



LED | Controls | Emergency

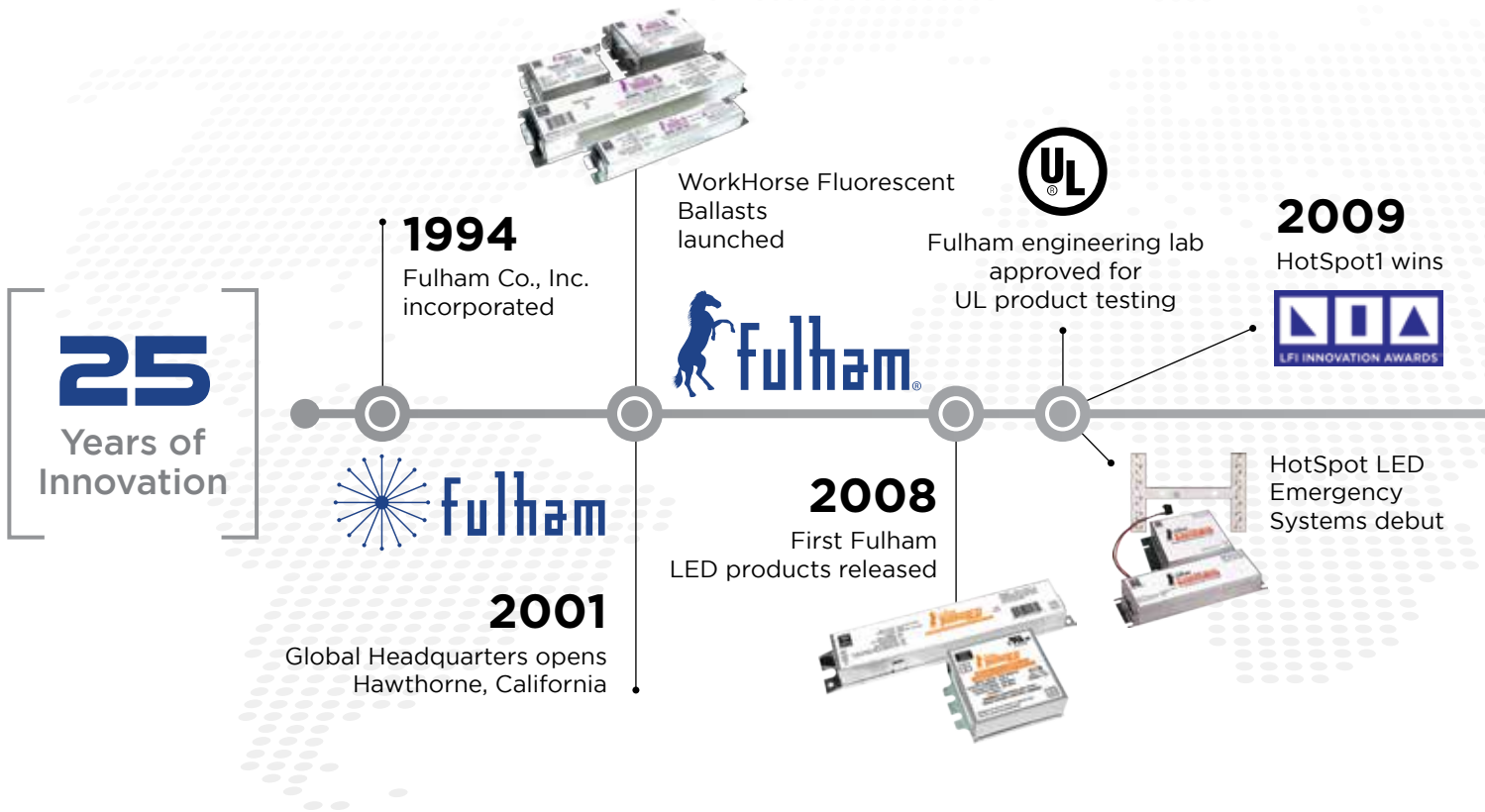
Europe

Featured Products
Catalogue



A Pioneer in Lighting Electronics

Founded in 1994, Fulham is dedicated to clever, sustainable lighting solutions that give our users the power to create or install smart, differentiated lighting. Fulham's revered product quality and world-class customer responsiveness make us the preferred partner to over 3000 lighting manufacturers and distributors worldwide.



LED DRIVERS

Lumo Series LED Drivers	4-6
WorkHorse LED Programmable Drivers	7
ThoroLED LED Drivers	8-9

LIGHT SOURCES

Vizion Linear High Output DC LED Modules	10-11
Vizion 350mA ECO Series DC LED Modules	12
Vizion DirectAC LED Engine Retrofit Kits	13

From our headquarters in Los Angeles and design centers in China and India, our team of product managers and engineers work with our customers to conceive, design, and manufacture reliable, sustainable lighting solutions that bring cutting edge innovation to a global market.

