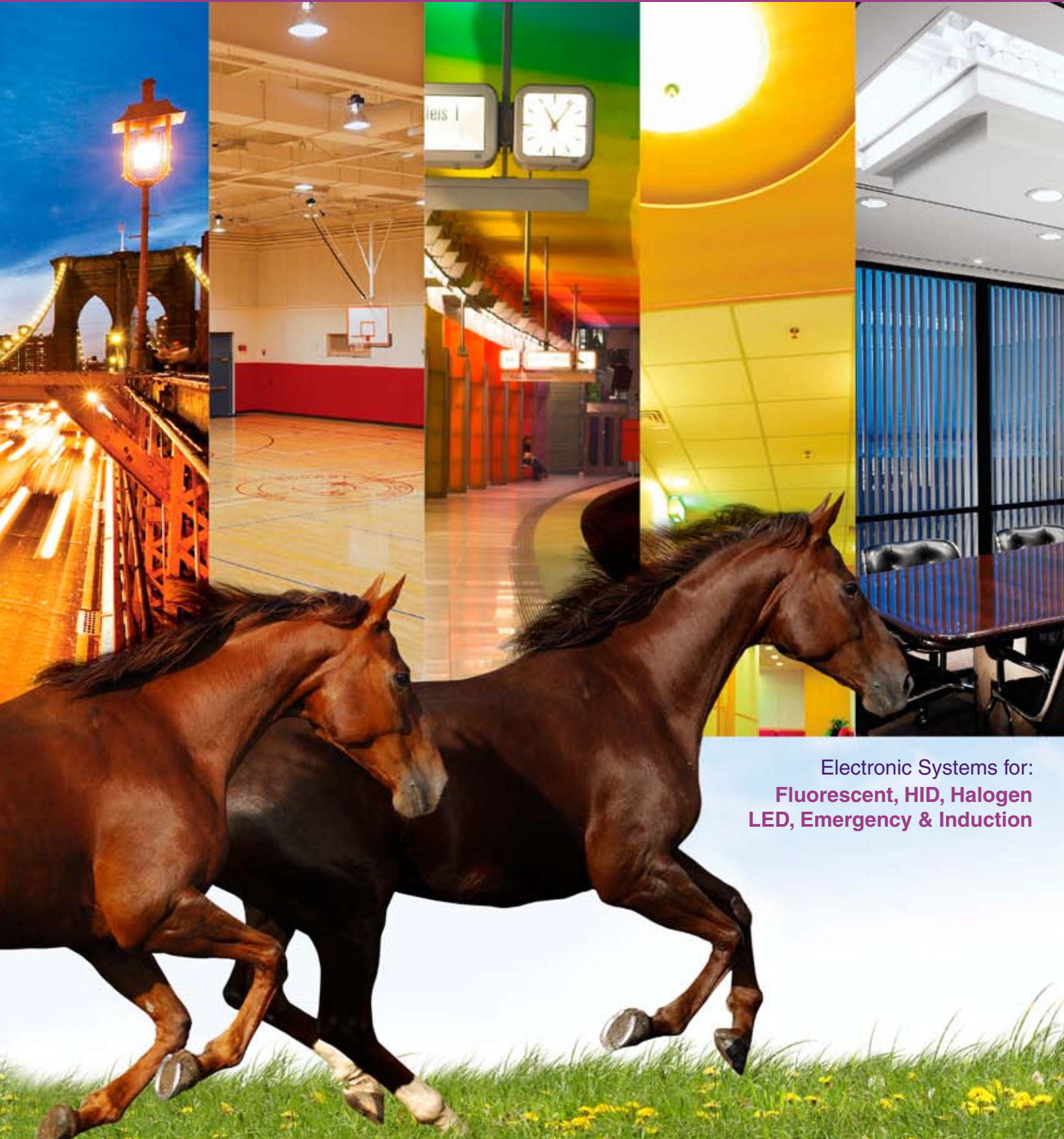




Trusted worldwide for cost efficient lighting solutions.

2010-2011 Catalog



Electronic Systems for:
**Fluorescent, HID, Halogen
LED, Emergency & Induction**

Fulham Co. Inc Always New, Always Improving

Long known as a global supplier of fine electronic ballasts, Fulham has built an equal reputation for fine lamps – as well as Electronic Transformers, LED Arrays and Drivers, Emergency Lighting, Induction Systems, Signage Ballasts, Refrigeration Ballasts, Controllers, Wiring Harnesses, Ionizers and Custom Assemblies. Through tremendous global growth, Fulham is dedicated to servicing clients new and old, near and far, to the same standards they've grown accustomed to.

Fulham's rigorous quality control program ranks among the highest in the industry resulting in a remarkably low product failure rate. Fulham's product diversity and excellence is thanks in part to our international staff of world-class engineers and production experts and our investment and commitment to leadership in product innovation. Our sales/service excellence is due to over 700 employees stationed around the globe in facilities in North America, Middle East, Europe, Asia, Africa and Latin America.

Wherever you are, anywhere world wide, Fulham is ready to serve all your lighting needs. Whether you need industrial or home lighting; signage, POP or ad kiosks; interior decoration, theater or movie sets; retail display cases or refrigeration; tanning salons or aquariums; parking lot or street lighting; signage; emergency lighting; jukeboxes or arcade games – or anything else where dependable, versatile, low-maintenance lighting is essential – Fulham has it.

So browse the catalog. Take your time. You never know where your next good idea will come from. And when you get that idea, Fulham can help you bring it to life, quickly, easily and cost-effectively. Call us.

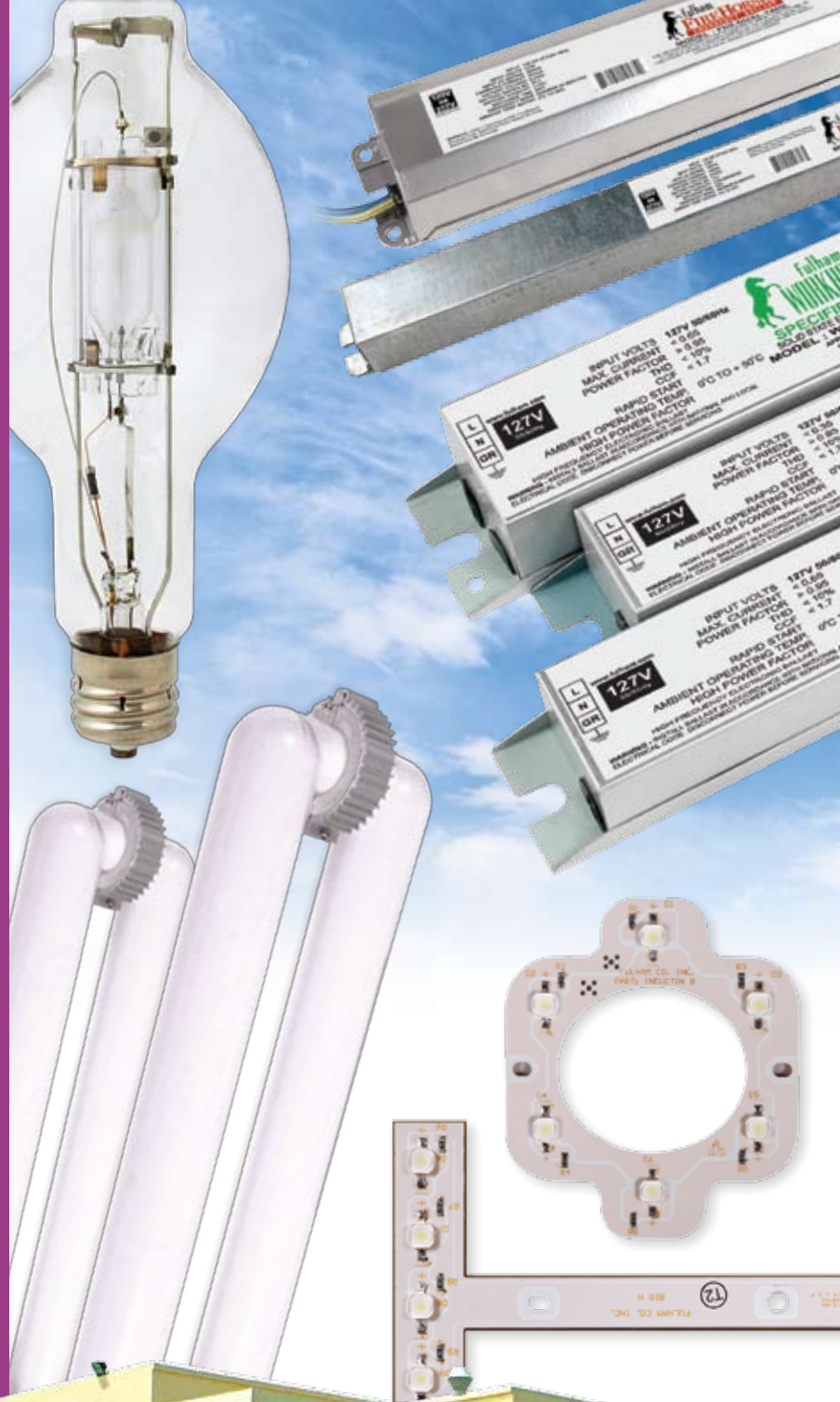


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RoHS
COMPLIANT



CERTIFIED
ISO
9001:2000

CERTIFIED
ISO
14001:2004



HIGH HORSE®

INDUCTION LIGHTING SYSTEMS

UNV 120-277V 50/60 Hz



- Indoor / Outdoor High Traffic
- Limited Access
- High / Low Bay
- Extreme Cold Temperature
- Roadway

Common Specifications

Input Voltage:	120V-277V	Case Temp.	<65°C
Input Frequency	50/60 Hz	Operating Temp. Open Fixture	(0°C to 50°C)
Output Frequency	250K Hz	Operating Temp. Closed Fixture	(-20°C to 50°C)
THD	< 10%		
Power Factor	> 0.95		

