



# LED Direct Troffer Luminaires

## Ideal for:

TCP's LED Direct Troffer Luminaires feature back-lit technology with a robust construction that still offers a slim, low-profile with beautiful full panel diffusion and superior uniformity.

These energy efficient troffers offer a cost-effective solution to maximize energy savings and take advantage of utility rebates without sacrificing performance.

**APPLICATIONS:** Tbar Grid Ceilings

- Office
- Retail Stores
- Schools
- Hospitality
- Restaurants
- Healthcare



5 YEAR WARRANTY

we know light.™



## Features/Benefits

Provides energy savings over fluorescent alternatives	Instant energy savings; potential rebate eligibility
Long 50,000 hour rated life	Significantly reduce maintenance labor & material costs
Excellent color consistency & CRI	Enhances color of focal point while maintaining uniformity throughout lighting installation
Mercury free	Great for all environments
Fits standard 1" and 9/16" T-bar grid ceilings	Easy installation and retrofit application
Utilizes edge-lit technology	Full diffusion with excellent uniformity
Slim, low-profile design	Lightweight for easy handling. Fit more per pallet to reduce shipping cost and storage space



2x2



2x4

## Specifications

Input Line Voltage	120-277 VAC
Input Line Frequency (Hz)	50/60HZ
Wattage (W)	2x2 - 23W/29W/38W 2x4 - 29W/39W/46W
Lumens (L)	2x2 - 2600L/3200L/4200L 2x4 - 3600L/4600L/5200L
Lumens per Watt (LPW)	>100 LPW
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
Controls	0-10V dimming (standard)



5 YEAR WARRANTY

## Replacement Strategy

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS*	LED ENERGY SAVINGS
<b>TCP LED Flat Panel - 2x2</b>	—	<b>4100</b>	<b>38</b>	—
2 Lamp 34W T12 U-Bend	0.88	4420	74	49%
2 Lamp 32W T8 U-Bend	0.88	4275	58	34%
2 Lamp 24W T5HO	1.0	3145	54	30%
<b>TCP LED Flat Panel - 2x4</b>	—	<b>5200</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**

## 2x2 LED Direct Troffer Luminaire

### Applications

TCP LED Direct Troffer Luminaires are cost-effective, high-efficiency alternatives to traditional T5, T8 and T12 linear fluorescent troffers. Featuring a slim, low-profile design, our LED direct troffers uses back lit technology to deliver full panel diffusion and superior uniformity. Applications include offices, schools, retail locations, healthcare, hospitality and other T-grid and commercial ceilings.

### Construction

- Rectangular white frame
- Lens: frosted white diffuser
- IP20 rated
- IC rated for direct contact with insulation
- Designed for easy drop into T-bar grid ceilings

### Electrical

- UL/cUL damp location rated
- 0-10V dimming driver (standard)
- LED driver with integrated junction box
- System rated for long 50,000 hour life

### Optics

- Back lit technology provides even uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal



### Listings

UL/cUL Listed  
IC Rated  
RoHS Compliant

### Warranty

Five year limited warranty against defects in manufacturing.

### Lumen Maintenance

L70 > 54000 hours

## Catalog Ordering Matrix Example: DTF2UZD2341K

DT	F	2	UZD		
FAMILY	LENS TYPE	SIZE	DIMMING	WATTAGE	COLOR TEMPERATURE
DT = Direct Back Lit Troffer	F = Frosted	2 = 2' x 2'	UZD = 0-10V Dimming	<b>23</b> = 2600 Lumens <b>29</b> = 3200 Lumens <b>38</b> = 4200 Lumens	<b>30K</b> = 3000K <b>35K</b> = 3500K <b>41K</b> = 4100K <b>50K</b> = 5000K

### Accessories:

Item Number	Description
YHANGER6PK	Y FIT CABLE HANGER 6 PACK

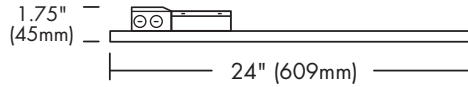
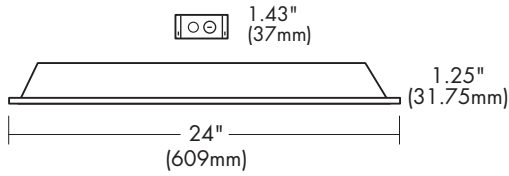
<sup>1</sup> Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.

