

## 2. product description

Specification and model: T5, T6, T8, T10, etc

Light source chip: crystal 2835led lamp beads for light, 80% energy saving than incandescent lamp

Brand of lamp beads: Philips, OSRAM, Hongli=

Service life: up to 50000 hours

Input voltage: AC100-240V 50/60hz

Protection grade: fill with high-quality sealed waterproof silica gel, the outer layer is tightly wrapped with waterproof silica gel, and transparent ABS is adopted, and the protection grade is ip65/ip67

Heat dissipation scheme: the circuit board adopts all glass fiber circuit board with low water absorption and good moisture resistance, with a thickness of 1.2mm and fast heat dissipation

Shell material: PC, aluminum, pc+ aluminum, all plastic thermoplastic engineering plastics [waterproof conventional with full plastic preferred best scheme]

Light transmittance: the transmittance of transparent PC cover is 94-96%, and that of PC cover with large stripe is 90-92%.

Light transmittance of PC cover with light diffusion 85-88%

Flame retardant grade: PC cover flame retardant grade: 94-v2 or 94-V0

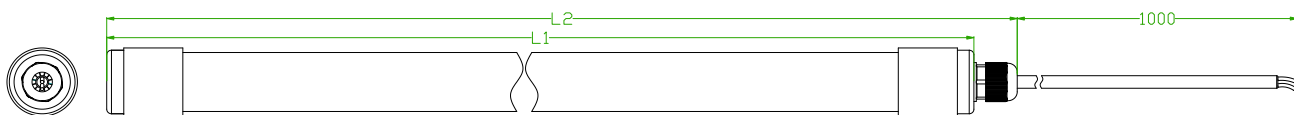
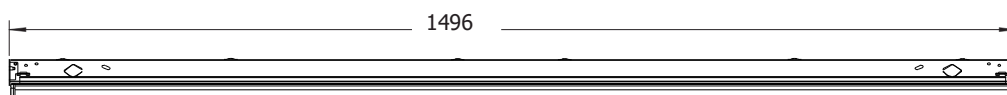
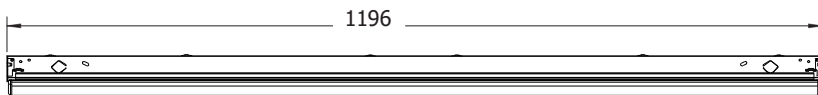
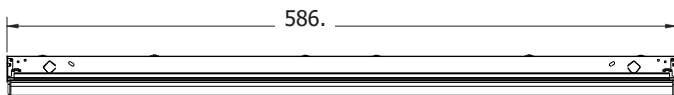
Energy saving and environmental protection: high efficiency, low carbon, no ultraviolet energy saving 60%. LED light source has long life, low power consumption and durable. Odorless, non-toxic PC plastic, with excellent physical properties, can work for a long time at low temperature

## 3. scope of use

Shelves, display cabinets, air curtain cabinets, island cabinets, vertical air cabinets, planting plants, planting plants, fish tanks, fresh food, drinks, refrigerators, frozen storage, or indoor and outdoor humid areas, etc

## 4. product size

L1: 586mm、1196mm、1496mm L2: 605mm、1215mm、1515mm



## Product parameter

Light Output Range: 6000 – 3,000 lumens

CRI: 80 CRI Standard (90CRI Refer to factory for lead- time) CCT: 3000K, 3500K, 4000K, 5000K

Distributions: 120° diffused lens

Input Voltage: 100V-275V

Efficiency: Up to 160 LPW

Fixture Rated: L70 @ 100,000 hours minimum @ 45°C

Limited Warranty: 2-4Years

Temperature Rating: -30°C to +45°C (-22°F to 113° F) Controls & Sensors: 0-10V standard, Motion & daylight sensor options.

Wireless ZigBee Daintree compliant options

## PRODUCT DESCRIPTION- T8F Waterproof TUBE

The Retrofit Kits for Linear Panels conversion for use only with fluorescent luminaires, delivers up to high lumens of exceptional 80+ CRI light with L70>50000H while achieving up to 110 lumens per watt. The Retrofit Kits are available in 4000k, 5000k DLC color temperature, using a UL/cUL external power supply

## Linear Tube With External Driver



## ORDER INFORMATION:

Typical Order Example: T84-MD-16W-40F

Catagory	Size	Driver	Wattge	CCT(XX)	Cover
T8=T8 Tube	2=2FT 4=4FT 5=5FT	MD=One Driver for Multi Tubes ED=External Driver	7W=7W 10W=10W 18W=18W 22W=22W	30=3000K 40=4000K 50=5000K	F=Frosted C=Clear

