



2025

LED RETROFIT
LIGHTING SOLUTIONS

the **Power** to
Create Better Light™

www.espentech.com



A long-exposure photograph of a city at night, featuring a highway with light trails and a large circular graphic overlay. The image has a blue color grade and includes geometric light patterns.

THE POWER
TO CREATE
BETTER **LIGHT**



ESPEN Technology is dedicated to delivering sustainable and environmentally progressive lighting solutions. As a manufacturer and designer of high efficiency lighting products, ESPEN continually strives to improve the efficiency of lighting technology. Our products reflect an emphasis on sustainability, quality, and reliability. Our product development is driven by a simple commitment: to improve people's lives and build a better future for generations to come.

Our ESPEN products are complemented by an industry-leading warranty policy. The goal is to offer our customers and end-users an invaluable asset: peace of mind. With an emphasis on quality and a focus on efficiency, ESPEN Technology's engineers have developed a whole line of LED drivers, lamps, modules, retrofit kits, emergency solutions and control systems that are worthy of the latest LED luminaires. High efficiency, advanced thermal management, increased life, and versatility in form create the ultimate LED systems for today's most advanced LED lighting. Stringent component qualification and quality control guarantee a long life and increased overall system longevity.



Not all products are qualified on the DLC QPL. To view our DLC qualified products, please consult the DLC Qualified Products List at www.designlights.org/qpl

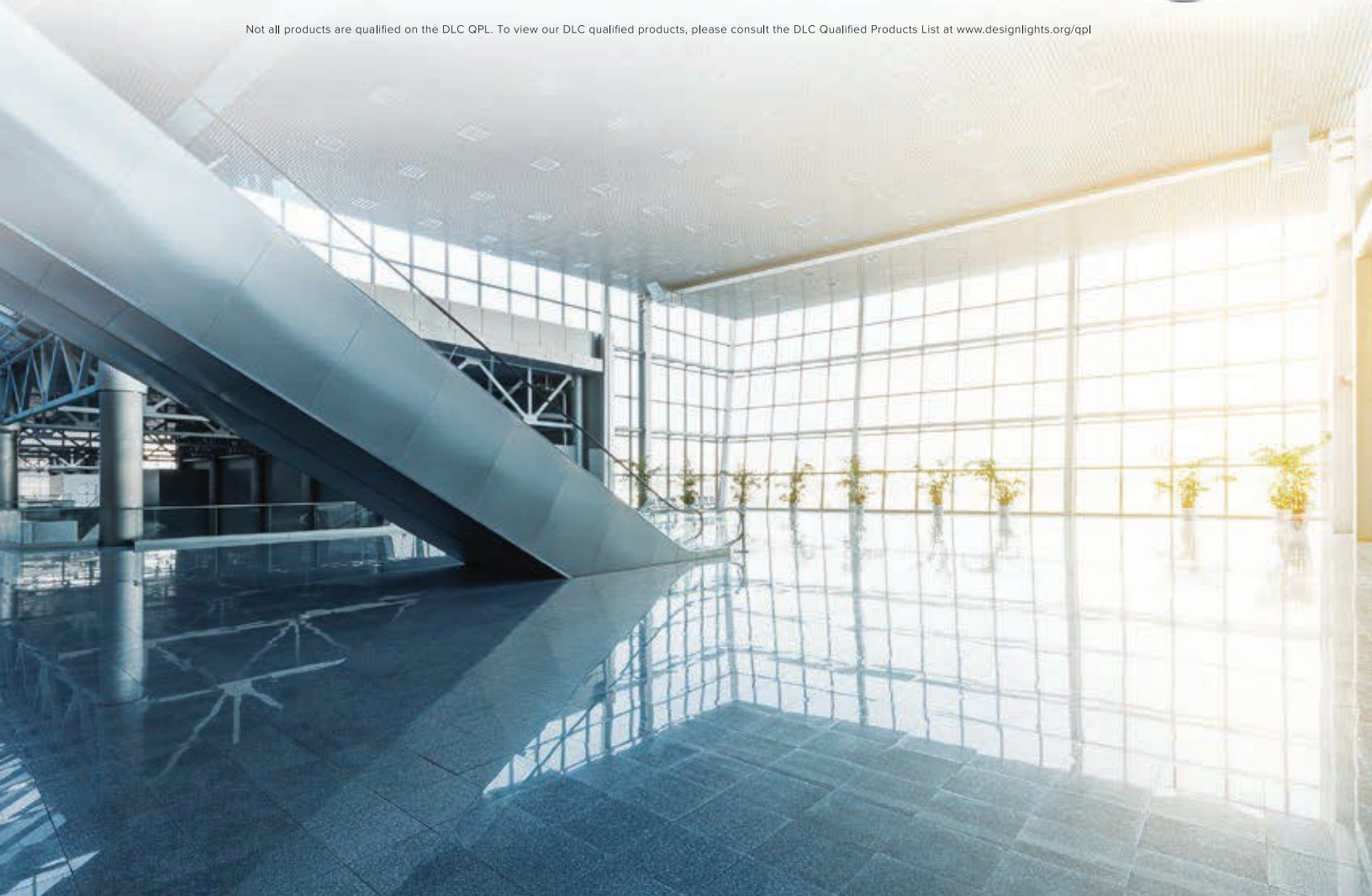


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RetroFlex™



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Flex™



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CORETECH™



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RetroFlex™



Plug & Play | Ballast Compatible LED Lamps | Type A

TYPE - A



non-dimming

0-10V Dimming

RetroFlex led driver

Dedicated Driver, Instant Start
Constant Current, 0-10V Dimming



emergency ballast

Maintenance-Free, Long Life
Hi-Temperature Ni-Cad Battery

linearLED

Med, Bi-Pin, Single-Pin, Double-Recess Pin
Long Life, Convenient Wiring



RetroFlex™

LED Solutions
Plug and Play



ARMORCOAT™
SHATTER-RESISTANT COATED LAMPS

Safety Coated, Shatter-Resistant Lamps

ballast replacement

High Efficiency, Slim Profile, Instant Start,
Program Start



ABOUT ESPEN RETROFLEX LED LAMPS

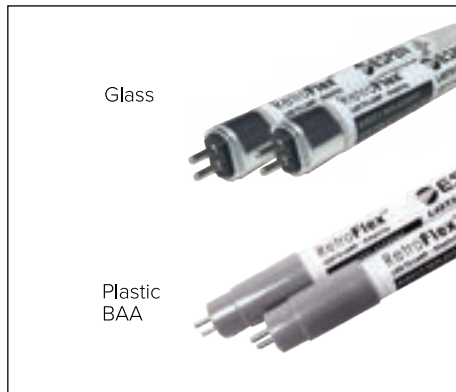
ESPEN Retroflex LED lamps lead the industry with ballast compatible, plug & play technology. These high-performance lamps don't require any alteration to the fixture. The upgrade to LED technology is as simple as replacing the old fluorescent lamps with new Retroflex lamps. This saves you up to 50% of system power while maintaining or increasing illumination levels. These lamps work directly off your existing electronic ballasts, within your fixtures, and come in a range of shapes and sizes.

*Please visit www.espentech.com for compatibility list.

RetroFlex™



Plug & Play | Ballast Compatible LED T5 Lamps



FEATURES AND BENEFITS

- LED Replacement for T5 Fluorescent Lamps
- Works with fluorescent electronic ballast (**Programmed Start, Dimming**)^{1,2}
- Quick and Convenient Installation
- Utilizes Existing Shunted or Non-Shunted Tombstones
- Instant on, No delay
- Convenient and quick installation
- Frosted to Prevent Glare
- Suitable for Damp Locations
- Integrated Thermal Fuse Protection
- ETL Sanitation Listed - *conforms to NSF/ANSI 2*
- Maintains the original UL Certification of the Fixture
- Compatible with Controls and Sensors
- Rated for Use in Food Prep Areas and Refrigerated Food Displays
- -20° F to 130° F Ambient Operating Temp
- 5 Year Warranty
- 240° Wide Beam Angle
- Dimmable



TYPE-A

Model No.	Replaces	Length (in)	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Ballast Input Voltage (V)	CCT (K)	CRI	Life (h)
Linear T5 High Efficiency (HE) Plastic										
L48T5HE/830/13P-EB	F28T5HE	48	13	16	1600	123	120 - 277	3000	83+	50000
L48T5HE/835/13P-EB	F28T5HE	48	13	16	1600	123	120 - 277	3500	83+	50000
L48T5HE/840/13P-EB	F28T5HE	48	13	16	1600	123	120 - 277	4000	83+	50000
L48T5HE/850/13P-EB	F28T5HE	48	13	16	1600	123	120 - 277	5000	83+	50000
Linear T5 High Output (HO) Plastic										
L24T5/830/12P-EB	F24T5HO	24	12	15	1500	125	120 - 277	3000	83+	50000
L24T5/835/12P-EB	F24T5HO	24	12	15	1500	125	120 - 277	3500	83+	50000
L24T5/840/12P-EB	F24T5HO	24	12	15	1500	125	120 - 277	4000	83+	50000
L24T5/850/12P-EB	F24T5HO	24	12	15	1500	125	120 - 277	5000	83+	50000
L36T5/830/18P-EB	F39T5HO	36	18	21	2000	111	120 - 277	3000	83+	50000
L36T5/835/18P-EB	F39T5HO	36	18	21	2000	111	120 - 277	3500	83+	50000
L36T5/840/18P-EB	F39T5HO	36	18	21	2000	111	120 - 277	4000	83+	50000
L36T5/850/18P-EB	F39T5HO	36	18	21	2000	111	120 - 277	5000	83+	50000
L48T5/830/24P-EB	F54T5HO	48	24	27	3300	137	120 - 277	3000	83+	50000
L48T5/835/24P-EB	F54T5HO	48	24	27	3300	137	120 - 277	3500	83+	50000
L48T5/840/24P-EB	F54T5HO	48	24	27	3300	137	120 - 277	4000	83+	50000
L48T5/850/24P-EB	F54T5HO	48	24	27	3300	137	120 - 277	5000	83+	50000
Linear T5 High Output (HO) Glass										
L48T5HO/830/24G-EB	F54T5HO	48	24	27	3200	133	120 - 277	3000	83+	50000
L48T5HO/835/24G-EB	F54T5HO	48	24	27	3200	133	120 - 277	3500	83+	50000
L48T5HO/840/24G-EB	F54T5HO	48	24	27	3200	133	120 - 277	4000	83+	50000
L48T5HO/850/24G-EB	F54T5HO	48	24	27	3200	133	120 - 277	5000	83+	50000

¹ System Power and Lumens based on normal ballast factor (0.88). Operation on low and high ballast factor will yield alternate specification.

² Voltage is dependant on ballast brand and model number. See espentech.com for ballast compatibility list.

RetroFlex™



Plug & Play | Ballast Compatible LED T8 Lamps

TYPE - A



FEATURES AND BENEFITS

- LED Replacement for T8 Fluorescent Lamps
- Works with fluorescent electronic ballast (**Instant Start, Programmed Start, Dimming**)^{1,2}
- Quick and Convenient Installation
- Utilizes Existing Shunted or Non-Shunted Tombstones
- Instant on, No delay
- Convenient and quick installation
- Suitable for Damp Locations
- Integrated Thermal Fuse Protection
- ETL Sanitation Listed -conforms to NSF/ANSI 2
- Maintains the original UL Certification of the Fixture
- Compatible with Controls and Sensors
- Rated for Use in Food Prep Areas and Refrigerated Food Displays
- -20° F to 130° F Ambient Operating Temp
- 5 Year Warranty
- 325° Wide Beam Angle



Model No.	Replaces	Length (in)	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI	Life (h)
Linear T8 Plastic										
L24T8/830/12P-EB	F32T8	24	9	11	1500	167	120 - 277	3000	83+	50000
L24T8/835/12P-EB	F32T8	24	9	11	1500	167	120 - 277	3500	83+	50000
L24T8/840/12P-EB	F32T8	24	9	11	1500	167	120 - 277	4000	83+	50000
L24T8/850/12P-EB	F32T8	24	9	11	1500	167	120 - 277	5000	83+	50000
L36T8/830/12P-EB	F32T8	36	12	14	1750	146	120 - 277	3000	83+	50000
L36T8/835/12P-EB	F32T8	36	12	14	1750	146	120 - 277	3500	83+	50000
L36T8/840/12P-EB	F32T8	36	12	14	1750	146	120 - 277	4000	83+	50000
L36T8/850/12P-EB	F32T8	36	12	14	1750	146	120 - 277	5000	83+	50000
L48T8/830/10P-EB	F32T8	48	10	12	1750	175	120 - 277	3000	83+	50000
L48T8/835/10P-EB	F32T8	48	10	12	1750	175	120 - 277	3500	83+	50000
L48T8/840/10P-EB	F32T8	48	10	12	1750	175	120 - 277	4000	83+	50000
L48T8/850/10P-EB	F32T8	48	10	12	1750	175	120 - 277	5000	83+	50000
L48T8/830/12P-EB	F32T8	48	12	14	1850	154	120 - 277	3000	83+	50000
L48T8/835/12P-EB	F32T8	48	12	14	1850	154	120 - 277	3500	83+	50000
L48T8/840/12P-EB	F32T8	48	12	14	1850	154	120 - 277	4000	83+	50000
L48T8/850/12P-EB	F32T8	48	12	14	1850	154	120 - 277	5000	83+	50000
Linear T8 Glass										
L48T8/830/10G-EB	F32T8	48	10	13	1950	195	120 - 277	3000	83+	50000
L48T8/835/10G-EB	F32T8	48	10	13	1950	195	120 - 277	3500	83+	50000
L48T8/840/10G-EB	F32T8	48	10	13	1950	195	120 - 277	4000	83+	50000
L48T8/850/10G-EB	F32T8	48	10	13	1950	195	120 - 277	5000	83+	50000
L48T8/830/12G-EB	F32T8	48	12	14	1800	150	120 - 277	3000	83+	50000
L48T8/835/12G-EB	F32T8	48	12	14	1800	150	120 - 277	3500	83+	50000
L48T8/840/12G-EB	F32T8	48	12	14	1800	150	120 - 277	4000	83+	50000
L48T8/850/12G-EB	F32T8	48	12	14	1800	150	120 - 277	5000	83+	50000

¹ System Power and Lumens based on normal ballast factor (0.88). Operation on low and high ballast factor will yield alternate specification.

