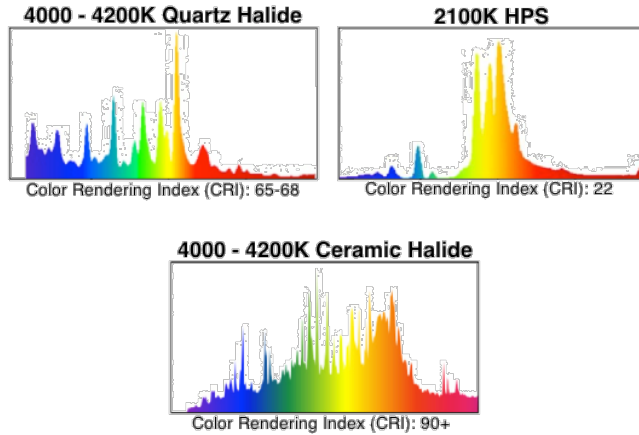


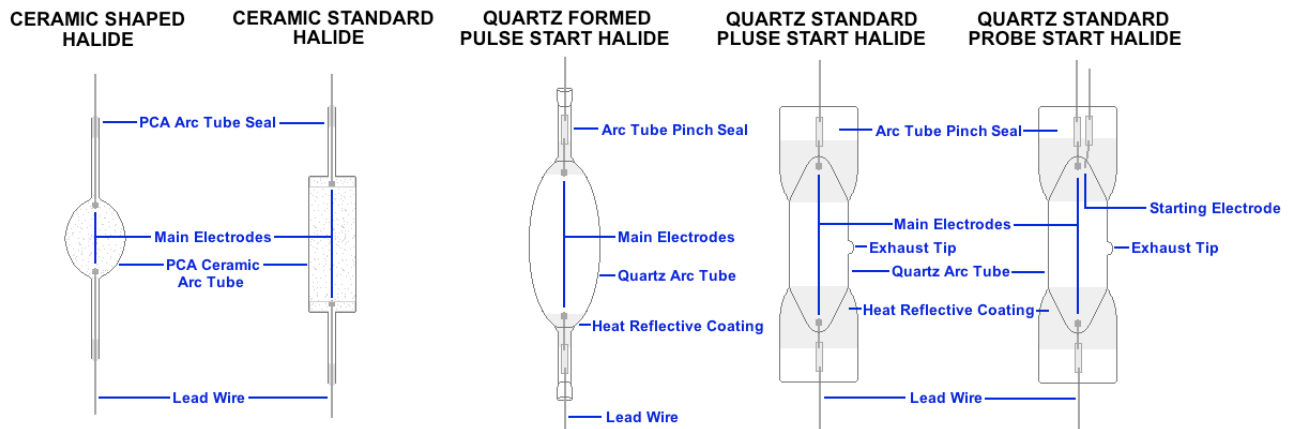
Technology

Ceramic metal halide lamps are considered one of the best light sources for plant growth. They produce light closest to natural sunlight compared to quartz metal halide and High Pressure Sodium (HPS) lamps. The full spectrum light is ideal for growing flowering, fruiting and leafy plants. Provides excellent light for all growing stages.



PHILIPS 315 Watt CDM Elite lamps employ a shaped PCA (Polycrystalline Alumina) arc tube, dosed with rare earth metal iodide. Commonly known as ceramic metal halide lamps. The PHILIPS CDM Elite technology allows for a short arc length, long service life and maintains excellent light output over time.

The PCA arc tube is more resistant to chemical corrosion than quartz arc tubes. This significantly improves the service life and reliability. The PCA material permits the arc tube to operate at a higher temperature and the specialized shape maintains a uniform operating temperature. This increases efficiency and provides a fuller light spectrum with little influence from the operating position.



Technology



Benefits:

- Longer service life
- Full spectrum white light
- Excellent light source for plant growth
- Lifetime color stability $\pm 200K$
- Provides more output per watt
- Up to 120 Lm/W
- Available in open fixture rated
- Compact light source

All discharge lamps require a ballast to operate properly. The ballast is required to deliver the correct voltage and amperage, not only for operation but also during lamp starting and warm up phases. The main job for the ballast is to limit the lamp operating current.