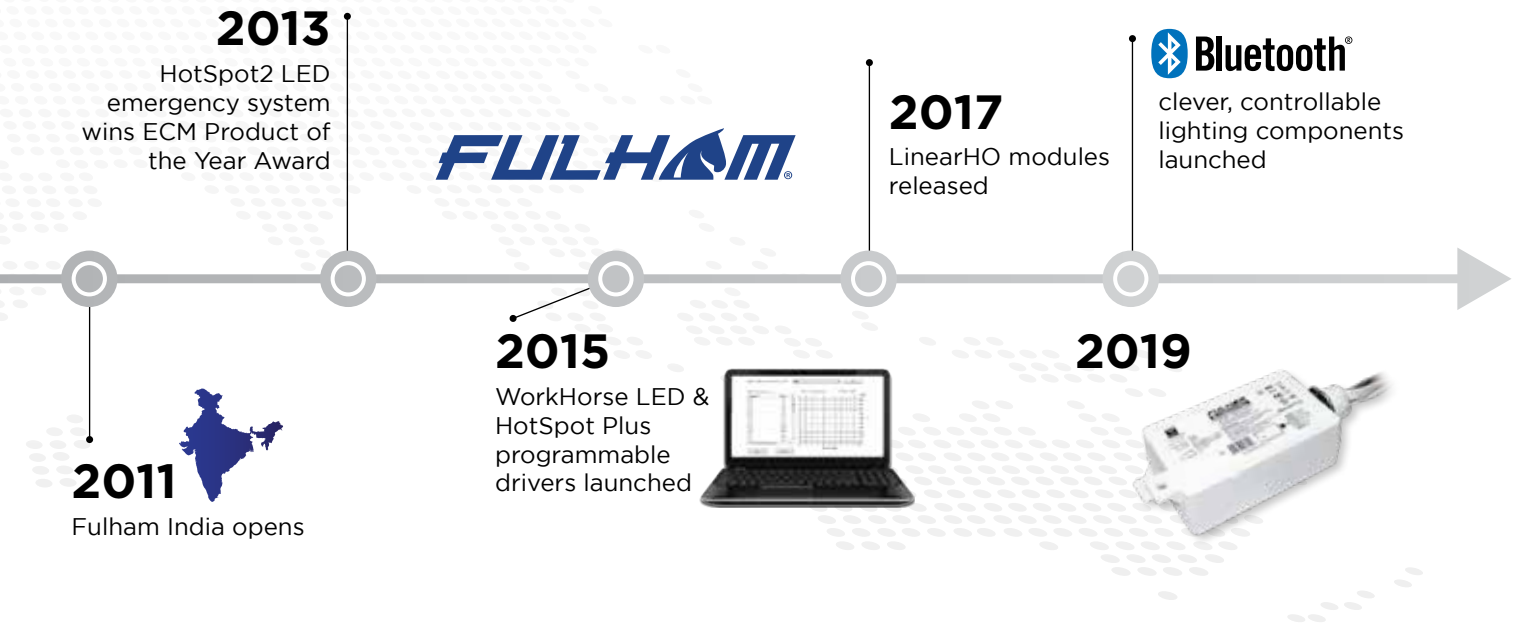


Table of Contents

CONTROLS

EliteControl SIG Qualified 14-15
Bluetooth Mesh Lighting Control System

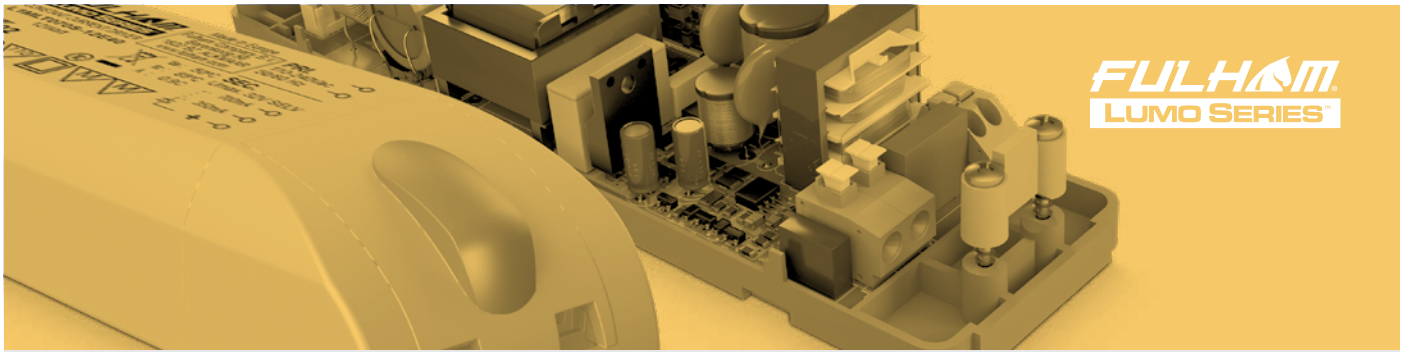
EMERGENCY

HotSpot Plus LED Driver & Emergency System 16
HotSpot Constant Power 17
Programmable LED Emergency Driver
HotSpot2 LED Emergency System 18

Warranty Information 19

Contact Us Back Cover

Visit www.fulham.com for additional products not shown here, including fluorescent ballasts for UV and general lighting, DC LED light engines, and products for international markets.



Reaching New Heights in Engineering Excellence

Fulham Lumo Series drivers are built on core engineering design principles for exceptional standards of performance and reliability in LED systems. Highest grade critical components together with design features for thermal management ensure excellent reliability. Low ripple designs create flicker-free lighting and perfectly smooth dimming. Simplicity of specification and installation is a key characteristic of all Fulham Lumo Series drivers, hence the wide voltage and current ranges and industry leading low inrush current.

Engineered for Performance

- Industry leading efficiency
- Multiple dimming options and output currents
- Very high power factor

Engineered for Reliability

- Low inrush current
- Thermal, overload, short circuit and overvoltage protection
- Flicker-free light

Engineered for Simplicity

- Future-proof flexibility – industry leading voltage and current range enabling seamless support of LED generations and minimizing supply chain complexity



Constant Voltage Output



L 100 x W 52 x H 24 (mm)

Model Number	Alternate Reference	Max Watts (W)	Max Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1M1MLT105S-20E	L05011i	20	1050	Dipswitch	10/12/24	220 - 240 (50/60 Hz)	1-10V/pulse
L1W1MID120D-20E	L05011i2	20	1200	Dipswitch	6 - 42 options	220 - 240 (50/60 Hz)	1-10V/pulse
L1LDC070S-20E*	L05030	20	1200	Dipswitch	4 - 24 options	17 - 32 Vdc (50/60 Hz)	Non-Dimming

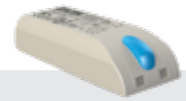


L 157 x W 42 x H 32 (mm)

Model Number	Alternate Reference	Max Watts (W)	Max Current (mA)	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1MLT024V-36E*	L05046	36	1500	24	110 - 240 (50/60 Hz)	Non-Dimming

* Contact Fulham for lead time and availability

Dimming Multiple Output, Constant Current



L 99 x W 39 x H 23 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1E1230025S-10E	L05021-40250	10	200/250	Output wires	20 - 40	220 - 240 (50/60 Hz)	Mains Dimming
L1E1230070S-12E	L05021	12	350/700	Output wires	3 - 32	220 - 240 (50/60 Hz)	Mains Dimming
L1E1230070P-12E	L05121	12	250-700	Output wires	6 - 40	220 - 240 (50/60 Hz)	Mains Dimming
L1E1230030S-12E	L05021-40300	12	180/300	Output wires	20 - 40	220 - 240 (50/60 Hz)	Mains Dimming



L 110 x W 52 x H 24 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1M1MLT105S-20E	L05011i	20	350/700/1050	Dipswitch	3 - 33	110 - 240 (50/60 Hz)	1-10V/Pulse/Pot
L1W1MID120D-20E	L05011i2	20	100 - 1200	Dipswitch	6 - 42	180 - 240 (50/60 Hz)	1-10V/Pulse/Pot
L1W1MLT500S-20E	L05011Ci	20	110 - 500	Potentiometer	3 - 43	110 - 240 (50/60 Hz)	1-10V/Pulse/Pot
L1W2MLT100S-20E	L05016i	20	1x 250-1000 2x 250-500	Potentiometer	3 - 33	110 - 240 (50/60 Hz)	1-10V/Pulse/Pot
L1V1230105S-25E	L05023-A	25	100 - 1050	Dipswitch/ TPSB-100EU	3 - 43	220 - 240 (50/60 Hz)	Mains Dimming
L1M1MID120S-24E	L05011i3	20 24	100 - 1200 600 - 900	Dipswitch	6 - 42	180 - 240 (50/60 Hz)	1-10V/Pot
L1W1MID140S-30E	L05031	30	100 - 1400	Dipswitch	6 - 42	180 - 240 (50/60 Hz)	1-10V/Pulse/Pot



L 157 x W 42 x H 32 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1A1MID100S-30E	L05025	30	100 - 1000	Resistor	7 - 43	160 - 240 (50/60 Hz)	DALI
L1A1MID100S-40E	L05040	40	100 - 1000	Resistor	7 - 55	160 - 240 (50/60 Hz)	DALI
L1M1MLT140S-40E*	L05045	40	300 - 1400	Resistor	15 - 32	110 - 240 (50/60 Hz)	1-10V/Pot
L1M1MLT105S-40E	L05049-601000	40	245 - 1050	Resistor	26 - 60	110 - 240 (50/60 Hz)	1-10V/Pot
L1M1230200S-60E*	L05055	60	700 - 2000	Resistor	22 - 46	220 - 240 (50/60 Hz)	1-10V/Pot
L1M1230140S-60E*	L05059	60	280 - 1400	Resistor	18 - 60	220 - 240 (50/60 Hz)	1-10V/Pot

