
INSTRUCTIONS

PHANTOM DE

DOUBLE-ENDED DIGITAL BALLAST



PHB4015

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OVERVIEW

The Phantom Ballast Commercial DE is an ideal ballast choice for efficient growing. It was created with state-of-the-art microprocessor technology to utilize the industry's double-ended 1000W HPS lamps. It operates on a 208/240V, 50/60 Hz power supply.

This ballast (and all 40 Series Phantom Ballasts) includes a Control Port on the side panel which allows connection to and data communication with the Autopilot PX1 Lighting Controller via USB. Use with the PX1 is optional—the 40 series ballasts operate perfectly with standard manual control when not connected to a PX1. The power cord for the 40 Series ballasts now includes a ferrite collar which suppresses radio frequency interference.

WARNINGS

- This ballast and the Control Port are compatible only with the Autopilot PX1 Lighting Controller. Do not connect any other device to the Control Port. Any attempt to connect it to an unrelated device or control it with an incompatible controller may result in damage to the ballast and will void the warranty.
- Use this ballast in greenhouses or indoor applications only. Position it in an area away from excessive heat or contact with liquids.
- This ballast does not rely on the luminaire enclosure for protection against accidental contact with live parts.
- For remote operations, use this ballast with a maximum lamp cord of 15 feet.
- Disconnect the ballast from the power supply before performing any maintenance, lamp changes, or other modifications.
- Contact the retailer or distributor for service if the ballast does not work after confirming the power connection, output connection, and bulb operation.
- Opening the ballast will void the warranty.
- Lamps with built-in ignitors will not work with this ballast. Not for use with external ignitors.
- Always disconnect ballast's power cord before moving the unit or changing lamps.
- This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45-30 MHz.

INSTALLATION AND CONNECTION

For proper lamp break-in, we recommend that you run the ballast and bulb at 100% power for at least 12 straight hours after initial startup. This will improve lamp life and performance.

1. Find a suitable location for the ballast with sufficient cooling and away from any heat source.
2. Install the lamp firmly into the lamp socket of the reflector and connect the Lock & Seal lamp cord to the ballast.
3. Remove the power cord from the box. Plug the power cord into the power source (electrical outlet).
4. Plug the power cord into the power source (electrical outlet).
5. Once lamp has fired, set your desired dimming ratio. Please note that the ballast dims or raises output gradually to protect the lamp, so you might not see an instant increase upon changing your output percentage.

MOUNTING THE BALLAST ON THE WALL (FOR REMOTE OPERATION)

- Using the template on the left, mark the mounting screw positions on the wall. Screws need to be 145mm apart to ensure the screw head can be inserted into the



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hole on the back of the ballast. It is recommended that the screws be mounted in a wall stud. If that is not possible, please use drywall anchors rated for at least 15 pounds.

- Install the screws (not provided) into the stud. Install to the proper depth of 15mm.
- Slide the ballast onto the screws.
- We recommend that you mount the ballast vertically, with the output connector towards the bottom, for optimal cooling.
- Aside the vertical hanging way stated above, there are three other ways to utilize this ballast. Simply sit it on the floor in a convenient location; use the holes in the end plate flanges to hard-mount the ballast into place with bolts (not provided); or hang the ballast with attached style reflectors (instructions included within reflector package).

DIMMABLE NOTES

- When a USB cable is connected to the ballast's control port, manual dimming is defeated. The power-level LEDs over the Dimming button on the rear panel will go dark, and the LED next to the control port will go on. When/if the USB cable is disconnected from the control port, dimming control is returned to the Dimming button after a short delay, indicated by those LEDs becoming active again after start-up.
- Press the dimming button to cycle through the dimming levels. The appropriate LED indicator will light up to indicate selected dimming level (60%, 75%, 100%, Super).
- This ballast has built-in hot-restrike programming to protect the lamp and ballast in the event of the ballast turning off unexpectedly. The ballast will not attempt to restart a hot lamp for at least 15 minutes. If your lamp fails to start immediately, **DO NOT cycle the power on and off**. This can damage the lamp and ballast. If after 30 minutes your lamp is still not lit, shut off power to the ballast, and reconnect. This will begin the startup sequence again.

NOTES ON DIMMING

Main Voltage – Rated input voltage range for the ballast.

Operating Voltage Range – 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.

Max Input Power – Maximum possible wattage draw of the ballast.

Amperage – 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 ballast's power factor is greater than .99.

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.

Ferrite – Ferrites are usually non-conductive ferrimagnetic ceramic compounds derived from iron oxides. Ferrite cores are commonly incorporated as “collars” or “beads” on power cables of electronic equipment to prevent high frequency electrical noise (radio frequency interference) from exiting or entering the equipment.