Model	A	B	C	D
T8F-MD-7W-XX	589	596.5	604	32X29
T8F-MD-10W-XX	998	996.5	1004	32X29
T8F-ED-18W-XX	1198	1205.5	1213	32X29
T8F-ED-22W-XX	1198	1205.5	1213	32X29

## PERFORMANCE SUMMARY

MODEL	T8F-60-7W- XX	T8F-90-10W- XX	T8F-120-18W- XX	T8F-ED-22W- XX
Efficacy	100LPW	100LPW	104LPW	100LPW
Delivered Light Output	1000 Lumens	1800 Lumens	2230 Lumens	2500 Lumens
Input Power	10Watts	18Watts	22Watts	26Watts
CRI	Ra>80 ,R9>20	Ra>82 ,R9>15	Ra>82 ,R9>15	Ra>82 ,R9>15
CCT	3000K 4000k 5000k	3000K 4000k 5000k	3000K 4000k 5000k	3000K 4000k 5000k
Input Voltage	100-275 VAC	100-275 VAC	100-275 VAC	100-275 VAC
Input current	0.1A	0.16A	0.4A	0.25A
THD	<20%(at 275V)	<20%(at 275V)	<20%(at 275V)	<20%(at 275V)
PF	>0.9(at 275V)	>0.9(at 275V)	>0.9(at 275V)	>0.9(at 275V)
Standard Warranty	2-5 Years	2-5 Years	2-5 Years	2-5 Years
Mounting	Buckle pg7[Optional G13]	Buckle pg7[Optional G13]	Buckle pg7[Optional G13]	Buckle pg7[Optional G13]
Dimensions	640*210*180	1240*205*215	1240*205*215"	1240*205*215
Waterproof grade	IP65	IP65	IP65	IP65
Weight	0.15kg	0.34kg	0.33kg	0.425kg

## Electrical System

MODEL	T8F-60-7W- XX	T8F-90-10W- XX	T8F-120-18W- XX	T8F-ED-22W- XX
Diver Input	AC100-275 V 50/60Hz	AC100-275 V 50/60Hz	AC100-275V 50/60Hz	AC100-275 V 50/60Hz
Driver efficiency	>87%.	>87%.	>87%.	>87%.
Input Power	Stays constant over life	Stays constant over life	Stays constant over life	Stays constant over life
Diver output	DC36V 1.333A	DC36V 1.333A	DC36V 0.54A	DC36V 0.6A
Diver weight	450g	450g	130g	130g
MAX load amount	4pcs	3pcs	1pcs	1pcs
Standard Lifetime	Designed to minimum 50,000 hours			
Temperature Rating	Designed to operate in temperatures 40°C and below room side and plenum side.			

The external constant current driver ensures steady performance and long lifespan

The T8F-MD-7W-XX for Linear Panels (2x2 Troffers), design for installation 3PCS or 4PCS LED TUBE inside fixture standard.

## PRODUCT SPECIFICATIONS

### LED CHIP

Use LED sources has been LM80 test report from accredited testing laboratory in accordance with IESNA LM-80-2008, Standard color management maintains superior color consistency over time and temperature. CCT classification according to the ANSI C78.377-2008 standard.

### Heat Sink

The source and radiator distribution in LED tube top, heat source distribution placed solve heat concentration, quantity of heat conduction of each other and radiation, effective to solve thermal management system design of the cooling. This enables the LEDs to consistently run cooler, providing significant boosts to lifetime, efficacy, and color consistency.

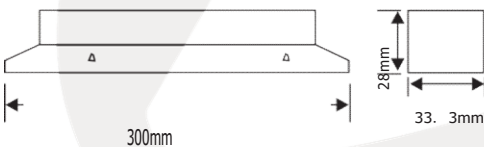
### Optical System

Proprietary optical system utilizes a unique combination of reflective components to achieve a uniform, comfortable appearance, high efficacy, low glare. LED TUBE with diffusion cover suggest to install the fixture with lens, LED TUBE with transparency cover suggest to install the fixture with reflector.

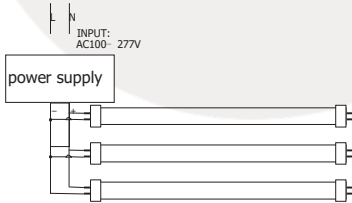
## Voluntary Qualification

cULus Listed	E355621
FCC	YES
Suitable for damp location	YES

### LED DRIVER DIMENSION



### CONNECTION



Every tube keep constant when remove any tube

### LUMINOUS INTENSITY (CD) DISTRIBUTION DATA

Y	c0	c45	c90
5	291.5	289.4	288.9
10	288.0	285.6	285.6
15	282.6	279.6	275.9
20	274.9	279.1	266.1
25	265.0	258.1	250.9
30	254.0	244.1	235.8
35	241.1	228.2	216.8
40	226.8	211.7	197.8
45	211.6	193.9	178.6
50	195.5	176.2	159.3
55	179.1	158.7	137.2
60	162.4	141.7	115.1
65	146.3	124.5	91.84
70	130.4	107.9	68.60
75	115.2	91.61	46.90
80	101.1	77.12	25.21

