TCP

LED Technical Data

LED Designer Series

When appearance is most important, TCP's LED Designer Series turns any location into something truly exceptional.

LIMITLESS OPTIONS for the following applications:

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

Great Features/Benefits

- Energy efficient – Up to 41% energy savings compared to fluorescent alternatives
- Long life: 50,000 hours
- Smooth, uniform dimming
- High efficiency alternative to T5, T8 and T12 linear fluorescent troffers
- Excellent color consistency and superior lumen maintenance

c UL us LISTED

DLC QPL LISTED

5 YEAR WARRANTY

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

we know light.™

LED Designer Series Volumetric Luminaires

Features/Benefits

Up to 41% less energy than fluorescent alternatives.	Instant energy savings.
Long 50,000 hour rated life.	Minimizes replacements & maintenance costs.
Very low heat generation.	Less energy wasted as heat.
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 grids.	Easy installation and retrofit application.
TCP LED drivers are specifically designed for high efficient LED combination.	Optimal performance and efficiency.

2 x 2 LED
Designer Series Volumetric Luminaire

2 x 4 LED
Designer Series Volumetric Luminaire

Specifications

Input Line Voltage	120-277 VAC
Input Power	2x2: 22.5-45W 2x4: 45-97W
Input Line Frequency	50/60HZ
Luminaire Life (Rated)	50,000 hours
Minimum Starting Temperature	-30°C
Maximum Operating Temperature	40°C
CRI	82
Power Factor	>90%
THD	<20%

Warranty

Five year limited warranty against defects in manufacturing.

c UL US LISTED DLC QPL LISTED 5 YEAR WARRANTY

Replacement Comparison

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS	ENERGY SAVINGS
TCP 2200 Lumen 2X2 LED		**2200**	**22.5**	**–**
2 Lamp 14W T5	1.0	2113	34	34%
2 Lamp 17W T8	0.88	1905	33	24%
TCP 3500 Lumen 2X2 LED		**3500**	**35**	**–**
2 Lamp 31W U-Bend	0.88	3790	59	41%
2 Lamp 24W T5 HO	1.0	3145	54	35%
TCP 4400 Lumen 2X2 LED		**4400**	**45**	**–**
2 Lamp 34W T12 U-Bend	0.88	4420	74	39%
2 Lamp 32W T8 U-Bend	0.88	4275	58	22%

SYSTEM	BALLAST FACTOR	LUMENS	INPUT WATTS	ENERGY SAVINGS
TCP 4400 Lumen 2X4 LED		**4400**	**45**	**–**
2 Lamp 32W T8 HBF	1.18	4658	65	31%
2 Lamp 28W T5	1.0	4675	63	29%
2 Lamp 32W T8 NBF	0.88	4468	59	24%
TCP 7000 Lumen 2X4 LED		**7000**	**72**	**–**
3 Lamp 32W T8 HBF	1.18	6960	93	23%
3 Lamp 32W T8 NBF	0.88	6681	89	19%
TCP 8600 Lumen 2X4 LED		**8600**	**97**	**–**
4 Lamp 32W T8 HBF	1.18	8965	153	37%
2 Lamp 54W T5	1.0	8000	117	17%
4 Lamp 32W T8 NBF	0.88	8606	112	13%

2x2 LED Designer Series Volumetric Luminaire

Applications

The TCP LED Designer Series Volumetric Luminaires 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 grid ceilings.

Construction

The TCP LED volumetric luminaire is constructed of rugged cold-rolled steel, post painted with a highly diffuse white finish, and an impact resistant acrylic diffuser. The housing is designed to mount in a variety of grid ceiling types.

Electrical

All electrical components are UL/cUL listed. TCP high efficiency drivers provide consistent power to ensure even lighting from the long life LEDs. Each driver is matched to a light engine to deliver 50,000 hours life. Full range dimming is optional.

