

# Luxterior

by TCP

## LED Flat Panel Troffer Retrofit Kit

### Product Specifications



TCP's LED Flat Panel Troffer Retrofit Kit offers a high-efficiency alternative to T5, T8, and T12 linear fluorescent systems. It provides long life with consistent color and superior lumen maintenance. Designed to mount in a variety of grid ceilings, the rugged, cold-rolled steel housing is post-painted with a matte white finish. The acrylic diffuser provides a low-glare, wide-light distribution.

The LED Flat Panel Troffer Retrofit Kit offers a cost-effective solution to maximize savings and take advantage of potential utility rebates without sacrificing performance.

### Reasons to choose the LED Flat Panel Troffer Retrofit Kit from TCP

- Uses up to 61% less energy than fluorescent alternatives
- Long 50,000 hour rated life
- Excellent color consistency and CRI
- Mercury free
- Fits standard 1" and 9/16" T-bar grid ceilings
- Acrylic diffuser with sloped housing design
- Slim, low-profile design

### Ideal Applications in T-Bar Ceilings

- Offices
- Retail Stores
- Schools
- Hospitality
- Restaurants
- Healthcare



## Specifications

Input Line Voltage .....	120-277 VAC
Input Line Frequency (Hz) .....	50/60Hz
Wattage (W)	
2x2 .....	38W/29W/23W
2x4 .....	38W/29W/23W
2x4 .....	46W/38W/29W
Lumens (L)	
2x2 .....	2500L/3200L/4200L
2x4 .....	2500L/3200L/4200L
2x4 .....	3200L/4200L/5100L
Lumens per Watt (LPW).....	>110LPW
Rated Life.....	50,000 hours
Minimum Starting Temperature .....	-20°C
Maximum Operating Temperature.....	40°C
CRI .....	>80
Power Factor .....	>90%
THD.....	<20%
Ratings.....	UL/cUL damp location rated
.....	DLC 5.1 Standard
Controls.....	0-10V dimming (standard)



## Replacement Strategy

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS*	LED ENERGY SAVINGS
<b>TCP LED Flat Panel Troffer - 2x2</b>	—	<b>3800</b>	<b>29</b>	—
2 Lamp 34W T12 U-Bend	0.88	4420	74	61%
2 Lamp 32W T8 U-Bend	0.88	4275	58	50%
2 Lamp 24W T5HO	1.0	3145	54	46%
<b>TCP LED Flat Panel Troffer - 2x4</b>	—	<b>5000</b>	<b>38</b>	—
3 Lamp 32W T8 HBF	1.18	6960	93	59%
3 Lamp 32W T8 NBF	0.88	6681	89	57%
2 Lamp 32W T8 HBF	1.18	4658	65	42%
2 Lamp 28W T5	1.0	4675	63	40%
2 Lamp 32W T8 NBF	0.88	4468	59	36%

\*Actual wattage may differ by +/- 5%, when operating between 120-277V +/- 10%.

**NOTE:** Charts show system lumens (delivered lumens), NOT straight lamp lumen output. This is calculated as follows:  
**System lumens = mean lumens x # lamps x ballast factor x luminaire efficiency factor**

## Applications

The TCP LED Flat Panel Troffer Retrofit Kit is a high-efficiency alternative to T5, T8, and T12 linear fluorescent troffers. Their intelligent high-performance LED light engines and drivers deliver long life, consistent color, and superior lumen maintenance. Applications include offices, schools, retail locations, hospitals, and other T-grid ceilings.

## Construction

The TCP LED Flat Panel Troffer Retrofit Kit is constructed of rugged cold-rolled steel, post painted with a matte white finish, and an acrylic diffuser. The housing is designed to mount in a variety of grid ceiling types.

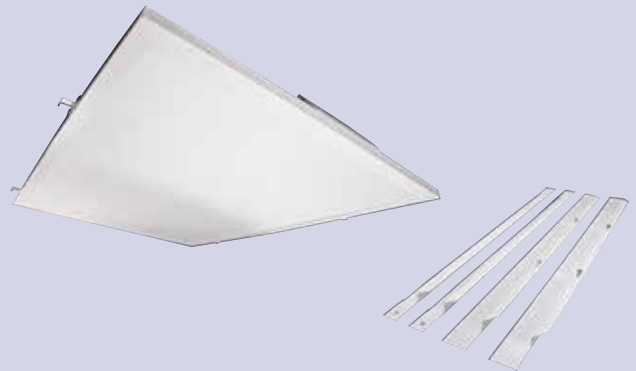
## Electrical

All electrical components are cULus listed. TCP high-efficiency drivers provide consistent power to ensure even lighting from the long life LEDs. Each driver is wattage selectable and is paired with a high-quality LED light engine to deliver long life and high-quality light. Full range 0-10V dimming is optional.