² Voltage is dependant on ballast brand and model number. See espentech.com for ballast compatibility list.

LED Drivers & Ballasts for Type A Lamps

NON-DIMMABLE DRIVERS FEATURES AND BENEFITS

- Constant Current
- Universal Voltage (120-277V)
- Energy Efficient Design
- Micro Case: Same mounting for T8 and T12 ballasts
- High Performance
- 5 Year Limited Warranty
- Model No.: VEL50BN-2C (2 LAMP)
VEL100BN-4C (4 LAMP)



TYPE-A

DIMMABLE DRIVERS FEATURES AND BENEFITS

- Constant Current
- 0-10V Continuous Dimming: 10%-100%
- Universal Voltage (120-277V)
- Slim Profile
- 5 Year Limited Warranty
- Model No.: VEL30BN-2C-10V (2 LAMP)
VEL60BN-4C-10V (4 LAMP)



ELECTRONIC BALLASTS FEATURES AND BENEFITS

- Full Ballast Line
- Slim Profile
- Lamp Auto Restrike
- High Efficiency
- Commercial Ballasts Backed by 5 Year Limited Warranty



Model No.	Type	Lamps	Voltage	Method
VE2P32MVHIPE	F17T8-F32T8	1 or 2	120-277V	Instant Start
VE259MVHIP	F96T8	2	120-277V	Instant Start
VE254MVHRP	F54T5HO	2	120-277V	Program Start
VE454MVHRP	F54T5HO	4	120-277V	Program Start

SUGGESTED BALLAST REPLACEMENTS FOR RETROFLEX LED LAMPS.
FOR MORE BALLAST OPTIONS PLEASE CHECK ESPEN WEBSITE WWW.ESPENTECH.COM

LED LAMPS WITH INTERNAL DRIVER | Type B



LED PL Lamps^{LED}

Internal Driver, Convenient Installation,
Instant on with no delay or warm up time,
High CRI, 5 year warranty



Linear^{LED}

Med. Bi-pin, Internal Driver, DLC Listed,
Glass tube for superior optical performance,
Utilizes unshunted (rapid start) sockets,
Long Life, Available in 0-10V dimming, and 5-CCT.

360° Sign Lamps^{LED}

Double-sided design, Rotatable endcaps,
Compatible with sensors, Utilizes R17d sockets,
Input from both ends

Flex™

LED Solutions
with Internal Driver



Emergency Inverter

90 Minute Illumination Time



LED PLL Lamps^{LED}

Utilizes current 2G11 sockets,
Internal Driver, Compatible with
controls and sensors, Instant On



Espen Flex LED Lamps

Espen Flex LED lamps have an internal driver that frees linear luminaires from old fluorescent ballasts and lamps. The lamp works directly off line input voltage 120/277V. Flex lamps make convenient and effective retrofit solutions for any old T12 system, especially with magnetic ballasts. Simply remove the old fluorescent ballast and wire line voltage directly to one side of the unshunted lamp holder. Flex lamps can save you up to 50% of system power, while maintaining or increasing illumination levels. Flex lamps come in a range of sizes including linear 2ft, 3ft, 4ft, 5ft, 6ft, and 8ft. The lamps are also available as 360° sign lamps for two-sided signs.

AC Direct | T5 Lamps | Double Ended Input

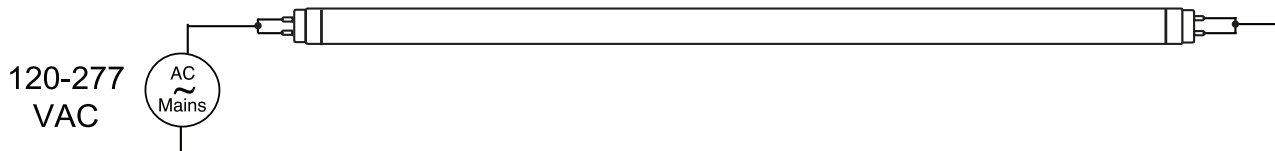


FEATURES AND BENEFITS

- Double Ended Bypass Connection
- Internal Driver
- Glass Tube for Optimal Light Output and Heat Dissipation
- -20° F to 130° F Ambient Operating Temperature
- Frosted to Prevent Glare
- Suitable for Damp Locations
- 240° Wide Beam Angle
- 5 Year Warranty



WIRING DIAGRAM



Model No.	Replaces	Length (in)	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI	Life (h)
Linear T5 High Efficiency (HE)									
L24T5/830/7G-ID DE	F14T5HE	24	7	900	128	120-277	3000	80+	50000
L24T5/835/7G-ID DE	F14T5HE	24	7	900	128	120-277	3500	80+	50000
L24T5/840/7G-ID DE	F14T5HE	24	7	900	128	120-277	4000	80+	50000
L24T5/850/7G-ID DE	F14T5HE	24	7	900	128	120-277	5000	80+	50000
L36T5/830/12G-ID DE	F21T5HE	36	12	1700	141	120-277	3000	80+	50000
L36T5/835/12G-ID DE	F21T5HE	36	12	1700	141	120-277	3500	80+	50000
L36T5/840/12G-ID DE	F21T5HE	36	12	1700	141	120-277	4000	80+	50000
L36T5/850/12G-ID DE	F21T5HE	36	12	1700	141	120-277	5000	80+	50000
L48T5HE/830/12G-ID DE	F28T5HE	48	12	1800	150	120-277	3000	80+	50000
L48T5HE/835/12G-ID DE	F28T5HE	48	12	1800	150	120-277	3500	80+	50000
L48T5HE/840/12G-ID DE	F28T5HE	48	12	1800	150	120-277	4000	80+	50000
L48T5HE/850/12G-ID DE	F28T5HE	48	12	1800	150	120-277	5000	80+	50000

Model No.	Replaces	Length (in)	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI	Life (h)
Linear T5 High Output (HO)									
L48T5/830/25G-ID DE	F54T5HO	48	25	3500	140	120-277	3000	80+	50000
L48T5/835/25G-ID DE	F54T5HO	48	25	3500	140	120-277	3500	80+	50000
L48T5/840/25G-ID DE	F54T5HO	48	25	3500	140	120-277	4000	80+	50000
L48T5/850/25G-ID DE	F54T5HO	48	25	3500	140	120-277	5000	80+	50000

TYPE - B

AC Direct I MULTI-CCT Linear Lamp I Double Ended Input

**NEW
PRODUCT**

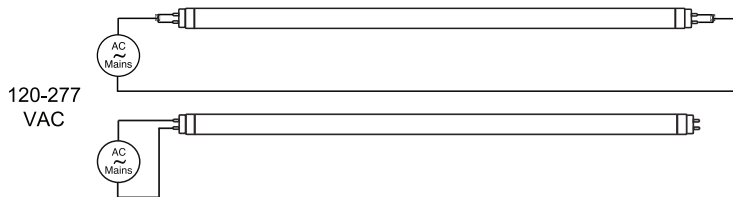


FEATURES AND BENEFITS

- Double End Bypass Connection with Shunted or Single End Bypass Connection with Non-Shunted Tombstones
- Internal Driver
- Glass Tube for Optimal Light Output and Heat Dissipation
- -20° F to 130° F Ambient Operation Temperature
- CCT Field-Adjustable
- Instant on, No delay
- Convenient and quick installat
- Frosted to Prevent Glare
- Suitable for Damp Locations
- 325° (T8), 240° (T5) Wide beam Angle
- 5 Year Warranty



WIRING DIAGRAM



TYPE - B

Model No.	Replaces	Length (in)	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	Selectable CCT (K)	CRI	Life (h)
Linear T5 4-CCT									
L24T5/8Q/7G-ID DE	F14T5HE	24	7	950	135	120-277	3000/3500/4000/5000	82+	50000
L36T5/8Q/12G-ID DE	F21T5HE	36	12	1800	150	120-277	3000/3500/4000/5000	82+	50000
L48T5/8Q/15G-ID DE	F28T5HE	48	15	2300	153	120-277	3000/3500/4000/5000	82+	50000
L48T8/8Q/24G-ID DE	F54T5HO	48	24	3200	133	120-277	3000/3500/4000/5000	82+	50000
Linear T8 5-CCT									
L48T8/8F/8G-ID DE	F32T8	48	8.5	1650	150	120-277	3000/3500/4000/5000/6500	82+	50000
L48T8/8F/12G-ID DE	F32T8	48	12	1800	150	120-277	2700/3000/3500/4000/5000	82+	50000
Linear T8 5-CCT 3-Power Shatterproof Coating									
L48T8/8F/15G-ID DE-AC (10W/12W/15W)	F32T8	48	10/12/15	1625/1825/2250	163/152/150	120-277	3000/3500/4000/5000/6500	82+	50000

AC Direct I T8 Linear Lamp I Double Ended Input

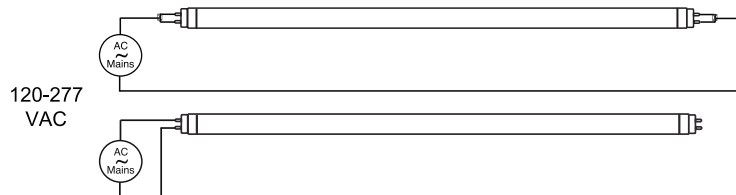


FEATURES AND BENEFITS

- Double End Bypass Connection with Shunted or Single End Bypass Connection with Non-Shunted Tombstones
- Internal Driver
- Optimal Light Output Glass Tube or Shatterproof Plastic Tube Optional
- -20° F to 130° F Ambient Operation Temperature
- Instant on, No delay
- Convenient and quick installat
- Frosted to Prevent Glare
- Suitable for Damp Locations
- 325° Wide beam Angle
- 5 Year Warranty



WIRING DIAGRAM



TYPE - B

Model No.	Replaces	Length (in)	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CRI	Life (h)
Linear T8 Glass								
L48T8/8XX/8G-ID DE	F32T8	48	8.5	1650	195	120 - 277	83+	50000
L48T8/8XX/10G-ID DE	F32T8	48	9.5	1650	174	120 - 277	83+	50000
L48T8/8XX/12G-ID DE	F32T8	48	12	1850	154	120 - 277	83+	50000
L48T8/8XX/15G-ID DE	F32T8	48	15	2200	147	120 - 277	83+	50000
Linear T8 Plastic								
L24T8/8XX/9P-ID DE	F17T8	24	9	1100	122	120 - 277	83+	50000
L36T8/8XX/12P-ID DE	F25T8	36	12	1400	117	120 - 277	83+	50000
L48T8/8XX/8P-ID DE	F32T8	48	8.5	1650	195	120 - 277	83+	50000
L48T8/8XX/12P-ID DE	F32T8	48	12	1800	150	120 - 277	83+	50000
L48T8/8XX/15P-ID DE	F32T8	48	15	2200	146	120 - 277	83+	50000

* XX = 30, 35, 40 or 50; 30 = 3000K, 35 = 3500K, 40 = 4000K and 50 = 5000K (3000K may be subject to lead times and availability).

