

TCP's LED Direct Troffer Luminaires feature backlit 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 potential utility rebates where applicable.

Applications: T-bar Grid Ceilings

Reasons to choose the LED Direct Troffer Luminaires from TCP

- Superior energy efficiency compared to fluorescent alternatives, providing instant energy savings and potential rebate ability
- Long 50,000 hour rated life significantly reduces maintenance labor and material costs
- Excellent color consistency and high CRI enhance color of focal point while maintaining uniformity throughout lighting installation
- Mercury-free construction is great for all environments
- Fits standard 1" and 9/16" T-bar grid ceilings
- Utilizes backlit technology for full diffusion with excellent uniformity
- Slim, low-profile design and lightweight for easy handling

Ideal Applications

- Office
- Retail Stores

- Schools
- Hospitality

- Restaurants
- Healthcare









Specifications

Input Line Frequency (Hz)	120-277 VAC 50/60Hz
Wattage (W)	23W
	23W/29W/38W
	23W/29W/38W
Lumens (L)	
0.5′×4′	2100L
1'x4'	2600L/3200L/4200L
2'x2'	2600L/3200L/4200L
2'x4'	3300L/4400L/5100L
Lumens per Watt (LPW)	>110 LPW
Rated Life	50,000 hours
Minimum Starting Temperature .	20°C
Maximum Operating Temperatu	re40°C
CRI	82
Power Factor	>90%
	<20%
Ratings	UL/cUL damp location rated, IC rated,
	IP20, DLC Standard 5.1
Controls	0-10V dimming (standard)



Replacement Strategy

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS*	LED ENERGY SAVINGS
TCP LED Direct Troffer - 1x4, 2x2	_	3200	29	_
2 Lamp 34W T12 U-Bend 2 Lamp 32W T8 U-Bend 2 Lamp 24W T5HO	0.88 0.88 1.0	4420 4275 3145	72 59 64	60% 51% 55%
TCP LED Direct Troffer - 2x4	_	5100	46	_
4 Lamp 32W T8 3 Lamp 32W T8 HBF 3 Lamp 32W T8 NBF 2 Lamp 32W T8 HBF 2 Lamp 28W T5 2 Lamp 32W T8 NBF	- 1.18 0.88 1.18 1.0 0.88	9251 6938 5174 4626 4060 3450	112 89 89 59 64 59	59% 48% 48% 22% 28% 22%

^{*}Actual wattage may differ by \pm -5%, when operating between 120-277V \pm -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

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 use backlit technology to deliver full panel diffusion and superior uniformity that meets or exceeds the output from edge-lit panels. 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

- Backlit technology provides even, uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal
- Meets or exceeds the look and performance of edge-lit panels





L70 > 54,000 hours

UL/cUL Listed IC Rated RoHS Compliant DIC 5.1 Standard

Warranty

Five year limited warranty against defects in manufacturing.

Catalog Ordering Matrix Example: DTF405UZD2341K									
FAMILY	LENS TYPE	SIZE	VOLTAGE	DIMMING	WATTAGE ^{1,2}	COLOR TEMPERATURE	OPTIONS		
DT = Direct			U = 120V-277V	ZD = 0-10V Dimming		ZD = 0-10V Dimming 30K = 3000K 35K - 3500K	27K = 2700K*** 30K = 3000K 35K = 3500K		
Backlit Troffer	F = Frosted	F = Frosted 405 = 0.5' x 4'	H = 120V-347V	ZD = 0-10V Dimming	23 = 2100 Lumens	41K = 4100K 50K = 5000K 65K = 6500K***	BLK = Black Frame		

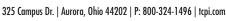
¹Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.

Accessories:

Item Number	Description
YHANGER6PK	y fit cable hanger 6 pack (hangs 3 units)

For the most up-to-date specs and warranty information, please visit www.tcpi.com











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

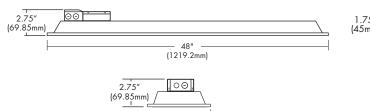
2700K and 6500K are special order. Please contact your TCP representative for lead times.



