

## LED Fixed Wattage Volumetric Troffers

### Product Specifications



TCP's LED Volumetric Troffers offer a high-efficiency alternative to T5, T8 and T12 linear fluorescent systems. They provide 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 highly diffused white finish. The acrylic diffuser provides a low-glare, wide distribution, and the sloped reflector softens the contrast between the luminaire and ceiling.

The LED Volumetric Troffers offer a cost-effective solution to maximize savings and take advantage of utility rebates without sacrificing performance.

## Reasons to choose the LED Fixed Wattage Volumetric Troffers from TCP

- Uses up to 61% less energy than fluorescent alternatives
- Long 50,000 hour rated life
- Excellent color consistency & 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 .....	23W/29W/38W
2x4 .....	23W/29W/38W/46W
Lumens (L)	
2x2 .....	3100L/4000L/5200L
2x4 .....	3100L/4000L/5200L/6000L
Lumens per Watt (LPW) .....	>130LPW
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, IC rated, IP20, DLC v5.0 Premium
Controls .....	0-10V dimming (standard)



2x2



2x4

## Replacement Strategy

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS*	LED ENERGY SAVINGS
<b>TCP LED Volumetric 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 Volumetric Troffer - 2x4</b>	—	<b>6000</b>	<b>46</b>	—
3 Lamp 32W T8 HBF	1.18	6960	93	51%
3 Lamp 32W T8 NBF	0.88	6681	89	48%
2 Lamp 32W T8 HBF	1.18	4658	65	29%
2 Lamp 28W T5	1.0	4675	63	27%
2 Lamp 32W T8 NBF	0.88	4468	59	22%

\*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 Volumetric Troffers are high efficiency alternatives to T5, T8 and T12 linear fluorescent troffers. Our 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 LED Volumetric Troffer is constructed of rugged cold-rolled steel, post painted with a highly diffuse 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 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 diffuse, low-glare light. The smooth white reflector integrates into the diffuser creating soft illumination and distributing the light evenly in a wide pattern. The sloped design also softens the contrast between the luminaire and ceiling.

Item Number	
Notes	Type



### Listings

UL/cUL Listed  
IC Rated  
RoHS Compliant  
DLC v5.0 Premium

### Lumen Maintenance

L90 > 36,000 hours

### Warranty

Seven year limited warranty against defects in manufacturing.

## Catalog Ordering Matrix Example: TRV2UZD2330K

TRV	2	U	ZD			
FAMILY	SIZE	VOLTAGE	DIMMING	WATTAGE <sup>1,2,3</sup>	COLOR TEMPERATURE	OPTIONS
TRV = Volumetric Troffer	2 = 2' x 2'	U = 120V-277V	ZD = 0-10V Dimming	23 = 3100 Lumens 29 = 4000 Lumens 38 = 4200 Lumens (Wattage Selectable to 38W/29W/23W)	30K = 3000K 35K = 3500K 41K = 4100K 50K = 5000K	EB - Emergency Backup

<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%.

<sup>3</sup> 23W and 29W are permanently fixed; 38W is adjustable to 38W, 29W, or 23W

### Accessories:

Item Number	Description	Item Number	Description
DTSK2	SURFACE MOUNT KIT FOR 2X2 TROFFER (WHITE) (NOTE: Not compatible with Battery Backup Units)	DTFLK2	RECESS MOUNT FLANGE KIT FOR 2X2 TROFFERS AND PANELS (WHITE)
YHANGER6PK	Y FIT CABLE HANGER 6 PACK (HANGS 3 UNITS)	DRVEXTCABLE	3FT DRIVER EXTENSION CABLE

**NOTE:** EB option is not compatible with DTSK2

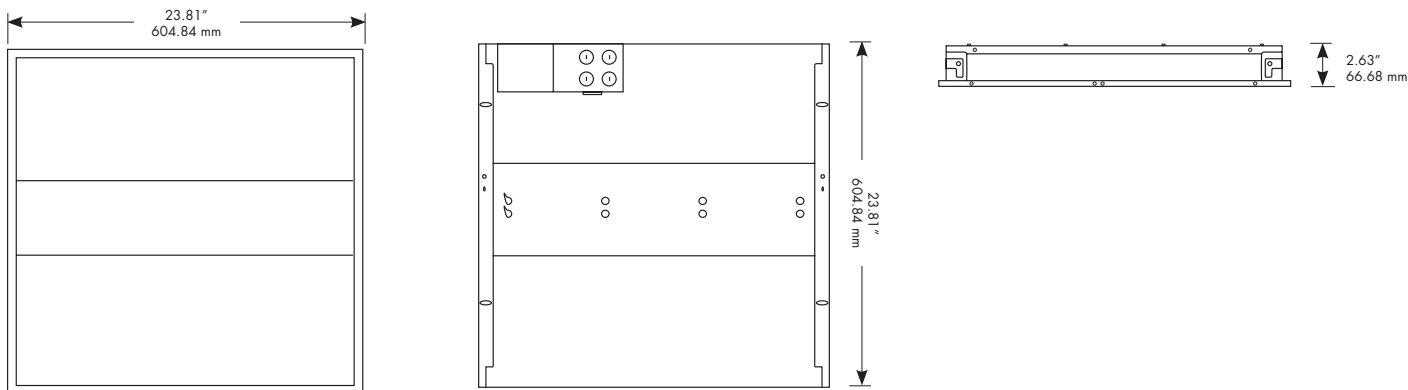
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7 YEAR WARRANTY