** NSF applies on plastic lamp only.

AC Direct I LED PLL Lamp



FEATURES AND BENEFITS

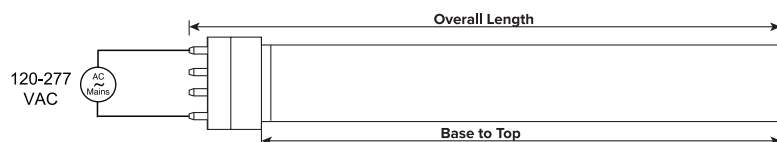
- Internal Driver
- Smooth, Consistent Light
- UL for Safety
- No UV, No Mercury
- Long Life
- High CRI
- Instant on, no delay or warm up time
- Convenient and quick installation
- Utilizes current lamp sockets
- Compatible with controls and sensors
- -20° F to 130° F Ambient Operating Temperature
- 5 Year Warranty



TYPE - B

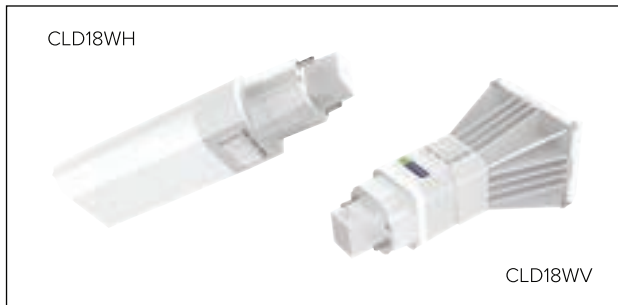
Model No.	Replaces	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI	Life (h)
Compact LED Lamps								
LT18W/835-ID	FT18W	8	640	80	120 - 277	3500	83+	50000
LT18W/840-ID	FT18W	8	640	80	120 - 277	4000	83+	50000
LT18W/850-ID	FT18W	8	640	80	120 - 277	5000	83+	50000
LT24W/835-ID	FT24W	10	800	80	120 - 277	3500	83+	50000
LT24W/840-ID	FT24W	10	800	80	120 - 277	4000	83+	50000
LT24W/850-ID	FT24W	10	800	80	120 - 277	5000	83+	50000
LT36W/835-ID	FT36W	15	1200	80	120 - 277	3500	83+	50000
LT36W/840-ID	FT36W	15	1200	80	120 - 277	4000	83+	50000
LT36W/850-ID	FT36W	15	1200	80	120 - 277	5000	83+	50000
LT40W/835-ID	FT40W/FT55W	18	1800	80	120 - 277	3500	83+	50000
LT40W/840-ID	FT40W/FT55W	18	1800	80	120 - 277	4000	83+	50000
LT40W/850-ID	FT40W/FT55W	18	1800	80	120 - 277	5000	83+	50000

WIRING DIAGRAM



LT series	Overall Length IN (mm)	Base Face to Top IN (mm)
Dimensions		
LT40	21.3" (540)	19.4" (493)
LT36	16.6" (421)	14.7" (374)
LT24	12.8" (326)	10.9" (278)
LT18	9.1" (231)	7.2" (183)

AC Direct I LED PLL Lamp

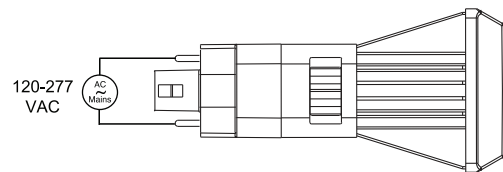
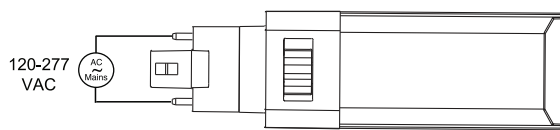


FEATURES AND BENEFITS

- Compatible with 2-Pin and 4-Pin Sockets
- Internal Driver
- Three Adjustable CCT (3000K, 3500K, 4000K)
- -20° F to 130° F Ambient Operating Temperature
- Utilizes G24Q / G24D base
- Frosted to Prevent Glare
- Suitable for Damp Locations
- 5 Year Warranty



WIRING DIAGRAM



Model No.	Direction	Replaces	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI
Compact LED Lamps								
CLD18WH/8T-ID	Horizontal	18W, 26W, 32W, 42W CFQ	8.5	960/1020/1050	113/120/124	120 - 277	3000/3500/4000	83+
CLD18WV/8T-ID	Vertical	18W, 26W, 32W, 42W CFQ	8.5	960/1020/1050	113/120/124	120 - 277	3000/3500/4000	83+

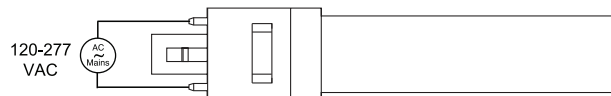


FEATURES AND BENEFITS

- Compatible with 2-Pin G23 Sockets
- Internal Driver
- Three Adjustable CCT (3000K, 4000K, 5000K)
- -20° F to 130° F Ambient Operating Temperature
- Frosted to Prevent Glare
- Suitable for Damp Locations
- 5 Year Warranty



WIRING DIAGRAM



Model No.	Direction	Replaces	Lamp Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Input Voltage (V)	CCT (K)	CRI
Compact LED Lamps								
CLDS9WH/8T-ID	Single-Sided	9W CFT	4.5	400/500/475	89/111/106	120 - 277	3000/4000/5000	83+
CLDD9WH/8T-ID	Double-Sided	9W CFT	4.5	400/500/475	89/111/106	120 - 277	3000/4000/5000	83+

TYPE - B

AC Direct I LED 360° Sign Lamps



FEATURES AND BENEFITS

- Double-sided Design Sign Light
- 360° Beam Angle
- Rotatable End Caps
- Internal Driver
- Compatible with Sensors
- Instant On, No Delay or Warm Up Time
- Convenient and Quick Installation
- Input from Both Ends
- Utilizes R17d Sockets
- Works in Cold Temperature Applications
- Plastic tube is shatterproof
- No UV, No Mercury
- UL for Safety
- High CRI
- 5 Year Warranty

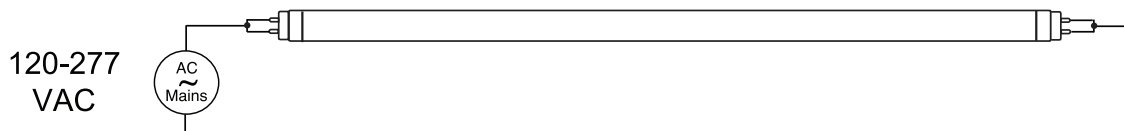


TYPE - B

Model No.	Length (in)	Base Type	Lamp Wattage	Input Voltage (V)	CCT (K)	Initial Lumens	CRI	Beam Angle	Lamp Efficacy (lm/W)	Power Factor	THD
360° Sign Lamps											
LS48T8HO/840/21P-ID DE	48	R17d	21	120 - 277	4000	2500	83+	360	120	>0.90	<20%
LS48T8HO/865/21P-ID DE	48	R17d	21	120 - 277	6500	2500	83+	360	120	>0.90	<20%
LS60T8HO/840/25P-ID DE	60	R17d	25	120 - 277	4000	3000	83+	360	120	>0.90	<20%
LS60T8HO/865/25P-ID DE	60	R17d	25	120 - 277	6500	3000	83+	360	120	>0.90	<20%
LS72T8HO/840/32P-ID DE	72	R17d	32	120 - 277	4000	3840	83+	360	120	>0.90	<20%
LS72T8HO/865/32P-ID DE	72	R17d	32	120 - 277	6500	3840	83+	360	120	>0.90	<20%
LS96T8HO/840/42P-ID DE	96	R17d	42	120 - 277	4000	5000	83+	360	120	>0.90	<20%
LS96T8HO/865/42P-ID DE	96	R17d	42	120 - 277	6500	5000	83+	360	120	>0.90	<20%

* Available by request. Please inquire within.

WIRING DIAGRAM



Type A + B LED T8 Lamps

8ft Slimline & HO Lamps ^{LED}

Compatible with Espen Ballast: VE259MVHIP and VE259120HIP
Easy Assembling from two sections of 4ft tube
ArmorCoat Shatterproof Coating



U-Bent Lamps ^{LED}

Utilizes existing instant start or rapid start G13 sockets
High Performance Plastic Series
DLC Listed



Linear ^{LED}

Med. Bi-Pin, Dual Mode, DLC Listed, Convenient Wiring
Convenient Wiring, Long Life, Type A + B



UniFlex™

LED Solutions
Ballast Compatible
and AC Direct

RetroFlex LED Driver ^{LED}

Dedicated Driver, Instant Start, Constant Current,
0-10V Dimming



Emergency Inverter

90 Minute Illumination Time



Ballast Replacement

High Efficiency, Slim Profile, Instant Start,
Program Start



Emergency Ballast

Maintenance-Free, Long Life
Hi-Temperature Ni-Cad Battery



UniFlex - Type A+B Solution

UniFlex is a line of Hybrid Type A+B LED Linear linear tubes, with industry-leading performance. The lamps can work with an existing fluorescent ballast, as 'plug-n-play', or directly on line voltage if the old ballast is bypassed. For Type A operation, the lamps work with fluorescent electronic ballast, both instant start and programmed start. For Type B operation, UniFlex lamps have an internal driver that accepts 120-277VAC, double-ended input. UniFlex works with existing instant start or rapid start sockets and are compatible with dimming ballasts, controls, and sensors. UniFlex lamps are offered in 2', 3', 4', U-bent, and 8' configurations.



FEATURES AND BENEFITS

Type A mode:

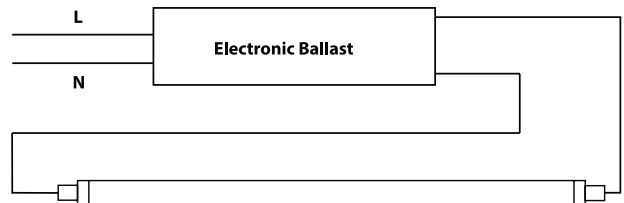
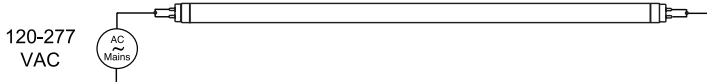
- Works on existing compatible Instant Start¹
- Programmed Start
- Dimming electronic ballast

Type B mode:

- Internal Driver (Direct 120-277VAC input)

- Utilizes existing instant start or rapid start G13 sockets
- Glass tube for superior optical performance
- Long life | High CRI
- Instant on, no delay or warm up time
- Convenient and quick installation
- Works in cold temperature applications
- Compatible with controls and sensors
- Glass tube for superior optical performance
- Continuous Dimming to 10%
- Selectable CCTs simplify retrofit project planning
- 325° Wide Beam Angle
- 5 Year Warranty

WIRING DIAGRAM



Model No.	Length (in)	Power Direct	Power Ballast	Input Voltage (V)	Field-Adjustable CCT (K)	Lumens	CRI	Lamp Efficacy Direct	Lamp Efficacy Ballast	Life (h)
Linear T8										
L24T8/8T/9G-AB	24	9	12	120-277	3500K/4000K/5000K	1450	83	161	121	50000
L24T8/8F/9G-AB	24	9	12	120-277	3000K/3500K/4000K/5000K/6500K	1450	83	161	121	50000
L36T8/8T/11G-AB	36	11	14	120-277	3500K/4000K/5000K	1700	83	154	121	50000
L36T8/8F/11G-AB	36	11	14	120-277	3000K/3500K/4000K/5000K/6500K	1700	83	154	121	50000
L48T8/8T/12G-AB	48	12	15	120 - 277	3500K/4000K/5000K	1800	83	150	120	50000
L48T8/8F/12G-AB	48	12	15	120 - 277	3000K/3500K/4000K/5000K/6500K	1800	83	150	120	50000

¹ See espentech.com for ballast compatibility list.



FEATURES AND BENEFITS

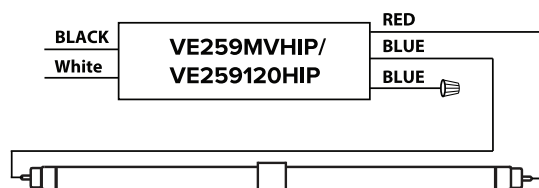
- Type A mode: Compatible with electronic ballast
VE259MVHIP and VE259120HIP
- Type B mode: Internal Driver (Direct 120-277VAC input)
- Long Life
- High CRI
- Instant on, no delay or warm up time
- Convenient and quick installation
- Accessory: Fa8 and R17d End Cap Adapter Converter, Mounting Clip L96T8/8XX/24G-AB default Fa8, L96T8HO/8XX/42G-AB default R17d
- Easy Assembling from two sections of 4ft tube
- Works in cold temperature applications
- ArmorCoat | Shatterproof Coating
- Glass Tube for Optimal Light Output and Heat Diffusion
- 325° Wide Beam Angle
- 5 Year Warranty



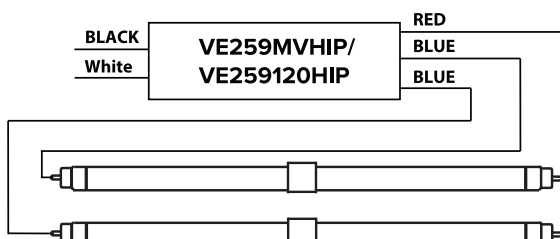
Model No.	Length	Input Voltage (V)	Power w/ Ballast (W)	Power w/ Ballast (W)	CCT	Lumens (lm)	CRI	Lamp Efficacy Direct AC (LPW)	System Efficacy w/ Ballast (LPW)	Life (h)
L96T8/830/24G-AB	96	120-277	24	28	3000k	3600	82	150	128	50000
L96T8/835/24G-AB	96	120-277	24	28	3500k	3600	82	150	128	50000
L96T8/840/24G-AB	96	120-277	24	28	4000k	3600	82	150	128	50000
L96T8/850/24G-AB	96	120-277	24	28	5000k	3600	82	150	128	50000
L96T8HO/830/42G-AB	96	120-277	42	45	3000k	5500	82	130	122	50000
L96T8HO/835/42G-AB	96	120-277	42	45	3500k	5500	82	130	122	50000
L96T8HO/840/42G-AB	96	120-277	42	45	4000k	5500	82	130	122	50000
L96T8HO/850/42G-AB	96	120-277	42	45	5000k	5500	82	130	122	50000