WARRANTY

ELECTRICAL SPECIFICATIONS / CARACTÉRISTIQUES ÉLECTRIQUES / ESPECIFICACIONES ELÉCTRICAS

Model	Main Voltage	Operating Voltage Range	Max Input Power	Output Power Settings	Power Factor	Ignitor Voltage	THD	CF	ta	tc
Modèle	Tension principale	Plage de tension de fonctionnement	Puissance absorbée max	Réglages de la puissance de sortie	Facteur de puissance	Tension d'allumage	THD	CF	ta	tc
Modelo	Voltaje principal	Rango de voltaje de funcionamiento	Max. potencia de entrada	Configuración de la potencia de salida	Factor de potencia	Voltaje del ignitor	THD	CF	ta	tc
PHB4015	208/240V	185-265V	1236W	Super/100%/75%/60%	> 0.98	4.0 kV	< 8%	1.414-1.6	40°C/104°F	70°C/158°F

INPUT AMPERAGE REFERENCE / INTENSITÉ D'ENTRÉE DE RÉFÉRENCE / REFERENCIA DEL AMPERAJE DE ENTRADA

Model	I _{max} 208/240V	Super Boost 208/240V	100% 208/240V	75% 208/240V	60% 208/240V
PHB4015	6.0/5.2	5.8/5.1	5.1/4.4	3.9/3.4	3.1/2.7

BALLAST LED STATUS INDICATORS / TÉMOINS D'ÉTAT À LED DU BALLAST / INDICADORES LED DE ESTADO DEL BALASTO

STATUS / ÉTAT / ESTADO	DIMMING BUTTON / BOUTON DE VARIATION / BOTÓN DE REGULACIÓN	SELECTED POWER LED / LED D'ALIMENTATION SÉLECTIONNÉE / LED ENCENDIDO/APAGADO
Warm Up / Mise en température / Proceso de encendido / Proceso de encendido	On / sur / en	Slow Flash / Clignotement lent / Parpadeo lento
Normal Operation / Fonctionnement normal / Funcionamiento normal	On / sur / en	On / sur / en
Stand By / Mode veille / Modo espera	Slow Flash / Clignotement lent / Parpadeo lento	Slow Flash / Clignotement lent / Parpadeo lento
Ballast Fault / Anomalie du ballast / Error balasto	Off / off / apagado	Off / off / apagado
Lamp Fault / Anomalie de la lampe / Error lámpara	Off / off / apagado	Rapid Flash / Clignotement rapide / Parpadeo rápido
End of Life Lamp Indicator / Témoin de fin de vie de la lampe / Indicador de final de la vida útil de la lámpara	Rapid Flash / Clignotement rapide / Parpadeo rápido	Off / off / apagado
Connection Error / Erreur de connexion / Error de conexión	Flash / Clignotement / Parpadeo x 1	Off / off / apagado
High Input Voltage / Haute tension d'entrée / Alta tensión de entrada	Flash / Clignotement / Parpadeo x 2	On / sur / en
Low Input Voltage / Basse tension d'entrée / Baja tensión de entrada	Flash / Clignotement / Parpadeo x 3	On / sur / en
Over Temperature / Surtempérature / Exceso de temperatura	Flash / Clignotement / Parpadeo x 4	On / sur / en



LIMITED WARRANTY

Hydrofarm warrants the **PHB4015** to be free from defects in materials and workmanship. The warranty term is for 3 years beginning on the date of purchase. Misuse, abuse, or failure to follow instructions is not covered under this warranty. Hydrofarm will, at our discretion, repair or replace the **PHB4015** covered under this warranty if it is returned to the original place of purchase. To request warranty service, please return the **PHB4015**, with original sales receipt and original packaging, to your place of purchase. The purchase date is based on your original sales receipt.

GARANTIE LIMITÉE

Hydrofarm garantit que **PHB4015** ne présente pas de défauts de matériel ni de fabrication. La garantie est en vigueur 3 ans à partir de la date d'achat. Cette garantie ne couvre pas l'utilisation incorrecte, l'abus ou le non respect de la notice. Hydrofarm, selon ses critères, réparera ou remplacera **PHB4015** couvert par cette garantie s'il est renvoyé au centre original d'achat. Pour demander le service de garantie, renvoyer **PHB4015**, avec le ticket d'achat et l'emballage originaux, au centre d'achat. La date d'achat est indiquée sur le ticket d'achat original.

GARANTÍA LIMITADA

Hydrofarm garantiza que **PHB4015** no presenta defectos en los materiales ni la fabricación. La vigencia de la garantía es 3 años que comienza en la fecha de compra. Esta garantía no cubre el uso erróneo, el abuso o el incumplimiento de las instrucciones. Hydrofarm, según su criterio, reparará o sustituirá **PHB4015** incluido en esta garantía si se devuelve al centro original de compra. Para solicitar el servicio de garantía, devuelva **PHB4015**, con el tique de compra y el embalaje originales, a su centro de compra. La fecha de compra se basa en su tique de compra original.