



# Direct8™ LED



## LED T8 Tubes GENERATION 3

Limitless Options  
for the following applications:

TCP has a new generation of LED compatible replacement T8 tubes for linear fixtures. These T8 tubes are dimmable and feature multiple ballast compatibility including Instant Start, Rapid Start, and Programmed Start.

- Offices
- Restaurants
- Retail Stores
- Lobbies
- Schools
- Hospitals



5 YEAR  
WARRANTY

we know light.™



## Features and Benefits

>50% energy savings
Long 50,000 hour rated life— minimizes replacements and labor costs
Compatible with Instant, Rapid or Programmed Start ballasts and most traditional fluorescent ballasts
Dimmable (0-10v dimming ballasts preferred)
No rewiring of fixture— simply replace fluorescent lamp with LED lamp
Instant on/off
No mercury— great for all environments
Rated for enclosed fixtures
2', 3', 4' tubes and U6 tube options available
No UV

## Specifications

Input Line Voltage	120-277, 347 VAC
Minimum Starting Temperature	-30°C
Maximum Operating Temperature	55°C
Power Factor	>.99
THD	<8%*
Beam Angle	210°
Field Angle	325°**

**NOTE:** Use shunted sockets for Instant Start ballasts. Use unshunted sockets for Rapid, Programmed, and Dimmable ballasts.

\*Ballast dependent, measured with reference ballast  
 \*\*Calculated

Note: Beam Angles and Field Angles do not apply to U-Lamps

## Listing

UL/cUL Listed – damp location rated
Approved for open and enclosed fixtures

## Warranty

Five years against defects in manufacturing
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To view our DLC qualified products, please consult the DLC Qualified Products List at [www.designlights.org/qpl](http://www.designlights.org/qpl).