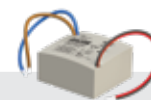


L 212 x W 76 x H 46 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)	Dimming Type
L1M1MLT400S-150E	L05065	150	700 - 4000	Resistor	24 - 60	90 - 240 (50/60 Hz)	1-10V

* Contact Fulham for lead time and availability

Non-Dimming Single Output, Constant Current



L 46 x W 42 x H 22 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Voltage (Vdc)	Input Voltage (Vac)
L1MLT0350-5.5C	L05150	5.5	350	3 - 16	100 - 240 (50/60 Hz)
L1MLT0680-6.5C	L05050	6.5	680	3 - 12	100 - 240 (50/60 Hz)



L 110 x W 52 x H 24 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Voltage (Vdc)	Input Voltage (Vac)
L1MLT0700-20E	L05013	20	700	3 - 33	115 - 240 (50/60 Hz)

Non-Dimming Multiple Output, Constant Current



L 99 x W 39 x H 23 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)
L1MLT020S-10E48	L05020-1248200	12	150/200	Output wires	20 - 48	115 - 240 (50/60 Hz)
L1MLT030S-12E48	L05020-1248300	12	250/300	Output wires	20 - 48	115 - 240 (50/60 Hz)
L1MLT070S-12E40	L05020-1240700	12	350/700	Output wires	20 - 40	115 - 240 (50/60 Hz)
L1MLT050S-12E40	L05020-1240500	12	400/500	Output wires	20 - 40	115 - 240 (50/60 Hz)
L1MLT082S-12E24	L05020-1224825	12	600/825	Output wires	20 - 24	115 - 240 (50/60 Hz)



L 110 x W 52 x H 24 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)
L1MLT140S-20E	L05012	20	350 - 1400	Potentiometer	3 - 33	115 - 240 (50/60 Hz)



L 157 x W 42 x H 32 (mm)

Model Number	Alternate Reference	Max Watts (W)	Output Current (mA)	Output Current Selection Method	Output Voltage (Vdc)	Input Voltage (Vac)
L1MLT140S-40E	L05044	40	300 - 1400	Resistor	15 - 32	110 - 240 (50/60 Hz)

Programmable Constant Current

- DALI and 0-10V models, dims to 1% of programmed current
- IP65 models available for outdoor and high power applications
- Advanced programmability of output current and dimming curve
- MCU controlled circuit and health monitoring



IP20 Programmable Constant Current Drivers

Model Number	Watts (W)	Output Current (mA)	Output Voltage (VDC)	Dimming Type	Surge	Dimensions (mm) (L x W x H)
T1A1UNV105P-40E*	40	250 - 1050	10 - 57	DALI	2kV/4kV	275 x 31 x 25
T1M1UNV105P-40E*	40	250 - 1050	10 - 57	0-10V	2kV/4kV	275 x 31 x 25
T1M1UNV105P-60E*	60	250 - 1050	10 - 57	0-10V	2kV/4kV	237 x 40 x 30
T1M1UNV105P-60F*	60	250 - 1050	10 - 57	0-10V	2kV/4kV	126 x 76 x 31
T1M1UNV105P-60G*	60	250 - 1050	10 - 57	0-10V	2kV/4kV	126 x 76 x 31

IP65 Outdoor Drivers

Model Number	Watts (W)	Output Current (mA)	Output Voltage (VDC)	Dimming Type	Surge	Dimensions (mm) (L x W x H)
T1M1UNV150P-40LES*	40	250 - 1050	10 - 57	0-10V	10kV	168 x 50 x 30
T1A1UNV150P-40LES*	40	250 - 1050	10 - 57	DALI	10kV	168 x 50 x 30
T1M1UNV210P-60LES*	60	500 - 2100	10 - 57	0-10V	10kV	241 x 43 x 29
T1A1UNV210P-60LES*	60	500 - 2100	10 - 57	DALI	10kV	241 x 43 x 29
T1M1UNV240P-96LES	96	700 - 2400	30 - 56	0-10V	10kV	170 x 60 x 32
T1M1UNV150P-100CES*	100	500 - 1500	50 - 150	0-10V	10kV	151 x 90 x 32
T1A1UNV150P-100CES*	100	500 - 1500	50 - 150	DALI	10kV	151 x 90 x 32
T1M1UNV150P-150LES*	150	500 - 1500	70 - 280	0-10V	10kV	241 x 59 x 39
T1A1UNV150P-150LES*	150	500 - 1500	70 - 280	DALI	10kV	241 x 59 x 39
T1M1UNV500P-185LES*	185	500 - 5000	30 - 56	0-10V	10kV	222 x 68 x 42
T1M1UNV140P-200LES	200	500 - 1400	80 - 280	0-10V	10kV	225 x 69 x 39
T1A1UNV140P-200LES*	200	500 - 1400	80 - 280	DALI	10kV	225 x 69 x 39

* Contact Fulham for lead time and availability

SmartSet: The Power of Programmability

Fulham's programmable WorkHorse LED drivers run on the innovative SmartSet programming platform, an intuitive, flexible system that gives the user the power to create the right driver for any situation. Benefits include SKU reduction and the ability to integrate more efficient LED modules into existing luminaire designs.

- Output current programmable in 1mA increments
- Allows custom dimming curves (for step dimming and dim-to-off)
- Driver does not need to be powered during programming
- One touch Auto-Programming capability for high volume usage
- Programming via handheld controller or PC software



TPSB-100EU
SmartSet Controller



SmartSet
Software

To see the Fulham SmartSet programming platform in action visit the links below:

Overview of basic programming features: www.fulham.com/smartsetprogramming

One touch Auto-Programming: www.fulham.com/smartsetauto

Programming custom dimming curves: www.fulham.com/smartsetdimmingcurve



Non-Dimming Constant Current Drivers

- Wide range of wattages and output currents to meet numerous applications
- Single and multiple channel models
- High efficiency performance ideal for interior luminaires



Non-Dimming LED Drivers

Model Number	Watts (W)	Output Current (mA)	Output Voltage (VDC)	Input Voltage (VAC)	CH.	IP	Dimensions (mm) (L x W x H)	Case Type
T1UNV1050-42C*	42	1050	12 - 40	120 - 277 (50/60)	1	64	95 x 70 x 31	Compact w/End Leads
T1UNV1400-60L*	60	1400	20 - 43	120 - 277 (50/60)	1	64	196 x 43 x 30	Linear w/End Leads
TCD3MLT0350-55L*	55	350	18 - 56	120 - 230 (50/60)	3	62	375 x 44 x 30	Linear w/End Leads
T1UNV0700-200L*	200	700	114 - 190V	120 - 277 (50/60)	1	65	225 x 68 x 39	Linear w/End Leads

0-10V Dimming Constant Current Indoor Drivers

- Wide range of wattages and output currents to meet numerous applications
- Single and multiple channel models
- High efficiency performance ideal for interior luminaires



