

Philips MasterColor  
Ceramic Metal Halide  
Pulse Start ED23½  
Lamps

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

MasterColor



## 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\*
- 4000K color temperature

**Better rated average life<sup>1</sup> of up to 24,000 hours**

- Compared to quartz metal halide pulse start 175W (MS175/U/PS) lamp with a 15,000 hour rated average life<sup>1</sup>

**Better lumen maintenance than quartz metal halide**

- Improved lumen maintenance increases time between re-lamping

**Better energy efficiency**

- Compared to mercury vapor and quartz metal halide with up to 99 lumens per watt

**Better value than quartz metal halide**

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

(1. See back page for footnote)

\* Requires a metal halide pulse start ballast

**PHILIPS**

# Philips MasterColor® Ceramic Metal Halide Pulse Start ED 23½ Lamps

## Ordering, Electrical and Technical Data (Subject to change without notice)

Product Number	Ordering Code	Nom. Watts	Bulb Finish	Base	Pkg. Qty.	ANSI Code	LCL (In.)	MOL (In.)	Avg. Life (Hrs.) <sup>1</sup>	Rated Initial Lumens <sup>2</sup>	Approx Mean Lumens <sup>3</sup>	Approx Temp. (Kelvin) <sup>4</sup>	Color CRI
430694	CDM70/U/PS/4K Elite	70	ED-23.5	Mogul	12	M143/M98/E	5	7 3/4	20000	6800	5440	4400	88
430686	CDM100/U/PS/4K Elite	100	ED-23.5	Mogul	12	M140/M90/E	5	7 3/4	20000	9900	7920	4200	91
154948	CDM150/U/PS/4K	150	ED-23.5	Mogul	12	M142/M102/E	5	7 3/4	24000	13000	9360	4000	85
430702	MHC100/U/HR/4K ED28	100	ED-28	Mogul	12	M140/M90/E	5	8 5/16	20000	10000	8000	4100	90

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

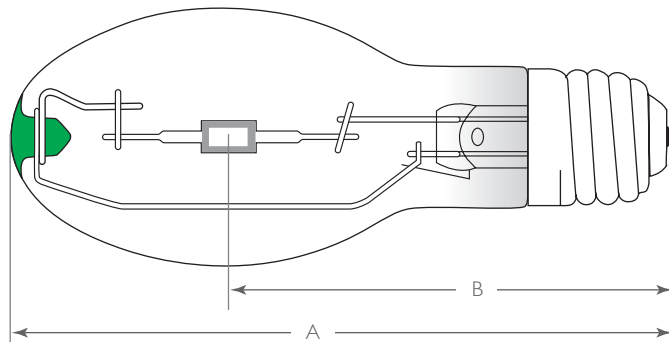
## Dimensions

A (MOL) \_\_\_\_\_ 7.75"/195mm

B (LCL) \_\_\_\_\_ 5.0"/127mm

LCL = Light Center Length

MOL = Maximum Overall Length



## RECOMMENDED WARNINGS, CAUTIONS, AND OPERATING INSTRUCTIONS

**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:21CFR 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 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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www.philips.com

Philips Lighting Company  
200 Franklin Square Drive  
P.O. Box 6800  
Somerset, NJ 08875-6800  
1-800-555-0050

A Division of Philips Electronics North America Corporation

Philips Lighting  
281 Hillmount Road  
Markham, Ontario  
Canada L6C 2S3  
1-800-555-0050

A Division of Philips Electronics Ltd.