315 Watt ceramic lamps require specialized ballasts for optimal performance and safe operation. The ballast and lamp specifications must be matched properly. Required general specifications:

ANSI standard C182

Low frequency square wave

Ignition voltage: 2.5 – 4.0kV

Lamp nominal operating power: 315W

Ballast with lamp End Of Life (EOL) protection

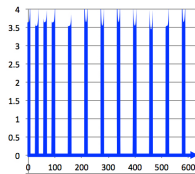
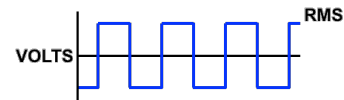
Ballast with thermal protection

Optional lamp dimming 50% maximum



ANSI C182 is the American National Standards Institute code for 315 Watt Ceramic metal halide lamps and ballasts. This ensures lamp and ballast compatibility.

The lamp operating frequency is important for optimal and safe operation. The shaped arc tube must be only operated with low frequency square wave and at specified ranges. Anything outside these limits could cause system failure. Certain frequencies can cause acoustic resonance, which can cause early or catastrophic lamp failure. The electronic ballast utilized in the PRO SPEC 315 Watt ballast operates lamp at 105-115Hz.



The ignition voltage is used to start the lamp. The ignition voltage is required to be within specified limits and timed correctly. The PRO SPEC 315 Watt ballast uses a sequenced, pulsed voltage to start the lamp precisely. The ignition voltage is timed for a maximum of 30 minutes. After this period of time the ballast will power down for safety.

Lamp operating power determines light output, light color and lamp life. The lamp should be operated at 315 watts nominal. Higher operating power results in higher operating temperatures. The lamps have temperature limits on the seals and materials used. Excess heat will degrade the lamp faster and early lamp failure will result.

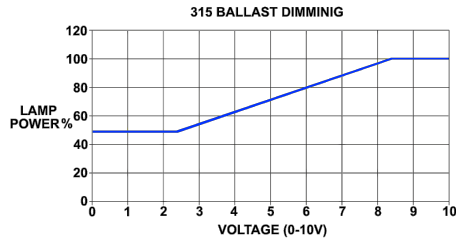
It is essential for the ballast to be equipped with lamp End Of Life (EOL) protection for safe operation. Eventually the ceramic arc tube will become leaky from chemical reactions and could rupture. This can cause the lamp to operate abnormally. Open fixture rated lamps are designed to keep the lamp contained if the arc tube ruptures. Over time the lamp operating voltage will rise due to chemical changes and from electrode wear. The PRO SPEC 315 Watt ballast monitors the lamp operating parameters. In the event of abnormal operation or lamp failure the ballast will power down until the power is cycled (off for >30 seconds).



Technology



Thermal protection protects the system from running too hot. If the ballast is installed incorrectly and allowed to operate too hot, the thermal protection cuts power off.



Lamps are allowed to be dimmed but limited to 50% output. Lamps should be operated at full rated output for a minimum of 10 minutes before dimming. The PRO SPEC 315 Watt ballast automatically operates lamps at 100% for the minimum time required before dimming. This guarantees the halides are allowed to enter the arc stream and the lamp is fully stabilized. This dimming approach has no impact on the lifetime of the system. Ballast can be dimmed using 0-10V controls.

PRO SPEC ballasts are designed to operate specified lamps at optimal levels and meet all lamp specifications. This guarantees a long lamp life, reliable performance and safe operation. All PRO SPEC ballasts are commercial/professional grade using only the highest quality components available. Every ballast is fully tested to ensure they meet specifications. We have over 14 years of experience in consulting, designing and testing lighting products. One of our first tasks was working with lamp manufacturers and testing compatible ballasts. Lighting ballasts have always been one of our biggest specialties. For additional information or questions please contact AHC Lighting.

All data and specifications are subject to change without notice.