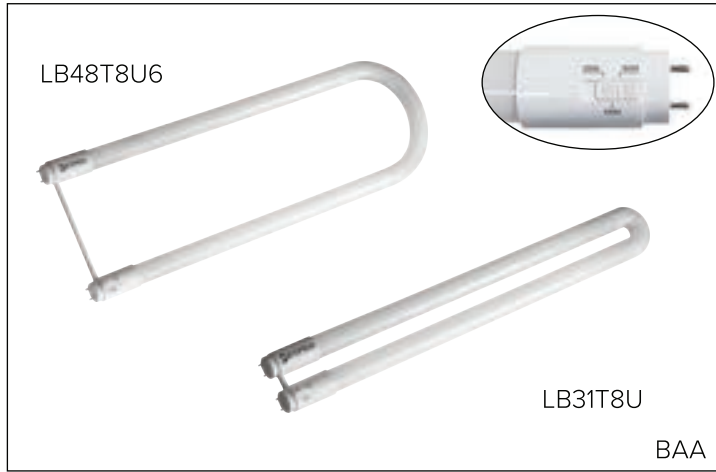
WIRING DIAGRAM

1-LAMP VE259MVHIP/VE250120HIP Wiring (Type A mode)



2-LAMP VE259MVHIP/VE250120HIP Wiring (Type A mode)





FEATURES AND BENEFITS

Type A mode:

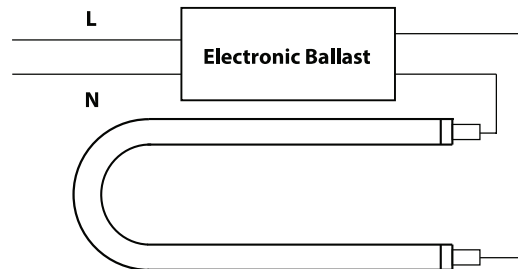
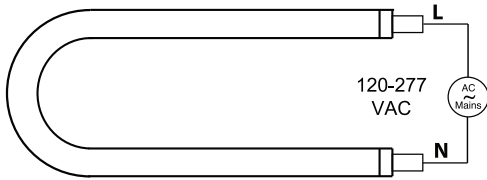
- Works on existing compatible Instant Start²
- Programmed Start
- Dimming electronic ballast

Type B mode:

- Internal Driver (Direct 120-277VAC input)

- Utilizes existing instant start or rapid start G13 sockets
- Glass tube for superior optical performance
- Long life | High CRI
- Instant on, no delay or warm up time
- Convenient and quick installation
- Works in cold temperature applications
- Compatible with controls and sensors
- Shatterproof plastic tube
- Continuous Dimming to 10%
- Selectable CCTs simplify retrofit project planning
- 240° Wide Beam Angle
- 5 Year Warranty

WIRING DIAGRAM



Model No.	Length (in)	Width (in)	Power Direct	Power Ballast	Input Voltage (V)	Field-Adjustable CCT (K)	Lumens (lm)	CRI	Lamp Efficacy Direct	Lamp Efficacy Ballast	Life (h)
U-bent T8											
LB31T8U/8T/13P-AB	24	1-5/8	13	15.5	120-277	3500K/4000K/5000K	1950	83	150 ¹	125 ¹	50000
LB31T8U/8F/13P-AB	24	1-5/8	13	15.5	120-277	3000K/3500K/4000K/5000K/6500K	1950	83	150 ¹	125 ¹	50000
LB48T8U6/8T/13P-AB	24	6	13	15.5	120-277	3500K/4000K/5000K	1950	83	150 ¹	125 ¹	50000
LB48T8U6/8F/13P-AB	24	6	13	15.5	120-277	3000K/3500K/4000K/5000K/6500K	1950	83	150 ¹	125 ¹	50000

¹ Calculation based on (lm/W)

² See espentech.com for ballast compatibility list.

LED LAMP WITH EXTERNAL DRIVER | Type C



driver^{LED}

Constant Current
Multi-Channel 0-10V & power line dimming
Field Adjustable through power line.

linear^{LED}

G13 or G5, External Driver
Dimmable, Long Life, Convenient Wiring



TYPE - C



Emergency Inverter

90 Minute Illumination Time



ESPEN CORETECH LED SYSTEM

LED lamps with external driver for full controllability ESPEN's CoreTech LED system consists of industry-leading LED lamps and programmable multi-channel drivers. The CoreTech system utilizes the exact same wiring diagram as fluorescent ballasts. The upgrade is handled the same as replacing an electronic ballast and lamps. Your facility can save up to 50% of system power while maintaining or increasing illumination levels.

The CoreTech multi-channel design permits all lamps to work independently to prevent total darkness when one lamp fails. The user-friendly programmability allows you to set the same system for normal output, high output, or low output, to match your application requirements.

LED T5 HE & HO LAMP WITH EXTERNAL DRIVER | Type C

TYPE - C



FEATURES AND BENEFITS

- No Polarity, Lamp Ends Can Be Reversed
- Compatible with Controls and Sensors
- Optimal Light Output Glass Tube or Shatterproof Plastic Tube Optional
- 50,000 Hours Life with No limitation on On/Off Cycles
- -20° F to 130° F Ambient Operating Temperature
- 1 or 2 Lamps Compatible with Espen VPL50 LED Driver
- 3 or 4 Lamps Compatible with Espen VPL100 LED Driver
- 240° Wide Beam Angle
- Support AB Switch Step-Dimming
- 0-10V Dimming
- Class 2 Output
- 5 Year Warranty



For T5HE Replacement (250mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T5/8XX/11G-XT	24	Low	F14T5HE	Glass	8	11	1200	150	120-277	250mA	82+	50000
L36T5/8XX/18G-XT	36	Low	F21T5HE	Glass	9	12	1400	155	120-277	250mA	82+	50000
L48T5/8XX/24G-XT	48	Low	F28T5HE	Glass	11	14	1700	155	120-277	250mA	82+	50000
L24T5/8XX/11P-XT	24	Low	F14T5HE	Plastic	8	11	1200	150	120-277	250mA	82+	50000
L36T5/8XX/18P-XT	36	Low	F21T5HE	Plastic	9	12	1400	155	120-277	250mA	82+	50000
L48T5/8XX/24P-XT	48	Low	F28T5HE	Plastic	11	14	1700	155	120-277	250mA	82+	50000

For T5HE Replacement (360mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T5/8XX/11G-XT	24	Normal	F14T5HE	Glass	9	12	1300	144	120-277	360mA	82+	50000
L36T5/8XX/18G-XT	36	Normal	F21T5HE	Glass	13	16	1900	146	120-277	360mA	82+	50000
L48T5/8XX/24G-XT	48	Normal	F28T5HE	Glass	15	18	2200	146	120-277	360mA	82+	50000
L24T5/8XX/11P-XT	24	Normal	F14T5HE	Plastic	9	12	1300	144	120-277	360mA	82+	50000
L36T5/8XX/18P-XT	36	Normal	F21T5HE	Plastic	13	16	1900	146	120-277	360mA	82+	50000
L48T5/8XX/24P-XT	48	Normal	F28T5HE	Plastic	15	18	2200	146	120-277	360mA	82+	50000

For T5HO Replacement (500mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T5/8XX/11G-XT	24	High	F24T5HO	Glass	12	15	1700	142	120-277	500mA	82+	50000
L36T5/8XX/18G-XT	36	High	F39T5HO	Glass	18	21	2500	139	120-277	500mA	82+	50000
L48T5/8XX/24G-XT	48	High	F54T5HO	Glass	24	27	3300	138	120-277	500mA	82+	50000
L24T5/8XX/11P-XT	24	High	F24T5HO	Plastic	12	15	1700	142	120-277	500mA	82+	50000
L36T5/8XX/18P-XT	36	High	F39T5HO	Plastic	18	21	2500	139	120-277	500mA	82+	50000
L48T5/8XX/24P-XT	48	High	F54T5HO	Plastic	24	27	3300	138	120-277	500mA	82+	50000

* XX = 30, 35, 40 or 50; 30 = 3000K, 35 = 3500K, 40 = 4000K and 50 = 5000K (3000K may be subject to lead times and availability).

** NSF applies on plastic lamp only.

LED MULTI-CCT T8 LAMP WITH EXTERNAL DRIVER | Type C

**NEW
PRODUCT**



FEATURES AND BENEFITS

- No Polarity, Lamp Ends Can Be Reversed
- Compatible with Controls and Sensors
- Shatterproof Plastic Tube Optional
- 50,000 Hours Life with No limitation on On/Off Cycles
- -20° F to 130° F Ambient Operating Temperature
- 1 or 2 Lamps Compatible with Espen VPL50 LED Driver
- 3 or 4 Lamps Compatible with Espen VPL100 LED Driver
- 5-CCT Field-Adjustable (2700K/3000K/3500K/4000K/5000K)
- 325° Wide Beam Angle
- Support AB Switch Step-Dimming
- 0-10V Dimming
- Class 2 Output
- 5 Year Warranty

TYPE - C



Low Output (250mA Driving Current)

Model No.	Length (in)	Driver Current	Replaces	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Drive Voltage (V)	CRI	Life (h)	Current Settings
Linear T8											
L24T8/8F/8P-XT	24	Low	F17T8	8	11	1200	150	120-277	82+	50000	250mA
L36T8/8F/11P-XT	36	Low	F25T8	9	12	1400	155	120-277	82+	50000	250mA
L48T8/8F/15P-XT	48	Low	F32T8	10	13	1600	150	120-277	82+	50000	250mA

Normal Output (300mA Driving Current)

Model No.	Length (in)	Driver Current	Replaces	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Drive Voltage (V)	CRI	Life (h)	Current Settings
Linear T8											
L24T8/8F/8P-XT	24	Normal	F17T8	9	12	1300	144	120-277	82+	50000	300mA
L36T8/8F/11P-XT	36	Normal	F25T8	11	14	1600	145	120-277	82+	50000	300mA
L48T8/8F/15P-XT	48	Normal	F32T8	12	15	1800	150	120-277	82+	50000	300mA

High Output (360mA Driving Current)

Model No.	Length (in)	Driver Current	Replaces	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Drive Voltage (V)	CRI	Life (h)	Current Settings
Linear T8											
L24T8/8F/8P-XT	24	High	F17T8	11	14	1600	145	120-277	82+	50000	360mA
L36T8/8F/11P-XT	36	High	F25T8	13	16	1900	146	120-277	82+	50000	360mA
L48T8/8F/15P-XT	48	High	F32T8	15	18	2200	146	120-277	82+	50000	360mA

LED T8 LAMP WITH EXTERNAL DRIVER | Type C

TYPE - C



FEATURES AND BENEFITS

- No Polarity, Lamp Ends Can Be Reversed
- Compatible with Controls and Sensors
- Optimal Light Output Glass Tube or Shatterproof Plastic Tube Optional
- 50,000 Hours Life with No limitation on On/Off Cycles
- -20° F to 130° F Ambient Operating Temperature
- 1 or 2 Lamps Compatible with Espen VPL50 LED Driver
- 3 or 4 Lamps Compatible with Espen VPL100 LED Driver
- 325° Wide Beam Angle
- Support AB Switch Step-Dimming
- 0-10V Dimming
- Class 2 Output
- 5 Year Warranty



For T8 LBF Replacement (250mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T8/8XX/8G-XT	24	Low	F17T8	Glass	8	11	1200	150	120-277	250mA	82+	50000
L36T8/8XX/11G-XT	36	Low	F25T8	Glass	9	12	1400	155	120-277	250mA	82+	50000
L48T8/8XX/15G-XT	48	Low	F32T8	Glass	10	13	1600	160	120-277	250mA	82+	50000
L24T8/8XX/8P-XT	24	Low	F17T8	Plastic	8	11	1200	150	120-277	250mA	82+	50000
L36T8/8XX/11P-XT	36	Low	F25T8	Plastic	9	12	1400	155	120-277	250mA	82+	50000
L48T8/8XX/15P-XT	48	Low	F32T8	Plastic	10	13	1600	160	120-277	250mA	82+	50000

For T8 NBF Replacement (300mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T8/8XX/8G-XT	24	Normal	F17T8	Glass	9	12	1300	144	120-277	300mA	82+	50000
L36T8/8XX/11G-XT	36	Normal	F25T8	Glass	11	14	1600	145	120-277	300mA	82+	50000
L48T8/8XX/15G-XT	48	Normal	F32T8	Glass	12	15	1800	150	120-277	300mA	82+	50000
L24T8/8XX/8P-XT	24	Normal	F17T8	Plastic	9	12	1300	144	120-277	300mA	82+	50000
L36T8/8XX/11P-XT	36	Normal	F25T8	Plastic	11	14	1600	145	120-277	300mA	82+	50000
L48T8/8XX/15P-XT	48	Normal	F32T8	Plastic	12	15	1800	150	120-277	300mA	82+	50000

For T8 HBF Replacement (360mA Driving Current)

Model No.	Length (in.)	Driver Mode	Replaces	Lamp Material	Lamp Power (W)	System Power (W)	Lumens (lm)	Lamp Efficacy (lm/W)	Driver Voltage (V)	Current Settings	CRI	Life (h)
L24T8/8XX/8G-XT	24	High	F17T8	Glass	11	14	1600	145	120-277	360mA	82+	50000
L36T8/8XX/11G-XT	36	High	F25T8	Glass	13	16	1900	146	120-277	360mA	82+	50000
L48T8/8XX/15G-XT	48	High	F32T8	Glass	15	18	2200	146	120-277	360mA	82+	50000
L24T8/8XX/8P-XT	24	High	F17T8	Plastic	11	14	1600	145	120-277	360mA	82+	50000
L36T8/8XX/11P-XT	36	High	F25T8	Plastic	13	16	1900	146	120-277	360mA	82+	50000
L48T8/8XX/15P-XT	48	High	F32T8	Plastic	15	18	2200	146	120-277	360mA	82+	50000

* XX = 30, 35, 40 or 50; 30 = 3000K, 35 = 3500K, 40 = 4000K and 50 = 5000K (3000K may be subject to lead times and availability).