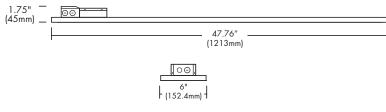
Dimensions and Mounting Data

Backlit Direct Troffer

Edge-lit Flat Panel



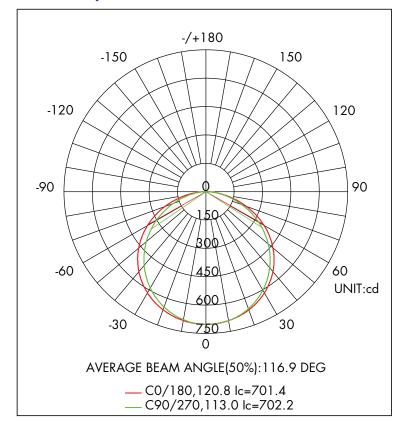
— 6" — (152.4mm)



Photometric Report

Based on photometric data for TCP Item # DTF405UZD2341K

Polar Graph



 $\label{eq:maximum Candela = 1407.6 Located At Horizontal Angle = 0, Vertical Angle = 0 \\ \#\ 1 \cdot Vertical Plane Through Horizontal Angles (0 \cdot 180) [Through Max. Cd.) \\ \#\ 2 \cdot Horizontal Cone Through Vertical Angle (0) [Through Max. Cd.) \\ \end{aligned}$

Specifications and dimensions subject to change without notice.











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 use backlit technology to deliver full panel diffusion and superior uniformity that meets or exceeds the output from edge-lit panels. Applications include offices, schools, retail locations, healthcare, hospitality and other T-grid and commercial ceilings.

Construction

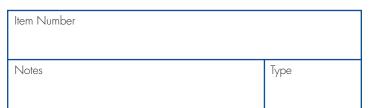
- Rectangular white frame
- Lens: frosted white diffuser
- IP20 rated
- IC rated for direct contact with insulation
- Designed for easy drop into T-bar grid ceilings

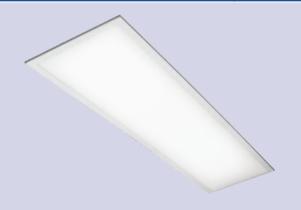
Electrical

- 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

- Backlit technology provides even, uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal
- Meets or exceeds the look and performance of edge-lit panels





Listings

UL/cUL Listed
IC Rated
RoHS Compliant
DIC 5.1 Standard

Lumen Maintenance

L70 > 54,000 hours

Warranty

Five year limited warranty against defects in manufacturing.

Catalog Ordering Matrix Example: DTF1UZD2341K										
FAMILY	LENS TYPE	SIZE	VOLTAGE	DIMMING	WATTAGE ^{1,2,3}	COLOR TEMPERATURE	OPTIONS	FRAME OPTIONS		
DT = Direct	F = Frosted	1 = 1' x 4'	U = 120V-277V	ZD = 0-10V Dimming	23 = 2600 Lumens 29 = 3200 Lumens	27K = 2700K*** 30K = 3000K 35K = 3500K	BLANK = None EB = Battery Backup CP = Chicago Plenum	BLANK = White Frame		
Backlit Troffer	r = rrosted	I = 1 X 4	H = 120V-347V	ZD = 0-10V Dimming	38 = 4200 Lumens (Wattage Selectable to 38W/29W/23W)	41K = 4100K 50K = 5000K 65K = 6500K***	IS = Integrated Microwave Sensor SM = SmartBox with sensor NLS = Network Lighting PIR Sensor	BLK = Black Frame		

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

Accessories:

Item Number	Description
YHANGER6PK	y fit cable hanger 6 pack (hangs 3 units)
DTSK1	SURFACE MOUNT KIT FOR 1X4 TROFFERS AND PANELS
DTFLK1	RECESS MOUNT FLANGE KIT FOR 1X4 TROFFERS AND PANELS

For the most up-to-date specs and warranty information, please visit www.tcpi.com







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

³ 23W and 29W are permanently fixed; 38W is adjustable to 29W or 23W.