Dimming LED Drivers

Model Number	Watts (W)	Output Current (mA)	Output Voltage (VDC)	Input Voltage (VAC)	CH.	IP	Dimensions (mm) (L x W x H)	Case Type
T1M1UNV0350-15F*	15	350	21 - 42	120 - 277 (50/60)	1	64	81 x 72 x 25	Compact w/Terminals
T1M1UNV0350-15L*	15	350	21 - 42	120 - 277 (50/60)	1	64	100 x 30 x 23	Linear w/End Leads
T1M1UNV0700-30F*	30	700	21 - 42	120 - 277 (50/60)	1	64	72 x 81 x 25	Compact w/Terminals
T1M1UNV0700-30L*	30	700	21 - 42	120 - 277 (50/60)	1	64	118 x 30 x 30	Linear w/End Leads
T1M1UNV0900-40L*	40	900	10 - 40	120 - 277 (50/60)	1	64	241 x 33 x 27	Linear w/End Leads
T1M1UNV1050-42C*	42	1050	12 - 40 /12	120 - 277 (50/60)	1	64	120 x 68 x 31	Compact w/Bottom Leads & Mounting Studs
T1M1UNV1400-60L*	60	1400	18 - 42	120 - 277 (50/60)	1	Damp	241 x 43 x 31	Linear w/End Leads
T1M1UNV1680-88L*	88	1680	21 - 44	120 - 277 (50/60)	1	64	241 x 43 x 29	Linear w/End Leads
T1M1UNV2000-88L*	88	2000	21 - 44	120 - 277 (50/60)	1	64	241 x 43 x 29	Linear w/End Leads
T1M1UNV2100-88L*	88	2100	21 - 42	120 - 277 (50/60)	1	64	241 x 43 x 29	Linear w/End Leads
T1M1UNV0800-100A*	100	800	70 - 150	120 - 277 (50/60)	1	Dry	213 x 50 x 33	Interconnect Terminals

* Contact Fulham for lead time and availability

Some products may not carry CE marking. Contact Fulham for more information.



Non-Dimming Constant Voltage LED Drivers

- Constant voltage - 12V and 24V models
- Optimized high efficiency performance
- Low temperature performance

Single Output - Non-Dimmable Drivers

Model Number	Watts (W)	Output Voltage (VDC)	Input Voltage (VAC)	Ch.	IP	Dimensions (mm) (L x W x H)	Case Type
T1UNV024V-20L*	20	24	120 - 277; 50/60Hz	1	62	160 x 40 x 25	Linear w/End Leads
T1UNV012V-60LF*	60	12	100 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1UNV012V-60L*	60	12	120 - 277; 50/60Hz	1	66	241 x 43 x 31	Linear w/End Leads
T1UNV024V-60L*	60	24	100 - 277; 50/60Hz	1	66	241 x 43 x 31	Linear w/End Leads
T1UNV012V-60LG*	60	12	100 - 277; 50/60Hz	1	68	241 x 43 x 31	Linear w/End Leads
T1UNV024V-60LF*	60	24	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1UNV012V-75L*	75	12	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1UNV024V-75L*	75	24	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1UNV024V-100LE (2KV/4KV)*	100	24	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1UNV024V-100LS (2KV/4KV)*	100	24	120 - 277; 50/60Hz	1	64	261 x 40 x 30	Linear w/End Leads



0-10V Dimming Constant Voltage LED Drivers

- Linear form factor
- Surge protection, overload protection

Constant Voltage Dimmable LED Drivers

Model Number	Watts (W)	Max Output Current (mA)	Output Voltage (VDC)	Input Voltage (VAC)	Ch.	IP	Dimensions (mm) (L x W x H)	Case Type
T1M1UNV012V-20L*	20	1660	12	120 - 277; 50/60Hz	1	62	160 x 40 x 25	Linear w/End Leads
T1M1UNV024V-20L*	20	833	24	100 - 277; 50/60Hz	1	62	160 x 40 x 25	Linear w/End Leads
T1M1UNV012V-60L*	60	5000	12	100 - 277; 50/60Hz	1	66	241 x 43 x 31	Linear w/End Leads
T1M1UNV024V-60L*	60	2500	24	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1M1UNV012V-75L*	75	6250	12	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1M1UNV024V-75L*	75	3125	24	120 - 277; 50/60Hz	1	64	241 x 43 x 31	Linear w/End Leads
T1M1UNV024V-150L*	150	6250	24	120 - 277; 50/60Hz	1	67	227 x 68 x 40	Linear w/End Leads

* Contact Fulham for lead time and availability

Some products may not carry CE marking. Contact Fulham for more information.

LIGHT SOURCES



Low Profile Linear High Output DC LED Modules

- Ideal replacement for T5HO in linear highbays, water/vapor proof, and recessed and wall luminaires
- Aluminium extrusion mount provides superior thermal management
- Low profile design for use in smaller luminaires
- Constant current, high-efficacy LEDs, 3 SDCM for high color consistency
- Up to 219 lm/W; output range 234 lm to 14,699 lm (@4000K/80CRI)
- Optional lenses snap on in seconds (See page 11)



Specifications

Operating Temp. Range	-40°C to 55°C	PCB Material	MCPCB (Aluminium Clad)
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; 3 SDCM	Warranty	5 years @ 105°C Tc from the date of manufacture
Lumen Maintenance	L70: >60,000Hrs / L90: 40,000Hrs (meets DLC Premium and Standard requirements)	Safety/compliance	cURus (File # E351548), UL Class 2 Lighting System, CE, SELV, RoHS Compliant

