













### **HOW IT WORKS**

One Tube, Three Wattage. No Dimmer Required.

Control the brightness with a regular on/off switch:

- 1. Switch on 100%
- 2. Switch off and on 50%
- 3. Switch off and on 25%

Leave it off for 10 seconds at any brightness and the next time you turn it on its back to 100%.

## STAND OUT FROM THE COMPETITION

Just one more reason to choose you is all that is needed sometimes: The added functionality gives your customer that additional reason to abandon other choices. Our 3WAY™ TUBE can be used as a regular tube but gives the customer the freedom to dim their lighting when it's needed to save more money than normal and to shorten their return on investment time.

- Added functionality vs. no functionality
- Possibility of higher savings vs. no possibility of higher savings
- Looks like a traditional fluorescent T8 tube
- UL | DLC | RoHS | FCC Certified
- Tested and qualified 50,000 hours life span, 5 years warranty



## **LOWER INSTALLATION COSTS**

Our 3WAY™ TUBE was designed to make the installation process easier and quicker: Works directly with an electronic instant start ballast or without a ballast because contractors never know what they're going up against until those ceiling panels are lifted and every fixture is double checked. Because the dimming function is built into the tube, there's no need to change or add a dimmable ballast and install additional wiring for the dimmer switch.

- Works with Electronic Instant Start ballasts (UL & DLC Type A Certified)
- Works without a ballast (UL & DLC Type B Certified)
- No dimmable ballast or dimmer wiring required

## **APPLICATIONS**

- Commercial Offices & Industrial Facilities
- Education & Governmental Facilities
- Medical & Health Care Faculties
- Retail Stores, Banks & Food Services
- Airports, Train/Subway Stations & Bus Stations

### **SPECIFICATIONS**

SKU	LAMP CODE	SIZE	ССТ	LPW	100%   LMN	50%   LMN	25%   LMN
EFS18190-x	44-T8-60-10W-xxK-GL-D-AB-1	2ft	3, 4, 5000k	113.4	10W   1347	5.0W   674	2.50W   337
EFS18191-x	44-T8-120-12W-xxK-GL-D-AB-1	4ft	3, 4, 5000k	150.0	12W   1800	6.0W   900	3.00W   450
EFS18192-x	44-T8-120-15W-xxK-GL-D-AB-1	4ft	3, 4, 5000k	126.0	15W   2150	7.5W   1075	3.75W   538
EFS18193-x	44-T8-120-18W-xxK-GL-D-AB-1	4ft	3, 4, 5000k	131.6	18W   2500	9.0W   1250	4.50W   625

#### Notes

- LPW and LMN reflect CCT of 5000k. Other CCT available, please inquire.
- Dim settings can be altered with factory order.
- DLC rating will show highest wattage use only.

### SHARED CHARACTERISTICS

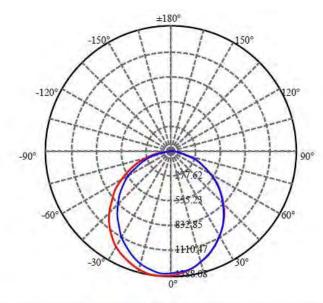
BRAND	EST	Operating Temperature	-20°C ~ +45°C
Color Rendering Index	>80	IP Rating	IP20
Beam Angle	>220°	Base Type	G13
Lumen Maintenance	50,000 Hours	Starting Time	<1.0 s
Power Factor	≥0.9	Material Usage	RoHS compliant; no mercury
Operating Frequency	50/60Hz	Dimmable	Yes (Step Dimming)



## **MODEL SELECTION**

Assembly Line	Category	Length	Wattage	ССТ	Material	Dimming	DLC Type	Version
XX	-YX	-XX	-XXW	-XXK	-YY	-Y	-YY	-Z
44 = Internal	T8 = T8 Tube	60 = 2ft 120 = 4ft	10W 12W 15W 18W	30K = 3000k 40K = 4000k 50K = 5000k	GL=Glass	D = Step Dimming	AB = DLC Type A & B	1 = Frist Version

# **LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**





C180(Max): \_\_\_\_\_ C0/C180: \_\_\_\_\_

Field angle(10%Imax):C0/180Left:76.3 Right:83.0

:C90/270Left:79.8 Right:78.4

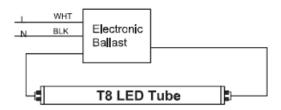
Beam Angle(50%Imax):C0/180Left:52.5 Right:56.7

:C90/270Left:53.0 Right:52.0

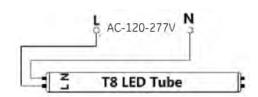


# WIRING DIAGRAM

### TYPE A



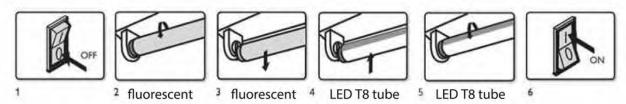
#### TYPE B



# **INSTALLATION INSTRUCTION**

### Type A

- 1. Make sure to turn power off by disconnecting the supply voltage.
- 2. Remove diffuser (if provided).
- 3. Remove the conventional fluorescent lamp and dispose of them properly.
- 4. Verify the existing ballast is on our ballast list or not. Plug T8 LED tube into lamp holders.
- 5. Re-install diffuser (if removed in step 2)
- 6. Turn power on and check the light distribution angle.