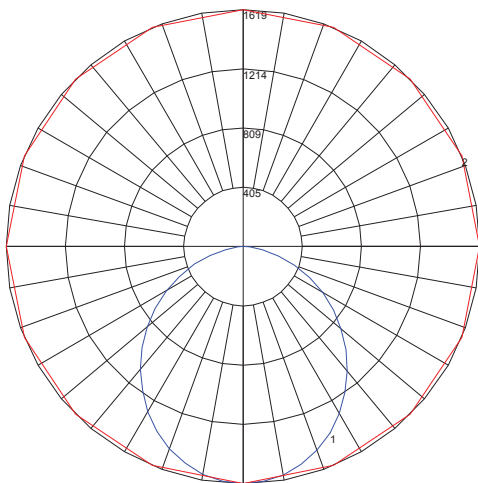
## Dimensions and Mounting Data



## Photometric Report

Based on photometric data for  
TCP Item # TRV2UZA3830K

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

L90 > 36,000 hours

### Warranty

Seven year limited warranty against defects in manufacturing.

## Catalog Ordering Matrix

Example: TRV4UZD2330K

TRV	4	U	ZD			
FAMILY	SIZE	VOLTAGE	DIMMING	WATTAGE <sup>1,2,3,4</sup>	COLOR TEMPERATURE	OPTIONS
TRV = Volumetric Troffer	4 = 2' x 4'	U = 120V-277V	ZD = 0-10V Dimming	23 = 3100 Lumens 29 = 4000 Lumens 38 = 4200 Lumens (Wattage Selectable to 38W/29W/23W) 46 = 6000 Lumens	30K = 3000K 35K = 3500K 41K = 4100K 50K = 5000K	EB - Emergency Backup

<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%.

<sup>3</sup> 23W and 29W are permanently fixed; 38W is adjustable to 38W, 29W, or 23W

<sup>4</sup> 46W is permanently fixed

### Accessories:

Item Number	Description	Item Number	Description
DTSK4	SURFACE MOUNT KIT FOR 2X4 TROFFER (WHITE) (NOTE: Not compatible with Battery Backup Units)	DTLK4	RECESS MOUNT FLANGE KIT FOR 2X4 TROFFERS AND PANELS (WHITE)
YHANGER6PK	Y FIT CABLE HANGER 6 PACK (HANGS 3 UNITS)	DRVEXTCABLE	3FT DRIVER EXTENSION CABLE

**NOTE:** EB option is not compatible with DTSK4

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

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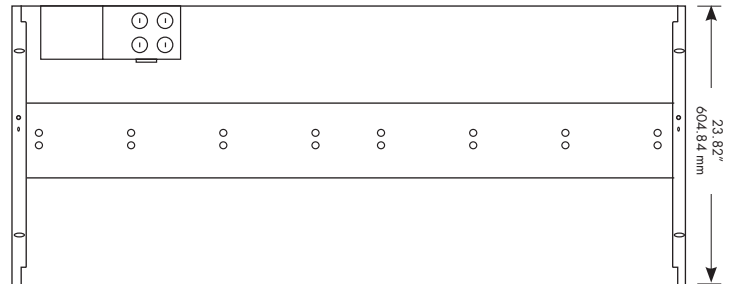
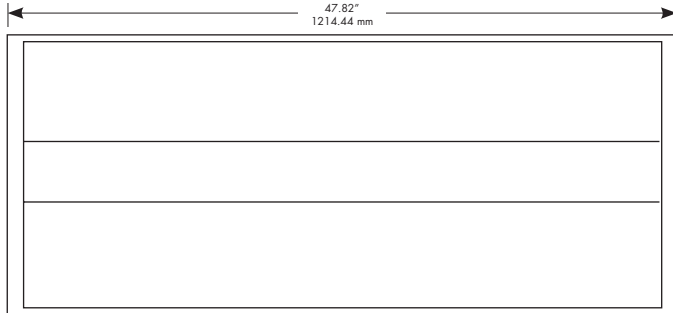
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7 YEAR WARRANTY

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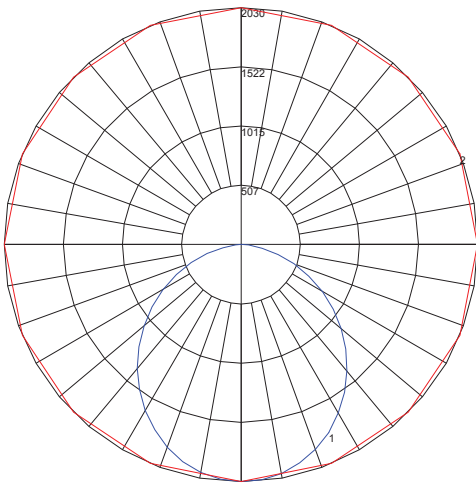
## Dimensions and Mounting Data



## Photometric Report

Based on photometric data for  
TCP Item # TRV4UZD4630K

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

## 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.%



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Sales:

Date:

Model:

Project:

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Catalog Number:

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