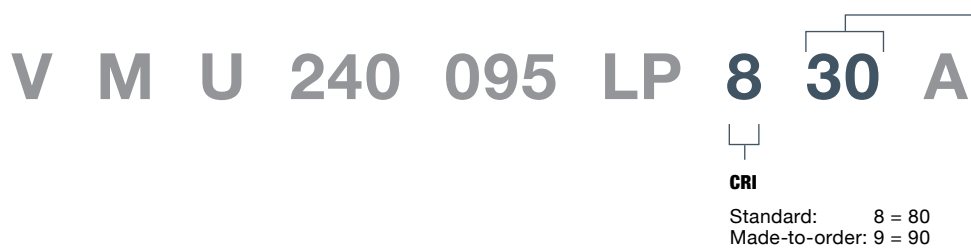
Product Models

Model Number / Dimension (L x W x H)	Number of LEDs	Input Current (mA)	Nom. Fwd. Voltage (VDC)	Nom. Rated Power (W)	Max. Fwd. Voltage (V)	Max. Rated Power (W)	Nom. Lum. @4000K/80CRI (lm)	Nom. Efficacy @4000K/80CRI (lm/W)
VMU048012LPyxxA (140mm x 32mm x 7.4mm)	24	175	22.3	3.9	25	4	799	205
		350	23.1	8.1	25	9	1518	187
		480*	23.8	11.40	26	12	1959	172
VMU064025LPyxxA (278mm x 32mm x 7.4mm)	48	350	34.0	11.9	37	13	2347	197
		450	34.7	15.6	38	17	2942	189
		640*	35.6	22.8	39	25	3919	172
VMU080030LPyxxA (559mm x 32mm x 7.4mm)	60	350	33.7	11.8	37	13	2380	202
		700	35.1	24.6	39	27	4418	180
		800*	35.6	28.5	39	31	4899	172
VMU125050LPyxxA (559mm x 32mm x 7.4mm)	96	350	32.9	11.5	35	12	2425	211
		700	34.1	23.9	36	26	4698	197
		1250*	35.5	44.4	38	49	7700	173
VMU140055LPyxxA (1121mm x 32mm x 7.4mm)	108	700	33.8	23.7	36	25	4736	200
		1050	34.7	36.4	38	39	6847	188
		1400*	35.5	49.7	39	55	8656	174
VMU140055LPyxxC** (1168mm x 32mm x 7.4mm)	108	700	33.8	23.7	36	25	4736	200
		1050	34.7	36.4	38	39	6847	188
		1400*	35.5	49.7	39	55	8656	174
VMU240095LPyxxA (1121mm x 32mm x 7.4mm)	180	700	33.0	23.1	35	24	4838	209
		1400	34.2	47.9	37	52	9331	195
		2400*	35.6	85.4	39	94	14,699	172
VMU240095LPyxxC** (1472mm x 32mm x 7.4mm)	180	700	33.0	23.1	35	24	4838	209
		1400	34.2	47.9	37	52	9331	195
		2400*	35.6	85.4	39	94	14,699	172

* Indicates maximum rated current. Modules may be operated at a current less than or equal to this value, below the Tc rating.

** Made to order. Minimum order quantity applies.

Part Numbering Key



LIGHT SOURCES



Linear High Output DC LED Modules

- Ideal replacement for T5HO in linear highbays, water/vapor proof, and recessed and wall luminaires
- Aluminum extrusion mount for thermal management with positioning magnets
- LED at each end and connector underneath for even light distribution
- Constant current, high-efficacy LEDs, 3 SDCM for high color consistency
- Up to 198 lm/W; output range 2,200 lm to 13,310 lm (@4000K/80CRI)



Specifications			
Operating Temp. Range	-40°C to 55°C	PCB Material	CEM3
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; 3 SDCM	Warranty	5 years @ 105°C Tc from the date of manufacture
Lumen Maintenance	L70: >60,000Hrs / L90: 40,000Hrs (meets DLC Premium and Standard requirements)	Safety/compliance	cURus (File # E351548), UL Class 2 Lighting System, CE, SELV, RoHS Compliant

Product Models								
Model Number / Dimension (L x W x H)	Number of LEDs	Input Current (mA)	Nom. Fwd. Voltage (VDC)	Nom. Rated Power (W)	Max. Fwd. Voltage (V)	Max. Rated Power (W)	Nom. Lum. @4000K/80CRI (lm)	Nom. Efficacy @4000K/80CRI (lm/W)
TMU125050CLyxxA (560mm x 44mm x 10mm)	96	350	33	12	35	12	2245	195
		1050	35	37	38	40	6210	169
		1250*	36	44	39	49	7130	161
TMU140055CLyxxA (1120mm x 44mm x 10mm)	108	350	33	11	34	12	2255	196
		1050	35	36	38	39	6340	174
		1400*	36	50	39	55	8015	161
TMU240095CLyxxA (1120mm x 44mm x 10mm)	180	350	32	11	34	12	2230	198
		1400	34	48	37	52	8640	180
TMU240095CLyxxC** (1473.2mm x 44mm x 13.3mm)		2400*	36	85	39	94	13610	159

* Indicates maximum rated current. Modules may be operated at a current less than or equal to this value, below the Tc rating.

** Made to order. Minimum order quantity applies.

Part Numbering Key

T M U 240 095 CL 8 30 A

┌───┐
CRI
Standard: 8 = 80
Made-to-order: 9 = 90

┌───┐
Color Temperature
Standard: 30 = 3000K
35 = 3500K
40 = 4000K
50 = 5000K
Made-to-order: 27 = 2700K
57 = 5700K
65 = 6500K

Accessories for Low Profile Linear HO & Linear HO Output DC Modules			
Model Number	Description	Model Number	Description
TLE-OPT-120-002	140mm snap-on lens, 82% transmissivity	VLE-OPT-060-022C	560mm Linear 60° beam angle optical lens
TLE-OPT-120-003	280mm snap-on lens, 82% transmissivity	VLE-OPT-060-044C	1120mm Linear 60° beam angle optical lens
TLE-OPT-120-004	560mm snap-on lens, 82% transmissivity	TLE-OPT-120-020	Standard LinearHO module end caps (2 pieces)
TLE-OPT-120-013	1120mm snap-on lens, 82% transmissivity	VLE-OPT-120-012	Low Profile LinearHO module end caps (2 pieces)
TLE-OPT-120-014	1168mm snap-on lens, 82% transmissivity	TLC-HN02	560mm wire harness for 1 or 2 modules in parallel
TLE-OPT-120-021	1473mm snap-on lens, 82% transmissivity	TLC-HN04	560mm wire harness for 3 or 4 modules in parallel

LIGHT SOURCES



350mA ECO Series DC LED Modules

- Range of common lengths and wattages to fit a variety of luminaires
- High efficacy: up to 146 lm/W @ 350mA, 4000K/80 CRI
- On board connectors allow easy wire connections and end-to-end board linking
- 4 SDCM for high color consistency



Specifications

Beam Angle	120°
Operating Temperature Range	-35°C to +45°C
Lumen Maintenance	L70 = 50,000hrs @ Tc=85°C / L90 = 17,000hrs @ Tc=55°C
Color Consistency	Binning per ANSI C78.377-2008; 4 SDCM
PCB Material	FR-4
Warranty	5 years @ Max Tc from the date of manufacture
Safety/compliance	cURus (File # E351548), Class 2 Lighting System, RoHS Compliant

Product Models

Model Number	Number of LEDs	Nominal Input Current** (mA)	Forward Voltage (VDC)	Nominal Power (W)	Dimensions (L x W) (including connector)	Lumens @4000K/80CRI (lm)	Nom. Efficacy @4000K / 80 CRI (lm/W)
TMU040003ELyxxA'	6	350	6.1	2.1	38 x 24 x 6 mm	305	145
TMU040005ELyxxA'	12	350	12.1	4.2		590	139
TMU040005ELyxxB'	12	350	12.1	4.2		620	146
TMU040008ELyxxA'	18	350	18.1	6.3	38 x 24 x 6 mm	925	146
TMU040010ELyxxA'	24	350	24.1	8.4	279 x 18 x 6 mm	1230	146
TMU040010ELyxxB'	24	350	24.1	8.4		1230	146
TMU040010ELyxxC'	24	350	24.1	8.4		1230	146
TMU040015ELyxxA'	36	350	36.1	12.6	432 x 18 x 6 mm	1845	146

* Contact Fulham for lead time and availability

** Max input current 450mA. See specification sheets for detailed information on input current levels.

Part Numbering Key

T M U 040 015 E L 8 30 A



CRI

Standard: 8 = 80
Made-to-order: 9 = 90

Color Temperature

Standard: 30 = 3000K
35 = 3500K
40 = 4000K

Made-to-order: 27 = 2700K
50 = 5000K

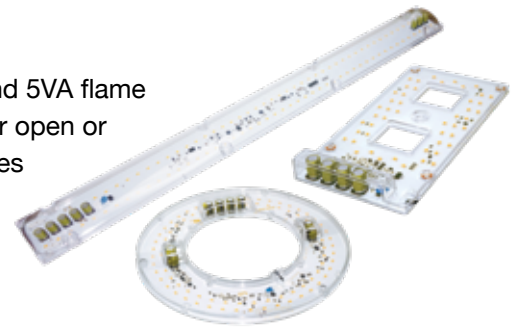
Some products may not carry CE marking. Contact Fulham for more information.