** NSF applies on plastic lamp only.

Field Adjustable Driver for Type-C LED's | Type C



VPL50
TAA



VPL100
TAA

TYPE - C

FEATURES AND BENEFITS

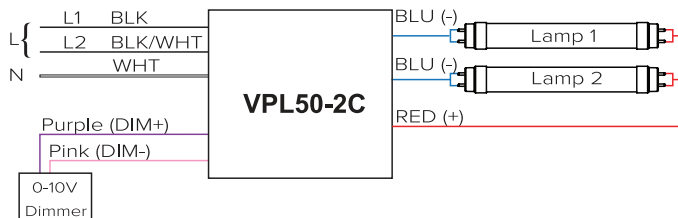


- 3-Level Selectable Drive Current
- Universal Voltage (120 - 277V)
- Multiple Output Channels
- Constant Current | 2 Channels
- Output Current Selectable through Line Lead
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

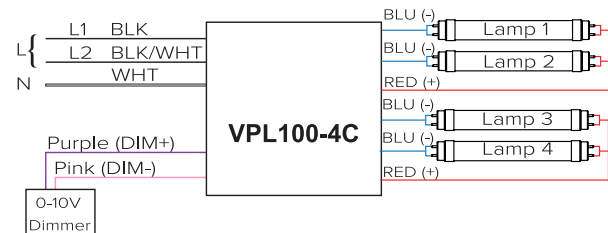


- 3-Level Selectable Drive Current
- Universal Voltage (120-277V)
- Multiple Output Channels
- Constant Current | 4 Channels
- Output Current Selectable through Line Lead
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

2 LAMP WIRING DIAGRAM



4 LAMP WIRING DIAGRAM



Model No.	Driver Type	No. of Channels	Max Input Wattage (W)	Input Voltage (V)	Output Current Selection (mA)	Output Voltage (V)	Dimming	Aux Power
3-level Output Selectable Driver								
VPL50-2C-025/030/036	Constant Current	2	41	120 - 277	250/300/360	20-48	0 - 10V	-
VPL100-4C-025/030/036	Constant Current	4	81	120 - 277	250/300/360	20-48	0 - 10V	-
VPL50-2C-025/030/036	Constant Current	2	56	120 - 277	250/300/360	20-48	0 - 10V	-

See espentech.com for CoreTech™ and VersaLinear™ specifications.

Field Adjustable Driver w. Aux Power for Type-C LED's | Type C

TYPE - C



FEATURES AND BENEFITS

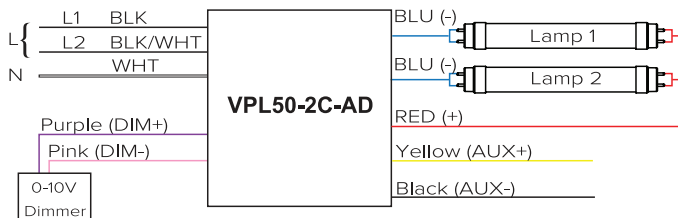


- 3-Level Selectable Drive Current
- Universal Voltage (120 - 277V)
- Multiple Output Channels
- Constant Current | 2 Channels
- Output Current Selectable through Line Lead
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

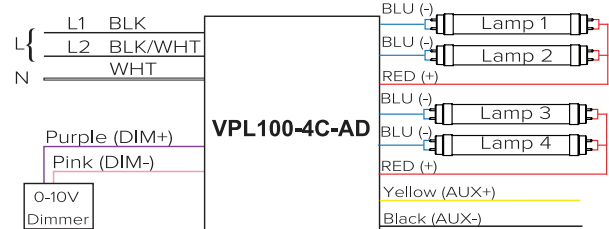


- 3-Level Selectable Drive Current
- Universal Voltage (120-277V)
- Multiple Output Channels
- Constant Current | 4 Channels
- Output Current Selectable through Line Lead
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

2 LAMP WIRING DIAGRAM



4 LAMP WIRING DIAGRAM



Model No.	Driver Type	No. of Channels	Max Input Wattage (W)	Input Voltage (V)	Output Current Selection (mA)	Output Voltage (V)	Dimming	Aux Power
3-level Output Selectable Driver								
VPL50-2C-AD-025/030/036	Constant Current	2	84	120 - 277	250/300/360	20-48	0 - 10V	12V Max.200mA
VPL100-4C-AD-025/030/036	Constant Current	4	59	120 - 277	250/300/360	20-48	0 - 10V	12V Max.200mA
VPL50-2C-AD-025/036/050	Constant Current	2	84	120 - 277	250/300/360	20-48	0 - 10V	12V Max.200mA

See espentech.com for CoreTech™ and VersaLinear™ specifications.

Field Adjustable Driver w. Dual Current Setting for Type-C LED's | Type C



VPL50
TAA



VPL100
TAA

TYPE - C

FEATURES AND BENEFITS

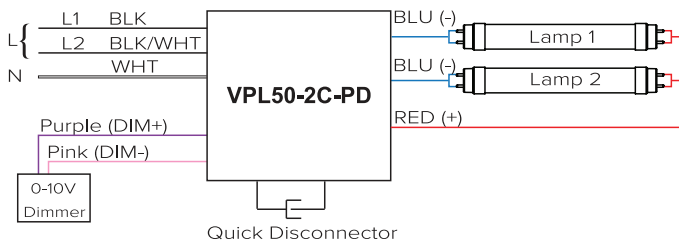


- 3-Level Selectable Drive Current
- Universal Voltage (120 - 277V)
- Multiple Output Channels
- Constant Current | 2 Channels
- Output Current Selectable through Line Lead
- Suitable for AB-switch Step-dimming
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

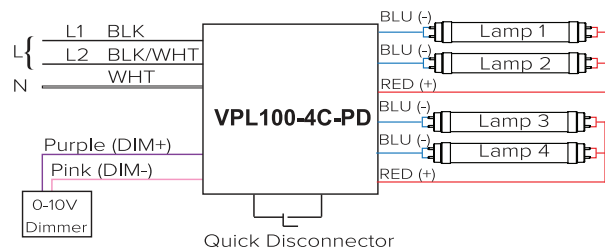


- 3-Level Selectable Drive Current
- Universal Voltage (120-277V)
- Multiple Output Channels
- Constant Current | 4 Channels
- Output Current Selectable through Line Lead
- Suitable for AB-switch Step-dimming
- 0-10V Dimmable
- PF > 0.9, THD < 20% @ Full Load
- Compatible with LED modules and Coretech LED tubes
- UL, cUL, UL8750 Class 2
- FCC Part 15 Class A

2 LAMP WIRING DIAGRAM



4 LAMP WIRING DIAGRAM



Model No.	Driver Type	No. of Channels	Max Input Wattage (W)	Input Voltage (V)	Output Current Selection (mA)	Output Voltage (V)	Dimming
3-level Output Selectable Driver							
VPL50-2C-PD-025/030/036	Constant Current	2	41	120 - 277	Disconnecter Opened: 250/300/360 Disconnecter Closed: 250/300/360	20-48	0 - 10V
VPL100-4C-PD-025/030/036	Constant Current	4	81	120 - 277	Disconnecter Opened: 250/300/360 Disconnecter Closed: 250/300/360	20-48	0 - 10V

See espentech.com for CoreTech™ and VersaLinear™ specifications.



versaLinear^{LED}

Designed to Achieve High Lumen Output
Each Kit Includes LED Modules Paired
with an LED Driver
Available in HE



Commercial Downlight

LED Center Basket
Available in 2' x 2' and 2' x 4' Sizes



Troffer Kit^{LED}

LED Center Basket
Available in 2' x 2' and 2' x 4' Sizes



Panel Kit^{LED}

Ultra-Thin LED Panel
Available in 2' x 2' and 2' x 4' Sizes



Channel Kit^{LED}

High Efficiency LED Module & LED Driver
Provides Uniform Ambient Lighting



versaKIT Strips^{LED}

Converts 8ft T12 or T8 Fluorescent
Strip Lights to the latest 4ft LED Technology
Holds Two Rows of Two LED T8 Lamps
Compatible with Type-A, Type-B, & Type-C Lamps for Rebate Programs



Emergency Inverter

Suitable for LED Type B or A+B lamps, retrofit kits
and LED fixtures, esp. integrated fixtures
Powers up the whole fixture

LED Retrofit Solutions

The VersaKit family include more than 50 models of LED Linear retrofit kits. Many of the VersaKit retrofit kits create the look of a completely new fixture, but without the labor of replacing the fixture. Utilizing the existing housing drops installation time to just minutes, and the ceiling doesn't need to be disturbed. The VersaKit retrofit kit family includes: Flat Panel Retrofit Kits, Channel Retrofit Kits, LED Channel Retrofit Kits, Troffer Retrofit Kits, and Commercial Recess Downlights.

Commercial Recessed Downlight



BAA/TAA

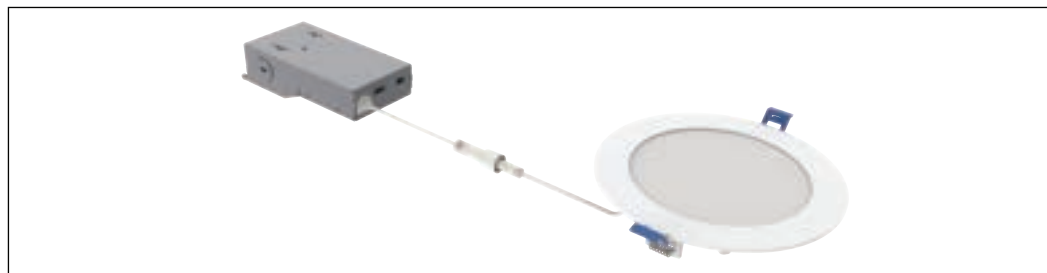
FEATURES AND BENEFITS

- Universal Voltage 120-277V
- Three Adjustable Lumen Output
- Three Adjustable CCT Options (3000K, 3500K, 4000K)
- 0-10V Dimmable
- Works in cold temperature applications
- 5 year warranty



Model No.	Type	Power Adjustable (W)	Input Voltage (V)	Lumens Adjustable (lm)	CRI	Beam Angle	Power Factor	Dia. X Height
CRI80								
VEKR4D/8T/10W-10V	4" Downlight	5 / 7 / 10	120-277	550 / 770 / 1100	80	100°	0.9	5.71" x 3.70"
VEKR6D/8T/13W-10V	6" Downlight	6.5 / 9 / 13	120-277	790 / 1100 / 1560	80	100°	0.9	8.27" x 4.25"
VEKR8D/8T/17W-10V	8" Downlight	8.5 / 12 / 17	120-277	1030 / 1450 / 2040	80	100°	0.9	10.24" x 4.57"
VEKR9.5D/8T/27W-10V	9.5" Downlight	17 / 21 / 27	120-277	2070 / 2500 / 3240	80	100°	0.9	11.22" x 5.04"
CRI90								
VEKR4D/9T/14W-10V	4" Downlight	6 / 9 / 14	120-277	550 / 770 / 1100	90	100°	0.9	5.71" x 3.70"
VEKR6D/9T/21W-10V	6" Downlight	8.5 / 13.5 / 21	120-277	770 / 1100 / 1650	90	100°	0.9	8.27" x 4.25"
VEKR8D/9T/27W-10V	8" Downlight	12 / 19 / 27	120-277	1100 / 1650 / 2200	90	100°	0.9	10.24" x 4.57"
VEKR9.5D/9T/40W-10V	9.5" Downlight	23 / 32 / 40	120-277	1900 / 2450 / 3000	90	100°	0.9	11.22" x 5.04"

RETROFIT KITS



FEATURES AND BENEFITS

- Universal Voltage 120-277V
- Three Adjustable Lumen Output
- Five Adjustable CCT Options (3000K, 3500K, 4000K)
- 0-10V Dimmable
- Works in cold temperature applications
- 5 year warranty

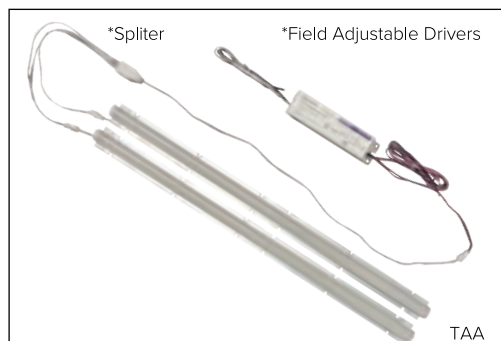


Model No	Type	Power Adjustable (W)	Input Voltage (V)	Lumens Adjustable (lm)	CRI	Beam Angle	Power Factor	Dia. X Height
CRI80								
VSRD/4R/12WS/CS5/WOD/UNV/10V	4" Downlight	6 / 9 / 12	120-277	525 / 775 / 1000	80	110°	0.9	5.04" x 0.94"
VSRD/6R/17WS/CS5/WOD/UNV/10V	6" Downlight	9 / 12 / 17	120-277	800 / 1050 / 1450	80	110°	0.9	6.85" x 0.94"
VSRD/8R/23WS/CS5/WOD/UNV/10V	8" Downlight	12 / 17 / 23	120-277	1025 / 1450 / 1900	80	110°	0.9	8.86" x 0.81"

versaKIT™ versaLinear™



LED Linear Module Retrofit Kits (Single-Channel 160lm/W)