	System Model Number	Watts	Input Current (Amp) 120v - 277v	Input Power	Rated Initial Luminance (LM)	Efficacy (LM/W)	Luminance Maintenance (60K Hrs)	CRI	Color Temp. (Kelvin)	Average Lamp Life (Hours)
CIRCULAR	HH-ILS-CP40-5K HH-ILS-CDS40-5K	40	0.365-0.153	42	2800	67	70%-75%	> 80	5000K	100,000
	HH-ILS-CP70-5K HH-ILS-CDS70-5K HH-ILS-CDC70-5K	70	0.64-0.27	74	5250	71				
	HH-ILS-CP80-5K HH-ILS-CDS80-5K HH-ILS-CDC80-5K	80	0.731-0.307	84	6000	71				
	HH-ILS-CP100-5K HH-ILS-CDS100-5K HH-ILS-CDC100-5K	100	0.91-0.38	105	8000	76				
	HH-ILS-CP120-5K HH-ILS-CDS120-5K HH-ILS-CDC120-5K	120	1.09-0.46	126	9600	76				
	HH-ILS-CP150-5K HH-ILS-CDS150-5K HH-ILS-CDC150-5K	150	1.37-0.57	158	12000	76				
	HH-ILS-CP200-5K HH-ILS-CDS200-5K HH-ILS-CDC200-5K	200	1.80-0.76	210	17000	81				
	HH-ILS-CDS250-5K HH-ILS-CDC250-5K	250	2.25-0.95	263	22500	86				
	HH-ILS-CDS300-5K HH-ILS-CDC300-5K	300	2.73-1.14	315	27000	86				

NOTE: Contact Customer Service for Ordering Information • Color Temperature: 2720K To 6500K Available Upon Request
Ambient -40°C To 0°C Available Upon Request • Replacement Ballast and Lamp • Dimming Options



Features

- Up to 100,000 Rated Hours Lamp Life
- 75-100 LPW Provides High Efficiency
- High Color Rendering Index
- Quick Start / Instant Restrike
- High Power Factor
- High Operating Frequency
- High Lumen Maintenance
- Optional Color Temperatures
- Constant Wattage Output
- Strong Adaptability to Wide Range of Applications
- Low THD
- Dimming Options
- Universal Voltage

	System Model Number	Watts	Input Current (Amp) 120v - 277v	Input Power	Rated Initial Luminance (LM)	Efficacy (LM/W)	Luminance Maintenance (60K Hrs)	CRI	Color Temp. (Kelvin)	Average Lamp Life (Hours)
BULB	HH-ILS-BP35-5K	35	0.32-0.35	37	2450	66	70%-75%	> 80	5000K	100,000
	HH-ILS-BP55-5K	55	0.505-0.21	58	3575	62				
	HH-ILS-BP85-5K	85	0.77-0.32	89	5950	67				
	HH-ILS-BDS85-5K									
	HH-ILS-BP100-5K	100	0.91-0.38	105	7000	67				
	HH-ILS-BDS100-5K									
	HH-ILS-BP120-5K	120	1.09-0.46	126	9000	71				
	HH-ILS-BDS120-5K									
	HH-ILS-BP165-5K	165	1.495-0.63	173	11550	67				
	HH-ILS-BDS165-5K									
	HH-ILS-BP200-5K	200	1.80-0.76	210	14000	67				
	HH-ILS-BDS200-5K									
TUBULAR	HH-ILS-BP250-5K	250	2.25-0.95	263	18750	71	70%-75%	> 80	5000K	100,000
	HH-ILS-BDS250-5K									
	HH-ILS-TP40-5K	40	0.363-0.153	42	2800	67				
	HH-ILS-TP70-5K	70	0.64-0.27	74	5250	71				
	HH-ILS-TDC70-5K									
	HH-ILS-TP80-5K	80	0.731-0.307	84	6000	71				
	HH-ILS-TDC80-5K									
	HH-ILS-TP100-5K	100	0.91-0.38	105	8000	76				
	HH-ILS-TDC100-5K									
	HH-ILS-TP120-5K	120	1.10-0.46	126	9600	76				
	HH-ILS-TDC120-5K									
	HH-ILS-TP150-5K	150	1.37-0.57	158	12000	76				
	HH-ILS-TDC150-5K									
	HH-ILS-TP200-5K	200	1.80-0.76	210	17000	81				
	HH-ILS-TDC200-5K									
	HH-ILS-TDC250-5K	250	2.25-0.95	263	21250	81				
	HH-ILS-TDC300-5K	300	2.72-1.14	315	27000	86				
	HH-ILS-TDC400-5K	400	3.63-1.52	420	36000	86				

NOTE: Contact Customer Service for Ordering Information • Color Temperature: 2720K To 6500K Available Upon Request
Ambient -40°C To 0°C Available Upon Request • Replacement Ballast and Lamp • Dimming Options

HIGH HORSE[®]

INDUCTION LIGHTING SYSTEMS

RETRO-FIT PROGRAM & OEM ENGINEERED SYSTEMS

Fulham provides a complete range of supportive services that may enable you to retro-fit your existing fixtures with HighHorse Induction Lamps & Ballasts.

Fulham Engineered System Advantage

Kit Component Properties ensure:

- Long System Life
- Optimum Performance
- Maximum Warranty

Primary Benefits

- Reduced Energy/ Maintenance = <2 year payback
- Visual Performance = Greater Safety/Security
- Qualify for Rebate & Government Assist Programs

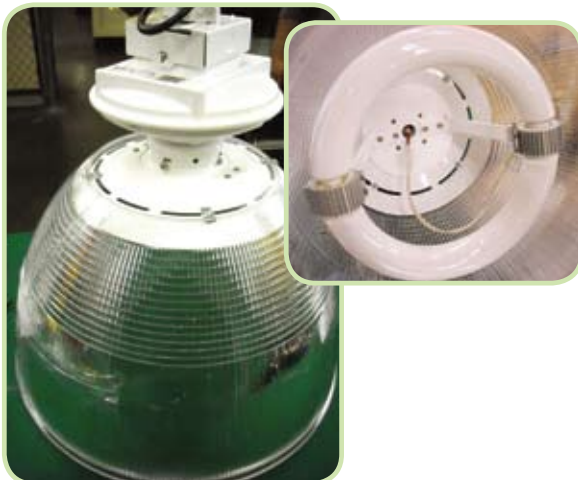


Complete Ballast & Lamp Mounting Assembly

7 Point System Evaluation

Fulham determines the best lamp and ballast combination for the existing fixture using our 7 Point System Evaluation

- Ballast mounting and thermal management
- Lamp mounting and optical enhancement
- Ease of installation component options
- Thermal Test Report
- Retro-fit Component CAD drawings
- Installation instructions
- Evaluation sample



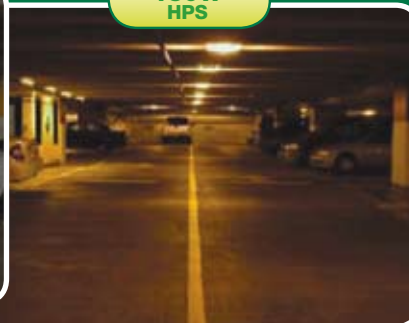
Available Systems	Wattages
Circular Systems	40W - 300W
Bulb Systems	35W - 250W
Tubular Systems	40W - 400W

Lower Wattage Superior Lighting

85W
INDUCTION



150W
HPS



How is it that an 85w HighHorse Induction system can replace a 150w HID system and the visual acuity is improved with the Induction system?

Find out now.

Call or click for more information:

323.599.5000

www.fulham.com

HIGH HORSE®

HID BALLAST & LAMP KITS

MULTI-VOLT 50/60 Hz

EVERYTHING YOU NEED IN 1 CONVENIENT KIT

Fulham HighHorse Ballast & Lamp kits include:

Ballast, Lamp, Dry Capacitor, Ignitor and Mounting Hardware.

- HPS and Metal Halide Kits
- Available from 70W to 1000W
- UL Recognized Components
- Dry Capacitor
- Attractive, Durable Packaging
- Competitive Pricing
- Multivolt - 120V/208V/230V/277V



Kit Model #	Watts	Lamp	Coil & Core Ballast	Dry Capacitor
High Pressure Sodium Kits				
HHHPSQ470DE1	70W	HL0070AU	HHHPSMLT470	HHHPSDCAP70
HHHPSQ470DM2	70W	HL0070BBU	HHHPSMLT470	HHHPSDCAP70
HHHPSQ4100DE1	100W	HL0100AU	HHHPSMLT4100	HHHPSDCAP100
HHHPSQ4100DM2	100W	HL0100BBU	HHHPSMLT4100	HHHPSDCAP100
HHHPSQ4150DE1	150W	HL0150AU	HHHPSMLT4150	HHHPSDCAP150
HHHPSQ4150DM2	150W	HL0150BBU	HHHPSMLT4150	HHHPSDCAP150
HHHPSQ4250DM5	250W	HL0250CBU	HHHPSMLT4250	HHHPSDCAP250
HHHPSQ4400DM5	400W	HL0400CBU	HHHPSMLT4400	HHHPSDCAP400
Metal Halide Kits				
HMMHQ470DE1	70W	HM0070AU4K	HMMHMLT470	HMMHDCAP70
HMMHQ4100DE1	100W	HM0100AU4K	HMMHMLT4100	HMMHDCAP100
HMMHQ4175DE1	175W	HM0175AU4K	HMMHMLT4175	HMMHDCAP175
HMMHQ4175DM3	175W	HM0175DU4K	HMMHMLT4175	HMMHDCAP175
HMMHQ4250DM3	250W	HM0250DU4K	HMMHMLT4250	HMMHDCAP250
HMMHQ4400DM2	400W	HM0400DU4K	HMMHMLT4400	HMMHDCAP400
HMMHQ4400DM3	400W	HM0400EU4K	HMMHMLT4400	HMMHDCAP400
HMMHQ41000DM7	1000W	HM1000FBU4K	HMMHMLT41000	HMMHDCAP1000

