Philips MasterColor CDM Elite 3000K Tubular Single-Ended T6 Lamps

Ideal for retail display lighting, general and indirect lighting, wall washing and fiber-optic systems

MasterColor CDM Elite

A compact solution for retail

Philips MasterColor CDM Elite 3000K Tubular Single-Ended T6 Lamp is the *next generation* of MasterColor.

Excellent color
- Up to 90 CRI (color rendering index)
- Color stability over life within ± 200K
- Lamp-to-lamp color consistency over life

Total cost of ownership benefits
- High lamp efficacy (up to 110 LPW)
- 70W MasterColor CDM Elite delivers 15% better initial efficacy* and 35% better design lumens** than standard 70W MasterColor T6 lamps
- 80% lumen maintenance at 12,000 hours
- New 100W MasterColor CDM Elite T6 delivers design lumens equal to 150W standard MasterColor T6 lamp

Application versatility
- Universal burning position
- Dimensions, base and light center length are same as MasterColor T6 lamps
- Features FadeBlock—an integrated UV blocking medium for reduced fading of fabrics and paintings
- Available in new 39W, 50W, and 70W Elite lamps

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MasterColor CDM Elite

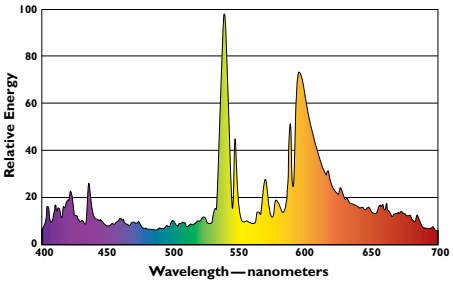
Ordering Data (Subject to change without notice)

Product Number	Ordering Code	Pkg. Qty.	Nom. Watt.	ANSI Ballast Code	Approx. Initial Lumens[1]	Approx. Mean Lumens[2]	CRI
41047-2	CDM Elite20/T6/830	12	20	C156/E	1800	1550	85
40914-4	CDM Elite35/T6/930	12	39	C130/E	4000	3500	90
41416-9	CDM Elite50/T6/930	12	50	C193/E	5400	4750	90
40915-1	CDM Elite70/T6/930	12	70	C139/E	7650	6700	90
40829-4	CDM Elite100/T6/930	12	100	C191/E	11,000	9680	90

Electrical and Technical Data

Lamp Operating Volt. (rms)(Nom.)[3] _____ 94 (20W)
_____ 90 (50W)
_____ 84 (39W, 70W)
_____ 88 (100W)
Initial Lamp Volt. Range (rms)[4] _____ 80–100
Lamp Operating
Current (Amps) Nominal (rms) _____ 0.215 (20W)
_____ 0.47 (39W)
_____ 0.59 (50W)
_____ 0.89 (70W)
_____ 1.14 (100W)
Lamp Current Crest Factor (Maximum) _____ 1.8
Warm-up to 80% Full Brightness _____ 2 minutes
Restrike Time for Hot Lamps _____ 4–8 minutes
Ballast Open Circuit Voltage ___ 250 RMS Min. (20W)
_____ 198 RMS Min. (39W, 50W, 70W, 100W)
Pulse Peak Volts _____ 3000–4000
Pulse Width @ 90% Peak ____ 2 Micro Sec. Minimum
Pulse Repetition Rate (Minimum)[5] __ 2 per Half Cycle
Minimum Operating Temp. _____ -30°C (-22°F)

Representative Spectral Power Distribution of MasterColor 3000K Lamps



Physical Characteristics

Bulb Size _____ T6
Bulb Finish _____ Clear
Base _____ G-12 Bi-Pin
Max. Overall Length (MOL) _____ 3 15/16" (20W, 39W, 50W 70W)
_____ 4 11/32" (100W)
Light Center Length (LCL) _____ 2 7/32"
Arc Length _____ 0.13" (3.31mm)(20W)
_____ 0.19" (4.8mm)(39W)
_____ 0.24" (6mm)(50W)
_____ 0.28" (7.15mm)(70W)
_____ 0.33" (8.5mm) (100W)
Max. Bulb Temp. _____ 320°C (608°F)(20W)
_____ 500°C (932°F)(39W, 50W, 70W, 100W)
Max. Base Temp. _____ 250°C (482°F)
Arc Tube Material _____ Polycrystalline Alumina
Max Bulb to Base Eccentricity _____ 3°
Max. Arc Tube to Base Eccentricity _____ 3°

Operating Characteristics

Rated Avg. Life, Hrs.[6] _____ 15,000 (20W, 39W, 50W, 70W, 100W)
Correlated Color Temp. (CCT)[2] _____ 3000K
CIE Chromaticity Approx.[2] ____ x-.434 y-.391 (20W)
_____ x-.435 y-.396 (39W, 50W, 70W)
_____ x-.432 y-.399 (100W)
Efficacy (lpw) _____ 90 (20W)
_____ 102 (39W)
_____ 108 (50W)
_____ 109 (70W)
_____ 110 (100W)

Operating Position

Universal
Enclosed luminaires only.

NOTE: Use on thermally protected electronic ballast only.

1) Measured at 100 hrs. life. Approximate lumen values listed are for vertical operation of the lamp.
2) Approximate lumen output at 40% of lamp rated average life.
3) Measured at rated lamp watts on a linear reactor. LPW does not include ballast losses.
4) Measured with the lamp operating at rated watts.
5) Option-Pulse Width @ 90% Peak, 1 micro second minimum with 2 pulses per half cycle.
6) 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.

Footnotes from front page:
* Based on a MasterColor Elite 3000K Tubular Single-Ended T6 70 W lamp with 7650 initial lumens vs. a CDM T6 70W lamp with 6600 initial lumens.
** Based on a MasterColor Elite 3000K Tubular Single-Ended T6 70 W lamp with 6700 design lumens vs. a CDM T6 70W lamp with 4950 design lumens.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor Ceramic Metal Halide Lamps: Single-Ended CDM-T G12 and CDM-TC G8.5 (Universal); Double-Ended CDM-TD RX7 (Horizontal ± 45°, Enclosed Fixtures Only)

"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 may 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.**
Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.
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:

1. 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.
2. Use only in fully enclosed fixtures capable of withstanding particles of glass having temperatures up to 1000°C. Lens/diffuser material must be heat resistant. Consult fixture manufacturer regarding the suitability of the fixture for this lamp.
3. Do not operate a fixture with a missing or broken lens/diffuser.
4. Operate lamp only within specified limits of operating position.
5. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
6. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. Operate CDM-T6 (G12 base) lamps only on thermally protected ballasts.
   D. Operate CDM-TC lamps (G8.5 base), CDM-T6 Elite lamps, and CDM-T6 39W/842 lamps only on thermally protected electronic ballasts.
7. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
8. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
9. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
10. 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.
11. Lamps may require 4 to 8 minutes to re-light if there is a power interruption.
12. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

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