LIGHT SOURCES



DirectAC LED Retrofit Kits

- Very low flicker, meets Title 24 requirements
- DirectAC Drive with integrated LED board
- Smooth TRIAC/ELV dimming down to 10%
- Kits include installation hardware and labels
- High voltage barrier and 5VA flame rated lens - suitable for open or fully enclosed luminaires
- JA8 Compliant



Specifications

Input Voltage	UNV (120 - 277VAC)
Beam Angle	120°
Estimated Lumen Maintenance (L70)	Round and Rectangular models: L70 > 54,000hrs / L90 = 20,000hrs Linear models: L90 = 35,000hrs
Flicker Percentage	<30%
Operating Ambient Temp. Range (Ta)	-35°C to +50°C
PCB Material / Lens Material	MCPCB (superior thermal management) / Optical Grade Polycarbonate (5VA Flame rated)
Safety/Compliance	cULus Classified, cURus, RoHS, ENERGY STAR Luminaire 2.0 Listed, JA8 Compliant (2700K - 4000K @90CRI)
Protections	Surge 2.5kV; Over temperature control
Warranty	5 Years @ Max Tc from the date of manufacture

Product Models

Model Number	Input Power	Max Lumens @4000K***	CRI	Available CCT	Shape	Dimensions (L x W x H) (mm)
TJTUNV010ACyxxB'	10W	1065	80/90"	Standard options: 2700K, 3000K, 3500K, 4000K Made-to-order: 5000K	Round	79 Dia. x 18 H
VJTUNV010LNyxxB05'	10W	1087	90		Linear	140 x 56 x 17
VJTUNV015LNyxxB11'	15W	1644	90		Linear	280 x 56 x 17
TJTUNV015ACyxxB'	15W	1680	80/90"		Round	129 Dia. x 19 H
TJTUNV015ARyxxB'	15W	1725	80/90"		Rectangular	188 L x 102 W x 18 H
TJTUNV023ACyxxB'	23W	2540	80/90"		Round	177 Dia. x 18 H
VJTUNV030LNyxxB22'	30W	3235	90		Linear	560 x 56 x 17
TJTUNV034ACyxxB'	34W	3685	80/90"		Round	243 Dia. x 21 H

* Contact Fulham for lead time and availability

** Made-to-order

*** Round & Rectangular models: @80CRI; Linear models: @90CRI

Part Numbering Key

V J T UNV 030 LN 9 30 B 22

CRI

Round & Rectangular models
Standard: 8 = 80
Made-to-order: 9 = 90

Linear models
Standard: 9 = 90

Color Temperature

Standard: 27 = 2700K
30 = 3000K
35 = 3500K
40 = 4000K

Made-to-order: 50 = 5000K

Some products may not carry CE marking. Contact Fulham for more information.

CONTROLS



SIG Qualified Bluetooth® Mesh Lighting Control System



Bluetooth mesh is an emerging platform for connected lighting that is paving the way to IoT smart lighting. It provides fast, reliable performance, unmatched scalability, high-level security and out-of-the-box interoperability, creating opportunities for larger, more efficient lighting networks.

- **Wireless** High speed communication at distances of over 90 meters, creating massive savings on installation and wiring
- **Scalable** Start small with a single room, or connect thousands of devices in a building-wide installation
- **Secure** Advanced encryption standards with multiple authentication keys for maximum protection
- **Reliable** Self-healing network prevents communication losses and allows devices to be added or removed without disruption
- **Interoperable** All SIG Qualified Bluetooth mesh devices can communicate seamlessly, regardless of manufacturer

Fulham eliteBlue Commissioning Software

Fulham's eliteBlue commissioning software provides an intuitive set of tools for commissioning and monitoring qualified Bluetooth mesh lighting devices. Using simple web and iOS apps, users can easily customize lighting control parameters in accordance with site-specific needs and building energy codes.

- **Web portal**
Used off site to manage lighting installation projects and plan commissioning, including mapping zones within a building, setting up control scenarios for zones and managing users collaborating on the project.

Try it at eliteblue.fulham.com

- **Mobile app for iOS**
Used onsite to commission devices and fine-tune installations. No specialized training or lighting control expertise is needed- the intuitive interface lets you add Bluetooth mesh lighting devices to a wireless network in no time.



CONTROLS

Connected Driver

A 40W, 0-10V constant current driver with the unique ability to add Bluetooth mesh connectivity by attaching an intelligent Bluetooth antenna. Compatible with third-party sensors, wall switches, and other devices, the connected driver serves as the core component for powerful, easy-to-expand connected systems.

- 0-10V dimming standard. Add Bluetooth dimming with optional ESLI01HB01 SmartLink
- Compatible with Fulham's SmartSet programming platform



Specifications

Model Number	Input Voltage (VAC)	Watts	Output Voltage (VDC)	Dimensions (L x W x H)	Case Type	Case Qty.
T2C1UNV150P-40L	UNV (120-277)	40	10-57	168 mm x 50 mm x 30 mm	Compact w/End Leads	30

Bluetooth to 0-10V SmartBridge

A simple, easy-to-install component that connects to an existing 0-10V driver to add SIG Qualified Bluetooth mesh capability. The SmartBridge is an ideal solution for manufacturers looking to develop their Bluetooth product lines or contractors seeking to provide wireless lighting options in the field.



Specifications

Model Number	Max Load (W)	Max Input Current (A)	Input Voltage (VAC)	IP	Features	Dimensions (L x W x H)	Case Qty.
CTBRCB02JM02	600	5	UNV (120 - 277)	66	On / Off, 0-10V Dimming Control, Sensor Input	132 mm x 58 mm x 33 mm	30
CTBRCB03JM03-PC					On / Off, 0-10V Dimming Control, Sensor Input, Color Control, Power Metering		

Bluetooth Accessories

Model Number	Description	Dimensions	Case Qty
ESLI01HB01	Bluetooth SmartLink (attaches to T2C1UNV150P-40L to provide Bluetooth capability)	33.8mm length x 50.5mm diameter	20
ELIOPJX00SR	Short-range PIR occupancy and daylight harvesting sensor for SmartBridge Detection range: 4m diameter at height 2.4m, 5m diameter at height 2.7m	63.5mm length x 41.9mm diameter	30
ELIOPJX00LR	Long-range PIR occupancy and daylight harvesting sensor for SmartBridge Detection range: 16m diameter at height 12m	63.5mm length x 41.9mm diameter	30



ESLI01HB01



ELIOPJXS00SR

EMERGENCY



HotSpot Plus LED Driver & Emergency System

The revolutionary HotSpot Plus LED Driver & Emergency System combines the functions of a dimmable, programmable LED driver, emergency LED driver, and replaceable backup battery in a single compact unit. Under normal conditions this all-in-one solution operates as a constant current driver; during a power outage the integrated battery automatically activates, providing reliable emergency illumination for safe building egress. Benefits include smaller size, simplified installation, and the ability to bring emergency LED capability to smaller luminaires.