### Type B

- 1. Remove the existing ballast and rewire as AC 100-277V input
- 2. Put on LED tube into the lamp holders of existing fixture
- 3. Put on the cover diffuser (if needed)
- 4. Turn on the power and check the light distribution

# **3 STEP DIMMING FUNCTION**

### **Step Dimming**

- \* Turn on the power.
- \* Switch off & on to adjust brightness.



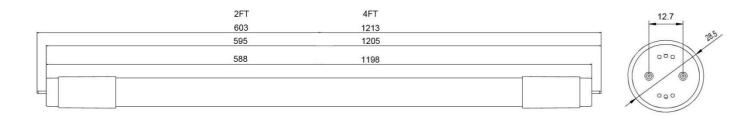


STEP	SWITCH	OUTPUT
1st	OFF/ON	100%
2nd	OFF/ON	50%
3rd	OFF/ON	25%



## **PRODUCT DIMENSION**

Size	L	W	н	Weight
2ft	23.74"	1"	1"	0.1kg / 0.22 lbs
4ft	47.76"	1"	1"	0.2kg / 0.44 lbs



## **PACKAGE DIMENSION**

Size	Size of Cartoon L*W*H(mm/in)	Net Weight/pcs	Package Gross Weight
2ft	605x 195 x 200mm / 23.82"x 7.7"x 7.9"	0.1kg / 0.22 lbs	3.2kg / 7.05 lbs
4ft	1205 x 195 x 200mm / 47.4"x 7.7"x 7.9"	0.2kg / 0.44 lbs	6.4kg / 14.1 lbs

## **PACKAGE INFORMATION**

Product	roduct Quantity		duct Quantity Container (w/o pallets)		(	Container (with pallet)				
Size	/ Box	/ Pallet	20'GP	40'GP	40'HQ	45'HQ	20'GP	40'GP	40'HQ	45'HQ
2ft	25	2500	21000	60000	66000	76000	18000	52000	56000	64000
4ft	25	1250	11000	25000	33000	38000	10125	22500	28000	32000



# **CAUTION**

- 1. When installing, make sure that power is switched off before connecting or disconnecting to lamp fixture.
- 2. If the LED tube in luminaire exhibits abnormal operation (buzzing, flickering, minimal light, etc.), turn off power, remove lamp and contact us.
- 3. This lamp only operates on instant start electronic ballasts.
- 4. Risk of fire, loose contact or wrong installing may cause arcing lead to FIRE. If lamp-holders are damaged, corroded, charred, blackened, or loose, contact a qualified electrician for proper replacement.



Tube is not installed properly



Pin is not inserted into lamp holder



Loose contact



Wrong angle



Pin is not inserted into lamp holder

### 5. Tube installed properly







## **BALLAST COMPATIBILITY LIST**

BRAND	MODEL	BRAND	MODEL
	QHE 1x32T8/UNV ISN-SC		KTEB-432-UV-IS-N-P
	QHE 2x32T8/UNV ISN-SC	KEYSTONE	KTEB-232RIS-1-TP-SL
	QHE 4x32T8/UNV ISL-SC		KTEB-232RIS-1-TP-SL/G
	QHE 2x32T8/UNV ISL-SC HALCO		EP232IS/L/MV/HE
	QHE 2x32T8/UNV PSN-MC	ACCUPRO	AP-432IP-UNV
OSRAM SYLVANIA	QHE 2x32T8/UNV PSX-MC		VE232MVHIPLE
	QHE 3x32T8/UNV ISL-SC	ESPEN	VE432MVHIPLE
	QTP 2x32T8/UNV ISL-SC		VE432120HIP
	QT 2x32 T8/347 ISL-SC		B432IUNVHE-A
	QHE 4x32T8/347 ISL-SC		B232IUNVEL-N
	QHE 3x32T8/UNV ISN-SC		B232IUNVHP-N
	GE232MAX-L/Ultra	LIAUN/EDCAL / TDIAD	B332IUNVHP-A
	GE232MAX347-N	UNIVERSAL / TRIAD	B432IUNVHP-A
	GE432MAX347-N		B232IUNVHP-B
	GE432MAX-G-N		B332PUNVHE-A
	GE432MAX-G-N-42T		B432IUNVEL-A
GENERAL ELECTRIC (GE)	GE232-MVPS-N		ICN-3P32-N
	GE432-MVPS-N		ICN-4P32-N
	GE432MV-N-42T		IOP-4P32-LW-N
	GE432MAXP-H/ULTRA		IOPA-4P32-N
	GE432MAXP-L/ULTRA	PHILIPS ADVANCE	IOPA-4P32-LW-N
	GE432-120RESDIYB		IOP-3P32-N
HOWARD INDUSTRIES	EP3/32IS/MV/MC/HE		IOP-4PSP32-SC
PACIFIC FLUORESCENT	EB-232IS-120-RES		REB-4P32-SC
			REL-2P32-SC

We're constantly testing new ballasts. Please request updated ballast list if required or call with a specific ballast and we'll prioritize its' testing.