FEATURES AND BENEFITS

- Each Kit Includes LED Modules Paired with an LED Driver
- LED Modules Feature Durable Aluminium Structures
- Magnetic Backing for Easier Installation
- NSF 2 Complied with PC Diffuser Available
- Kits Retrofit 2, 3 and 4ft T5 and T8 Fixtures
- -20° F to 130° F Ambient Operating Temperature
- End-to-End Lighting with No Dark Spots
- 120 - 277V Input Voltage, PF > 0.9, THD < 20%
- 0-10V Dimmable, CRI 80+
- 5 Year Warranty



RETROFIT KITS

Espen Model No.	No. of Modules	Driver Included	Splitter Included	Driver Current Selection (mA)	Low Mode			Normal Mode				High Mode			
					System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)	Driver Current Selection (mA)	System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)	Driver Current Selection (mA)	System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)
2FT - Bar Kit															
VEBK21F/8XX	1	VEL25050MVHDA-10V-P 025/035/050	BK-S1L	-				-				250	10	1625	162
VEBK22F/8XX	2	VEL25050MVHDA-10V-P 025/035/050	BK-S2L	250	10	1625	162	350	14.5	2275	156	500	21	3200	152
VEBK23F/8XX	3	VEL25050MVHDA-10V-P 025/035/050	BK-S3L	350	14.5	2300	159	500	20.5	3200	156	-			
VEBK24F/8XX	4	VEL60130MVHDA-10V-P 065/095/130	BK-S4L	-				650	26.5	4100	155	950	40.5	6150	152
3FT - Bar Kit															
VEBK31F/8XX	1	VEL25050MVHDA-10V-P 025/035/050	BK-S1L	-				-				250	10	1625	162
VEBK32F/8XX	2	VEL25050MVHDA-10V-P 025/035/050	BK-S2L	250	10	1650	165	350	14	2275	162	500	20.5	3300	161
VEBK33F/8XX	3	VEL25050MVHDA-10V-P 025/035/050	BK-S3L	350	14	2300	164	500	20.5	3325	162	-			
VEBK34F/8XX	4	VEL60130MVHDA-10V-P 065/095/130	BK-S4L	-	-	-	-	650	26	4275	164	950	40	6525	163
4FT - Bar Kit															
VEBK41F/8XX	1	VEL25050MVHDA-10V-P 025/035/050	BK-S1L	-				-				250	10	1650	165
VEBK42F/8XX	2	VEL25050MVHDA-10V-P 025/035/050	BK-S2L	250	10	1650	165	350	14	2300	164	500	20	3275	164
VEBK43F/8XX	3	VEL25050MVHDA-10V-P 025/035/050	BK-S3L	350	14	2325	166	500	20	3300	165	-			
VEBK44F/8XX L (Low Power)	4	VEL25050MVHDA-10V-P 025/035/050	BK-S4L	500	19.5	3250	166	-				-			
VEBK44F/8XX	4	VEL60130MVHDA-10V-P 065/095/130	BK-S4L	-				650	25.5	4250	166	950	38	6300	166
4FT HO - Bar Kit															
VEBK41F/HO/8XX	1	VEL25050MVHDA-10V-P 025/035/050	BK-S1L	250	10	1700	170	350	14	2325	166	500	20.5	3350	163
VEBK42F/HO/8XX	2	VEL60130MVHDA-10V-P 065/095/130	BK-S2L	-				650	26	4325	166	950	38.5	6300	163
VEBK43F/HO/8XX	3	VEL60130MVHDA-10V-P 065/095/130	BK-S3L	650	26	4300	165	950	38	6250	164	1300	52.5	8575	163
VEBK44F/HO/8XX	4	VEL60130MVHDA-10V-P 065/095/130	BK-S4L	950	38	6400	168	1300	52	8675	167	-			

* XX = 30, 35, 40 or 50; 30 = 3000K, 35 = 3500K, 40 = 4000K and 50 = 5000K (3000K may be subject to lead times and availability).

versaKIT™ versaLinear™



LED Linear Module Retrofit Kits (Multiple-Channel)



FEATURES AND BENEFITS

- Each Kit Includes LED Modules Paired with an LED Driver
- LED Modules Feature Durable Aluminium Structures
- Magnetic Backing for Easier Installation
- NSF 2 Complied with PC Diffuser Available
- Kits Retrofit 2, 3 and 4ft T5 and T8 Fixtures
- -20° F to 130° F Ambient Operating Temperature
- End-to-End Lighting with No Dark Spots
- 120 - 277V Input Voltage, PF > 0.9, THD < 20%
- 0-10V Dimmable, CRI 80+
- 5 Year Warranty



Esen Model No.	Replaces	Diffuser Lens	No. of Modules	Driver Included	Low Mode			Normal Mode			High Mode		
					System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)	System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)	System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)
2FT - High Efficiency													
VEKM-L21F/8XX	1xF17T8	Yes	1	VPL50-2C	8.5	1125	132	10	1325	132	12	1550	130
VEKM-L21C/8XX	1xF17T8	No	1	VPL50-2C	8.5	1250	147	10	1475	147.5	12	1725	144
VEKM-L22F/8XX	2xF17T8	Yes	2	VPL50-2C	16	2150	135	19	2550	135	24	3125	130
VEKM-L22C/8XX	2xF17T8	No	2	VPL50-2C	16	2375	148	19	2825	149	24	3475	145
VEKM-L23F/8XX	3xF17T8	Yes	3	VPL100-4C	24	3250	135	29	3900	135	34	4425	130
VEKM-L23C/8XX	3xF17T8	No	3	VPL100-4C	24	3600	150	29	4325	149	34	4925	145
VEKM-L24F/8XX	4xF17T8	Yes	4	VPL100-4C	32	4350	136	38.5	5150	134	43	5600	130
VEKM-L24C/8XX	4xF17T8	No	4	VPL100-4C	32	4825	150	38.5	5725	149	43	6225	145
3FT - High Efficiency													
VEKM-L31F/8XX	1xF25T8	Yes	1	VPL50-2C	11.5	1525	133	13.5	1800	133	16	2075	130
VEKM-L31C/8XX	1xF25T8	No	1	VPL50-2C	11.5	1700	148	13.5	2000	148	16	2300	144
VEKM-L32F/8XX	2xF25T8	Yes	2	VPL50-2C	22.5	3050	136	27	3650	136	32	4150	130
VEKM-L32C/8XX	2xF25T8	No	2	VPL50-2C	22.5	3375	150	27	4050	150	32	4600	144
VEKM-L33F/8XX	3xF25T8	Yes	3	VPL100-4C	33.5	4550	136	40.5	5450	135	46	5975	130
VEKM-L33C/8XX	3xF25T8	No	3	VPL100-4C	33.5	5050	151	40.5	6050	149	46	6625	144
VEKM-L34F/8XX	4xF25T8	Yes	4	VPL100-4C	44.5	6050	136	53.5	7250	136	60	7800	130
VEKM-L34C/8XX	4xF25T8	No	4	VPL100-4C	44.5	6725	151	53.5	8050	150	60	8675	145
4FT - High Efficiency													
VEKM-L41F/8XX	1xF32T8	Yes	1	VPL50-2C	12	1625	136	14.5	1975	136	18	2350	130
VEKM-L41C/8XX	1xF32T8	No	1	VPL50-2C	12	1800	150	14.5	2200	152	18	2600	144
VEKM-L42F/8XX	2xF32T8	Yes	2	VPL50-2C	23.5	3250	139	28.5	3950	139	35	4550	130
VEKM-L42C/8XX	2xF32T8	No	2	VPL50-2C	23.5	3600	153	28.5	4375	154	35	5050	144
VEKM-L43F/8XX	3xF32T8	Yes	3	VPL100-4C	35.5	4900	138	42.5	5875	138	50	6500	130
VEKM-L43C/8XX	3xF32T8	No	3	VPL100-4C	35.5	5450	154	42.5	6525	154	50	7225	145
VEKM-L44F/8XX	4xF32T8	Yes	4	VPL100-4C	47	6525	139	57	7900	139	65	8450	130
VEKM-L44C/8XX	4xF32T8	No	4	VPL100-4C	47	7250	154	57	8775	154	65	9375	144
Esen Model No.	Replaces	Diffuser Lens	No. of Modules	Module Included	Driver Included	System Wattage (W)	Lumens (lm)	System Efficacy (lp/w)					
4FT HO - High Output													
VEKM-L41F/HO/8XX	1xF54T5HO	Yes	1	VLM4824F/HO/8XX	VPL50-2C	23	3175	138					
VEKM-L41C/HO/8XX	1xF54T5HO	No	1	VLM4824C/HO/8XX	VPL50-2C	23	3575	145					
VEKM-L42F/HO/8XX	2xF54T5HO	Yes	2	VLM4824F/HO/8XX	VPL100-4C	44.5	6150	138					
VEKM-L42C/HO/8XX	2xF54T5HO	No	2	VLM4824C/HO/8XX	VPL100-4C	44.5	6900	145					
4FT VHO - Very High Output													
VEKM-L41F/VHO/8XX	1xF95T5HO	Yes	1	VLM4848F/VHO/8XX	VPL100-4C	44.5	6225	140					
VEKM-L41C/VHO/8XX	1xF95T5HO	No	1	VLM4848C/VHO/8XX	VPL100-4C	44.5	7000	164					

* XX = 30, 35, 40 or 50; 30 = 3000K, 35 = 3500K, 40 = 4000K and 50 = 5000K (3000K may be subject to lead times and availability).



LED Retrofit Kits: 3-Level, 3-CCT Adjustable

*Center Basket Retrofit kit
BAA/TAA



*Panel Retrofit kit
BAA/TAA



FEATURES AND BENEFITS

- Utilizes Existing Housing to Reduce Installation Cost
- Kits Retrofit 1'x4', 2'x2' and 2'x4' Fixtures
- Installation Bracket and side rails included
- Air-return rails, Surface Mount Kit, EM Backup available
- 0-10V Dimming, dim-to-off
- Control Ready, Sensor-Ready-Bracket Pre-wired
- Auxiliary Power 12V, max. 100mA
- -20° F to 130° F Ambient Operating Temperature
- 120 - 277V Input Voltage, PF > 0.9, THD < 20%
- L70 > 100,000 hours
- CRI > 80 by Default, CRI > 90 available
- 5 Year Warranty



Model No.	Retrofits	Field-Adjustable Power (W)	Lumens (lm)	Efficacy (lm/W)	Field-Adjustable CCT (K)	CRI
Troffer Retrofit kit						
VEKT1X4/8T(-AD)(-SRB) (20W/25W/30W)	1' x 4'	20W/25W/30W	2500/3125/3750	125	3500/4000/5000	82+
VEKT2X2/8T(-AD)(-SRB) (20W/25W/30W)	2' x 2'	20W/25W/30W	2500/3125/3750	125	3500/4000/5000	82+
VEKT2X4/8T(-AD)(-SRB) (25W/30W/34W)	2' x 4'	25W/30W/34W	3125/3750/4250	125	3500/4000/5000	82+
VEKT2X4/8T(-AD)(-SRB) (46W/52W/56W)	2' x 4'	46W/52W/56W	5750/6500/7000	125	3500/4000/5000	82+
Panel Retrofit kit						
VEKT-DP1X4(-AD)(-SRB) (18W/22W/25W)	1' x 4'	18W/22W/25W	2250/2750/3125	125	3500/4000/5000	82+
VEKT-DP2X2(-AD)(-SRB) (18W/22W/25W)	2' x 2'	18W/22W/25W	2250/2750/3125	125	3500/4000/5000	82+
VEKT-DP2X4(-AD)(-SRB) (23W/30W/36W)	2' x 4'	23W/30W/36W	2875/3750/4500	125	3500/4000/5000	82+

OPTIONS: TAA (Trade Agreement Act Compliant)

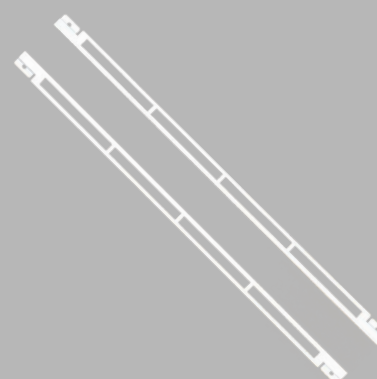
*Installation Bracket (Included)



*Side Rails (Included)



*Air-Return Side Rails (Available)



LED Channel Retrofit Kits: 3-Level, 3-CCT Adjustable



FEATURES AND BENEFITS

- Utilizes Existing Housing to Reduce Installation Cost
- Universal Design Kits Retrofit 4' and 8' Strip Fixtures
- Diffuser Lens Provides Uniform Ambient Lighting and Reduce Glare
- EM Backup available
- 0-10V Dimming, dim-to-off
- Auxiliary Power 12V, max. 100mA
- -20° F to 130° F Ambient Operating Temperature
- 120 - 277V Input Voltage, PF > 0.9, THD < 20%
- L70 > 100,000 hours
- 5 Year Warranty