- Programmable output current in 1mA increments
- UL 924 Self-Diagnostics
- Selectable emergency output:
 - 40W model: 5W for 180 minutes or 10W for 90 minutes
 - 70W model: 7W for 90 minutes, programmable for lower power and longer runtime
- Compact size and simple installation for maximum flexibility



COMING SOON: DALI Dimming Model
Contact Fulham for Availability

HotSpot Plus LED Driver and Emergency System

Watts	Output Current (mA)	Output Voltage (VDC)	Model Number	Input Voltage (VAC)	Dimming Type	Ch.	Dimensions (L x W x H) (mm)	Case Type
45	250 - 1400	11 - 50	FHSAC1-230-45CE	220 - 240 (50/60)	0-10V	1	229 x 82 x 34	Compact w/ Terminals
70	350 - 2400	11 - 55	FHSAC1-UNV-70S	120 - 277 (50/60)	0-10V	1	424 x 30 x 25	Linear w/ Terminals

HotSpot Plus Accessories

FHS-TSTWL-BC	IP67, bicolor LED Indicator / test switch for use in exposed, outdoor-rated luminaires for 40W model
FHS-TSTWL-BC-S	IP67, bicolor LED Indicator / test switch for use in exposed, outdoor-rated luminaires for 70W model
FHS-EXT-48-TST	48" test switch extension cable

The Power of Programmability

All HotSpot LED drivers feature Fulham's innovative SmartSet programming platform, which gives the user the power to create the right driver for any situation.

- Auto-Programming capability for high volume usage
- Driver does not need to be powered during programming
- Programming via handheld controller or PC software



TPSB-100EU
SmartSet Controller



SmartSet
Software

To see the Fulham SmartSet programming platform in action visit the links below:

Overview of basic programming features: www.fulham.com/smartsetprogramming

One touch Auto-Programming: www.fulham.com/smartsetauto

Programming custom dimming curves: www.fulham.com/smartsetdimmingcurve

EMERGENCY



HotSpot Constant Power Programmable Emergency System

- Provides programmable, constant power emergency output for LED modules.
- Advanced features include self-diagnostics and detailed data logging.
- Compatible with Fulham SmartSet Programming Platform and TPSB-100 handheld controller.
- Complete system includes emergency driver and emergency battery.



Specifications

Model Number	FHSCP-UNV-10P-L-SD	RFI/EMI	FCC Part 15A Non-Consumer
Input Voltage	100 - 277VAC, 50/60Hz	Number of Output Channels	1 Channel
Input Current	0.06A Max.	Output Type	Class 2
Output Power	1-10W	Battery Type	LiFePO4 9.6VDC
Output Current	620mA Max.	Battery Recharge Time	12 Hours
Output Voltage Range	16 - 55VDC	Dimension	200.4 x 52 x 29.7
Ambient Operating Temperature	10°C to 55°C	Input Surge Protection	Line-Neutral 2kV, Line & Neutral-Ground 2kV

HotSpot Constant Power Programmable Battery Packs

Model Number	Max. Load for 90 Min	Capacity	Dimensions (mm) (L x W x H)
FHSBATL3-1.5-SD*	5W	1500mAh	89 x 70 x 25
FHSBATL9-.6-SD*	6W	1800mAh	191 x 48 x 22
FHSBATL3-3-SD	10W	3000mAh	112 x 72 x 33
FHSBATL6-1.5L-SD*	10W	3000mAh	200 x 40 x 23
FHSBATT8-C3L-SD*	10W	3000mAh	235 x 54 x 31

* Contact Fulham for lead time and availability

Why Battery Chemistry Matters

Fulham's HotSpot LED Emergency drivers are designed with safety, reliability, and performance in mind. This is why our newest drivers use LiFePO4 (Lithium Phosphate) batteries. They are non-toxic, contain no heavy metals, and provide the highest levels of safety, efficiency, and high temperature tolerance.

	Lithium Batteries				
	LiFePO4	LiMn2O4	LiCoO2	NiMH	NiCd
Chemistry	LiFePO4	LiMn2O4	LiCoO2	NiMH	NiCd
Voltage	3.2 V	3.7 V	3.6 V	1.2 V	1.2 V
Volume Energy density	290Wh/L	320 Wh/L	500Wh/L	260Wh/L	150Wh/L
Weight Energy density	130Wh/kg	135 Wh/kg	200Wh/kg	80Wh/kg	60Wh/kg
Safety	Good	Acceptable	Bad	Good	Good
Toxic or green	Green	Green	Toxic	Green	Toxic
Tolerance high Tem.	Good	Bad	Acceptable	Acceptable	Good
1C Cycle life (<80%)	>2000	~ 400	~ 500	~ 500	~ 500
Self-discharge / month	5%	8%	8%	35%	30%
Memory effect	no	no	no	no	yes
Energy efficiency	95%	90%	90%	70%	75%

EMERGENCY



HotSpot2 LED Emergency System

The HotSpot2 emergency lighting system drives existing constant current LED modules during power outages. A complete system is composed of an emergency driver, emergency battery, and output wire harness. A wide range of lumen output and run times are available.



HotSpot2 Drivers

Model Number	FHS2-UNV-36L	FHS2-UNV-56S
Input Voltage	100-277VAC	
Input Frequency	50/60Hz	
Input Current	0.1A Max	
LED Currents	100mA - 700mA	
Standby Input Power	<0.8W	
Total LED Power	20W	
Input Surge Protection	2.5KV Ring Wave	
Over Current Protection	Fuse	
Illumination Time	90 - 350 Min	
LED Connection	Series	
LED Output Protection	Self Resetting PTC	
Output Classification	UL1310/Class 2	
Bicolor LED Indicator	Included LED indicator / test switch provides automatic system status updates	
Output Voltage	12 - 55VDC	12 - 56VDC
Dimension (mm)	L 135 x W 43 x H 27	L 241 x W 30 x H 25

HotSpot2 Emergency Battery Packs

Model Number	Dimensions (mm) (L x W x H)	Chemistry	Capacity (mAh)	Battery Count	Recharge Time	Max. Load for 90 min. (W)	
						-36L	-56S
FHSBATT8-AA.9'	133 x 61 x 17	NiCd	900	8 Cells	24Hrs	4	4
FHSBATL3-1'	88 x 58 x 23	LiFePO4	1000	3 Cells	24Hrs	4	4
FHSBATL6-.6'	133 x 48 x 22	LiFePO4	1200	6 Cells	24Hrs	6	4
FHSBATL3-1.5'	88 x 69 x 23	LiFePO4	1500	3 Cells	24Hrs	8	8
FHSBATL3-1.5S'	225 x 28 x 24	LiFePO4	1500	3 Cells	24Hrs	8	8
FHSBATL9-.6'	191 x 46 x 30	LiFePO4	1800	9 Cells	24Hrs	10	8
FHSBATTCC3-3***	152 x 91 x 39	LiFePO4	3000	3 Cells	24Hrs	14**	14**
FHSBATL6-1.5'	145 x 69 x 23	LiFePO4	3000	6 Cells	24Hrs	16	14
FHSBATL6-1.5L'	200 x 38 x 30	LiFePO4	3000	6 Cells	24Hrs	16	14
FHSBATL6-1.5S'	424 x 28 x 24	LiFePO4	3000	6 Cells	24Hrs	16	14
FHSBATT8-C3'	105 x 84 x 54	NiCd	3000	8 Cells	24Hrs	16	16
FHSBATT8-C3L'	200 x 52 x 26	NiCd	3000	8 Cells	24Hrs	16	16
FHSBATL3-3'	112 x 70 x 31	LiFePO4	3000	3 Cells	24Hrs	16	16
FHSBATT8-D4'	126 x 98 x 68	NiCd	4000	8 Cells	24Hrs	20	20
FHSBATL6-3'	191 x 70 x 31	LiFePO4	6000	6 Cells	32Hrs	20**	20**
FHSBATL6-3L'	202 x 53 x 30	LiFePO4	6000	6 Cells	32Hrs	20**	20**