HIGH HORSE®

HID METAL HALIDE HPS CORE & COIL BALLASTS

MULTI-VOLT 50/60 Hz



- 39W - 1000W Range
- All Ballasts Include Capacitor-Igniter-Bracket
- Pulse Start and 2009 Energy Savings Compliant Models
- HX-HPF & CWA Circuits
- Multi-Tap Voltage Range
- Precision Coil Winding
- High Temperature Rated Capacitor and Igniter
- Starting Temperature HPS -40°C
- Starting Temperature MH -30°C
- Contractor Replacement Kits



Description	ANSI CODE	Input Watts	Ballast + Ignitor + Dry Capacitor + Mounting Hardware	Ballast + Ignitor + Wet Capacitor + Mounting Hardware	Ballast + Ignitor (Less Capacitor) + Mounting Hardware	Ignitor Only	Dry Capacitor	Dry Capacitor VAC Rating	Wet Capacitor	Wet Capacitor VAC Rating	Ballast Weight lbs.
High Pressure Sodium			HHHPS-MLT4-	HHHPS-MLT4-	HHHPS-MLT4-	HHHPS-	HHHPS-DCAP-		HHHPS-WCAP-		
HX-HPF HPS70W/120V/208V/240V/277V	S62	91	70D	70W	70	IG70-150	70	7uF/280VAC	70	7uF/280VAC	4.85
HX-HPF HPS100W/120V/208V/240V/277V	S54	123	100D	100W	100	IG70-150	100	10uF/280VAC	100	10uF/280VAC	6.61
HX-HPF HPS150W/120V/208V/240V/277V	S55	185	50D	150W	150	IG70-150	150	14uF/280VAC	150	14uF/280VAC	7.71
CWA HPS200W /120V/208V/240V/277V	S66	240	200D	200W	200	IG200-400	200	28uF/330VAC	200	28uF/300VAC	7.71
CWA HPS250W/120V/208V/240V/277V	S50	290	250D	250W	250	IG200-400	250	35uF/330VAC	250	35uF/300VAC	11.13
CWA HPS400W/120V/208V/240V/277V	S51	460	400D	400W	400	IG200-400	400	55uF/240VAC	400	55uF/300VAC	13.77
CWA HPS600W/120V/208V/240V/277V	S106	665	600D	600W	600	IG600	600	64uF/280VAC	600	64uF/300VAC	20.06
CWA HPS1000W/120V/208V/240V/277V	S52	1,090	1000D	1000W	1000	IG1000	1000	26uF/400VAC	1000	26uF/525VAC	25.79
Probe Start Metal Halide			HHMH-MLT4-	HHMH-MLT4-	HHMH-MLT4-	HHMH-	HHMH-DCAP-		HHMH-WCAP-		
HX-HPF MH70W/120V/208V/240V/277V	M98/M143	90	70D	70W	70	IG70-150	70	8uF/280VAC	70	8uF/280VAC	5.51
HX-HPF MH100W/120V/208V/240V/277V	M90/M140	129	100D	100W	100	IG70-150	100	12uF/280VAC	100	10uF/280VAC	5.62
HX-HPF MH150W/120V/208V/240V/277V	M102/M142	185	150D	150W	150	IG70-150	150	16uF/280VAC	150	16uF/280VAC	7.71
CWA MH175W /120V/208V/240V/277V	M57/H39 150w-M107	205	175D*	175W*	175*		175	10uF/400VAC	175	10uF/400VAC	6.83
CWA MH250W/120V/208V/240V/277V	M58/H37	305	250D*	250W*	250*		250	15uF/400VAC	250	15uF/400VAC	9.03
CWA MH400W/120V/208V/240V/277V	M59/H33	445	400D*	400W*	400*		400	24uF/400VAC	400	24uF/400VAC	10.58
CWA MH1000W/120V/208V/240V/277V	M47/H36	1,075	4100D*	1000W*	1000*		1000	24uF/400VAC	1000	24uF/480VAC	25.8
2009 Compliant Pulse Start Metal Halide			HHMH-MLT4-	HHMH-MLT4-	HHMH-MLT4-	HHMH-	HHMH-DCAP-		HHMH-WCAP-		
CWA MH175W /120V/208V/240V/277V	M137/M152	198	175PD	175PW	175P	IG175-200	175P	11uF/400VAC	175P	11uF/370VAC	9.29
CWA MH200W /120V/208V/240V/277V	M136	225	200PD	200PW	200P	IG175-200	200P	15uF/330VAC	200P	15uF/350VAC	7.93
CWA MH250W /120V/208V/240V/277V	M138/M153	281	250PD	250PW	250P	IG175-400	250P	17uF/330VAC	250P	17uF/400VAC	9.85
CWA MH320W /120V/208V/240V/277V	M132/M154 M170	362	320PD	320PW	320P	IG175-400	320P	21uF/400VAC	320P	21uF/400VAC	11.00
CWA MH350W /120V/208V/240V/277V	M131/M171	392	350PD	350PW	350P	IG175-400	350P	22.5uF/400VAC	350P	23uF/400VAC	11.00
CWA MH400W /120V/208V/240V/277V	M135/M155 M172	445	400PD	400PW	400P	IG175-400	400P	26uF/400VAC	400P	26uF/400VAC	11.02
CWA MH450W /120V/208V/240V/277V	M144	504	450PD	450PW	450P	IG450	450P	26.5uF/400VAC	450P	26uF/400VAC	13.12

*Integral Ignitor

HIGH HORSE®

HID METAL HALIDE ELECTRONIC BALLASTS

120V 50/60 Hz



- Constant Power and Light
- Enhanced Color Uniformity
- Wide Lamp Type Compatibility
- Improved Lumen Maintenance
- Longer Lamp Life
- Energy Saving
- Small, One-Piece Design
- Lower Operating Cost



Specifications	Models		
	HH-MH-120-039-BL HH-MH-120-039-C	HH-MH-120-050-BL HH-MH-120-050-C	HH-MH-120-070-BL HH-MH-120-070-C
Lamp Type/Wattage	M130/39 Watt	M110/50 Watt	M98/70 Watt
Operating Voltage	120v	120v	120v
Max Current (Amp)	0.40A	0.55A	0.72A
Min Operating Temp	-30°C	-30°C	-30°C
Max Case Temp	85°C	80°C	80°C
Open Circuit Protection	No	No	No
End of Lamp Life Protection	No	No	No
Power Factor	>.98	>.98	>.98
ATHD: (Total Harmonic Distortion)	<10%	<10%	<10%
Crest Factor	<1.4	<1.4	<1.4
Lamp Frequency (Low Square Wave)	Yes	Yes	Yes
Remote Mounting	<15 ft	<15 ft	<15 ft
Dimming Option (50%)	No	No	No
Case Size L X W X H	5.5" x 3.5" x 1.6"	5.5" x 3.5" x 1.6"	5.5" x 3.5" x 1.6"
Weight	1.4 lbs	1.5 lbs	1.4 lbs

Case Options:

BL - 8/32 Studs on bottom, 2" on center with bottom leads

C - No studs on bottom, compact model with side leads

Common Specifications

Frequency	50/60 Hz	Automatic Resetting Thermal Switch
Protection Input	(ANSI C62.41)	EMI: FCC CFR Title 47 Part 18 non-consumer
Voltage Transients	MOV (Per ANSI C82.11 - 1993 & C62.41)	Lamp Wattage Regulation
cULus Listed with UL1029 Type 1 Outdoors, Suitable for Recessed use		Ballast Efficiency >90%
Class P Inherent Thermal Protection		Flicker - Zero
Sound Rating	A	ROHS Compliance



fulham[®] HID LAMPS

High Pressure Sodium

- Medium Base 35W to 150W
- Mogul Base 50W to 1000W
- Long Life
- High Efficiency

Metal Halide

- 75W-1000W
- High Color Rendering
- Long Life 15,000+ hours



Part Number	Description	Watts	CCT (K)	Avg. Life (Hr.)	Initial Lumens (lm)	Mean Lumens (lm)	MOL (inches)
High Pressure Sodium							
Medium Base							
HL0050AU	LU50/ED17/MED	50W	2000	24,000+	3400	2800	5.43
HL0070AU	LU70/ED17/MED	70W	2000	24,000+	6000	4800	5.43
HL0100AU	LU100/ED17	100W	2000	24,000+	9500	7700	5.43
HL0150AU	LU150/ED17/MED	150W	2000	24,000+	15000	12000	5.43
Mogul Base							
HL0070BBU	LU70/ED23.5	70W	2000	24,000+	6000	4800	7.75
HL0100BBU	LU100/ED23.5	100W	2000	24,000+	9500	7700	7.75
HL0150BBU	LU150/55/ED23.5	150W	2000	24,000+	15000	12000	7.75
HL0250CBU	LU250/ET18	250W	2000	24,000+	26000	22100	9.65
HL0400CBU	LU400/ET18	400W	2000	24,000+	47000	39950	9.65
Standard Metal Halide							
Medium Base							
HM0070AU	MH70/ED17/U	70W	3K, 4K	15000	6000	4400	5.44
HM0100AU	MH100/ED17/U	100W	3K, 4K	15000	8000	5500	5.44
HM0175AU	MH175/ED17/U	175W	3K, 4K	15000	14000	9300	5.44
Mogul Base							
HM0175DU	MH175/ED28/U	175W	3K, 4K	15000	16000	12800	8.31
HM0250DU	MH250/ED28/U	250W	3K, 4K	15000	20500	17500	8.31
HM0400DU	MH400/ED28/U	400W	3K, 4K	15000	36000	27200	8.31
HM0400EU	MH400/ED37/U	400W	3K, 4K	15000	36000	28000	11.5
HM1000FBU	MH1000/BT56/BU	1000W	3K, 4K	15000	110000	86000	15.38

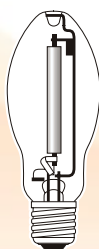
* CCT Standard colors: 3K= 3200K; 4K= 4200K

Add Color Temperature CCT (K) required to item number when ordering; Example HP0070AU4K

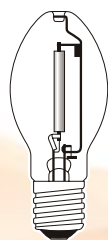
Lamp Notes:

- (1) All lamps listed are CLEAR finish. COATED lamps available for special order.
- (2) Other Wattages and Lamp types available special order. Please contact Fulham at 323-599-5000