Model No.	Retrofits	Field-Adjustable Power (W)	Lumens (lm)	Efficacy (lm/W)	Field-Adjustable CCT (K)	CRI
Troffer Retrofit kit						
VEKL4F/30-8T (18W/25W/30W)	4' Strip	18W/25W/30W	2350/3250/3900	130	3500/4000/5000	82+
VEKL4F/45-8T (34W/38W/45W)	4' Strip	34W/38W/45W	4425/4950/5850	130	3500/4000/5000	82+
Panel Retrofit kit						
VEKL8F/54-8T (38W/46W/54W)	8' Strip	38W/46W/54W	4950/5975/7025	130	3500/4000/5000	82+
VEKL8F/90-8T (65W/75W/90W)	8' Strip	65W/75W/90W	8450/9750/11700	130	3500/4000/5000	82+

OPTIONS: TAA (Trade Agreement Act Compliant)

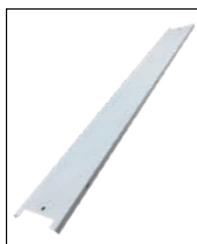


FEATURES AND BENEFITS

- Converts 8 Foot T12 or T8 Fluorescent Strip Lights to the Latest 4FT LED Technology
- Holds Two Rows of Two LED T8 Lamps
- Compatible with Type A, B, & C Lamps
- 5 Year Warranty



[1] Universal Socket Plate



[2] Ballast Cover (white)



[8] Screws



[4] Quarter Turn Fasteners



[8] Sockets

Model No.	Socket Type	Case Qty.
8 FT Channel Retrofit Kit for Linear LED Lamps		
RXS8-432-USP-WH	Shunted	10
RXS8(NS)-432-USP-WH	Non-Shunted	10

Troffer Fixture

LED Fixtures: 3-Level, 3-CCT Adjustable

*Center Basket Troffer
BAA/TAA



*Panel
BAA/TAA



FEATURES AND BENEFITS

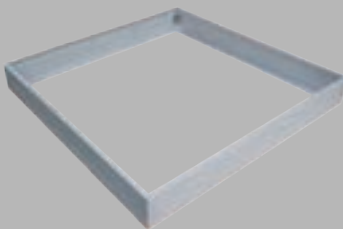
- Available in 1'x4', 2'x2' and 2'x4'
- Surface Mount Kit, EM Backup available
- 0-10V Dimming, dim-to-off
- Control Ready, Sensor-Ready-Bracket Pre-wired
- Auxiliary Power 12V, max. 100mA
- -20° F to 130° F Ambient Operating Temperature
- 120 - 277V Input Voltage, PF > 0.9, THD < 20%
- L70 > 100,000 hours
- CRI > 80 by Default, CRI > 90 available
- 5 Year Warranty



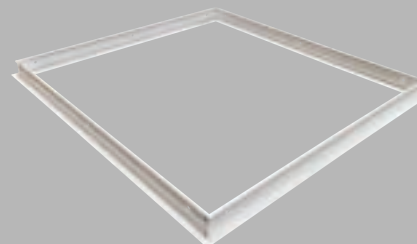
Model No.	Retrofits	Field-Adjustable Power (W)	Lumens (lm)	Efficacy (lm/W)	Field-Adjustable CCT (K)	CRI
Troffer Retrofit kit						
VEFT1x4/8T(-AD)(-SRB) (20W/25W/30W)	1' x 4'	20W/25W/30W	2500/3125/3750	125	3500/4000/5000	82+
VEFT2x2/8T(-AD)(-SRB) (20W/25W/30W)	2' x 2'	20W/25W/30W	2500/3125/3750	125	3500/4000/5000	82+
VEFT2x4/8T(-AD)(-SRB) (25W/30W/34W)	2' x 4'	25W/30W/34W	3125/3750/4250	125	3500/4000/5000	82+
VEFT2X4/8T(-AD)(-SRB) (46W/52W/56W)	2' x 4'	46W/52W/56W	5750/6500/7000	125	3500/4000/5000	82+
Panel Retrofit kit						
VEFP1X4/8T(-AD)(-SRB) (18W/22W/25W)	1' x 4'	18W/22W/25W	2250/2750/3125	125	3500/4000/5000	82+
VEFP2X2/8T(-AD)(-SRB) (18W/22W/25W)	2' x 2'	18W/22W/25W	2250/2750/3125	125	3500/4000/5000	82+
VEFP2X4/8T(-AD)(-SRB) (23W/30W/36W)	2' x 4'	23W/30W/36W	2875/3750/4500	125	3500/4000/5000	82+

OPTIONS: TAA (Trade Agreement Act Compliant)

*Surface Mount Kit (Available)



*Flanged Kit (Available)



Emergency Solutions

The Sentinel family of LED emergency ballasts, inverters, and drivers provide a complete set of emergency back up solutions for Types A, B, and C LED retrofit products. When AC power fails, Sentinel LED battery back up products switch to emergency mode and keep LED retrofit products illuminated at a reduced lumen output for a minimum of 90 minutes. The Sentinel emergency ballasts are for Type A lamps. The Sentinel emergency inverters are for Type B lamps. While the Sentinel emergency drivers are for Type C lamps, retrofit kits, and fixtures. Sentinel LED emergency back ups are suitable for use in new fixtures or retrofit applications, and most models include: LED charging indicator light, single-pole test switch, and installation hardware.



Emergency Back-Up Lamp

Suitable for G13 base
Linear LED application



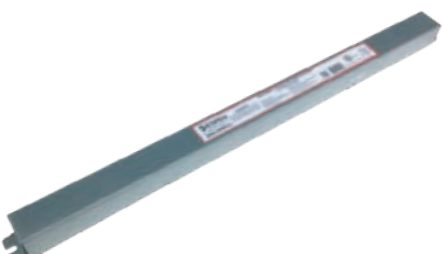
Standalone Emergency Back-Up Kits

Suitable for any applications
Standalone operation



Emergency Inverters

Suitable for LED Type B or A+B lamps, retrofit kits and
LED fixtures, esp. integrated fixtures
Power up the whole fixture



Emergency Ballasts

Suitable for LED Type A or A+B lamps with fluorescent
Directly power the lamps

Sentinel®

Emergency Lamps

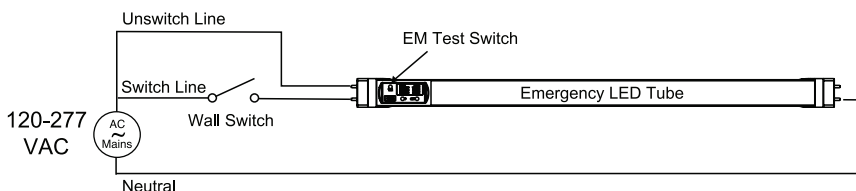


FEATURES AND BENEFITS

- Easily upgrade existing T8 fixtures with Emergency Lighting
- Dual operation with General and Emergency Illumination
- Automatically adjusts to full illumination in Emergency mode
- Built in Self-Testing and status indicator lights
- RoHS Mercury Free
- Comes Standard with:
 - (1) EmergenTLED Lamp
 - (2) T8 G13 Locking Sockets with 12" Leads
 - (3) Socket Lock Pins (1 Extra)



WIRING DIAGRAM



REQUIRED
Unshunted
Rapid Start Socket

Model No.	Length (in)	Selectable Power (W)	Lumens (lm)	Emergency Power (W)	Emergency Lumens (lm)	Selectable CCT (K)	CRI	EM. time
EMTL/48/T10/8T/5W/P/ID DE (12W/15W/18W)	48	12W/15W/18W	1300/1650/2000	5	700	3500/4000/5000	80+	90 min.

INDICATORS AND TESTING

MODE	LED INDICATOR STATUS		ERROR	EM DRIVER STATUS/MODE	CORRECTIVE ACTION
Normal Mode	Solid Green		None	Battery fully charged/System OK	/
	Solid Red		None	Battery is charging	/
	None.Both LEDs OFF		None	In EM mode or emergency run-time is ended	/
	Flashing Green		None	Self-Diagnostic test underway	/
Fault Mode	Flashing Red		Lamp	Lamp Failure	Replace Product and/or Contact Customer Service

Standalone Emergency Back-Up Kits



FEATURES AND BENEFITS

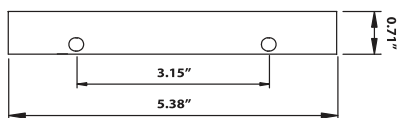
- Constant Wattage and Light Output
- High Efficacy LED Module
- Standalone installation does not affect Existing Fixture
- UL 924 Listed



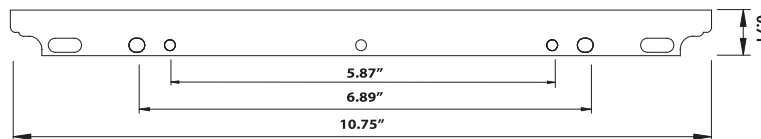
Model No.	Lumens (lm)	EM Driver Model	EM Driver Input Voltage	EM Driver Output Voltage	LED Module	CRI	CCT (K)
VEM-K1000	1000	VEML8JV-1	120V-347Vac	30-60Vdc	VLM0605L/850	80	5000
VEM-K1500	1500	VEML8JV-1	120V-347Vac	30-60Vdc	VLM1207L/850	80	5000

DIMENSIONS

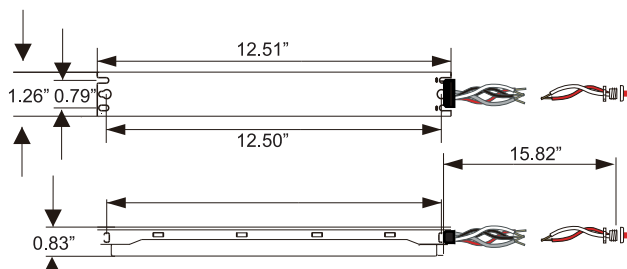
VLM0605L/850



VLM1207L/850



VEML8JV-1



FEATURES AND BENEFITS



500 Lumens

VEM500DV-L - Emergency Ballast

- Emergency ballast for fluorescent, Type A and Type A+B in A Mode
- Dual Input Voltage (120/277V)
- Maintenance Free, Long Life
- High Temperature Ni-Cad Battery
- Durable, Heavy-Duty Steel Housing
- 1-lamp: 500 lumens
- 5 Year Limited Warranty



800 Lumens

VEM800DV-L - Emergency Ballast

- Emergency ballast for fluorescent, Type A and Type A+B in A Mode
- Dual Input Voltage (120/277V)
- Maintenance Free, Long Life
- High Temperature Ni-Cad Battery
- Durable, Heavy-Duty Steel Housing
- 1-lamp: 800 lumens
- Slim Design
- 5 Year Limited Warranty



1300 Lumens

VEM1300DV-L - Emergency Ballast

- Emergency ballast for fluorescent, Type A and Type A+B in A Mode
- Dual Input Voltage (120/277V)
- Maintenance Free, Long Life
- High Temperature Ni-Cad Battery
- Durable, Heavy-Duty Steel Housing
- 1-lamp: 1,300 lumens | 2-lamp: 1,300 lumens
- Slim Design
- 5 Year Limited Warranty



Model No.	Type	Lumens	Voltage (V)	Operation Hours	Case
VEM500DV-L	Emergency Ballast	500	120/277	90 mins	Regular
VEM800DV-L	Emergency Ballast	800	120/277	90 mins	Slim
VEM1300DV-L	Emergency Ballast	1300	120/277	90 mins	Slim

* Operating hours, 90min at full lumen output.