LED T8 Tube  
4 foot



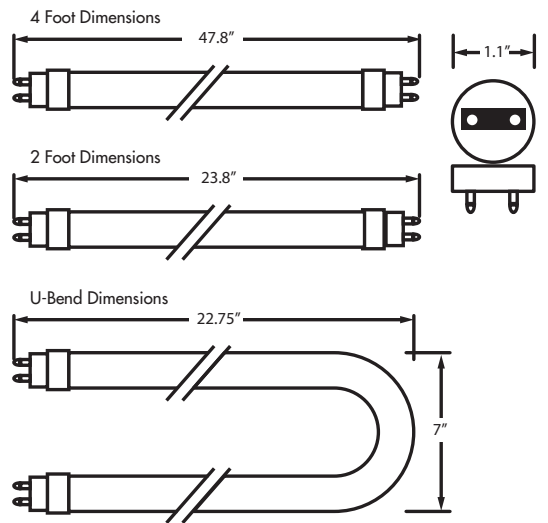
LED T8 Tube  
3 foot



LED T8 Tube  
2 foot



LED U-Bend T8 Tube  
6 inch





# LED T8 Tubes GENERATION 3

LED DirecT8™ Instant Start/Rapid Start/Programmed Start Compatible

Item#	Description	DLC QPL*	Lamp Watts	Equip Watts	LBF System Watts	NBF System Watts	HBF System Watts	LBF Lumens	NBF Lumens	HBF Lumens	CCT	CRI	Base
<b>LED 12 WATT T8 TUBE – 4 FOOT GLASS MODEL# T8021</b>													
L12T8D5030K	LED 12W 4' T8 IS/RS 30K		12W	32W	13.0	14.9	21.5	1260	1700	2280	3000K	80	G13
L12T8D5035K	LED 12W 4' T8 IS/RS 35K	★	12W	32W	13.0	14.9	21.5	1300	1750	2340	3500K	80	G13
L12T8D5041K	LED 12W 4' T8 IS/RS 41K	★	12W	32W	13.0	14.9	21.5	1340	1800	2400	4100K	80	G13
L12T8D5050K	LED 12W 4' T8 IS/RS 50K	★	12W	32W	13.0	14.9	21.5	1380	1850	2480	5000K	80	G13
L12T8D5041KBP	LED 12W 4' T8 IS/RS 41K BULK PACK	★	12W	32W	13.0	14.9	21.5	1340	1800	2400	4100K	80	G13
L12T8D5050KBP	LED 12W 4' T8 IS/RS 50K BULK PACK	★	12W	32W	13.0	14.9	21.5	1380	1850	2480	5000K	80	G13
<b>LED 11 WATT HIGH EFFICACY T8 TUBE – 4 FOOT GLASS MODEL# T8024</b>													
L11T8D5030K	LED 11W 4' T8 HE IS/RS 30K		11W	32W	11.3	13.6	18.5	1340	1800	2410	3000K	80	G13
L11T8D5035K	LED 11W 4' T8 HE IS/RS 35K	★	11W	32W	11.3	13.6	18.5	1380	1850	2480	3500K	80	G13
L11T8D5041K	LED 11W 4' T8 HE IS/RS 41K	★	11W	32W	11.3	13.6	18.5	1410	1900	2540	4100K	80	G13
L11T8D5050K	LED 11W 4' T8 HE IS/RS 50K	★	11W	32W	11.3	13.6	18.5	1450	1950	2610	5000K	80	G13
<b>LED 11 WATT T8 TUBE – 3 FOOT GLASS MODEL# T8022</b>													
L11T8D3D5030K	LED 11W 3' T8 IS/RS 30K		11W	25W	11.6	13.5	19.2	1040	1400	1870	3000K	80	G13
L11T8D3D5035K	LED 11W 3' T8 IS/RS 35K		11W	25W	11.6	13.5	19.2	1080	1450	1940	3500K	80	G13
L11T8D3D5041K	LED 11W 3' T8 IS/RS 41K		11W	25W	11.6	13.5	19.2	1110	1500	2000	4100K	80	G13
L11T8D3D5050K	LED 11W 3' T8 IS/RS 50K		11W	25W	11.6	13.5	19.2	1150	1550	2070	5000K	80	G13
<b>LED 9 WATT T8 TUBE – 2 FOOT GLASS MODEL# T8023</b>													
L9T8D5030K	LED 9W 2' T8 IS/RS 30K		9W	17W	8.5	9.5	14.2	850	1150	1540	3000K	80	G13
L9T8D5035K	LED 9W 2' T8 IS/RS 35K	★	9W	17W	8.5	9.5	14.2	870	1175	1575	3500K	80	G13
L9T8D5041K	LED 9W 2' T8 IS/RS 41K	★	9W	17W	8.5	9.5	14.2	890	1200	1600	4100K	80	G13
L9T8D5050K	LED 9W 2' T8 IS/RS 50K	★	9W	17W	8.5	9.5	14.2	910	1225	1640	5000K	80	G13
<b>LED 13 WATT U-BEND T8 TUBE – 6 INCH PLASTIC MODEL# T8006</b>													
L13T8UD5030K	LED 13W U6 T8 IS/RS 30K	★	13W	32W	13.0	16.0	22.0	1400	1800	2500	3000K	83	2G13
L13T8UD5035K	LED 13W U6 T8 IS/RS 35K	★	13W	32W	13.0	16.0	22.0	1400	1800	2500	3500K	83	2G13
L13T8UD5041K	LED 13W U6 T8 IS/RS 41K	★	13W	32W	13.0	16.0	22.0	1450	1850	2550	4100K	83	2G13
L13T8UD5050K	LED 13W U6 T8 IS/RS 50K	★	13W	32W	13.0	16.0	22.0	1500	1900	2600	5000K	83	2G13

\*Design Lights Consortium (DLC) Qualified Product

For the most up-to-date specs and warranty information, please visit [www.tcpi.com](http://www.tcpi.com)

## NBF System Power Guide

4' system watts ≤ 15W  
 4' HE system watts ≤ 14W  
 3' system watts ≤ 14W  
 2' system watts ≤ 10W  
 2' U-Bend system watts ≤ 16W



## Compatibility Guides

### LED Direct8™ Instant Start Ballast

Manufacturer	Series	Model #	Voltage
GE		GE132MAX-L/ULTRA	UNIV
		GE132MAXP-N/ULTRA	UNIV
		GE232MAX347-N	347
		GE232MAX-N/ULTRA	UNIV
		GE232MAX-G-N/Ultra	UNIV
		GE232MAXP-H/ULTRA	UNIV
		GE332MAXP-H/ULTRA	UNIV
		GE332MAXP-N/ULTRA	UNIV
		GE332MAX-L/ULTRA	UNIV
		GE332MAX-G-N	UNIV
		GE432MAX347-N	347
Sylvania/Osram	QHE	2x32T8/ISN-SC	UNIV
	QHE	2x32T8/ISN-SC	347
	QHE	4x32T8/ISN-SC	UNIV
Philips/Advance	Advance	GOPA-2P32-SC	347
	Advance	GOPA-4P32-SC	347
	Advance	ICN-2P32-N	UNIV
	Advance	ICN-3P32-N	UNIV
	Advance	ICN-4P32-N	UNIV
	Advance	IOP-2P32-LW-N	UNIV
	Advance	IOP-3P32-N	UNIV
	Advance	IOPA-4P32-LW-N	UNIV
	Advance	IOPA-4P32-LW-SC	UNIV
	Advance	IOPA-4P32-N	UNIV
TCP		E2P32ISUNVE	UNIV
		E2P32ISUNVHE	UNIV
		E2P32ISUNVLE	UNIV
		E3P32ISUNVE	UNIV
		E3P32ISUNVHE	UNIV
		E3P32ISUNVLE	UNIV
		E4P32ISUNVE	UNIV
		E4P32ISUNVHE	UNIV
		E4P32ISUNVLE	UNIV
Universal Lighting Technologies	Triad	B132IUNVHP-N	UNIV
	Triad	B232IUNVHP-N	UNIV
	Triad	B332IUNVHP-A	UNIV
	Triad	B432IUNVHP-A	UNIV
	Triad	B232I347HPA	347
	Triad	B432I347HP-000C	347
IOTA		I-320 IOTA EMERGENCY BALLAST	

