LED FLUORESCENT Lighting

CHALLENGER

- **State of the art SMD Chip**
- Best in class brightness
- Better heat profile – runs cooler, less affected by external heat
- Longer life
- Improved mechanical stability
- Mercury Free

With up-to-the-minute Surface Mounted Device (SMD) / internal driver technology, The Challenger takes the lead.

Even previous generations of our LED replacement tubes outshone old-line fluorescents in Total Cost of Ownership and overall performance. This latest iteration puts our LED competition in deep shade too.

As with all our LED replacement tubes, Challenger plug-and-plays wherever you have fluorescents right now – just bypass or remove the ballast/starter for optimal performance.

Specifications

LED Chip:	Ultra Bright SMD LED
Brightness:	1500lm
Beam Angle:	120°
Bulb / Socket Type:	G13 bipin lamp holder
Color Temperature:	Neutral white: 4500K, Cool white: 6500K
Color Rendering Index:	CRI: 80
Life Span:	50,000-60,000 hours
Power Consumption:	18 Watt
Voltage:	85W 240V AC (240V AC and 270V AC version available upon request)
Number of LEDs:	360 LEDs
Dimensions:	4 feet
Cover Material:	High-Transparency PC Cover
Housing:	Aluminum
Operating Temperature:	-30 ~ 60°C
Power Factor:	0.85

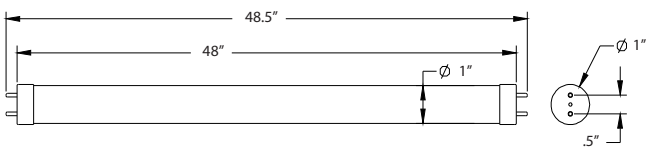
Lumen Chart

	4 feet
Neutral White	1500 lm
Cool Whte	1500 lm

SKU (120VAC version)

Neutral White 4500K	4′ Tube: LW10-8204-C18-W4K
Cool White 6500K	4′ Tube: LW10-8204-C18-W6K

Diagram



LED Waves

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Challenger

T-8 Ultra Brightness LED Replacement Light Tube with SMD technology

Congratulations on your purchase of the latest in lighting technology. Bid farewell to Depression-era fluorescent lights, with their flicker and hum – and say hello to the 21st Century technology of solid-state lighting.

Some of the highlights of The Challenger:

- Plug and play installation and usage
- Extra-Bright: 360 SMD!
- Super-long life: 50,000-60,000 hours. Compare this to 30,000 hours for older LED units – and 10,000 for old-line fluorescents! Drastically reduce maintenance and relamping costs over time.
- Low power –18W!
- Attractive – acrylic and galvanized aluminum finish (shatterproof, too!)
- No lead. No mercury. No disposal hassles.

T-8 LED Replacement Lamp—User Guide

This product is intended for direct replacement installation ("retrofit") of conventional T8 fluorescent tubes

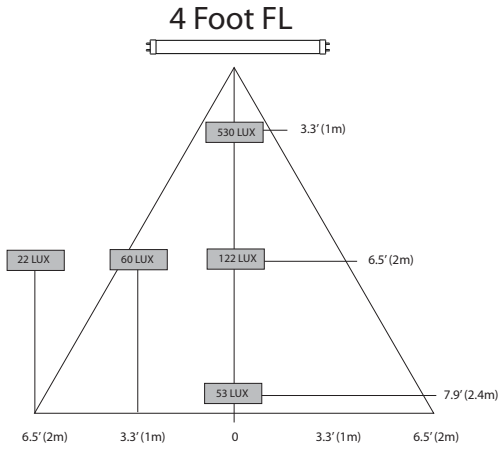
We strongly advise you to read this guide in its entirety before proceeding with retrofit. LED lights are not "electrical" in the sense that an incandescent bulb is, they are "electronic". Incorrect usage will affect the electronic contents, limiting lamp performance, degrading light quality and shortening lamp life.

1. Remove or bypass all ballasts and/or starters prior to installation.
2. **Do not tamper with the acrylic cover. If cover is damaged or removed, do not touch the printed circuit board (PCB) with the power on, serious injury or death due to electric shock may result.**
3. High ambient temperatures can significantly shorten unit lifespan.
4. With adequate weatherproofing, LED tubes will continue to operate at low temperatures (including those below 32°F/0°C) at full brightness. Please consult with refrigeration specialists and/or qualified electricians when installing in a refrigerated environment, to ensure adequate weatherproofing and safety standards
5. Do not stare at the lamp when in use—the brightness of LEDs is considerably greater than conventional light sources, discomfort and/or eye injury may result.