Optics

The impact resistant acrylic diffuser conceals the LEDs while providing even light distribution across the luminaire. The smooth white reflector curves into the diffuser, creating volumetric illumination by softening and distributing the light evenly in a wide pattern. The curved design also softens the contrast between the luminaire and ceiling.

Catalog Number	
Notes	Type

Listings

UL/cUL Listed – damp location rated
Design Lights Consortium (DLC) Qualified Products List
RoHS Compliant
Chicago Plenum Compliant (when option selected)

Warranty

Five year limited warranty against defects in manufacturing.

Lumen Maintenance

Lumen Maintenance Factor (LMF)			
36,000 hours[1]	**50,000 hours**[2]	**100,000 hours**[2]	**L_{70} (hours)**[2]
93.30%	91.27%	84.39%	219,000

[1] IESNA TM-21-11 projected value based on 6X IESNA LM-80-08 total test duration of 6,000 hours.
[2] IESNA TM-21-11 calculated value exceeds 6X IESNA LM-80-08 total test duration of 6,000 hours.

Catalog Ordering Matrix

Example: TCPTRV2UNI4430K

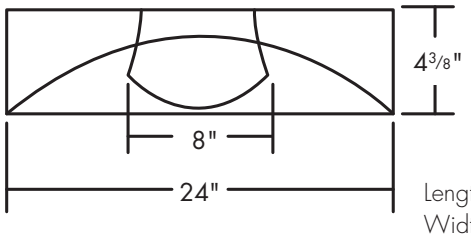
TCP	TRV	2					
BRAND	**FAMILY**	**SIZE**	**VOLTAGE**	**CONTROLS/DIMMING**	**LUMEN PACKAGE (Power)**[12]	**COLOR TEMPERATURE**	**OPTIONS**
TCP – TCP Designer	**TRV** – Volumetric	**2** – 2′ x 2′	**UNI** – 120V-277V **120** – 120V* * Specify 120V voltage only if DIM option is also selected.	**(blank)** – Non Dimming **DIM** – Line Dimming* * Specify DIM line dimming only if 120V voltage option is also selected.	**22** – 2200 Lumens (22.5W) **35** – 3500 Lumens (35W) **44** – 4400 Lumens (45W)	**30K** – 3000K **35K** – 3500K **41K** – 4100K **50K** – 5000K	**CP07** – Emergency Backup **CP** – Chicago Plenum

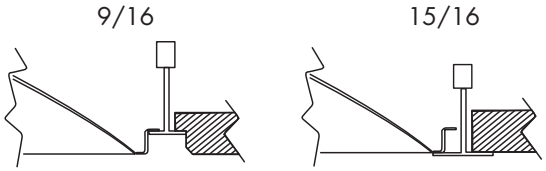
[1] Approximate lumen output. Actual performance may vary based on CCT, options selected and end user application.
[2] Actual wattage may differ by +/- 5%; when operating between 120-277V +/- 10%.

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

2x2 LED Designer Series Volumetric Luminaire

Dimensions and Mounting Data





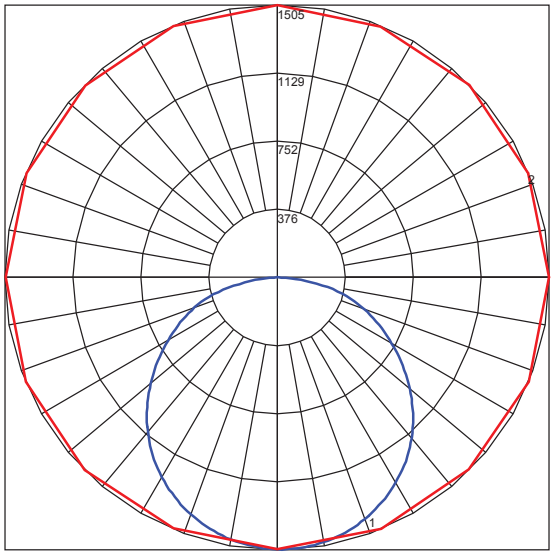
Length: 24"
Width: 24"
Depth: 4-3/8"

All dimensions are in inches unless otherwise specified.