<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)

# 2x2 LED Direct Troffer Luminaire

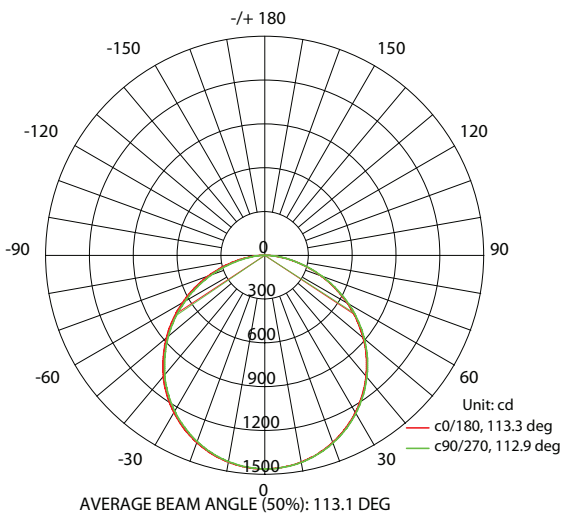
## Dimensions and Mounting Data



## Photometric Report

Based on photometric data for  
TCP Item # DTF2UZD3841K (38W)

### Polar Graph



### Coefficients of Utilization – Zonal Cavity Method

#### Effective Floor Cavity Reflectance 0.20

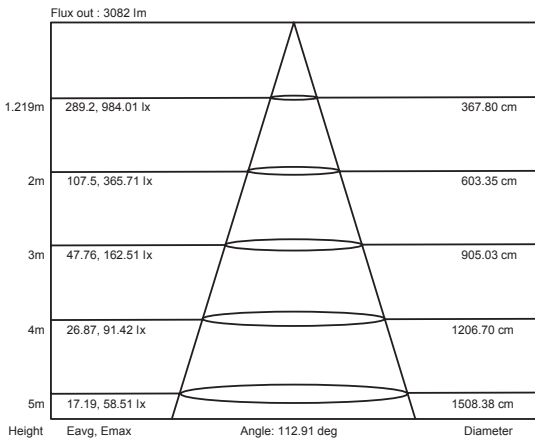
pCC	80			70			50			30			10			0
	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0
1	1.04	.99	.96	1.01	.98	.94	.97	.94	.91	.93	.91	.88	.9	.88	.86	.83
2	.9	.93	.78	.88	.82	.77	.85	.79	.75	.82	.77	.73	.78	.75	.71	.69
3	.79	.71	.64	.78	.7	.64	.75	.68	.63	.72	.66	.61	.69	.64	.6	.58
4	.7	.61	.54	.69	.6	.54	.66	.59	.53	.64	.58	.53	.62	.56	.52	.5
5	.63	.53	.47	.61	.53	.47	.59	.52	.46	.57	.51	.45	.55	.5	.45	.43
6	.56	.47	.41	.55	.47	.41	.53	.46	.4	.52	.45	.4	.5	.44	.39	.37
7	.51	.42	.36	.5	.42	.36	.49	.41	.36	.47	.4	.35	.46	.4	.35	.33
8	.47	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.32	.42	.36	.31	.29
9	.43	.34	.29	.42	.34	.29	.41	.34	.29	.4	.33	.28	.39	.33	.28	.26
10	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.3	.26	.36	.3	.26	.24

### Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	535.10	N.A.	12.70
0-30	1137.6	N.A.	27.00
0-40	1866.31	N.A.	44.30
0-60	3307.79	N.A.	78.50
0-80	4130.35	N.A.	98.00
0-90	4211.88	N.A.	98.90
10-90	4073.5	N.A.	96.60
20-40	1331.21	N.A.	31.60
20-50	2087.96	N.A.	49.50
40-70	1963.11	N.A.	46.60
60-80	822.56	N.A.	19.50
70-80	300.94	N.A.	7.10
80-90	81.52	N.A.	1.90
90-110	0.32	N.A.	0.00
90-120	0.95	N.A.	0.00
90-130	1.86	N.A.	0.00
90-150	3.54	N.A.	0.10
90-180	4.34	N.A.	0.10
110-180	4.02	N.A.	0.10
0-180	4216.21	N.A.	100.00

Total Luminaire Efficiency = N.A.%

### AAI Graph



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg	Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3781	3757	3739	75	3049	3038	3021
55	3658	3630	3607	85	2445	2413	2289
65	3434	3402	3388				

Specifications and dimensions subject to change without notice.

## 2x4 LED Direct Troffer Luminaire

### Applications

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- Designed for easy drop into T-bar grid ceilings

### Electrical

- UL/cUL damp location rated
- 0-10V dimming driver (standard)
- LED driver with integrated junction box
- System rated for long 50,000 hour life

### Optics

- Back lit technology provides even uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal



#### Listings

UL/cUL Listed  
IC Rated  
RoHS Compliant

#### Warranty

Five year limited warranty against defects in manufacturing.

#### Lumen Maintenance

L70 > 54000 hours

## Catalog Ordering Matrix Example: DTF4UZD2941K

DT	F	4	UZD		
FAMILY	LENS TYPE	SIZE	DIMMING	WATTAGE	COLOR TEMPERATURE
DT = Direct Back Lit Troffer	F = Frosted	4 = 2' x 4'	UZD = 0-10V Dimming	<b>29</b> = 3600 Lumens <b>39</b> = 4600 Lumens <b>46</b> = 5200 Lumens	<b>30K</b> = 3000K <b>35K</b> = 3500K <b>41K</b> = 4100K <b>50K</b> = 5000K

#### Accessories:

Item Number	Description
YHANGER6PK	Y FIT CABLE HANGER 6 PACK

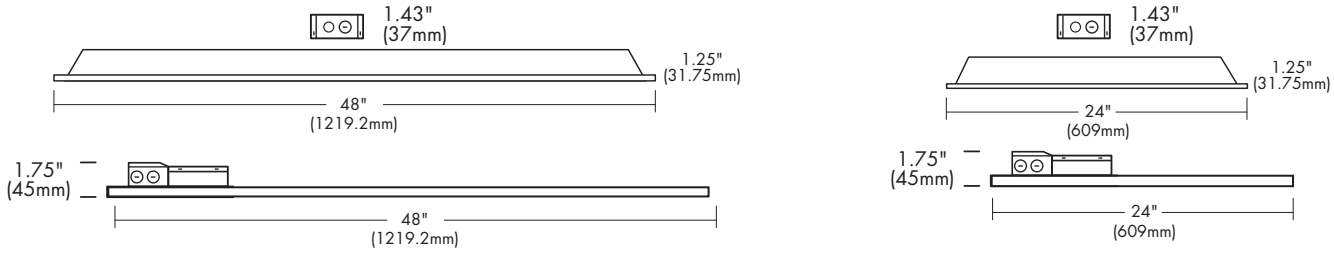
<sup>1</sup> Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.

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

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# 2x4 LED Direct Troffer Luminaire