HIGH PRESSURE SODIUM

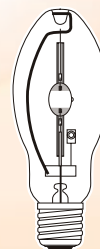


MEDIUM BASE

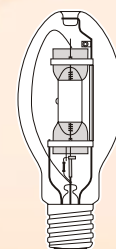


MOGUL BASE

STANDARD METAL HALIDE



MEDIUM BASE



MOGUL BASE



fulham® HID LAMPS

Protected Metal Halide Lamps

- 50W-1000W
- High Color Rendering
- Long Life 10,000+ hours
- Standard MH for Enclosed fixtures and Protected Metal Halide Lamps suitable for Open Fixtures

Pulse Start Metal Halide

- Part of your Energy Efficient Lighting System
- 50W to 1000W
- Available for Open and Enclosed Fixtures
- Better Color Uniformity
- Better Lumen Maintenance
- Faster Re-strike & Warm-up Time



Part Number	Description	Watts	CCT (K)	Avg. Life (Hr.)	Initial Lumens (lm)	Mean Lumens (lm)	MOL (inches)
Protected Metal Halide							
Medium Base							
HP0070AU	MP70/ED17/U/4K	70W	3K, 4K	15000	6000	4400	5.44
HP0100AU	MP100/ED17//U/4K	100W	3K, 4K	15000	8500	5800	5.44
HP0150AU	MP150/ED17/U/4K	150W	3K, 4K	15000	12500	10000	5.44
HP0175AU	MP175/ED17/U/4K	175W	3K, 4K	15000	16000	12800	5.44
Mogul Base							
HP0400GBU	MP400/BT37/BU/4K	400W	3K, 4K	20000	36000	30500	11.5
HP1000GBU	MP1000/BT37/BU/4K	1000W	3K, 4K	20000	107000	85000	11.5
Pulse Start Protected Metal Halide - 2009 EISA Compliant							
Mogul Base							
HP0175DPBU4K	MP175/ED28/PS/BU/4K	175W	3K, 4K	15000	17000	12500	8.31
HP0200DPBU4K	MP200/ED28/PS/BU/4K	200W	3K, 4K	15000	20000	16000	8.31
HP0250DPBU4K	MP250/BT28/PS/BU/4K	250W	3K, 4K	15000	23800	19000	8.31
HP0320DPBU4K	MP320/ED28/PS/BU/4K	320W	3K, 4K	15000	28600	21000	11.5
HP0350DPBU4K	MP350/ED28/PS/BU/4K	350W	3K, 4K	15000	33000	24500	8.31
HP0400GPBU4K	MP400/BT37/PS/BU/4K	400W	3K, 4K	15000	42000	33600	11.5
HP0450EPBU4K	MP450/ED37/PS/BU/4K	450W	3K, 4K	15000	47000	37000	11.5
HP1000GPBU4K	MP1000/BT37/PS/BU/4K	1000W	3K, 4K	15000	105000	80000	11.5

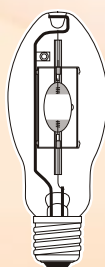
* CCT Standard colors: 3K= 3200K; 4K= 4200K

Add Color Temperature CCT (K) required to item number when ordering; Example HP0070AU4K

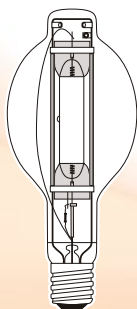
Lamp Notes:

- (1) All lamps listed are CLEAR finish. COATED lamps available for special order.
- (2) Other Wattages and Lamp types available special order. Please contact Fulham at 323-599-5000

PROTECTED METAL HALIDE

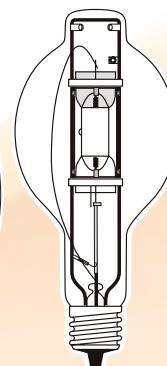
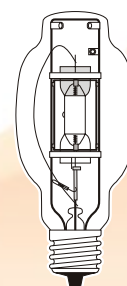


MEDIUM BASE



MOGUL BASE

PULSE START PROTECTED METAL HALIDE



MOGUL BASE

THOROLED

HIGH BRIGHTNESS LED LAMPS

MR16



Advanced Features:

- Easy installation
- Long life LED
- Superior Heat Management
- Minimal UV or heat emitted on lit surface

Optional Accessories:

- Ceiling Ring



High Brightness LED MR 16 Lamps

Model #	Description
TLMR1607HP40C	8W 40° Angle 5500K
TLMR1607HP40W	8W 40° Angle 3000K
TLMR1607HP60C	8W 60° Angle 5500K
TLMR1607HP60W	8W 60° Angle 3000K
Dimensions	Diameter 1.95" MOL 2.21"
Input Power	8W
Input Voltage	12V AC/DC
Power Supply	Low-Voltage Transformer
Operating Temp.	-20°C~40°C
Colors Available:	3000K, 5500K, Red, Green, Blue
Beam Angle Available	40°/ 60°
Base	GX 5.3
Lumen	280lm
Life Rating	40,000hrs
IP Rating	30
Warranty	2-years

LED MR16 3W Lamps

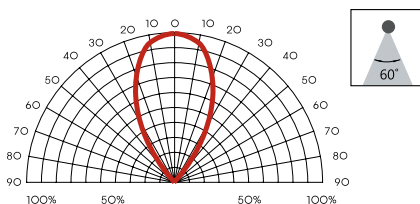
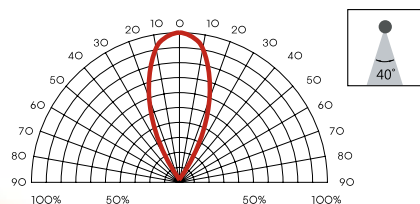
Model #	Description
TLMR160355-CW	3W, 55° Beam Angle, Cool White
TLMR160355-WW	3W, 55° Beam Angle, Warm White
Dimensions	Diameter 2.0" MOL 2.3"
Input Power:	3 watts
Input Voltage	12V AC/DC
Operating Temp.	-20° C to 40° C
Color Temperatures Available	Cool White
	Warm White
Beam Angle Available	55°
Base	GX 5.3

Recommended Fulham Driver for all MR16's

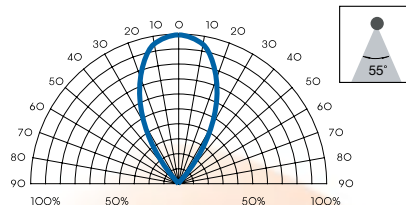
Model: TL1MLT 012 10 L

Refer to page 17 for specifications

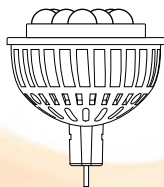
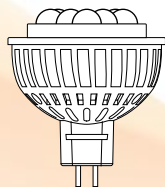
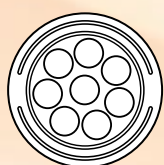
High Brightness MR16



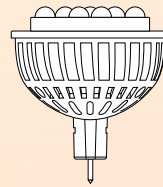
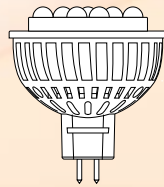
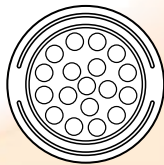
MR16 3W



MR16



MR16 3W



THOR LED

HIGH BRIGHTNESS LED LAMPS

PAR 30 / PAR 38

Applications:

- Landscape accent/ Spot lighting
- Architecture Lighting
- Display Case Accent
- Artwork Lighting
- Mood Lighting
- Amusement Park Accent
- Recessed and Dimmable Applications

Common Specifications

Base	E26/E27
Input Voltage	AC110V / AC230V
Input Frequency	50Hz/60Hz
LED Type	CREE
Beam Angle	15°, 30°, 45°, 60°
LED Life	50,000 Hours



Dimming Specifications

Dimming Range	5%-100%
Type	Switch (Triac)
Available Work Mode	Trailing edge (Recommended) Front edge
Recommended Dimmer Brands	Lutron "Skylark" Leviton TCL MASANO

High Brightness LED PAR 30 Lamps 15W

Model #	Description
TLPAR30D15W28-15	15W, 15° Angle, 2800K
TLPAR30D15W28-45	15W, 45° Angle, 2800K
TLPAR30D15W28-60	15W, 60° Angle, 2800K
TLPAR30D15W35-15	15W, 15° Angle, 3500K
TLPAR30D15W35-45	15W, 45° Angle, 3500K
TLPAR30D15W35-60	15W, 60° Angle, 3500K
TLPAR30D15W60-15	15W, 15° Angle, 6000K
TLPAR30D15W60-45	15W, 45° Angle, 6000K
TLPAR30D15W60-60	15W, 60° Angle, 6000K

Illuminance

Color	Beam Angle	Luminous Flux
Cool White	15°	496
Natural White	15°	523
Warm White	15°	424
Cool White	45°	455
Natural White	45°	493
Warm White	45°	392

High Brightness LED PAR 38 Lamps 27W

Model #	Description
TLPAR38D27W28-15	27W, 15° Angle, 2800K
TLPAR38D27W28-45	27W, 45° Angle, 2800K
TLPAR38D27W28-60	27W, 60° Angle, 2800K
TLPAR38D27W35-15	27W, 15° Angle, 3500K
TLPAR38D27W35-45	27W, 45° Angle, 3500K
TLPAR38D27W35-60	27W, 60° Angle, 3500K
TLPAR38D27W60-15	27W, 15° Angle, 6000K
TLPAR38D27W60-45	27W, 45° Angle, 6000K
TLPAR38D27W60-60	27W, 60° Angle, 6000K

Illuminance

Color	Beam Angle	Luminous Flux
Cool White	15°	935
Natural White	15°	956
Warm White	15°	776
Cool White	45°	886
Natural White	45°	891
Warm White	45°	751



Advanced Features:

- Adjustable for Perfect Illumination
- Easy installation
- Long life LED
- Superior Heat Management
- Minimal UV or heat emitted on lit surface
- End to End connectivity up to 43W

