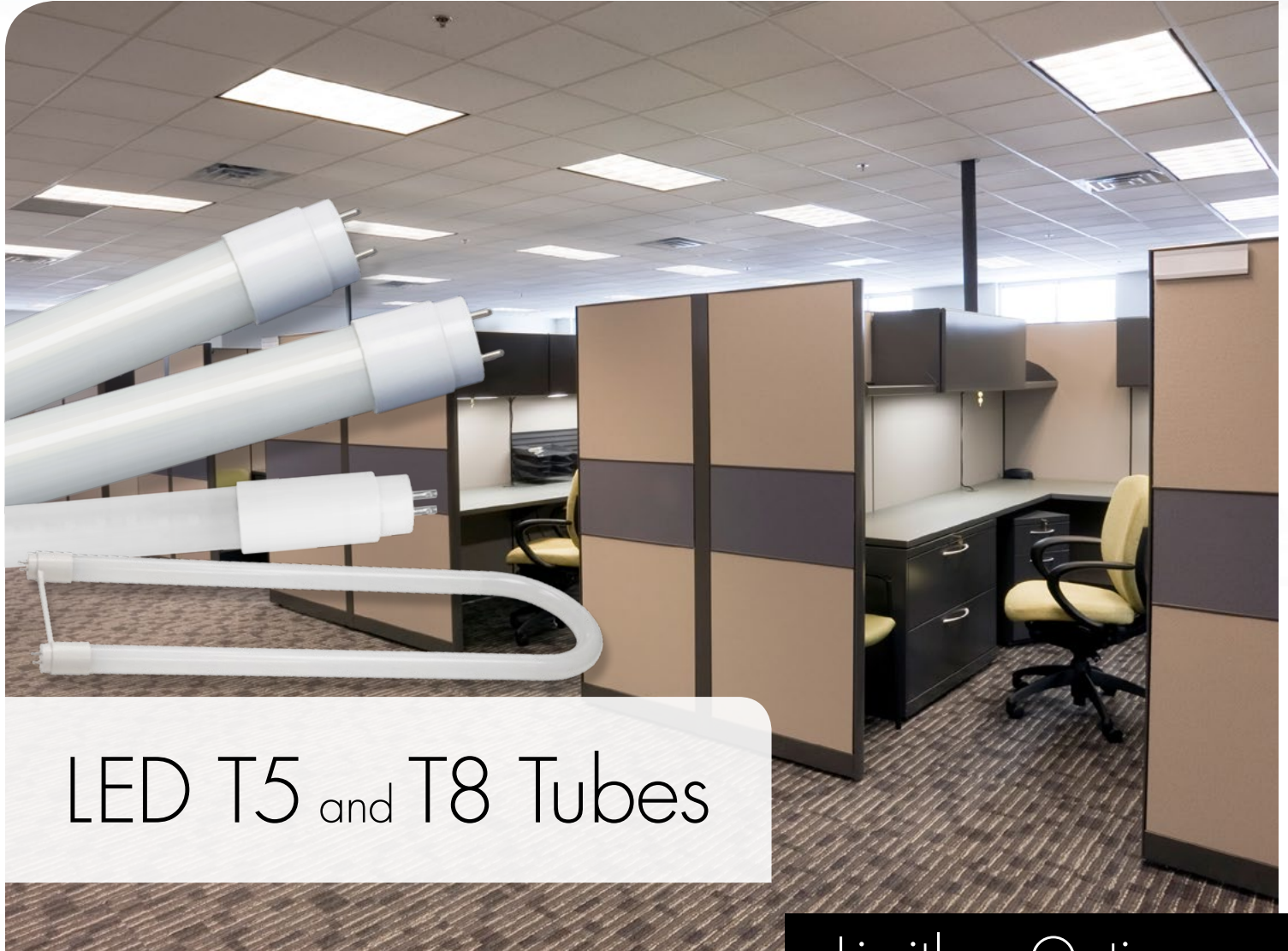




Direct5™
LED

Direct8™
LED



LED T5 and T8 Tubes

TCP has a new generation of LED compatible replacement T5 and T8 tubes for linear fixtures. These T5 and T8 tubes are dimmable and feature multiple ballast compatibility including Instant Start, Rapid Start, and Programmed Start.