## Optics

The acrylic diffuser conceals the LEDs while providing a highly-diffused, low-glare light. The smooth white reflector integrates into the diffuser creating soft illumination while distributing the light evenly in a wide pattern.

Item Number	
Notes	Type



### Listings

UL/cUL Listed  
RoHS Compliant  
DLC 5.1 Standard

### Lumen Maintenance

L90 > 36,000 hours

### Warranty

Five year limited warranty against defects in manufacturing.

## Catalog Ordering Matrix Example: FRK2UZDA1CCT

FAMILY	SIZE	VOLTAGE	DIMMING	WATTAGE <sup>1,2</sup>	COLOR TEMPERATURE
FRK = Flat Panel Retrofit Kit	2 = 2' x 2'	U = 120V-277V	ZD = 0-10V Dimming	A1 = 38W/29W/23W Selectable	CCT = 3500K/4100K/5000K

<sup>1</sup> Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.

<sup>2</sup> Actual wattage may differ by +/- 5%; when operating between 120-277V +/- 10%.

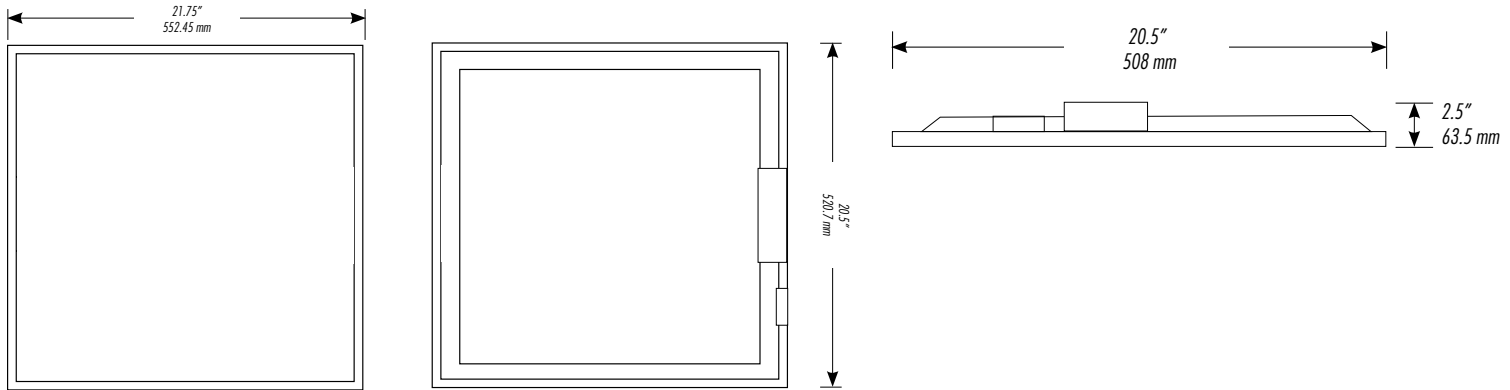
For the most up-to-date specs and warranty information, please visit [www.tcpi.com](http://www.tcpi.com)

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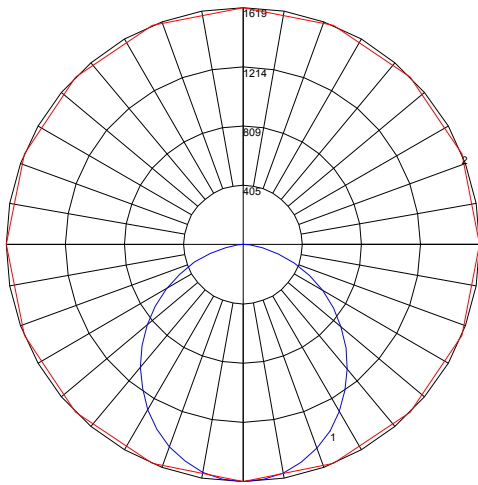
## Dimensions and Mounting Data



## Photometric Report

Based on photometric data for  
TCP Item # FRK2UZDA1CCT

### Polar Graph



Maximum Candela = 1671.01 Located At Horizontal Angle = 10, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 190) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

### Average Luminance

candelas/square meter (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3788	4043	4385
55	3530	3930	4460
65	3190	3840	4691
75	2600	3900	5273
85	1462	3433	3393

Specifications and dimensions subject to change without notice.

## Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	94	105	101	97	93	96	93	90	92	90	87	89	87	85	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	72	77	74	70	68
3	89	78	70	63	86	76	69	62	73	67	61	71	65	60	68	63	59	57
4	81	69	60	53	79	68	59	53	65	58	52	63	56	51	61	55	50	48
5	75	62	52	46	73	60	52	45	58	51	45	56	49	44	54	48	44	42
6	69	55	46	40	67	54	46	39	53	45	39	51	44	39	49	43	38	36
7	64	50	41	35	62	49	41	35	48	40	35	46	39	34	45	39	34	32
8	59	46	37	31	58	45	37	31	44	36	31	42	36	31	41	35	30	28
9	56	42	34	28	54	41	33	28	40	33	28	39	32	28	38	32	27	26
10	52	39	31	25	51	38	30	25	37	30	25	36	30	25	35	29	25	23

## Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	590.75	N.A.	12.30
0-30	1252.75	N.A.	26.10
0-40	2050.35	N.A.	42.80
0-60	3647.2	N.A.	76.00
0-80	4670.78	N.A.	97.40
0-90	4793.14	N.A.	99.90
10-90	4640.08	N.A.	96.70
20-40	1459.6	N.A.	30.40
20-50	2290.86	N.A.	47.80
40-70	2214.67	N.A.	46.20
60-80	1023.58	N.A.	21.30
70-80	405.76	N.A.	8.50
80-90	122.36	N.A.	2.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.73	N.A.	0.00
90-180	2.82	N.A.	0.10
110-180	2.82	N.A.	0.10
0-180	4795.96	N.A.	100.00

Total Luminaire Efficiency = N.A.%

## Applications

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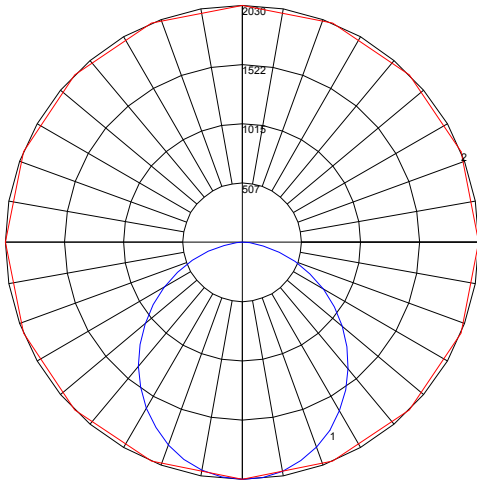
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# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

### Average Luminance candelas/square meter (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2411	2600	2825
55	2261	2257	2917
65	2048	2582	3137
75	1703	2774	3595
85	987	2767	2730

Specifications and dimensions subject to change without notice.

## Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	0
1	108	103	98	94	105	100	96	92	96	93	90	92	89	87	89	86	84	82	0
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67	0
3	89	78	69	62	86	76	68	62	73	67	61	70	64	60	68	63	59	56	0
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	55	50	48	0
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41	0
6	69	55	46	39	67	54	45	39	52	44	39	50	44	38	49	43	38	36	0
7	64	50	41	35	62	49	40	34	47	40	34	46	39	34	45	38	34	32	0
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28	0
9	55	42	33	28	54	41	33	28	40	33	27	39	32	27	38	32	27	25	0
10	52	38	30	25	51	38	30	25	37	30	25	36	29	25	35	29	25	23	0

### Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	741.86	N.A.	12.10
0-30	1575.01	N.A.	25.80
0-40	2581.26	N.A.	42.20
0-60	4607.58	N.A.	75.40
0-80	5937.37	N.A.	97.10
0-90	6112.53	N.A.	100.00
10-90	5920.5	N.A.	96.80
20-40	1839.41	N.A.	30.10
20-50	2891.24	N.A.	47.30
40-70	2821.12	N.A.	46.10
60-80	1329.79	N.A.	21.70
70-80	534.99	N.A.	8.70
80-90	175.16	N.A.	2.90
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	1.65	N.A.	0.00
110-180	1.65	N.A.	0.00
0-180	6114.17	N.A.	100.00

Total Luminaire Efficiency = N.A.%

# TECHNOLOGY CAST IN A BEAUTIFUL LIGHT

For over 20 years, TCP has been designing, developing and delivering energy-efficient lighting into the market. Thanks to our cutting-edge technology and manufacturing expertise, we have shipped billions of high quality lighting products. With TCP, you can count on a lighting product that is designed to meet the needs of the market - that transforms your surroundings and envelopes you in warmth - lighting that generates beauty with every flip of the switch.

Sales:

Date:

Model:

Project:

Rep:

Catalog Number:

Type:

Notes:



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