^{***2700}K and 6500K are special order. Please contact your TCP representative for lead times.***

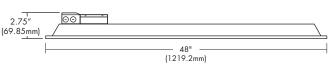


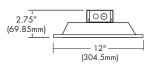
2.75"

1'x4' LED DT Series Luminaires

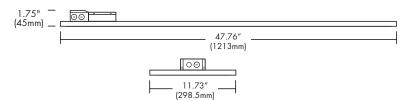
Dimensions and Mounting Data

Backlit Direct Troffer





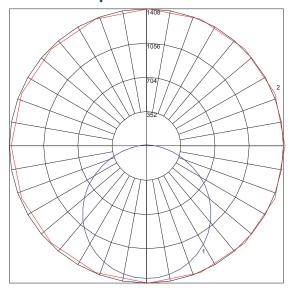
Edge-lit Flat Panel



Photometric Report

Based on photometric data for TCP Item # DTF1UZD3830K (38W)

Polar Graph



Maximum Candela = 1407.6 Located At Horizontal Angle = 0, Vertical Angle = 0 # 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.) # 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3631	3602	3585
55	3506	3474	3437
65	3292	3239	3179
75	2892	2795	2680
8.5	2165	1083	1746

Spacing Criterion

(0-180): 1.28, (90-270): 1.28

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
]	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	62	69	65	61	58
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50
5	76	63	54	47	73	62	53	47	59	52	46	57	51	46	56	50	45	43
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	493.60	N.A.	12.71
0-30	1095.31	N.A.	27.02
0-40	1722.30	N.A.	44.34
0-60	3056.50	N.A.	78.68
0-80	3808.40	N.A.	98.04
0-90	3881.50	N.A.	99.92
10-90	3910.96	N.A.	96.70
20-40	1281.49	N.A.	31.70
20-50	2010.58	N.A.	49.70
40-70	1887.56	N.A.	46.70
60-80	782.93	N.A.	19.40
70-80	283.30	N.A.	7.00
80-90	76.63	N.A.	1.90
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	0.01	N.A.	0.00
90-180	0.76	N.A.	0.00
110-180	0.76	N.A.	0.00
0-180	3884.70	N.A.	100.00

Total Luminaire Efficiency = N.A.%









Applications

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Construction

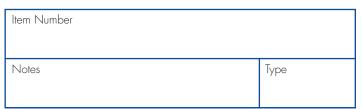
- Rectangular white frame
- · Lens: frosted white diffuser
- IP20 rated
- IC rated for direct contact with insulation
- Designed for easy drop into T-bar grid ceilings

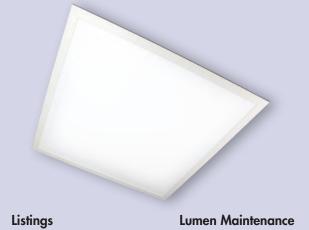
Electrical

- 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

- Backlit technology provides even, uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal
- Meets or exceeds the look and performance of edge-lit panels





L70 > 54000 hours

UL/cUL Listed IC Rated RoHS Compliant DLC 5.1 Standard

Warranty

Five year limited warranty against defects in manufacturing.

Catalog Ordering Matrix Example: DTF2UZD2341K											
FAMILY	LENS TYPE	SIZE	VOLTAGE	DIMMING	WATTAGE ^{1,2,3}	COLOR TEMPERATURE	OPTIONS	FRAME OPTIONS			
DT = Direct	F = Frosted		U = 120V-277V	ZD = 0-10V Dimming	23 = 2600 Lumens 29 = 3200 Lumens	27K = 2700K*** 30K = 3000K 35K = 3500K	BLANK = None EB = Battery Backup CP = Chicago Plenum	BLANK = White Frame			
DT = Direct Backlit Troffer	r = Frosted			ZD = 0-10V Dimming	38 = 4200 Lumens (Wattage Selectable to 38W/29W/23W)	41K = 4100K 50K = 5000K 65K = 6500K***	IS = Integrated Microwave Sensor SM = SmartBox with sensor NLS = Network Lighting PIR Sensor	BLK = Black Frame			

¹Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application. ²Actual wattage may differ by +/- 5%; when operating between 120-277V +/- 10%.