Limitless Options
for the following applications:

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



5 YEAR
WARRANTY



we know light.™



Direct5™
LED

Direct8™
LED

Features and Benefits

>50% energy savings (based on T8 NBF energy use)
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 recommended)
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

Item #	Min Starting Temp	Max Operating Temp	Voltage	NSF 2 Rated	Beam Angle	Field Angle*	PF	THD**
L112T8	-30c	55c	120-277, 347V	no	210°	325°	> .99	< 8%
LPT815A	-30c	55c	120-277, 347V	no	200°	305°	> .99	< 8%
LT818A	-30c	55c	120-277, 347V	no	200°	305°	> .99	< 8%
L112T8-95	-30c	55c	120-277, 347V	no	210°	325°	> .99	< 8%
T80414095P	-30c	55c	120-277V	no	200°	305°	> .99	< 8%
L111T8	-30c	55c	120-277, 347V	no	210°	325°	> .99	< 8%
T80430	-30c	55c	120-277V	no	200°	305°	> .99	< 8%
L111T83	-30c	55c	120-277, 347V	no	210°	325°	> .99	< 8%
L9T8	-30c	55c	120-277, 347V	no	210°	325°	> .99	< 8%
L113T8U	-30c	55c	120-277, 347V	no	160°	325°	> .99	< 8%
L115T8-SC	-30c	45c	120-277, 347V	yes	160°	290°	> .99	< 8%
L25T5	-20C	45c	120-277, 347V	yes	160°	270°	> .99	< 5%
L13T5	-20C	45c	120-277, 347V	yes	160°	250°	> .99	< 5%

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

*Calculated **At 120v, ballast dependent

Listing

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

Warranty

Five years against defects in manufacturing

LED T5 Tube
4 foot



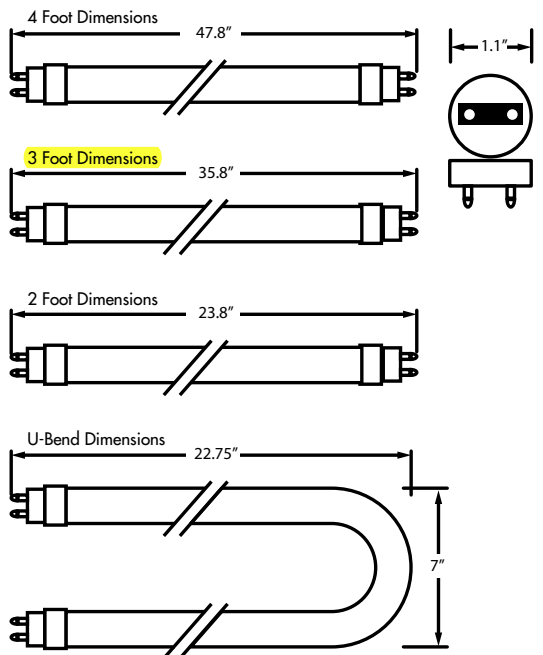
LED T8 Tube
4 foot



LED T8 Tube
3 foot



LED T8 Tube
2 foot



To view our DLC qualified products, please consult the DLC Qualified Products List at www.designlights.org/qpl.