** EM ballast will continue to produce light after 90min, but lumen output will reduce over time.

Emergency Inverters

FEATURES AND BENEFITS

- Emergency Inverter for most Espen Type B lamps
- Dual Input Voltage (120/277V)
- 90 Minute Illumination Time
- 32 °F to 122 °F Ambient Operating Temperature
- 3 options with different sizes and wattage output
- Durable Steel Housing Contains LED Driver & Battery
- Suitable for Damp Locations
- LED Test Switch Included
- Does Not Affect Normal Operation
- 5 Year Limited Warranty



VEMB5W



- Espen Flex Type B: T8 for 2ft, 3ft, 4ft; T5HE; also operated PL and PLL lamps; Type A+B UniFlex (when used as Type B) lamps.
- Provides 5W of power for a minimum of 90 minutes
- Lithium Ion Rechargeable Battery
- UL 924 & FCC Compliant
- Output OCV 200 VDC

VEMB10W



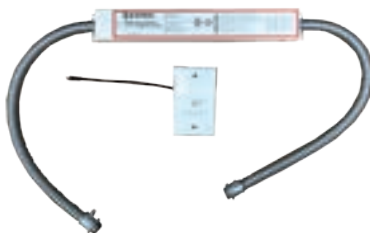
- Espen Flex Type B: T8 for 2ft, 3ft, 4ft; T5; and Type A+B UniFlex (when used as Type B) lamps.
- Provides 10W of power for a minimum of 90 minutes
- Lithium Ion Rechargeable Battery
- UL 924 & FCC Compliant
- Output OCV 200 VDC

VEMB8W-10V (D)



- Emergency inverter for Espen Type B lamps no greater than 8W
- Emergency inverter for Espen Type C lamps system under 60W
- Emergency inverter for Espen 0-10V dimming retrofit Kits and fixtures under 60W
- Wide range input voltage of 120-347Vac, 50/60Hz
- 90 minutes minimum illumination time
- 5°C ~ 50°C (30°F ~ 122°F) Ambient operating temperature
- Constant power output
- Lithium-ion battery integrated
- Dual-end conduit for easy installation
- Self-testing monthly and yearly
- UL 924 listed and CEC Compliant

VEMB15W-10V (D)



- Emergency inverter for Espen Type B lamps no greater than 15W; and Type A+B UniFlex (when used as Type B) lamps no greater than 15W
- Emergency inverter for Espen Type C lamps system under 80W
- Emergency inverter for Espen 0-10V dimming retrofit Kits and fixtures under 80W
- Wide range input voltage of 120-347Vac, 50/60Hz
- 90 minutes minimum illumination time
- 5°C ~ 50°C (30°F ~ 122°F) Ambient operating temperature
- Constant power output
- Lithium-ion battery integrated
- Dual-end conduit for easy installation
- Self-testing monthly and yearly
- UL 924 listed and CEC Compliant

Step-Down Transformer

Non-Isolated Autotransformer

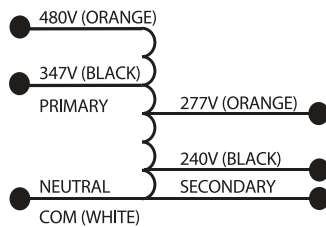


FEATURES AND BENEFITS

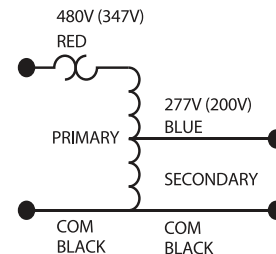
- Non-isolated autotransformer
- Thermally protected (auto reset)
- Max. case temperature 105 °C
- Designed for lighting applications
 - LED
 - Electronic ballasts
 - HID
- Low profile cases
- Sound rated AUL listed
- UL listed
- 5 year warranty



WIRING DIAGRAM



WD1: VETR480/277-60VA & VETR480/277-110VA



WD2: VETR480/277-250VA & VETR480/277-375VA

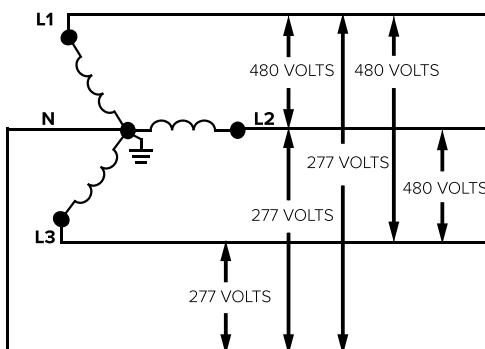
* Cap all unused wires

** Do not use on ungrounded systems

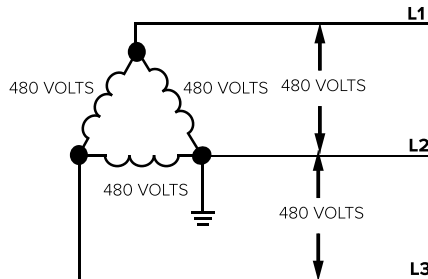
Model No.	Input Voltage (V)	Max. Input Wattage (VA)	Output Voltage (V)	Max. Input Wattage (VA)	Dimension (INCH)	Wiring Diagram
VETR480/277-60VA	480/347	66	277/240	60	7.20" x 1.73" x 1.30"	WD-1
VETR480/277-110VA	480/347	125	277/240	110	7.20" x 1.73" x 1.30"	WD-1
VETR480/277-250VA	480/347	275	277/200	250/180	9.50" x 1.73" x 1.30"	WD-2
VETR480/277-375VA	480/347	410	277/200	375/270	11.65" x 1.73" x 1.30"	WD-2

*** Inquire for availability

APPLICATION NOTES



Suitable for Wye 480V or Grounded Delta Power



Why do we use VA instead of Watts when setting Step-Down Transformer loads?

The power in watts is the real power drawn by the equipment. Volt-Amps (VA) are called the "apparent power" and is the product of the voltage applied to the equipment times the current drawn by the equipment.

*Use one of these formulas to determine the missing quantity:
 Watts = VA * Power factor or VA = Watts / Power Factor

Controls

High Bay Sensors

OCCUPANCY SENSOR | 360° HIGH BAY PASSIVE INFRARED (PIR) FIXTURE MOUNT



The FMH-6A-MV (UM) Occupancy Sensor is designed to mount directly onto a luminaire and is ideal for high mounted areas such as warehouses, manufacturing facilities, and other high ceiling applications.

Other mounting options include: Ceiling mount, J-Box Mount

OPERATION

The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a self-contained relay switches the connected lighting load on. The sensor is line powered and can switch line voltage. An internal timer, factory set at 15 seconds, keeps the lights on during brief periods of inactivity.

COVERAGE AREA

Best choice for 15 to 30ft mounting heights. 15 to 20ft radial coverage overlaps area lit by a typical high bay fixture.

SPECIFICATIONS

Voltage:	120/277VAC, 60 Hz
Load Requirement:	800VA @120VAC* 1200VA @277VAC*
	* Fluorescent Ballasts No Min
Load Horsepower:	1/6HP
Time Delay Adjustment:	Fixed 15 seconds to 30 minutes
Operating Temperature:	32° to 131° F (0° to 55° C)
Humidity Range:	0% to 90% RH, non-condensing
Coverage Range:	High Bay mounting heights up to 30 ft mounting/360° field
Terminal Line:	Black - Hot, White - Neutral, Red - Load

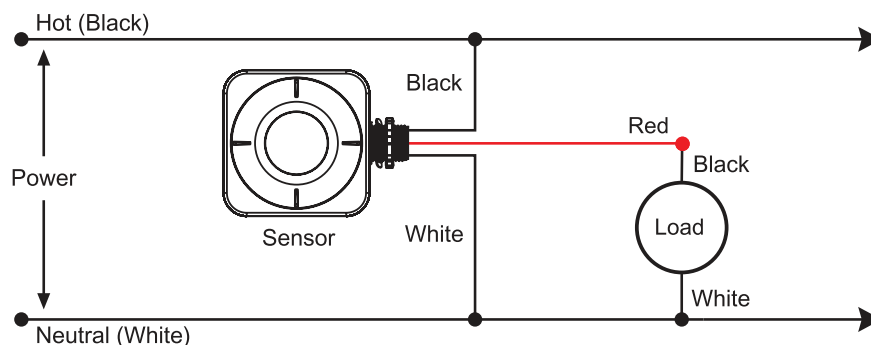
TYPICAL APPLICATIONS

- Warehouses
- Gymnasiums
- Manufacturing Facilities
- Industrial Facilities

FEATURES

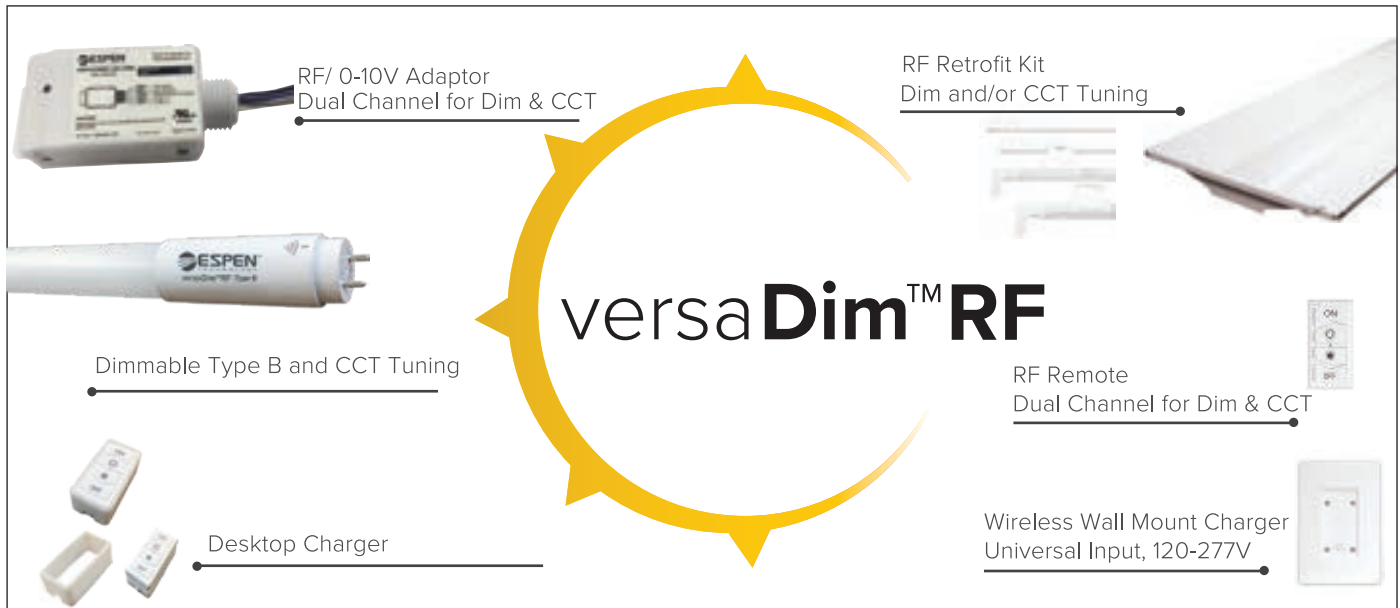
- PIR Occupancy Detection
- Self Contained Relay, No Power Pack needed
- Adjustable Time Delay: 15 sec - 30 mins
- 120/277Vac Input, 60Hz
- UL, cUL
- CA Title 24 Compliant
- 5 Year Warranty

WIRING DIAGRAM



Controls

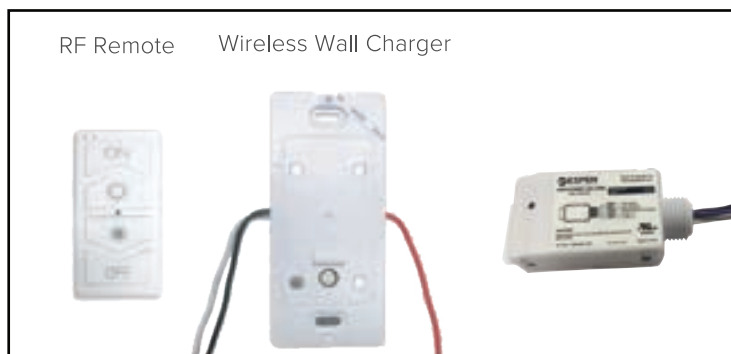
versaDim RF Control Charger & Remote & Adapter



DESCRIPTION

Complete system of wireless controlled linear LED retrofit products, using a handheld remote control. Dims lights, changes color temperature, or turns lights on/off. Use with ballast bypass (Type B) TLEDs, LED 0-10V dimming fixtures and retrofit kit.

Avoids costly commissioning of most wireless systems dual channel for dimming. Wall mount wireless charger. Adapter to convert existing fixtures to RF control. Zoning control capability. Max. 25ft control distance between versaDim RF devices.



FEATURES AND BENEFITS

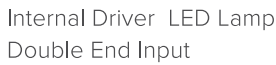
- versaDim RF 2.4GHz Remote Control System
- Wall mount wireless charger
- Universal 120-277V input
- Emergency switch
- Highly secure system
- Capable of zoning control
- Single/Dual 0-10V Channel Control Adapter
- Easy RF Pairing
- UL Listed



ELECTRICAL RATING

Model No.	Application	Input Voltage	Input Current	Input Wattage (W)
VC720MV	RF Charger	120/277Vac, 50/60Hz	6A/2.6A	Max. 720
VRF-DR	RF Remote	5Vdc (Wireless Charge)	60mA	0.3W
VRF-DM-SET	Desktop Charger Set	5Vdc (Wireless Charge)	100mA	0.5W
VRFA720MV-10V	RF Adapter	120/277Vac, 50/60Hz	6A/2.6A	Max. 720

FEATURES AND BENEFITS



- | Model No. | Length (in.) | Base Type | Lamp Wattage (W) | Input Voltage (V) | 5-CCT Selectible via versaDim Remote | Lumens (lm) | CRI | Lamp Efficacy (lm/W) | Life (h) |
|-----------------------|--------------|-----------|------------------|-------------------|--------------------------------------|-------------|-----|----------------------|----------|
| L24T8/8F/9P-ID DE RF | 24 | G13 | 9 | 120-277 | 2700K/3000K/3500K/4000K/5000K | 1150 | 80 | 121 | 50000 |
| L36T8/8F/12P-ID DE RF | 36 | G13 | 12 | 120-277 | 2700K/3000K/3500K/4000K/5000K | 1450 | 80 | 127 | 50000 |
| L48T8/8F/12P-ID DE RF | 48 | G13 | 12 | 120-277 | 2700K/3000K/3500K/4000K/5000K | 1800 | 80 | 142 | 50000 |

120-277Vac
50/60Hz

AC Mains

Line

Black

Green (Ground)

VC720MV-2W
VersaDim RF charger

Red

White (Optional)

VersaDim RF adapter
VRFA720MV-10V

Line (in)
Black

Neutral (in)
White

0-10V+
0-10V-
Line (out)
Neutral (out)

Purple
Pink
Black
White

0-10V
LED Driver

L

N

VersaDim RF lamp

VersaDim RF lamp

VRF-DR
VersaDim RF remote



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