Accessories:

Item Number	Description
YHANGER6PK	y fit cable hanger 6 pack (hangs 3 units)
DTSK2	SURFACE MOUNT KIT FOR 2X2 TROFFERS AND PANELS
DTFLK2	RECESS MOUNT FLANGE KIT FOR 2X2 TROFFERS AND PANELS

For the most up-to-date specs and warranty information, please visit www.tcpi.com





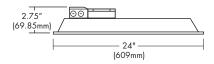


^{3 23}W and 29W are permanently fixed; 38W is adjustable to 29W or 23W. ***2700K and 6500K are special order. Please contact your TCP representative for lead times.***

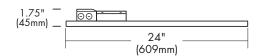


Dimensions and Mounting Data

Backlit Direct Troffer



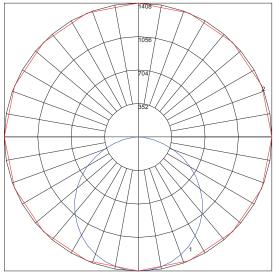
Edge-lit Flat Panel



Photometric Report

Based on photometric data for TCP Item # DTF2UZD3830K (38W)

Polar Graph



Maximum Candela = 1407.6 Located At Horizontal Angle = 0, Vertical Angle = 0 # 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.) # 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3631	3602	3585
55	3506	3474	3437
65	3292	3239	3179
75	2892	2795	2680
85	2165	1983	1746

Spacing Criterion

(0-180): 1.28, (90-270): 1.28

Specifications and dimensions subject to change without notice.

QΛ 50 30

Coefficients of Utilization - Zonal Cavity Method

KC		80				70				50			30			10		U
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
]	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	62	69	65	61	58
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50
5	76	63	54	47	73	62	53	47	59	52	46	57	51	46	56	50	45	43
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

Zonal Lumen Summary

Effective Floor Cavity Reflectance 0.20

Zone	Lumens	%Lamp	%Fixt
0-20	515.20	N.A.	12.70
0-30	1095.31	N.A.	27.10
0-40	1796.69	N.A.	44.40
0-60	3184.62	N.A.	78.70
0-80	3967.55	N.A.	98.10
0-90	4044.17	N.A.	100.00
10-90	3910.96	N.A.	96.70
20-40	1281.49	N.A.	31.70
20-50	2010.58	N.A.	49.70
40-70	1887.56	N.A.	46.70
60-80	782.93	N.A.	19.40
70-80	283.30	N.A.	7.00
80-90	76.63	N.A.	1.90
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	0.01	N.A.	0.00
90-180	0.76	N.A.	0.00
110-180	0.76	N.A.	0.00
0-180	4044.93	N.A.	100.00

Total Luminaire Efficiency = N.A.%









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 use backlit technology to deliver full panel diffusion and superior uniformity that meets or exceeds the output from edge-lit panels. 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

- Backlit technology provides even, uniform lighting
- 120° beam angle
- Frosted diffuser for reduced glare and aesthetic appeal
- Meets or exceeds the look and performance of edge-lit panels





Catalog Ordering Matrix Example: DTF4UZD2941K								
FAMILY	LENS TYPE	SIZE	VOLTAGE	TAGE DIMMING WATTAGE ^{1,2,3} TEMI			OPTIONS	FRAME OPTIONS
DT = Direct	E = Fractod	4 = 2' × 4'	U = 120V-277V	ZD = 0-10V Dimming	29 = 3300 Lumens	27K = 2700K*** 30K = 3000K 35K = 3500K	BLANK = None EB = Battery Backup CP = Chicago Plenum	BLANK = White Frame
DT = Direct Backlit Troffer	F = Frosted		H = 120V-347V	39 = 4400 Lumens 46 = 5100 Lumens (Wattage Salectable to	41K = 4100K 50K = 5000K 65K = 6500K***	IS = Integrated Microwave Sensor SM = SmartBox with sensor	BLK = Black Frame	

Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.

