



Philips MasterColor®
Ceramic Metal Halide
Pulse Start ED23½
Lamps featuring ALTO®
Lamp Technology

*Ideal for downtown areas,
colleges and universities
where visibility and quality
of light are important*

CERAMIC METAL HALIDE



† This lamp is better for the environment because of its reduced mercury content. All Philips ALTO® lamps give you end-of-life options which can simplify and reduce your lamp disposal costs depending on your state and local regulations.

Upgrade to better white light

Philips MasterColor® Ceramic Metal Halide Pulse Start ED23½ lamps are a better value than quartz metal halide, with longer life, higher lumen maintenance, and energy efficiency.

Better quality white light is now available in a familiar ED 23½ bulb shape with a mogul base

- Easy upgrade to better white light just by changing your bulb*
- Choice of color temperature—3000K or 4000K

Better rated average life¹ of 24,000 hours**

- vs. quartz metal halide pulse start 175W (MS175/U/PS) lamp with a 15,000 hour rated average life¹

Better lumen maintenance than quartz metal halide

- Improved lumen maintenance increases time between re-lamping

Better energy efficiency

- vs. mercury vapor and quartz metal halide with up to 90 lumens per watt

Better value than quartz metal halide

- Less mercury content than quartz metal halide, better for the environment

¹) See back of page for footnote

* Requires a metal halide pulse start ballast

** 100W 3000K lamp has a rated average life of 17,000 hours

PHILIPS
sense and simplicity

Philips MasterColor® Ceramic Metal Halide Pulse Start ED 23½ Lamps featuring ALTO® Lamp Technology

Ordering, Electrical and Technical Data

Product Number	Ordering Code	Nom. Watts	Bulb Finish	Base	Pkg. Qty.	ANSI Code	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.) ¹	Approx Initial Lumens ²	Approx Mean Lumens ³	Color Temp. (Kelvin) ⁴	CRI	
21114-4	CDM70/U/PS/3K ALTO	70	Clear	Mogul	12	M143/M98/E	5	7¼	24,000	6200	4340	3000	85+	NEW
15492-2	CDM70/U/PS/4K ALTO	70	Clear	Mogul	12	M143/M98/E	5	7¼	24,000	5900	4150	4000	85+	
21115-1	CDM100/U/PS/3K ALTO	100	Clear	Mogul	12	M140/M90/E	5	7¼	17,000	9000	6750	3000	85+	NEW
15493-0	CDM100/U/PS/4K ALTO	100	Clear	Mogul	12	M140/M90/E	5	7¼	24,000	9000	6750	4000	85+	
21117-7	CDM150/U/PS/3K ALTO	150	Clear	Mogul	12	M142/M102/E	5	7¼	24,000	13,000	9100	3000	85+	NEW
15494-8	CDM150/U/PS/4K ALTO	150	Clear	Mogul	12	M142/M102/E	5	7¼	24,000	13,000	9100	4000	85+	

1) Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average.

2) Measured at 100 hours of life in vertical and horizontal operating positions.

3) Approximate mean lumen output at 40% of lamp rated average life. Measured in vertical and horizontal operating positions.

4) Approximate color temperature in Kelvin degrees

● This product utilizes ALTO® Lamp Technology. ALTO products pass the US EPA's Toxicity Characteristic Leaching Procedure (TCLP) for non-hazardous waste status.

Check state and local laws, rules, and regulations regarding disposal.

Above specifications subject to change without notice.

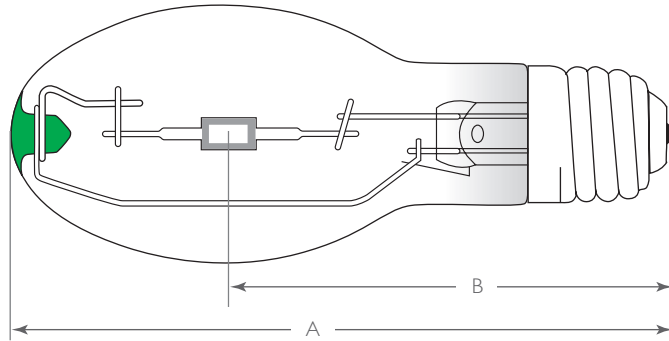
Dimensions

A (MOL) ————— 7.75"/195mm

B (LCL) ————— 5.0"/127mm

LCL = Light Center Length

MOL = Maximum Overall Length



RECOMMENDED WARNINGS, CAUTIONS, AND OPERATING INSTRUCTIONS

R "WARNING: These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J, (USA:21 CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb could cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

This lamp contains an arc tube with a filling gas containing not less than 25nCi of Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.

Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC TUBE RUPTURE, THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

LAMP OPERATING INSTRUCTIONS:

- RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
- Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
- Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C.
- Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:
 - Operate lamp only within specified limits of operation.
 - For total supply load refer to ballast manufacturers electrical data.
 - All Pulse Start lamps require a socket rated to withstand a 4000 Volt pulse.
- Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
- If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
- Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
- Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
- Lamps may require 10 to 15 minutes to re-light if there is a power interruption.
- Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
- Use this lamp only in a fixture that contains a Pulse Start metal halide ballast and is specifically designed for use with Pulse Start metal halide lamps.



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