* Contact Fulham for lead time and availability

** FHSBATTCC3-3: Rated 10W for Canada. FHSBATL6-3 and FHSBATL6-3L rated 16W for Canada.

*** Cold Pack Battery: -20°C minimum operating temperature

HotSpot2 Accessories

	Model Number	mA	Model Number	mA	Model Number	mA
Wiring harnesses: Used to set the output current to the LED module during emergency operation. Using lower current will allow longer run times.	FHS-HARNESS-100	100	FHS-HARNESS-250	250	FHS-HARNESS-550	550
	FHS-HARNESS-125	125	FHS-HARNESS-300	300	FHS-HARNESS-600	600
	FHS-HARNESS-150	150	FHS-HARNESS-350	350	FHS-HARNESS-650	650
	FHS-HARNESS-175	175	FHS-HARNESS-400	400	FHS-HARNESS-700	700
	FHS-HARNESS-200	200	FHS-HARNESS-450	450		
	FHS-HARNESS-225	225	FHS-HARNESS-500	500		
FHS-TSTWL-BC	IP67, bicolor LED Indicator / test switch for use in exposed, outdoor-rated luminaires					
FHS-EXT12M	305mm battery extension cable					
FHS-EXT-48-TST	1219mm test switch extension cable					

Also available: battery mounting brackets and wallplates. For more information, visit www.fulham.com

Length of Warranty and Coverage

Warranty period will be determined from the date of manufacture as indicated by the date code stamped on each product and will be covered as follows:

EliteControl™ - Hardware: 5 years
FireHorse™ - 2 to 5 Years
FREELITE™ - 5 Years
HighHorse™ Electronic HID Ballast - 3 Years
HighHorse™ Induction - 5 to 7 Years (If installed per instructions)
HotSpot™ - 3 to 5 Years*
IceHorse™ Ballast - 3 Years
LongHorse™ Electronic Remote Fluorescent Ballast - 5 Years
LumoSeries™ - 5 Years
PONY™ Electronic Ballast - 2 Years
PONY™ Electronic SugarCube™ - 2 Years
PONY™ Electronic Transformer - 2 Years
RaceHorse™ Electronic Ballast – 70°C 5 Years, 90°C 3 Years
SunHorse™ Ballast - 3 Years
SineHorse™ Ballast - 3 Years
ThoroLED™ Drivers - 2 to 5 Years
ThoroLED™ Modules/Engines - 3 to 5 Years*
ThoroLED™ Retrofit - 5 Years*
ThoroLED™ Luminaire - 5 Years*
Vizion™ Modules/Engines - 5 Years*
Vizion™ Retrofit - 5 Years*
Vizion™ Luminaire - 5 Years*
WorkHorse™ Electronic Fluorescent Ballast - 5 Years
WorkHorse LED™ Drivers - 5 Years

* Covered defects for Vizion, ThoroLED, and HotSpot LED modules. For purposes of this limited warranty, a defect in a module shall be defined as one or more individual LEDs dark at initial installation or greater than 10% of individual LEDs dark during the Warranty Period. Replacement and/or repair of individual Vizion, ThoroLED, or HotSpot LED Modules does not extend this limited warranty beyond the original Warranty Period.

Warranty Conditions

Fulham extends this express limited warranty only to the original purchaser or to the first user. This constitutes the complete warranty for the product. Fulham is not responsible for any auxiliary equipment not furnished by Fulham, which is used in connection with or attached to the product, or for operation of the product with any auxiliary equipment. Damage to all such equipment is expressly excluded from this warranty. In addition, Fulham is not responsible for any damage to the product resulting from the use of auxiliary equipment not supplied by Fulham.

Warranty Conditions Not Covered

This warranty is not applicable to any product manufactured by Fulham not installed and operated in accordance with:

- * Underwriters Laboratories Inc. (UL)
- * National Electrical Code (NEC)
- * Standards set by the International Electrotechnical Commission (IEC)
- * European Norms Electrical Certification (ENEC)
- * Applicable international federal, state and local codes
- * Remote applications beyond maximum distance noted on product specification sheet. If maximum distance is not provided, remote application is not covered.
- * Fulham specific, most recent instructions and application guidelines provided for installation of the product

Additionally, this warranty is not applicable to Fulham manufactured products that have been subjected to excessive stress including, but not limited to, operating temperatures exceeding the recommended maximum temperature on any part of the product.

Obtaining Warranty Service

If within the warranty period it appears that the installed product does not meet the warranty conditions specified, the purchaser must notify Fulham of its warranty claim. Fulham or its authorized service company will provide warranty service directly to you.

General Provisions

All responsibilities regarding the product are set forth by this warranty. Replacement or repairs of the product is your exclusive remedy. For purposes of clarity, "replacement or repairs of the product" does not include any removal or reinstallation costs or expenses, including, without limitation, any labor costs or expenses, shipping costs to return non-conforming products or any damages that may occur during the return of product to Fulham. If Fulham chooses to replace the product and is not able to do so because it has been discontinued or is not available, Fulham may replace it with a comparable product. Fulham reserves the right to use new, reconditioned, refurbished, repaired or remanufactured products or parts in the repair or replacement of any product covered by this warranty. If no replacement product is available, Fulham, solely at its discretion, may issue a credit for the product, prorated for its remaining warranty life.

This warranty is given in lieu of all other express warranties. Implied warranties, including those without limitation, warranties of merchantability and fitness for a particular purpose, are limited to the duration of this limited warranty. Fulham shall in no event be liable for damages in excess of the purchase price of the product, for any loss of use, loss of time, inconvenience, commercial loss, lost profits or savings or other incidental, special or consequential damages arising out of the use or inability to use such product, to the full extent such may be claimed by law.

Local Exceptions

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, therefore the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and purchasers may have other rights that vary by jurisdiction.

Returned Materials Authorizations (RMA)

Customers shall contact Fulham directly for all RMA's.

After receiving the RMA, the user shall promptly return the product at the user's expense to Fulham after receiving instructions as to when and where to ship product. Failure to follow this procedure shall void this warranty. Should the number of pieces received by Fulham differ from the RMA either +/-, the customer will be notified and adjustments will be made at that time.

Fulham reserves the right to examine all failed products to determine the cause of failure and patterns of usage and reserves the right to be the sole judge as to whether any products are defective and covered under this warranty.

Contact Information

Fulham Europe

Effective: August 1st, 2018