### ZONAL LUMEN DENSITY MEASUREMENT

Y	Φ zone	Φ total	%
0-5	6.948	6.948	0.75
5-10	20.57	27.52	2.96
10-15	33.47	60.99	6.57
15-20	45.12	106.1	11.43
20-25	55.22	161.3	17.38
25-30	69.49	224.7	24.21
30-35	63.37	294.2	31.69
35-40	73.31	367.5	39.59
40-45	75.03	442.5	47.67
45-50	74.69	517.2	55.72
50-55	72.44	589.6	63.52
55-60	68.45	658.1	70.90
60-65	63.05	721.1	77.69
65-70	56.54	777.7	83.78
70-75	49.33	827.0	89.10
75-80	41.61	868.6	93.58

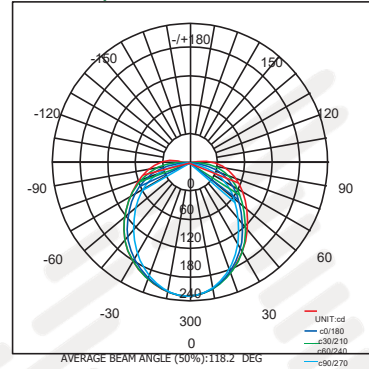
### COEFFICIENTS OF UTILIZATION

pcc	80%			50%	70%			50%			30%			10%			0
	50%	30%	10%		30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%		
pw																	0
pfc																	0
KCR	KCR: Room Cavity Ratio															CU	
0	119	119	119	116	116	116	111	111	111	106	106	106	102	102	102	0	
1	101	95	91	98	94	89	94	90	86	90	87	84	86	84	81	79	
2	87	79	72	85	77	71	81	75	70	78	73	68	74	70	67	64	
3	75	66	59	74	65	59	71	64	58	68	62	57	65	60	56	53	
4	67	57	50	65	56	49	63	55	49	60	53	48	58	52	47	45	
5	59	50	43	58	49	42	56	48	42	54	47	41	52	46	41	39	
6	53	44	37	52	43	37	50	43	37	49	42	36	47	41	36	34	
7	48	39	33	47	39	33	46	38	32	44	37	32	43	37	32	30	
8	44	35	29	43	35	29	42	34	29	41	34	29	39	33	28	26	
9	40	32	26	40	32	26	39	31	26	38	31	26	36	30	26	24	
10	37	29	24	37	29	24	36	28	23	35	28	23	34	28	23	21	

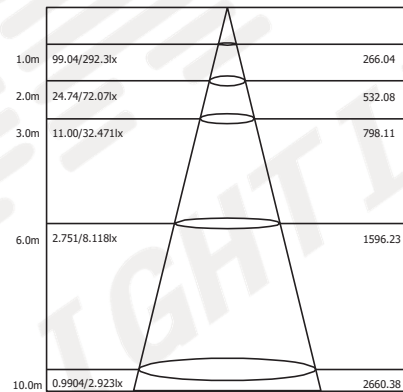
## PHOTOMETRY

Fixture photometry has been conducted accredited testing laboratory in accordance with IESNA LM-79-08 (single tube with milky cover).

### Luminous Intensity Distribution



### AVERAGE ILLUMINANCE CURVE



The T84-MD-18W-XX for Linear Panels (2x4 Troffers), design for installation 3PCS LED TUBE inside fixture standard.

**PRODUCT SPECIFICATIONS**

**LED CHIP**

Use LED sources has been LM80 test report from accredited testing laboratory in accordance with IESNA LM-80-2008, Standard color management maintains superior color consistency over time and temperature. CCT classification according to the ANSI C78.377-2008 standard.

**Heat Sink**

The source and radiator distribution in LED tube top, heat source distribution placed solve heat concentration, quantity of heat conduction of each other and radiation, effective to solve thermal management system design of the cooling. This enables the LEDs to consistently run cooler, providing significant boosts to lifetime, efficacy, and color consistency.

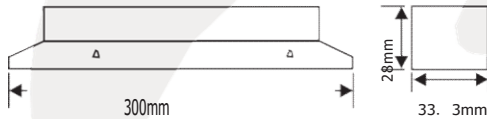
**Optical System**

Proprietary optical system utilizes a unique combination of reflective components to achieve a uniform, comfortable appearance, high efficacy, low glare. LED TUBE with diffusion cover suggest to install the fixture with lens, LED TUBE with transparence cover suggest to install the fixture with reflector .