5 YEAR WARRANTY



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

Item#	Description	DLC GPL*	Lamp Watts	Equiv Watts	LBF System Watts	NBF System Watts	HBF System Watts	LBF Lumens	NBF Lumens	HBF Lumens	CCT	CRI	Base
LED 12 WATT T8 TUBE – 4 FOOT GLASS (DLC SEARCH "L12T8D50**")													
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
LED 18 WATT T8 TUBE – 4 FOOT GLASS MODEL# T80433 (DLC SEARCH "T80433**")													
LT818A30K	LED 18W 4' T8 IS/RS 30K	★	15W	32W	15.4	17.5	25.7	2000	2300	3380	3000K	80	G13
LT818A35K	LED 18W 4' T8 IS/RS 35K	★	15W	32W	15.4	17.5	25.7	2050	2350	3450	3500K	80	G13
LT818A41K	LED 18W 4' T8 IS/RS 41K	★	15W	32W	15.4	17.5	25.7	2050	2350	3450	4100K	80	G13
LT818A50K	LED 18W 4' T8 IS/RS 50K	★	15W	32W	15.4	17.5	25.7	2100	2400	3525	5000K	80	G13
LED 12 WATT HIGH CRI T8 TUBE – 4 FOOT GLASS MODEL# T8021													
L12T8D5027K95	LED 12W 4' T8 IS/RS 27K 95		12W	32W	13.0	14.9	21.5	1300	1750	2340	2700K	90	G13
L12T8D5030K95	LED 12W 4' T8 IS/RS 30K 95		12W	32W	13.0	14.9	21.5	1340	1800	2400	3000K	90	G13
L12T8D5035K95	LED 12W 4' T8 IS/RS 35K 95		12W	32W	13.0	14.9	21.5	1340	1800	2400	3500K	90	G13
L12T8D5041K95	LED 12W 4' T8 IS/RS 41K 95		12W	32W	13.0	14.9	21.5	1360	1825	2425	4100K	90	G13
L12T8D5050K95	LED 12W 4' T8 IS/RS 50K 95		12W	32W	13.0	14.9	21.5	1380	1850	2480	5000K	90	G13
T80414095P	LED 12W 4' T8 IS/RS 41K 95		12W	32W	12.5	15.0	21.5	1050	1400	1860	4100K	90	G13
LED 11 WATT HIGH EFFICACY T8 TUBE – 4 FOOT GLASS MODEL# T8024													
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
LED 13 WATT HIGH EFFICACY T8 TUBE – 4 FOOT GLASS BULK PACK MODEL# T80430 (DLC SEARCH "T80430**")													
T8043040EBP	LED 13W 4' T8 HE IS/RS 41K BULK PACK	★	11W	32W	11.6	13.2	19.4	1625	1850	2700	4100K	80	G13
T8043050EBP	LED 13W 4' T8 HE IS/RS 50K BULK PACK	★	11W	32W	11.6	13.2	19.4	1625	1850	2700	5000K	80	G13
LED 11 WATT T8 TUBE – 3 FOOT GLASS MODEL# T8022													
L11T83D5030K	LED 11W 3' T8 IS/RS 30K		11W	25W	11.6	13.5	19.2	1040	1400	1870	3000K	80	G13
L11T83D5035K	LED 11W 3' T8 IS/RS 35K		11W	25W	11.6	13.5	19.2	1080	1450	1940	3500K	80	G13
L11T83D5041K	LED 11W 3' T8 IS/RS 41K		11W	25W	11.6	13.5	19.2	1110	1500	2000	4100K	80	G13
L11T83D5050K	LED 11W 3' T8 IS/RS 50K		11W	25W	11.6	13.5	19.2	1150	1550	2070	5000K	80	G13
LED 9 WATT T8 TUBE – 2 FOOT GLASS MODEL# T8023													
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

* DLC qualified product at time of printing, consult designlights.org for the most up-to-date listing.



LED T8 Ballast Compatibility Guides

Instant Start Ballasts Compatible with LED DirecT8™

Manufacturer	Model #	Voltage
ESPEN	VE2P32MVHIPE	UNV
	VE4P32MVHIPE	UNV
GE	GE132MAX-L/ULTRA	UNV
	GE132MAX-P-N/ULTRA	UNV
	GE232MAX347-N	347
	GE232MAX-N/ULTRA	UNV
	GE232MAX-G-N	UNV
	GE232MAX-P-N/ULTRA	UNV
	GE232MAX-H/ULTRA	UNV
	GE232MAX-P-H/ULTRA	UNV
	GE232MAX-P-L/ULTRA	UNV
	GE332MAX-L/ULTRA	UNV
	GE332MAX-N/ULTRA	UNV
	GE332MAX-P-N/ULTRA	UNV
	GE332MAX-G-N	UNV
	GE332MAX-H/ULTRA	UNV
	GE432MAX-P-L/ULTRA	UNV
	GE432MAX-G-N	UNV
	GE432MAX-N/ULTRA	UNV
	GE432MAX-H/ULTRA	UNV
	GE432MAX-P-H/ULTRA	UNV
	Osram/Sylvania	QHE2X32T8/UNV ISN-SC
QHE2X32T8/UNV ISL-SC		UNV
QHE2X32T8/UNV ISH-SC		UNV
QHE2X32T8/347 ISN-SC		347
QHE4X32T8/UNV ISN-SC		UNV
QHE4X32T8/UNV ISL-SC		UNV
QHE4X32T8/UNV ISH-SC		UNV
QHE4X32T8/UNV ISH		UNV
QTP2X32T8/UNV ISN-SC		UNV
QTP3X32T8/UNV ISN-SC		UNV
QTP2X32T8/UNV ISL-SC		UNV
QTP3X32T8/UNV ISL-SC		UNV
QTP2X32T8/UNV ISH-SC		UNV
QTP3X32T8/UNV ISH-SC		UNV
QTP4X32T8/UNV ISN-SC		UNV
Philips/Advance	IOPA-2P32-LW-N	UNV
	IOPA-3P32-LW-N	UNV
	IOPA-4P32-LW-N	UNV
	IOPA-4P32-N	UNV
	IOPA-2P32-HL-N	UNV
	IOPA-3P32-HL-N	UNV