Applications

- Indoor Use Only Display Case
- Cove Lighting
- Task Lighting
- Accent



Low Voltage LED Light Bar		
Model #	Description	L2 (in.)
TLFLB32024	4-ft Slim Light Bar	48.07
TLFLB32018	3-Ft Slim Light Bar	36.25
TLFLB32012	2-Ft Slim Light Bar	24.43
TLFLB3207	1-Ft Slim Light Bar	12.61
Input Power	4.4W/linear foot	
Input Voltage	24VDC	
Power Supply	Low-Voltage Switching Mode Power Supply (Part # TLFLBPOWER-18)	
Operating Temp.	-20°C~40°C	
Colors Available:	3000K, 5500K, Red, Green, Blue	
Beam Angle Available	100°	
Lumen	180 lm/ft	
Life Rating	40,000hrs	
IP Rating	30	
Warranty	2-years	

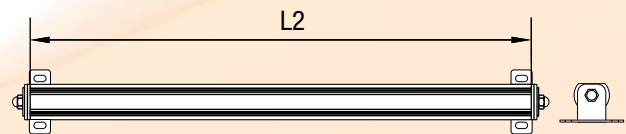
Power Supply Part # TLFLBPOWER-18	
Dimensions	4-1/8 x 1-7/8 x 1-1/8
Input	AC90-240V, 50/60Hz, plug and cord set
Output:	24VDC, up to 1.8A
Indoor Rated	cUL/UL listed

120-240V AC LED Light Bar		
Model #	Description	L1 (in.)
TLALB455	4-ft Slim Light Bar 55°	47.32
TLALB355	3-Ft Slim Light Bar 55°	35.50
TLALB255	2-Ft Slim Light Bar 55°	23.68
TLALB155	1-Ft Slim Light Bar 55°	11.86
Dimensions	Overall Width 1.65" Overall Height 1.54"	
Input Power	6W/linear foot	
Input Voltage	100-240V AC, 50/60Hz	
Operating Temp.	-20°C~40°C	
Colors Available:	3000K, 5500K, Red, Green, Blue	
Beam Angle Available	55° (100° optional)	
Lumen	245 lm/ft	
Life Rating	40,000hrs	
IP Rating	30	
Warranty	2-years	



*ADD COLOR TEMPERATURE CCT (K) REQUIRED TO ITEM NUMBER WHEN ORDERING:

EXAMPLE: TLFLB32012-CW CW=5500 WW=3000



THOROLED

LIGHT PLUGZ™ LED LIGHT ENGINES

Light Plugz™, the most versatile LED Light Engine available with high performance and reliability in an easy-to-incorporate package. Plugz Light engine's threaded housing is designed to mate with a variety of accessories, such as lens, heat-sink or custom designed housing.



Common Specifications

Input Voltage	9V-15V AC or DC
Input Watts	1.5W • 4W • 6.5W
Available LED Colors +/- 200K	White (2750K, 3950K, 6,000K), Red, Blue, Green, Amber and RGB
CRI	3700K-10.000K CCT - 75; 2600K-3700K CCT - 80
Dimmability	3.5V ~ 7V; Phase Modulation or Voltage Control
Maximum View Angle	80°
Lens	Standard: 45°; Available: 10°, 30°, 60°, 80°
Operating Temperature	-20° C ~ 60° C
Maximum Operating Temperature	80° C
Waterproof Class	IP67
Life Span	50,000 hours at no less than 70% lumen output
Dimensions	Thread: M26 x 1.5; Length: 30mm-50mm; Diameter: 26mm
Bezel Color	Black, Silver, White
Wire	UL 18 Gauge SPT-2; Length: (std) 36"



Ordering Options:

Base Part Number	TLE
Wattage	1W 3W 5W
Bezel Color	Silver: S Black: B White: W
LED Color	WW NW CW
Lens Pattern	10° 30° 45° 60°
Lens Surface	Flat: F

Luminous Flux (White LEDs):

	2750K Warm White	3950K Natural White	6000K Cool White
1W	73.9 lm	87.4 lm	87.4 lm
3W	129.3 lm	153 lm	153 lm
5W	162.6 lm	192.3 lm	192.3 lm

Accessories:

Nuts

Nut sold separately.

- For 1W TLE*: 3-groove Nut
TLE-HSK3 (black) or TLE-HSK3S (silver)
- For 3W & 5W*: 5-groove Nut
TLE-HSK5 (black) or TLE-HSK5S (silver)

*HSK Nut is not designed to provide thermal management in most applications.

Acrylic Drop Lens and Cap

Lens: 2-inch (TLE-LENSAR2) &
4-inch (TLE-LENSAR4)
Cap: TLE-ALCAP

Custom Heat Sinks

Fulham will work with customers, using a third party design and manufacturing group, to design custom heat sinks.

THOROLED LED DRIVERS

**CONSTANT CURRENT
120V 50/60 Hz**



Applications

- Signage/Channel Letters
- Undercabinet
- Sconce
- Refrigerated cases
- Recessed Ceiling fixtures
- Path way

Constant Current Drivers

- Constant current offers better LED performance
- Single or Multiple outputs for greater flexibility for LEDs run in Series
- High Efficiency
- Low Temperature Performance
- UL Class 2
- Compact Size
- 5 year warranty - 50,000 hour Service Life

Constant Voltage Drivers

- High Efficiency
- 50,000 hour life matches LED life
- Reliability & Flexibility
- 12V and 24V
- 5 year warranty - 50,000 hour Service Life



Constant Current Single and Multiple Outputs

Models	TC1120 0350 6 C	TC1120 0350 15 C	TC1120 0700 18 C	TC3120 0500 75 L
Input Voltage	120V	120V	120V	120V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Number of Channels	1	1	1	3
Output Wattage	6	15	18	75
Output Volts	20VDC	24-56VDC	10.5~30VDC	max. 50VDC
Output Current	350	350	700	500
Case Size	L 1.75" x W 1.75" x H 1"	L 2.57" x W 1.77" x H 1"	L 3.125" x W 2.36" x H 1"	L 12" x W 1.34" x H 1"
Case Material	Metal	Metal	Metal	Metal
Min. Operating Temp	-20°C	-20°C	-20°C	-30°C
Max. Case Temp	70°C	70°C	75°C	75°C

The logo for Thor LED, featuring the word "THOR" in a stylized, bold, orange font with a black outline, and "LED" in a smaller, black font to its right.

LED DRIVERS

DIMMING CONSTANT CURRENT 110-277V 50/60 Hz
CONSTANT VOLTAGE 95-277V 50/60 Hz

Dimming Constant Current Single and Multiple Outputs

Models	TCD1 120 0650 18 C	TCD1 120 0650 9 C	TCD1 120 0700 9C	TCD4 UNV 0350 39L
Input Voltage	120V	120V	120V	120-277V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Number of Channels	1	1	1	4
Output Wattage	18	9	9	39
Output Volts	<30VDC	<15VDC	<15VDC	22-27VDC
Output Current	650	650	700	350
Case Size	L 3.125" x W 2.36" x H 1"	L 2.8" x W 1.8" x H 1"	L 2.8" x W 1.8" x H 1"	L 9.5" x W 1.7" x H 1.2"
Case Material	Metal	Metal	Metal	Metal
Min. Operating Temp	-20°C	-27°C	-27°C	0°C
Max. Case Temp	75°C	75°C	75°C	70°C
Dimming Type	Triac Phase Control Dimmer Switch	Triac Phase Control Dimmer Switch	Triac Phase Control Dimmer Switch	0-10V
Dimming Range	100%-10% power (1.5W)	100%-10% power (1.5W)	100%-10% power (1.5W)	0-1V=Off; 9-10V= Full Output

Constant Voltage

Models	TL1MLT 012 10 L	TL1MLT 024 10 L	TV1UNV 012 60 L	TV1MLT 024 100 L
Input Voltage	95-240V	95-240V	120-277V	110-240V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Number of Channels	1	1	1	1
Output Wattage	6.6	8.4	60	100
Output Volts	12VDC	24VDC	12VDC	24VDC
Output Current	max 550mA	max 350mA	max 5A	max 4.1A
Case Size	L 4.5" x W 1.34" x H 0.75"	L 4.5" x W 1.34" x H 0.75"	L 9.5" x W 1.41" x H 1"	L 9.5" x W 2.25" x H 1.13"
Case Material	Plastic	Plastic	Metal	Metal
Min. Operating Temp	-20°C	-20°C	-40°C	-40°C
Max. Case Temp	85°C	85°C	90°C	90°C

ICEHORSE™ LOW TEMPERATURE ELECTRONIC BALLASTS

Minimum Starting
Temperature

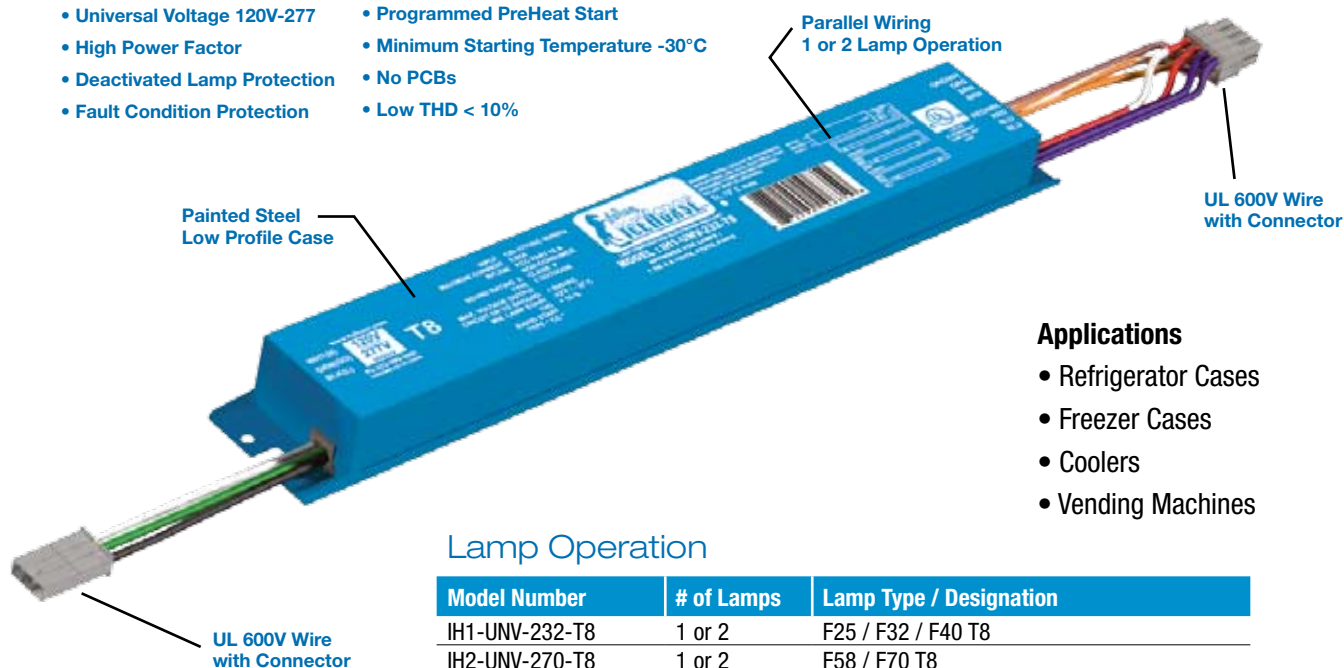
-30°C

T8 & T12 Lamps

UNV 120-277V 50/60 Hz

Advanced Design Application Features:

