relays and high inrush circuit breakers to ensure proper performance. For optimum performance, lighting sub-panels should have a fan installed to prevent high heat of the sub-panel.

AUTOPILOT PX2 CONTROLLER

⚠ NOTE: Phantom LP system uses ANALOG 0–11.5V control protocol.
Please ensure you select **ANALOG** when using with compatible PX series controllers.

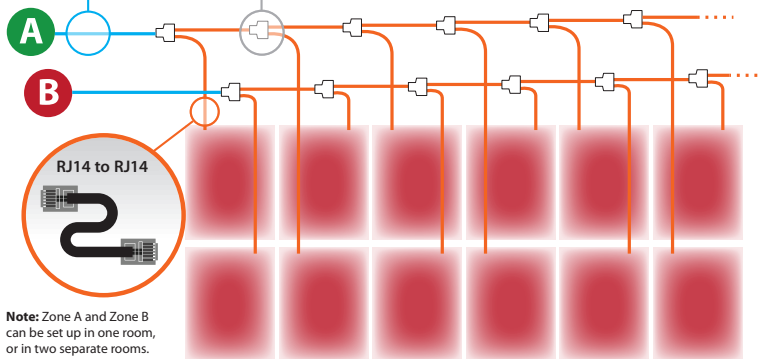
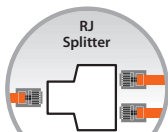
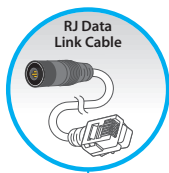
The Autopilot PX2 Controller is designed to work with the Phantom Commercial DE Electronic Ballast. Follow the PX2 Controller instructions for proper operation and to avoid ballast damage. Typical setup for the PX2 Digital Lighting Controller is shown below.

autopilot PX2 Advanced Digital & Analog Lighting Controller (APDPX2)



ZONE A
Controls up to 256 HID fixtures.

ZONE B
Controls up to 256 HID fixtures.

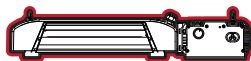


Note: Zone A and Zone B can be set up in one room, or in two separate rooms.

Cable Guide

HID Fixtures

**PHANTOM
with RJ PX Port**



Fixtures are not shown to scale.

LEGEND: HPS, MH & CMH

- RJ Data Link Cable
- RJ Splitter
- RJ14 to RJ14



IMPORTANT: Do not attach data link cables to AC power cable. Always keep low voltage data cables and high voltage AC power harness as far as possible from each other for stable signal transmission. Avoid coiling data cables as well as AC harnesses in tight coils. Excess cable should be managed by creating long loops as opposed to tight coils.

TROUBLESHOOTING USING THE BALLAST'S STATUS LED

The multi-color status LED provides information on the status of the ballast with respect to its connection to a controller and its general operating condition, and also gives error and warning signals. Consult the tables at right to interpret the status LED.



- All operating codes are represented by GREEN signals.
- All warning codes are represented by RED signals.
- All history codes (except the ignition code) are represented by YELLOW signals.
- BLACK dots in the diagrams represent the unlit LED.
- Warning codes and history codes override operating mode display.








LED signals are represented by colored dots in the diagrams in the table. In the STATUS INDICATIONS table, the green dots do not represent individual flashes; instead they represent the duration that the LED is illuminated green. Each dot shown in both diagrams represents one half second. For example, the “Ballast on” signal is shown as a black dot and then four green dots. This indicates a dark (unlit) LED for one half second and then a long green flash lasting two seconds.

In the ERROR OR WARNINGS INDICATIONS table, the individual colored dots do represent individual flashes (black dots represent time that the LED is unlit between flashes). They also represent the relative time duration of signals (each dot still represents one half second). For example, the “Too high voltage” signal is shown as two red dots followed by two black dots. This indicates two red flashes of one half second each followed by one second of a dark (unlit) LED.

STATUS INDICATIONS			
LED Status Message	Fixture Status	Description	Action/Solution
●●●●●●●●●● No LED activity	No power/off	The fixture is not connected to the mains or the power is off	Check power
●●●●●●●●●● Short green flash with long off interval	Ballast stand-by (on PX)	Fixture is connected to the mains and to a controller. Output of ballast is off	No action required
●●●●●●●●●● Long green flash with brief off interval	Ballast on (on PX)	Fixture is connected to the mains and to a controller. Output of ballast is on	No action required
●●●●●●●●●● Solid green on with no off interval	Ballast on (Manual dim)	Fixture is connected to the mains and set to manual output	No action required
●●●●●●●●●● Rapid yellow flash	Fixture is igniting the lamp	Fixture is trying to restart the lamp	When lamp does not start: Lamp may be too hot, defective or not properly connected (remote). Disconnect, check power cord and connections

● BLACK ● RED ● YELLOW ● GREEN

TROUBLESHOOTING USING THE BALLAST'S STATUS LED

ERROR OR WARNING INDICATIONS			
 <p style="margin: 0;">One rapid red flash with long off interval</p>	Too low voltage	Input voltage is too low Ballast power drops to 50% automatically	If input voltage accidentally falls below 108V, the ballast power will automatically decrease to 50% of the set power. Turn off the ballast and replace with correct supply voltage. If the voltage is a bit lower than 120V, the LED will blink and the ballast keeps running with set wattage.
 <p style="margin: 0;">One rapid yellow flash with long off interval</p>	Too low voltage occurred in past	Input voltage was too low in the past Ballast power drops to 50% automatically	See above, reset
 <p style="margin: 0;">Two rapid red flashes with medium-long off interval</p>	Too high voltage	Input voltage is too high	Disconnect the ballast. Check input voltage, check wiring and connection, check neutral in 3 phase systems, then reconnect the ballast. LED on the ballast will blink but power will not change.
 <p style="margin: 0;">Two rapid yellow flashes with medium-long off interval</p>	Too high voltage occurred in past	Input voltage was too high in the past	See above, reset
 <p style="margin: 0;">Three rapid red flashes with brief off interval</p>	Too high temperature	Electronics temperature is too high (max. 115°C/239°F)	There is temperature sensor in the PCB of the ballast. If it senses the internal ballast temperature reaches 110°C, the LED will start to blink. The ballast power will decrease to 50% of the set power automatically. Users should turn off the ballast or cool down the ballast.
 <p style="margin: 0;">Three rapid yellow flashes with brief off interval</p>	Too high temperature occurred in past	Electronics temperature was too high in the past (max. 115°C/239°F)	See above, reset
 <p style="margin: 0;">One rapid red flash with prolonged off interval</p>	No signal from controller (on PX)	Fixture is connected to the mains and set to PX but there is no signal on the control input.	If a controller is connected, search for loose connections, defective contacts or short-circuits. Re-connect the controller to the ballast or verify whether the controller is out of order.

● BLACK ● RED ● YELLOW ● GREEN