Manufacturer	Model #	Voltage
Philips/Advance (cont.)	IOPA-2P32-LW-SC	UNV
	IOPA-4P32-LW-SC	UNV
	IOP-2P32-LW-N	UNV
	IOP-3P32-LW-N	UNV
	IOP-4P32-LW-N	UNV
	IOP-3P32-N	UNV
	ICN-2P32-N	UNV
	ICN-3P32-N	UNV
	ICN-2P32-SC	UNV
	ICN-4P32-N	UNV
	GOPA-2P32-SC	347
	GOPA-4P32-SC	347
	REL-2P32-SC	UNV
	REL-2P32-RH-TP	UNV
	VEL-2P32-SC	UNV
	VEL-4P32-SC	UNV
	IOP-3P32-HL-90L-SC	UNV
	VOP-2P32-LW	277
	GEL-2P32-SC	347
	GEL-3P32-SC	347
Standard	E432T8IS120/N/AS	UNV
	E232T8IS120/N/AS	UNV
	E432PI347G0/347	347
	E232T8IS347/H/90C	347
	E432T8IS347/H/90C	347
TCP	E2P32ISUNVE	UNV
	E2P32ISUNVHE	UNV
	E2P32ISUNVLE	UNV
	E3P32ISUNVE	UNV
	E3P32ISUNVHE	UNV
	E3P32ISUNVLE	UNV
	E4P32ISUNVE	UNV
	E4P32ISUNVHE	UNV
	E4P32ISUNVLE	UNV
	E2P32IS120RES	UNV
Universal	B132IUNVHP-N	UNV
	B232IUNVHP-N	UNV
	B232IUNVEL-A rev D	UNV
	B232I277RH-A	277
	B332IUNVHP-A	UNV
	B432I277RH-A	277
	B432I120RH-A	UNV
	B232I120RH-A*	UNV
	B432IUNVHP-A	UNV

*Requires 5 minutes of warm up time

Ballast compatibility tests are performed under a controlled lab environment. Field conditions may vary from this type of environment. Ballasts may differ by age and could have undergone revisions under the same item number affecting compatibility. Compatibility may also extend beyond this list. TCP recommends trying a few ballast-lamp combinations in an on-site test to ensure compatibility and performance before a major installation.

Instant Start Ballasts Not Recommended for use with LED DirecT8 include:
Philips/Advance: IOP-3P32-LW-SC, IOP-2P32-LW-SC



LED T8 Ballast Compatibility Guides

Program Start Ballasts Compatible with LED DirecT8™

Manufacturer	Model #	Voltage
GE	GE-232-MVPS-N	UNV
	GE-232-MVPS-L	UNV
	GE-232MAXP-N/ULTRA	UNV
	GE232MAXH/ULTRA	UNV
	GE332-MVPS-N	UNV
	GE332-MVPS-H	UNV
	GE432-MVPS-N	UNV
	GE432-MVPS-H	UNV
	GE432-MVPS-L	UNV
	GE-432-MAX-N/ULTRA	UNV
Osram/Sylvania	QHE-2x32T8/UNV PSN-MC	UNV
	QHE-2x32T8/UNV PSH-HT	UNV
	QHE 3x32T8/UNV PSN-SC	UNV
	QHE 4x32T8/UNV PSN-SC	UNV
	QHE 4x32T8/UNV PSH-HT	UNV
	QTP2X32T8/UNV PSN-TC	UNV
Philips/Advance	IOP-2PSP32-N	UNV
	IOP-3PSP32-SC	UNV
	IOP-4PSP32-SC	UNV
	GOP-2PSP32-SC	UNV
	GOP-4PSP32-SC	UNV
	IOP-3S32-SC	UNV
TCP	E2P32PSUNVE	UNV
	E3P32PSUNVE	UNV
	E4P32PSUNVE	UNV
	E2P32PSUNVHE	UNV
	E3P32PSUNVHE	UNV
	E4P32PSUNVHE	UNV
	E2P32PSUNVLE	UNV
	E3P32PSUNVLE	UNV
	E4P32PSUNVLE	UNV
	2S32PSUNVHE	UNV
Universal	B232PUNVHE-B	UNV

Program Start Dimmable Ballasts Compatible with LED DirecT8™

Manufacturer	Model #	Voltage
BALLAST for 1 LAMP		
Philips/Advance	IZT-132-SC	UNV
BALLAST for 2 LAMPS		
Philips/Advance	IZT-2S32-SC	UNV
	IZT-2PSP32-SC	UNV

Emergency Ballasts Compatible with LED DirecT8™

Manufacturer	Model #	Voltage
IOTA	I-320	I-320
Bodine	B30	B30
	B50	B50