- Universal Voltage 120V-277
- High Power Factor
- Deactivated Lamp Protection
- Fault Condition Protection
- Programmed PreHeat Start
- Minimum Starting Temperature -30°C
- No PCBs
- Low THD < 10%



Applications

- Refrigerator Cases
- Freezer Cases
- Coolers
- Vending Machines

Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
IH1-UNV-232-T8	1 or 2	F25 / F32 / F40 T8
IH2-UNV-270-T8	1 or 2	F58 / F70 T8
		F48 / F60 T8HO
IH3-UNV-272-T12HO	1 or 2	F48 / F60 T10VHO
		F48 / F60 / F72 T12HO
	1	F72T8HO, F72T10VHO, F96T12VHO

Common Specifications

Input Voltage	120v-277v	Circuit to Ground	< 600 VAC
Input Voltage Range	± 10%	Approvals	UL / cUL Listed
Power Line Frequency	50/60Hz	Type	1 Outdoor / "CC"
High Power Factor	> 0.9	Thermal Protection	Class "P"
ATHD	< 10%	EMI/RFI Compliance	FCC Part 18-A (Non-Consumer)
Re-lamping Circuit	Deactivated Lamp Protection	Sound Rating	A
Surge Protection	ANSI C62.41-A7 Strikes and EN6100-4-5	Lamp Starting Temperature	Reference Lamp Specifications
Current Protection	Fuse	Minimum Operating Temperature	-30°C (-22°F)
Lamp Types Operated	Reference Chart	Maximum Case Temperature	70°C (158°F)
Lamp Operation Mode	Programmed Start	Ballast Case Construction	Painted Steel
Lamp Connection	Parallel	Input/Output Connections	Wire Leads + Connectors
Ignition Method	Programmed Pre-Heat Start	Hazardous Material	No PCBs
Lamp Current Crest Factor	< 1.7	Potted	Yes
Voltage Transients	ANSI 62.41	Warranty	3-years

IH1-UNV-232-T8

Max. Current: .85 AMP
Max. Load: 100W
Case Size: H 1" X W 1.7" X L 12"
Ballast Weight: 1.4 lbs
Case Quantity: 25 pcs.

IH2-UNV-270-T8

Max. Current: 1.35 AMP
Max. Load: 155W
Case Size: H 1" X W 1.7" X L 12"
Ballast Weight: 1.5 lbs
Case Quantity: 25 pcs.

IH3-UNV-272-T12HO

Max. Current: 1.20 AMP
Max. Load: 150W
Case Size: H 1" X W 1.7" X L 12"
Ballast Weight: 1.4 lbs
Case Quantity: 25 pcs.

SUNHORSETM

ELECTRONIC BALLASTS FOR UV & TANNING

120/210/230V 50/60 Hz



Common Specifications

Frequency	50/60 HZ	Thermal Protection	Automatic Resetting Thermal Switch
Open Circuit Voltage	600V	EMI	FCC PART 18-A
Protection Output	YES	Regulatory Approvals	UL/CUL
Protection Input	Fuse/MOV	Class P Inherent	Type 1 Outdoor
Over Current	YES	Thermal Protection	
Voltage Transient	ANSI C82.11 - 1993/C62.41	Lamp Starting Mode	Instant Start
		Sound Rating	A

Specifications	FEP-120-600-L	FEP-210-600-L	FEP-230-600-L	SHS-230-4-750-L	SHS-230-2-1500-L-10
Operating Voltage	120VAC	210VAC	230VAC	208-240VAC +/- 10%	208-240VAC +/- 10%
Max. Current	2.86	1.52	1.50	1.88	1.85
Max. Load	320W	320W	320W	380W	380W
Min. Operating Temp.	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	0°C (32°F)	0°C (32°F)
Max Case Temp	70°C (158°F)	70°C (158°F)	70°C (158°F)	75°C (167°F)	75°C (167°F)
Case Dimensions	H 1.25" x W 3" X L 18.75"	H 1.25" x W 3" X L 18.75"	H 1.25" x W 3" X L 18.75"	H 1.73" X W 3.11" X L 12"	H 1.73" X W 3.11" X L 12"

Lamp Operation

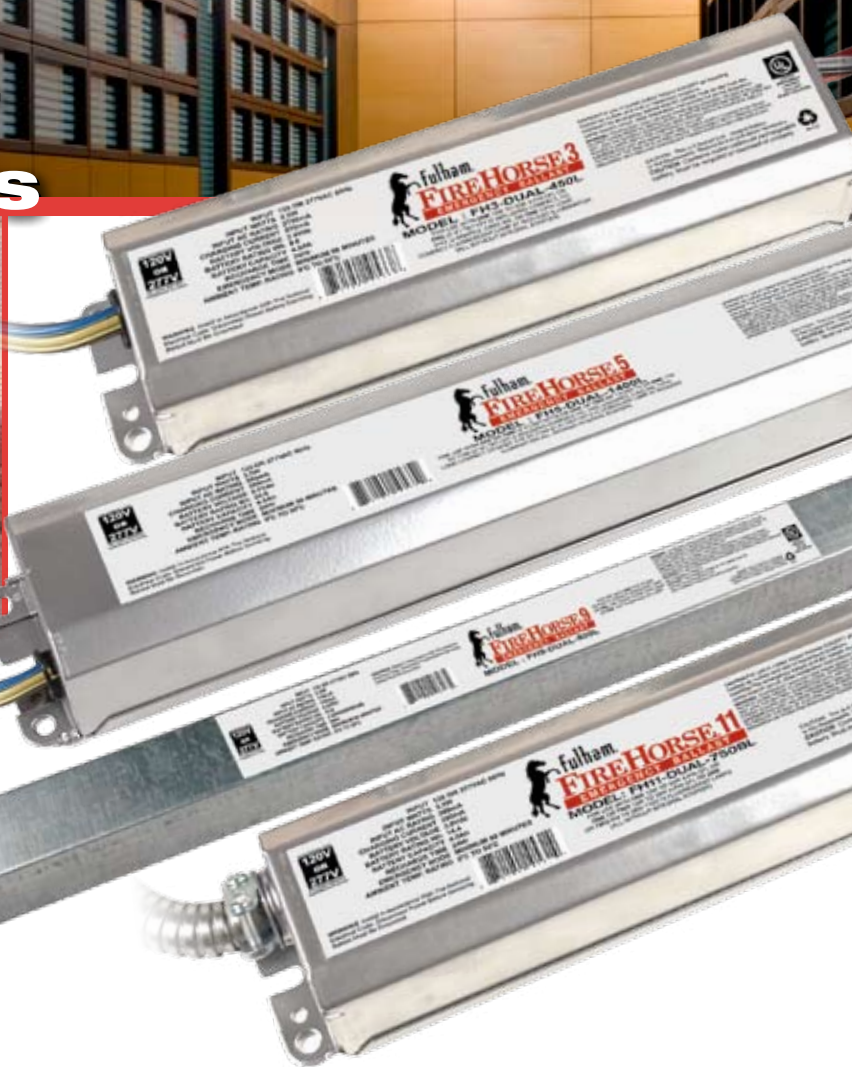
Model Number	Lamp Type / Designation
FEP-120-600-L	1 or 2 F72 / F79 T12HO
	3 x F24 / F30 / F36 / F48 / F59 / F60 / F64 / F72 / F84 T12HO
	4 x F24 / F30 / F36 / F48 / F59 / F60 / F64 / F72 T12HO
FEP-210-600-L	1 or 2 F59 / F72 / F79 T12HO
	3 or 4 F59 / F72 T12HO
FEP-230-600-L	2 x F72 / F79 T12HO • 4 x F59 / F72 T12HO
SHS-230-4-750-L	3 or 4 F59 / F71 / F72 / F73 T12HO
SHS-230-2-1500-L-10	1 or 2 F59 / F60 / F71 / F72 / F73 / F74 / F79(180W) / F79(200W) T12VHO

ELECTRONIC BALLAST FOR 600W HPS

Model: SHS-HPS-MLT-600-FC			
Input Voltage/Frequency	120VAC-240VAC 50/60 Hz	THD	<10%
Lamp Watts/Type	600 W Solarix UV Lamp	Protections	SC; OC; Ignition Failure; Thermal; EOL
Lamp Voltage	120 - 130V	EMI	FCC Class A, non-Consumer
Input Watts	640W	Sound Rating	A
Efficiency	95% max	Ballast Type	Electronic
Power Factor	>0.99	Operating Temp	-30°C - 50°C
Ballast Factor	1	Max Case Temp	90°C
Line Current	5.4A @ 120V; 2.64A @ 240V	Approvals/Class	UL/cUL listed, Class P; 1 Outdoor



FIRE HORSE™ EMERGENCY LIGHTING BALLASTS



DUAL VOLTAGE
120 or 277V 60 Hz



- Wide Range Of Lumen Output
- Wide Range of Lamp Compatibility
- Wide Range of Ballast Compatibility
- Low Profile Models for Integral Mounting
- Factory or Field Installation
- Full 2-5 Year Warranty on Selected Models