* Note that changes to electrical devices of any sort should always and only be undertaken by a qualified electrician.

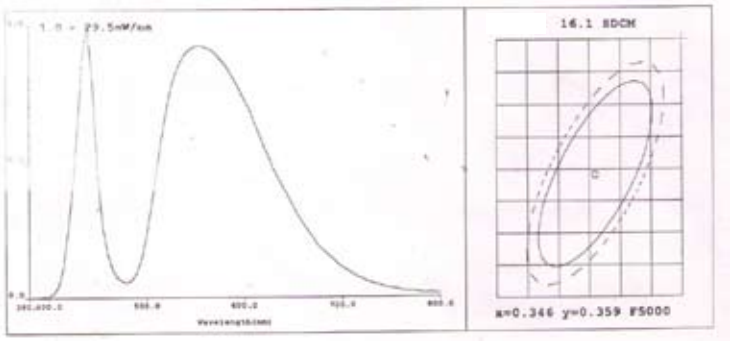
Warranty

1. LED Waves warranties this product for three (3) years against defects of material, labor and fabrication.
2. This warranty is void in the following instances:
    a. The light has been dismantled or opened. This includes removal of the end caps, acrylic cover or other parts
    b. The unit was damaged due to mishandling or negligence (for example, damage due to bending, dropping, etc.) after delivery of the unit was accepted by client
    c. The unit has been used with incorrect voltage or other issue connected with user's electricity supply or installation



CHALLENGER

4' (Neutral White)



CIE Color Parameters:
Chromaticity Coordinate: x=0.3682, y=0.4054/u=0.2064, v=0.5119 (duv= -1.68e-002)
CCT:Tc = 4462k Dominant WaveL: 564.6nm Purity= 32.2%
Peak WaveL: p=440nm Half Width: 22.6nm Ratio: R=13.4% G=85.7% B=0.9%
Average Wave: 561nm

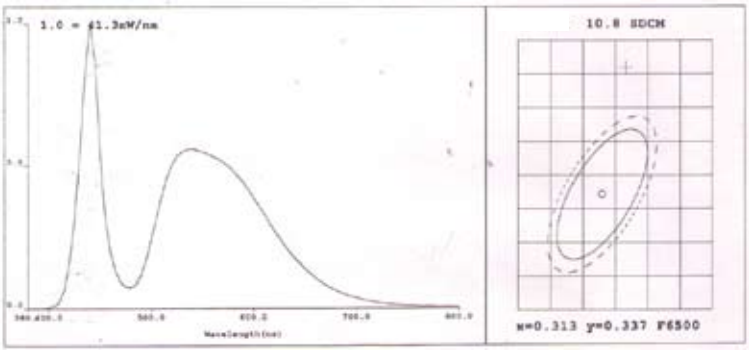
Rendering Index: Ra=64.4
R1=56 R2=65 R3=74 R4=64 R5=59 R6=57 R7=75 R8=46
R9= 0 R10=22 R11=62 R12=28 R13=58 R14=85 R15=50

Photo Parameters:
Luminous Flux: =1518.2 (lm) Luminous Efficacy: 84.41 (lm/W)
Radiant Power: 3.840 (W)

Electrical Parameters:
Voltage: 227.0V Current: 0.0948A Power: 18.61W PF: 0.829

Instrument Status:
Scan Range: 380nm-800nm Interval: 5nm Ip= 26824 (G=3, D=55)
REF= 44560 TMP (PMT) = 27.1˚C

4' (Cool White)



CIE Color Parameters:
Chromaticity Coordinate: x=0.3167, y=0.3559/u=0.1909, v=0.4826 (duv= -1.45e-002)
CCT:Tc = 6264k Dominant WaveL: 510.7nm Purity= 5.3%
Peak WaveL: p=440nm Half Width: 21.6nm Ratio: R=10.9% G=87.5% B=1.6%
Average Wave: 540nm

Rendering Index: Ra=64.4
R1=60 R2=66 R3=75 R4=66 R5=64 R6=60 R7=74 R8=51
R9= 0 R10=24 R11=66 R12=40 R13=60 R14=86 R15=51

Photo Parameters:
Luminous Flux: =1590.0 (lm) Luminous Efficacy: 84.72 (lm/W)
Radiant Power: 3.912 (W)

Electrical Parameters:
Voltage: 226.0V Current: 0.0983A Power: 18.76W PF: 0.844

Instrument Status:
Scan Range: 380nm-800nm Interval: 5nm Ip= 37484 (G=3, D=55)
REF= 36878 TMP (PMT) = 27.2˚C