### LED Direct8™ Rapid, Programmed, Dimmable Ballast

Manufacturer	Model #	Voltage
<b>2 LAMP</b>		
GE	GE-232-MVPS-N	UNIV
	GE-232-MVPS-L	UNIV
	GE-232MAXP-N/ULTRA	UNIV
	GE232MAX-H/ULTRA	UNIV
Sylvania/Osram	QHE-2x32T8/UNV PSN-NC	UNIV
	QHE-2x32T8/UNV PSHHT	UNIV
Philips/Advance	IOP-2PSP32-N	UNIV
	GOP-2PSP32-SC	UNIV
TCP	E2P32PSUNVE	UNIV
	E2P32PSUNVLE	UNIV
	TCP 2S32PSUNVHE	UNIV
	E2P32PSUNVHE	UNIV
<b>3 LAMP</b>		
GE	GE332-MVPS-N	UNIV
	GE332-MVPS-H	UNIV
Sylvania/Osram	QHE 3x32T8/UNV PSN-SC	UNIV
Philips/Advance	IOP-3S32-SC	UNIV
	IOP-3PSP32-SC	UNIV
TCP	E3P32PSUNVE	UNIV
	EP32PSUNVLE	UNIV
<b>4 LAMP</b>		
GE	GE432-MVPS-N	UNIV
	GE432-MVPS-H	UNIV
	GE432-MVPS-L	UNIV
	GE-432-MAX-N/ULTRA	UNIV
Sylvania/Osram	QHE 4x32T8/UNV PSN-SC	UNIV
	QHE 4x32T8/UNV PSHHT	UNIV
Philips/Advance	IOP-4PSP32-SC	UNIV
	GOP-4PSP32-SC	UNIV
TCP	E4P32PSUNVE	UNIV
	E4P32PSUNVHE	UNIV
<b>1 LAMP DIMMABLE</b>		
Philips/Advance	IZT-132-SC	UNIV
<b>2 LAMP DIMMABLE</b>		
Philips/Advance	IZT-2S32-SC	UNIV
	IZT-2PSP32-SC	UNIV



## Compatibility Guides

### LED DirecT8™ U-Bend Ballast

BALLAST for FOUR LAMPS					
Brand	Model #	Four Lamp	Three Lamp	Two Lamp	One Lamp
Espen	VE432MVHIP	√	√	√	√
Espen	VE432MVHIPE	√	√	√	√
Espen	VE432MVHIPHE	√	√	√	X
Howard	EP4/32IS/MV/MC/HE	√	√	√	√
Keystone	KTEB-432-UVIS-N-P	√	√	√	√
Philips/Advance	ICN-4P32-SC	277V ONLY	277V ONLY	277V ONLY	X

BALLAST for THREE LAMPS				
Brand	Model #	Three Lamp	Two Lamp	One Lamp
GE-ProLine	GE332MVN-DIY	√	√	√
GE-UltraMax	GE332MAX90-V60	√	√	X
Keystone	KTEB-332-UVIS-N-P	√	√	√
Sylvania	QTP 3x32T8/UNVPSX-SC	√	X	X
Workhorse	WHCG3-120-T8-IS	√	√	√

BALLAST for TWO LAMPS			
Brand	Model #	Two Lamp	One Lamp
Espen	VE232MVHIPE	√	√
Espen	VE232MVHIPHE	√	X
Espen	VE232MVHIPL	√	√
GE-UltraMax	GE232MAX-N/ULTRA	X	X
GE-UltraStart	GE-232-MVPS-H	√	X
GE-UltraStart	GE232-MVPS-L	√	√
Keystone	KTEB-232-UVIS-N-P	√	√
Keystone	KT-232-UV-PS-VDIM	√	√
Osram	QHE 2x32T8/UNV DIM-TC	X	X
Philips/Advance	ICN-2P32-N	√	√
Philips/Advance	IOPA-2P32-N	X	X
Philips/Advance	RCN-2S32-SC	X	X
Philips/Advance	REL-2P32-SC	X	X
Philips/Advance	REZ-2S32-SC	√	X
Robertson	RSW240T12120	√	√
Triad	B232SR120S30	√	√
Triad	B232IUNVHO-N	√	√
Workhorse	WHCG3-120-T8-IS	√	√

# CREATING BEAUTY

TCP has a 20-year history in energy-efficient lighting. Thanks to our cutting edge technology and manufacturing expertise, we have shipped billions of high quality lamps. Our integrated technology and manufacturing provides expedited time-to-market. With TCP, you can count on unique lighting products designed to meet very specific needs—lighting that transforms your surroundings and envelopes you in warmth—lighting that generates beauty with every flip of the switch.



For more information on the quality and care TCP can deliver, call us at **800.324.1496** or visit [tcp.com](http://tcp.com)

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