Accessories:

Item Number	Description
YHANGER6PK	y fit Cable Hanger 6 Pack (Hangs 3 Units)
DTSK4	SURFACE MOUNT KIT FOR 2X4 TROFFERS AND PANELS
DTFLK4	RECESS MOUNT FLANGE KIT FOR 2X4 TROFFERS AND PANELS

For the most up-to-date specs and warranty information, please visit www.tcpi.com







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

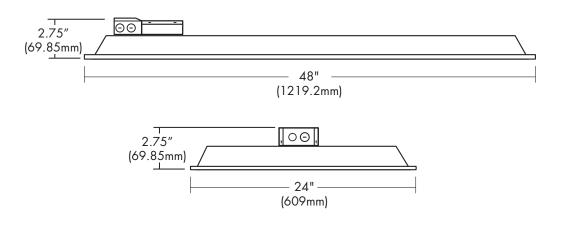
³ 29W and 39W are permanently fixed; 46W is adjustable to 39W or 29W.

2700K and 6500K are special order. Please contact your TCP representative for lead times.

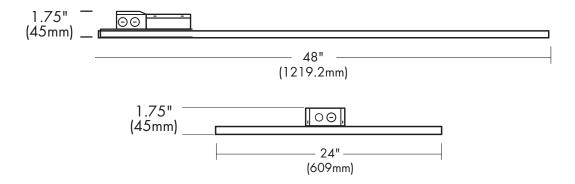


Dimensions and Mounting Data

Backlit Direct Troffer



Edge-lit Flat Panel





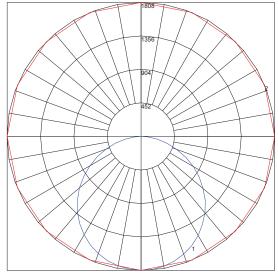




Photometric Report

Based on photometric data for TCP Item # DTF4UZD4630K (46W)

Polar Graph



Maximum Candela = 1808.2 Located At Horizontal Angle = 0, Vertical Angle = 0 # 1 - Vertical Plane Through Horizontal Angles (0 - 180) [Through Max. Cd.) # 2 - Horizontal Cone Through Vertical Angle (0) [Through Max. Cd.)

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2333	2317	2318
55	2254	2237	2229
65	2125	2092	2083
75	1904	1866	1822
85	1499	1470	1394

Spacing Criterion

(0-180): 1.28, (90-270): 1.28

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
1	109	104	99	95	106	101	97	94	97	94	91	93	91	88	90	87	85	83
2	99	90	83	78	96	88	82	77	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	58	52	62	56	52	50
5	76	63	53	47	73	61	53	46	59	52	46	57	51	45	55	50	45	43
6	70	56	47	41	68	55	47	41	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	661.93	N.A.	12.70
0-30	1407.56	N.A.	26.90
0-40	2309.2	N.A.	44.20
0-60	4094.49	N.A.	78.40
0-80	5115.44	N.A.	97.90
0-90	5222.48	N.A.	100.00
10-90	5051.35	N.A.	96.70
20-40	1647.27	N.A.	31.50
20-50	2584.72	N.A.	49.50
40-70	2431.84	N.A.	46.60
60-80	1020.95	N.A.	19.50
70-80	374.40	N.A.	7.20
80-90	107.04	N.A.	2.00
90-110	0.62	N.A.	0.00
90-120	0.62	N.A.	0.00
90-130	0.62	N.A.	0.00
90-150	0.67	N.A.	0.00
90-180	1.55	N.A.	0.00
110-180	0.94	N.A.	0.00
0-180	5224.04	N.A.	100.00

Total Luminaire Efficiency = N.A.%







TECHNOLOGY CAST IN A BEAUTIFUL LIGHT

For over 30 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:	Catalog Number:
Date:	Туре:
Model:	Notes:
Project:	TCD.
Rep:	TCP we know light.™