Photometric Report

Luminous Intensity Distribution Diagram

TCPTRV2UNI4430K



Maximum Candela = 1504.77 Located At Horizontal Angle = 337.5, Vertical Angle = 1
1 - Vertical Plane Through Horizontal Angles (337.5 - 157.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)

Coefficients of Utilization

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	96	106	101	98	94	97	94	91	93	91	88	90	87	85	83
2	99	90	83	78	96	88	82	77	85	79	75	82	77	73	78	75	71	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	74	62	53	47	59	52	46	57	51	46	56	50	45	43
6	70	56	48	41	68	56	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	41	36	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	32	30
9	56	43	35	29	55	42	34	29	41	34	29	40	33	29	39	33	29	27
10	53	40	32	26	52	39	31	26	38	31	26	37	31	26	36	30	26	24

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	546.99	N.A.	13.00
0-30	1156.31	N.A.	27.50
0-40	1882.91	N.A.	44.80
0-60	3286.64	N.A.	78.30
0-80	4112.81	N.A.	98.00
0-90	4193.06	N.A.	99.90
10-90	4051.09	N.A.	96.50
20-40	1335.92	N.A.	31.80
20-50	2078.18	N.A.	49.50
40-70	1915.01	N.A.	45.60
60-80	826.17	N.A.	19.70
70-80	314.89	N.A.	7.50
80-90	80.25	N.A.	1.90
90-110	0.77	N.A.	0.00
90-120	1.59	N.A.	0.00
90-130	2.73	N.A.	0.10
90-150	4.62	N.A.	0.10
90-180	5.38	N.A.	0.10
110-180	4.61	N.A.	0.10
0-180	4198.44	N.A.	100.00

Total Luminaire Efficiency = N.A.%

Specifications and dimensions subject to change without notice.

2x4 LED Designer Series Volumetric Luminaire

Applications

The TCP LED Designer Series Volumetric Luminaires 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 grid ceilings.

Construction

The TCP LED volumetric luminaire is constructed of rugged cold-rolled steel, post painted with a highly diffuse white finish, and an impact resistant acrylic diffuser. The housing is designed to mount in a variety of grid ceiling types.

Electrical

All electrical components are UL/cUL listed. TCP high efficiency drivers provide consistent power to ensure even lighting from the long life LEDs. Each driver is matched to a light engine to deliver 50,000 hours life. Full range dimming is optional.

Optics

The impact resistant acrylic diffuser conceals the LEDs while providing even light distribution across the luminaire. The smooth white reflector curves into the diffuser, creating volumetric illumination by softening and distributing the light evenly in a wide pattern. The curved design also softens the contrast between the luminaire and ceiling.

Catalog Number	
Notes	Type

Listings

UL/cUL Listed – damp location rated
Design Lights Consortium (DLC) Qualified Products List
RoHS Compliant
Chicago Plenum Compliant (when option selected)

Warranty

Five year limited warranty against defects in manufacturing.

Lumen Maintenance

Lumen Maintenance Factor (LMF)			
36,000 hours[1]	**50,000 hours**[2]	**100,000 hours** [2]	**L_{70} (hours)**[2]
93.30%	91.27%	84.39%	219,000

[1] IESNA TM-21-11 projected value based on 6X IESNA LM-80-08 total test duration of 6,000 hours.
[2] IESNA TM-21-11 calculated value exceeds 6X IESNA LM-80-08 total test duration of 6,000 hours.