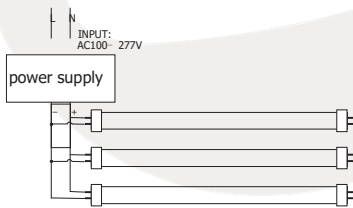
**Voluntary Qualification**

cULus Listed	E355621
DLC Listed	YES
LM79 Report	YES
Suitable for damp location	YES

**LED DRIVER DIMENSION**



**CONNECTION**



every tube keep constant when remove any tube

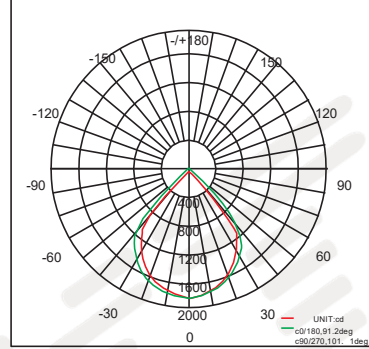
**COEFFICIENTS OF UTILIZATION**

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw	119	119	119	116	116	116	111	111	111	106	106	106	102	102	102	0
ptc	105	102	98	103	100	96	99	96	93	95	93	91	92	90	88	86
RCR	93	87	81	91	86	81	88	83	79	85	81	77	82	78	75	73
CU	83	75	69	81	74	69	78	72	67	76	71	66	73	69	65	63
1	74	66	59	73	65	59	70	64	58	68	62	58	66	61	57	55
2	67	58	52	66	58	52	64	57	51	62	55	51	60	54	50	48
3	60	52	46	59	51	46	58	51	45	56	50	45	55	49	45	43
4	55	47	41	54	46	41	53	46	40	51	45	40	50	44	40	38
5	50	42	36	50	42	37	48	41	36	47	41	36	46	40	36	34
6	46	39	33	46	38	33	45	38	33	44	37	33	43	37	33	31
7	43	35	30	42	35	30	41	35	30	41	34	30	40	34	30	28

**PHOTOMETRY**

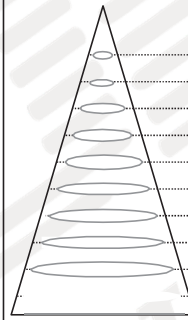
Fixture photometry has been conducted accredited testing laboratory in accordance with IESNA LM-79-08. (Recessed Troffer(2X4):Lithonia:2GT8-2-32-A19-277-GB101S Lens, install 3pcs tubes with milky cover)

**Luminous Intensity Distribution**



**AVERAGE ILLUMINANCE CURVE**

Angle:95.9 °. Flux out:4472.38lm



Height(m)	Diameter (cm)	Eavg(lx)	Emax(lx)
0.5	102.1	3407.0	7744.0
1.0	204.2	851.6	1936.0
1.5	306.4	378.5	860.5
2.0	408.5	212.9	484.0
2.5	510.6	136.3	309.8
3.0	612.7	94.6	215.1
3.5	714.9	69.5	158.0
4.0	817.0	53.2	121.0
4.5	919.1	42.1	95.6
5.0	1021.2	34.1	77.4

**LUMINOUS INTENSITY (CD) DISTRIBUTION DATA**

Y	C	0°C	22.5°C	45°C	67.5°C	90°C
0.0°C	1931	1931	1931	1931	1931	1931
5.0°C	1920	1922	1921	1922	1923	
10.0°C	1885	1889	1891	1895	1897	
15.0°C	1828	1835	1841	1850	1855	
20.0°C	1746	1757	1772	1787	1795	
25.0°C	1638	1656	1679	1702	1714	
30.0°C	1506	1527	1561	1595	1614	
35.0°C	1350	1377	1418	1465	1494	
40.0°C	1165	1201	1248	1313	1359	
45.0°C	957	1002	1065	1148	1204	
50.0°C	778	818	894	964	1024	
55.0°C	617	640	715	778	815	
60.0°C	483	474	531	602	637	
65.0°C	378	358	374	439	468	
70.0°C	287	276	253	316	333	
75.0°C	213	210	178	218	232	
80.0°C	151	142	122	141	160	
85.0°C	69	68	65	69	80	

**ZONAL LUMEN DENSITY MEASUREMENT**

Deg	Flux(lm)	%
0-5	46.1	1.03
5-10	136.4	3.05
10-15	221.4	4.95
15-20	297.6	6.65
20-25	361.1	8.08
25-30	408.7	9.13
30-35	437.6	9.79
35-40	445.9	9.97
40-45	431.7	9.65
45-50	396.2	8.86
50-55	344.9	7.71
55-60	282.7	6.32
60-65	219.0	4.90
65-70	163.9	3.66
70-75	122.7	2.75
75-80	89.0	1.99
80-85	52.4	1.17
85-90	12.9	0.29