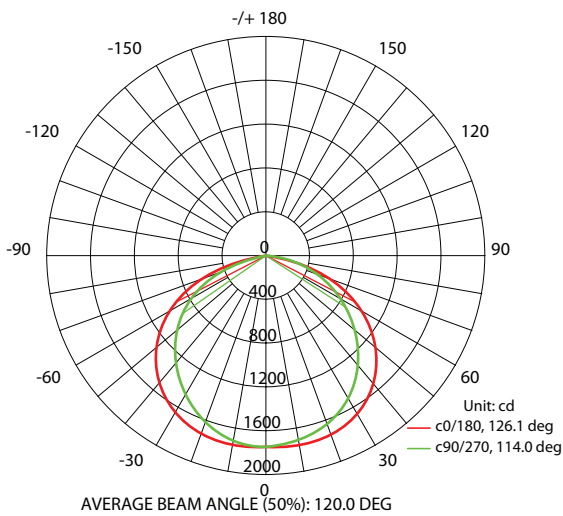
## Dimensions and Mounting Data



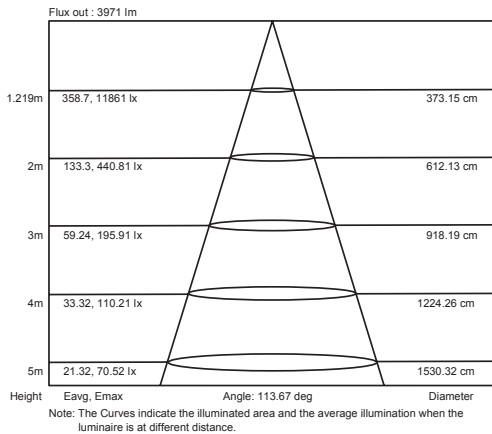
## Photometric Report

Based on photometric data for  
TCP Item # DTF4UZD4641K (46W)

### Polar Graph



### AAI Graph



## Coefficients of Utilization – Zonal Cavity Method

### Effective Floor Cavity Reflectance 0.20

pCC	80			70			50			30			10			0
pw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0
1	1.02	.99	.95	1.01	.97	.93	.97	.94	.9	.93	.9	.88	.89	.87	.85	.83
2	.9	.83	.77	.88	.81	.76	.84	.79	.74	.81	.76	.72	.78	.74	.71	.68
3	.75	.7	.63	.77	.69	.63	.74	.67	.63	.71	.65	.61	.68	.64	.6	.57
4	.69	.6	.53	.68	.6	.53	.65	.58	.53	.63	.57	.52	.61	.55	.51	.49
5	.62	.53	.46	.61	.52	.45	.58	.51	.45	.56	.5	.43	.55	.49	.44	.42
6	.55	.46	.4	.54	.46	.4	.53	.45	.39	.51	.44	.39	.49	.43	.38	.36
7	.5	.41	.35	.49	.41	.35	.48	.4	.35	.46	.39	.34	.45	.39	.34	.32
8	.46	.37	.31	.45	.37	.31	.44	.36	.31	.42	.36	.31	.41	.35	.3	.28
9	.42	.33	.28	.41	.33	.28	.4	.33	.28	.39	.32	.27	.38	.32	.27	.25
10	.39	.31	.25	.38	.3	.25	.37	.3	.25	.36	.29	.25	.35	.29	.25	.23

## Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	647.36	N.A.	11.80
0-30	1395.23	N.A.	25.50
0-40	2324.75	N.A.	42.50
0-60	4228.41	N.A.	77.40
0-80	5344.29	N.A.	97.80
0-90	5461.17	N.A.	99.90
10-90	5295.33	N.A.	96.90
20-40	1677.39	N.A.	30.70
20-50	2669.15	N.A.	48.80
40-70	2607.21	N.A.	47.70
60-80	1115.88	N.A.	20.40
70-80	412.33	N.A.	7.50
80-90	116.88	N.A.	2.10
90-110	1.05	N.A.	0.00
90-120	1.79	N.A.	0.00
90-130	2.27	N.A.	0.00
90-150	2.88	N.A.	0.10
90-180	3.17	N.A.	0.10
110-180	2.11	N.A.	0.00
0-180	5464.33	N.A.	100.00

Total Luminaire Efficiency = N.A. %

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg	Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2257	2406	2721	75	1848	1996	2290
55	2187	2348	2697	85	1555	1627	1784
65	2057	2223	2555				

Specifications and dimensions subject to change without notice.



TCP® | 325 Campus Dr. | Aurora, Ohio 44202 | P: 800-324-1496 | tcp.com