Catalog Ordering Matrix

Example: TCPTRV4UNI7030K

TCP	TRV	4					
BRAND	**FAMILY**	**SIZE**	**VOLTAGE**	**CONTROLS/DIMMING**	**LUMEN PACKAGE (Power)**[12]	**COLOR TEMPERATURE**	**OPTIONS**
TCP – TCP Designer	**TRV** - Volumetric	**4** – 2′ x 4′	**UNI** – 120V-277V **120** – 120V* * Specify 120V voltage only if DIM option is also selected.	**(blank)** – Non Dimming **DIM** – Line Dimming* * Specify DIM line dimming only if 120V voltage option is also selected.	**44** – 4400 Lumens (45W) **70** – 7000 Lumens (72W) **86** – 8600 Lumens (97W)	**30K** – 3000K **35K** – 3500K **41K** – 4100K **50K** – 5000K	**CP07** – Emergency Backup **CP** – Chicago Plenum

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

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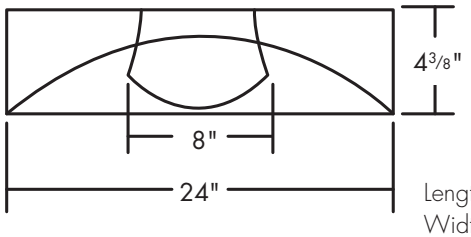
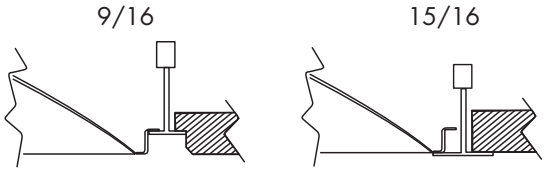
2x4 LED Designer Series Volumetric Luminaire

Dimensions and Mounting Data





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Width: 24"
Depth: 4-3/8"

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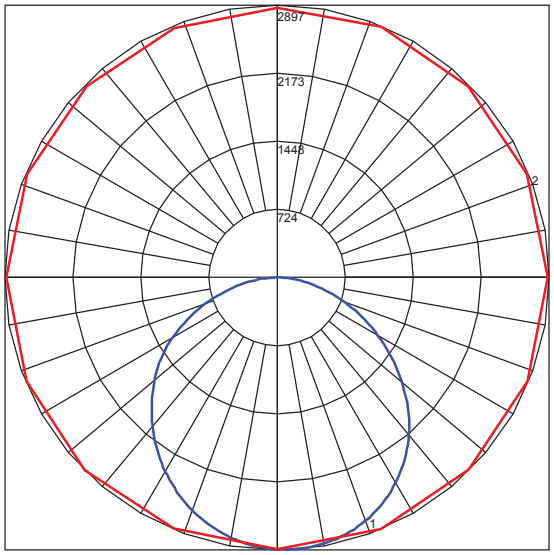
Photometric Report

Luminous Intensity Distribution Diagram

TCPTRV4UNI7030K



Maximum Candela = 2896.74 Located At Horizontal Angle = 292.5, Vertical Angle = 4
1 - Vertical Plane Through Horizontal Angles (292.5 - 112.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (4) (Through Max. Cd.)

Coefficients of Utilization

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	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	65	61	69	64	60	57
4	82	69	61	54	79	68	60	53	66	58	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42
6	69	56	47	40	67	55	46	40	53	45	40	51	44	39	50	44	39	37
7	64	50	42	35	62	50	41	35	48	40	35	47	40	35	45	39	34	32
8	60	46	37	31	58	45	37	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	1060.49	N.A.	12.40
0-30	2260.64	N.A.	26.40
0-40	3718.1	N.A.	43.40
0-60	6620.86	N.A.	77.20
0-80	8379.19	N.A.	97.70
0-90	8565.41	N.A.	99.90
10-90	8291.78	N.A.	96.70
20-40	2657.61	N.A.	31.00
20-50	4179.62	N.A.	48.80
40-70	3980.69	N.A.	46.40
60-80	1758.33	N.A.	20.50
70-80	680.40	N.A.	7.90
80-90	186.23	N.A.	2.20
90-110	3.01	N.A.	0.00
90-120	4.79	N.A.	0.10
90-130	5.89	N.A.	0.10
90-150	7.19	N.A.	0.10
90-180	7.82	N.A.	0.10
110-180	4.81	N.A.	0.10
0-180	8573.23	N.A.	100.00

Total Luminaire Efficiency = N.A.%

Specifications and dimensions subject to change without notice.