Common Specifications

Operating Voltage	120v or 277v	Ballast Compatibility	Electronic / Energy Savings
Frequency	60hz	Special Ballast Compatibility	Electronic Dimming Type
Listing	Emergency	Lamp Compatibility	Fluorescent Type
Alternate Listing	Inverter / Charger Pack	Fixture Wiring	Switched Or Unswitched
Regulatory Approval	UL	Installation	Factory Or Field
Regulatory Compliance	Meets Or Exceeds N.E.C./LSC	Remote Mounting	See Installation Instructions
Location Rating FH7	Damp	Battery Type	Long Life Rechargeable Ni-Cad
Operating Temp Range (Except Fh7)	0°C - 50°C	Minimum Emergency Operation	90 Minutes
Operating Temp Range FH7	20°C To 55°C	Minimum Charging Operation	24 Hours
Test Switch	Single Pole	Case Construction	Vandal Resistant Painted Steel
Test Indicator	LED Type	Case Construction Fh8-Fh9-Fh10	Vandal Resistant Galvanized Steel

FH1-DUAL-750CFL

Initial Lumen Output: 750
AC Input: 3.5W
Charging Current: 280mA Max.
Battery Voltage: 3.6Vdc
Battery Rating: 14.4Wh
Warranty: 2 Years
Case Size: H 1.5" W 2.4" L 9.4" Ctr 8.9"
Ballast Weight: 2.8 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH3-DUAL-450L

Initial Lumen Output: 450
AC Input: 2.5W
Charging Current: 280mA Max.
Battery Voltage: 2.4Vdc
Battery Rating: 9.6Wh
Warranty: 2 Years
Case Size: H 1.5" W 2.4" L 9.4" Ctr 8.9"
Ballast Weight: 2.5 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH4-DUAL-700L

Initial Lumen Output: 700
AC Input: 3.5W
Charging Current: 280mA Max.
Battery Voltage: 3.6Vdc
Battery Rating: 14.4Wh
Warranty: 3 Years
Case Size: H 1.5" W 2.4" L 9.4" Ctr 8.9"
Ballast Weight: 2.8 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH5-DUAL-1400L

Initial Lumen Output: 1400
AC Input: 3.5W
Charging Current: 280mA Max.
Battery Voltage: 6.0Vdc
Battery Rating: 24.0Wh
Warranty: 5 Years
Case Size: H 1.5" W 2.4" L 13.3" Ctr 12.1"
Ballast Weight: 3.4 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH6-DUAL-3000L

Initial Lumen Output: 3000
AC Input: 8.0W
Charging Current: 280mA Max.
Battery Voltage: 14.4Vdc
Battery Rating: 57.6Wh
Warranty: 5 Years
Case Size: H 1.7" W 5.5" L 16.3" Ctr 15.1"
Ballast Weight: 9.2 lbs
Case Quantity: 1 pc
Master Carton Quantity: 2 pcs

MODEL	FH1	FH3	FH4	FH5	FH6	FH7	FH8	FH9	FH10
LUMEN OUTPUT	750	450	700	1400	3000	500	1300	800	500
CFT/CFQ/CFTR - 4 Pin									
9W - 32W	1 or 2	1	1 or 2	1 or 2	1 or 2	1			
42W	1	1	1	1	1 or 2	1			
57W - 70W				1	1				
FT/CFM/FQL - 4 PIN									
9W - 18W	1 or 2	1	1 or 2	1 or 2	1 or 2	1	1	1	
24W - 39W	1 or 2	1	1	1 or 2	1 or 2	1	1	1	
40W	1	1	1	1	1	1	1	1	
50W - 55W			1	1	1		1	1	
CIRCULAR - FCRT5									
15W - 30W	1	1	1	1	1	1			
40W	1	1	1	1	1	1			
55W			1	1	1				
CIRCULAR - FCRT9									
20W - 32W	1	1	1	1	1	1			
40W	1	1	1	1	1	1			
2D/4P									
10W - 28W	1 or 2	1	1	1 or 2	1 or 2	1			
38W - 39W	1 or 2	1	1	1 or 2	1 or 2	1			
T5 LOW WATTAGE									
F4 - F13	1	1	1	1	1	1	1	1	1
T5 STANDARD									
F14 - F28	1	1	1	1	1	1	1	1	1
F35				1	1		1	1	
T5 HIGH OUTPUT									
F24 - F28				1	1		1	1	1
F54				1	1		1	1	
T8 STANDARD (Includes U-Bent)									
F13 - F25	1 or 2	1	1 or 2	1 or 2	1 or 2	1	1	1	1
F28	1	1	1 or 2	1 or 2	1 or 2	1	1	1	1
F30 - F32		1	1 or 2	1 or 2	1 or 2	1	1	1	
F35 - F40		1	1	1	1	1	1	1	
F58 - F72			1	1	1				
T8 HIGH OUTPUT									
F44			1	1	1				
F55 - F86			1	1	1				
T12/T10 STANDARD (Includes U-Bent)									
F14 - F25	1 or 2	1	1 or 2	1 or 2	1 or 2	1	1	1	
F30 - F40		1	1 or 2	1 or 2	1 or 2	1	1	1	
F50 - F75			1	1	1				
T12 HIGH OUTPUT									
F25 - F48			1	1	1				
F55 - F96			1	1	1				
F100 - F110			1	1	1				
T12/T10 VERY HIGH OUTPUT									
F110			1	1	1				
F115 - F215				1	1				

FH7-DUAL-500L

Initial Lumen Output: 500
AC Input: 2.5W
Charging Current: 280mA Max.
Battery Voltage: 6.0Vdc
Battery Rating: 9.0Wh
Warranty: 5 Years
Case Size: H 1.125" W 2.25" L 9.8" Ctr 9.125"
Ballast Weight: 2.3 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH8-DUAL-1300L

Initial Lumen Output: 1300
AC Input: 2.5W
Charging Current: 126mA Max.
Battery Voltage: 8.4Vdc
Battery Rating: 21.0Wh
Warranty: 5 Years
Case Size: H 1.2" W 1.3" L 21.0"
Ballast Weight: 2.1 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH9-DUAL-800L

Initial Lumen Output: 800
AC Input: 2.5W
Charging Current: 126mA Max.
Battery Voltage: 6.0Vdc
Battery Rating: 15.0Wh
Warranty: 5 Years
Case Size: H 1.2" W 1.3" L 17.0"
Ballast Weight: 1.7 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FH10-DUAL-500L

Initial Lumen Output: 500
AC Input: 2.5W
Charging Current: 127mA Max.
Battery Voltage: 3.6Vdc
Battery Rating: 9.0Wh
Warranty: 5 Years
Case Size: H 1.2" W 1.3" L 14.2"
Ballast Weight: 1.4 lbs
Case Quantity: 1 pc
Master Carton Quantity: 6 pcs

FIREHORSE™

HOTSPOT LED

LED EMERGENCY LIGHTING SYSTEM

UNV 120-277V 50/60 Hz

FireHorse HotSpot modular LED systems allow for a wide choice of lumen output levels and run times. Discrete size, universal input voltage, and plug-n-play low voltage output wiring provide extreme adaptability, low cost of installation, and a high level of safety during operation.



DRIVER

Model	FHS1-UNV-3.6L
Input Voltage	120-277VAC
Input Frequency	47 - 63 Hz
Input Current	0.07 A
Input Wattage	4 W
No Load Power Loss	0.5W
Surge Protection	C62.41 (TVS)
Over Current Protection	Fuse
Recharge Time	24 Hrs
LED Connection	Parallel
LED Output Protection	Self Resetting PTC
Output Classification	UL1310/Class 2
Battery Type	NiCd, 3.6 VDC
Battery Capacities	3AH, 4AH, 7AH
Illumination time	90 - 240 Min.
LED types	1 to 5W
LED Currents	350 mA - 1,500 mA
Total LED power	10W



FHS1-AR-4W-L

LINEAR

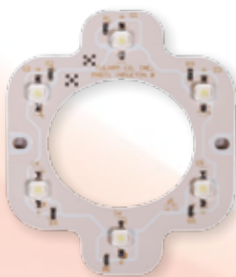
- Linear
- Wall Sconce
- Ceiling Flush Mount
- Low Level Lighting



FHS2-AR-4W-C

CIRCULAR

- Linear
- Down Light
- Wall Sconce



FHS5-AR-6W-CL

CLUSTER

- Circular Lamp Applications



FHS3-AR-10W-SH (small-H)
FHS3-AR-6W-SH
FHS4-AR-10W-LH (large-H)
FHS4-AR-8W-LH

H-CONFIG

- Wall Sconce
- Ceiling Flush Mount

BATTERY PACKS



- FHSBATT3-C3** 3 C cell batteries - 3 Amp Hours
1"H x 3.1"L x 2"W
- FHSBATT3-D4** 3 D cell batteries - 4 Amp Hours
1.35"H x 4"L x 2.5"W
- FHSBATT3-F7** 3 F cell batteries - 7 Amp Hours
1.35"H x 4"L x 3.6"W



FireHorse HotSpot2, a UL924 recognized emergency lighting system useable with any LED array driven by a constant current source. The battery charger auto-adjusts to the battery size and use, and the driver auto adjusts the output current based on the array connected, allowing a wide choice of lumen output and run times.

- Revolutionary Design for Extreme Versatility
- Superior Adaptability
- High Level of Safety Operation and Function
- High Efficiency
- Low Cost

DRIVER

Model	FHS2-UNV-3.6L
Input Voltage	120-277VAC
Input Frequency	47 - 63 Hz
Input Current	0.07 A
Input Wattage	4 W
No Load Power Loss	0.5W
Surge Protection	C62.41 (TVS)
Over Current Protection	Fuse
Recharge Time	24 Hrs
LED Connection	Parallel
LED Output Protection	Self Resetting PTC
Output Classification	UL1310/Class 2
Battery Type	NiCd, 9.6 VDC
Battery Capacities	.9Ah, 1Ah, 1.5Ah, 3Ah, 4Ah, 6Ah, 7Ah
Illumination time	90 - 350 Min.
LED types	1W or 2W
LED Currents	350 mA - 700 mA
Total LED power	20W



BATTERY PACKS

Model #	Dimensions	Chemistry	Capacity	Battery Count	Max Load for 90 min.	Recharge Time
FHSBATT8-AA.9	3.95" x 2.3" x 0.6"	NiCd	900mAh	8 Cells	4W	24Hrs
FHSBATT8-C3	8.12" x 2.09" x 1.02"	NiCd	3000mAh	8 Cells	16W	24Hrs
FHSBATT8-D4	10.32" x 2.48" x 1.30"	NiCd	4000mAh	8 Cells	22W	24Hrs
FHSBATL3-1	2.17" x 1.97" x 0.71"	LiFePO4	1000mAh	3 Cells	4W	24Hrs
FHSBATL3-1.5	2.17" x 2.56" x 0.71"	LiFePO4	1500mAh	3 Cells	8W	24Hrs
FHSBATL3-3	3.15" x 2.56" x 1.02"	LiFePO4	3000mAh	3 Cells	16W	24Hrs
FHSBATL6-1.5	4.33" x 2.56" x 0.71"	LiFePO4	3000mAh	6 Cells	16W	24Hrs
FHSBATL6-3	6.23" x 2.56" x 1.02"	LiFePO4	6000mAh	6 Cells	22W For 2:30 Hrs	48Hrs

RACEHORSE[™] CFL FLUORESCENT ELECTRONIC BALLASTS

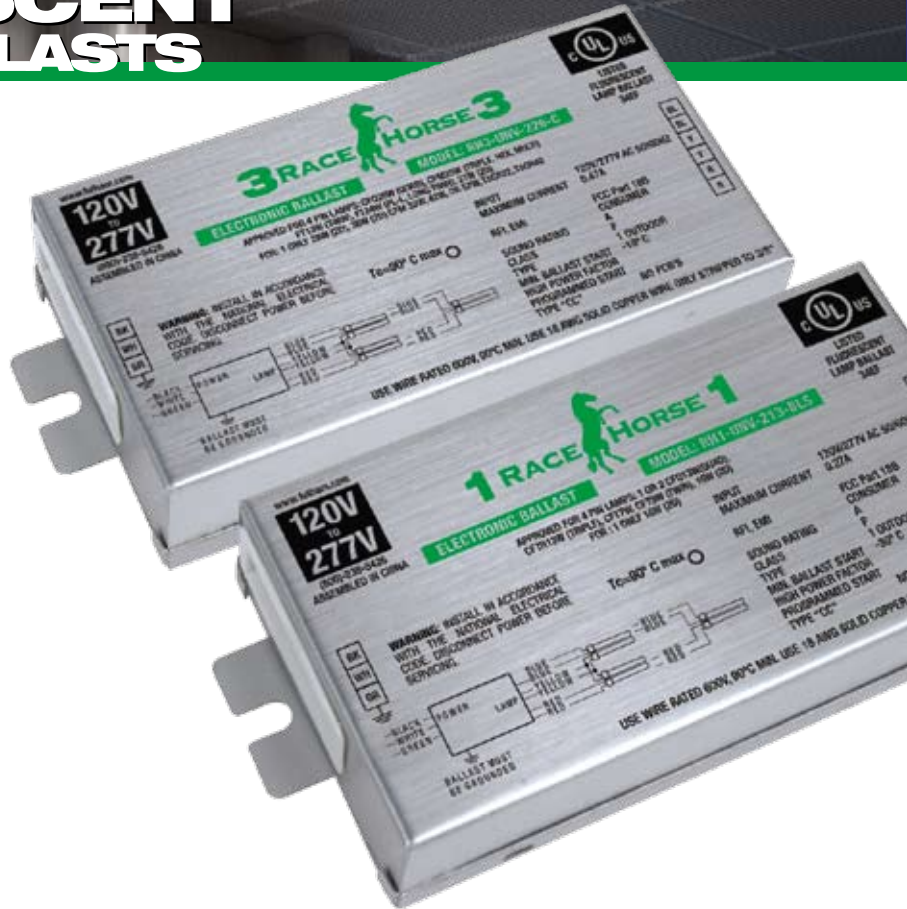
120-277V 50/60 Hz



- 120V - 277V
- < 10% ATHD
- High Power Factor
- End-of-Life Protection
- Operate 1x, 2x Lamps
- Twin, Triple, Quad, Double Quad 9-70W
- UL, cUL
- 90°C Max Operating Temp.
- -30°C Min. Start Temp.

Applications:

- Medium and high bay industrial and retail
- Canopy lighting
- Flood lighting
- Parking garages
- Gymnasiums
- Indirect wall washing
- Downlighting
- Outdoor architectural
- Post tops
- Wall sconces
- Ceiling surface mount



Common Specifications

Operating Voltage	Universal Voltage	Lamp Starting Temp.	See Lamp Specifications
Frequency	50/60 Hz	Ballast Maximum Case Temp.	167° F (75° C) - 5 year warranty
ATHD	< 10% Meets ANSI C82.11-1993	Ballast Maximum Case Temp.	194° F (90° C) - 3 year warranty
Protection/Output	Open Lamp, Shorted Lamp, End-of-Life	Ballast Lamp Starting Mode	Programmed Start
Input Over Current Protection	Fuse	Inherent Thermal Protection	Class P
Input Voltage Transients Protection	MOV (PER ANSI C82.11 – 1993)	Sound Rating	A
Regulatory Approvals	UL & cUL Listed Type 1 Outdoor	Remote Mounting	18' Maximum at -18°C
High Power Factor	> .98	Anti Arching Protection	UL Type CC
Open Circuit Voltage	600 V RMS Max.	EMI: FCC CFR Title 47 Part 18 Consumer and Nonconsumer	
Ballast Min. Operating Temp.	-22° F (-30° C)		

RACEHORSE 1

Max. Load: 26W
Model No.: RH1-UNV-213-BLS/C/K
Max. Current: .27 AMP

Case Size: H 1" W 2.4" L 5.0" L1 4.2"
Ballast Weight: 5.2 oz.
Case Quantity: 50 pcs.

RACEHORSE 2

Max. Load: 36W
Model No.: RH2-UNV-218-BLS/C/K
Max. Current: .36 AMP

Case Size: H 1" W 2.4" L 5.0" L1 4.2"
Ballast Weight: 5.2 oz.
Case Quantity: 50 pcs.

RACEHORSE 3

Max. Load: 57W
Model No.: RH3-UNV-226-BLS/C/K
Max. Current: .47 AMP

Case Size: H 1" W 2.4" L 5.0" L1 4.2"
Ballast Weight: 5.2 oz.
Case Quantity: 50 pcs.

RACEHORSE 4

Max. Load: 84W
Model No.: RH4-UNV-242-BLS/C/K
Max. Current: .72 AMP

Case Size: H 1.3" W 3" L 5.0" L1 4.2"
Ballast Weight: 7 oz.
Case Quantity: 50 pcs.



Advanced Features:

- Programmed start for extended lamp life in frequent switching applications
- End-of-lamp-life protection to safely remove power from the lamp as it nears end-of-life
- Cold starting to ensure proper functionality even in low temperature applications
- Improved reliability due to precision control flicker-free operation
- Auto-restart which eliminates the need to reset the power mains after lamp replacement
- Versatile mounting: Side and back leads included with optional ballast plate
- Auto light compensation during low power situations
- Dual entry color coded connector

Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
RH1-UNV-213-C	1 x	7CFT/E, 9CFT/E, 13CFQ/E, 13CFTR/E, 2D10W, 2D16W
RH1-UNV-213-BLS		
RH1-UNV-213-K	2 x	7CFT/E, 9CFT/E, 13CFQ/E, 13CFTR/E, 2D10W
RH2-UNV-218-C	1 x	18CFQ/E, 18CFTR/E, 2D21W
RH2-UNV-218-BLS		
RH2-UNV-218-K	2 x	18CFQ/E, 18CFTR/E, 2D16W, 2D21W
RH3-UNV-226-C	1 x	13CFT/E, 26CFQ/E, 26CFTR/E, 32CFTR/E, 42CFTR/E, 2D21W, 2D28W, 2D38W, T5CR22, FT18W, FT36W, T5CR40, FT24/E, 57CFM
RH3-UNV-226-BLS		
RH3-UNV-226-K	2 x	13CFT/E, FT18W, 26CFQ/E, 26CFTR/E, FT24/E, 2D21W, F24T5H0
RH4-UNV-242-C	1 x	CFM57, CFM70, 42CFTR/E, 24/27CFT/E, 36CFT/E, 40CFT/E, 2D28W, 2D38W, T5CR40, 36TUV, GPH793T5L
RH4-UNV-242-BLS		
RH4-UNV-242-K	2 x	26CFQ/E, 26CFTR/E, 32CFTR/E, 42CFTR/E, 24/27CFT/E, 36CFT/E, 40CFT/E, 2D28W, 2D38W, T5CR22W, T5CR40W, 36TUV, GPH793T5L

- BLS = Compact Case with mounting studs (8/32" studs on bottom plate, 2" on center)
- C = Compact Case; No studs on bottom plate
- K = Contractor Kit with stud adapter plate, lead wire set and wire removal tool

RACEHORSE Contractor Kit

Includes:

- RaceHorse Ballast
- Snap Mount Stud Adapter Plate (8/32" studs, 2" between studs)
- Lead Wire Set
- Wire Removing Tool

Product Numbers

RH1-UNV-213-K

RH2-UNV-218-K

RH3-UNV-226-K

RH4-UNV-242-K



RACEHORSE™ T5HO FLUORESCENT ELECTRONIC BALLASTS

120-277V 50/60 Hz



- 120V - 277V
- < 10% ATHD
- High Power Factor
- End-of-Life Protection
- Operate 1x, 2x, 3x and 4x Lamps
- TW, CR, T5HO
- UL, cUL
- Program Preheat Start



Applications:

- Medium and high bay industrial and retail
- Canopy lighting
- Flood lighting
- Parking garages
- Gymnasiums
- Indirect wall washing
- Downlighting
- Outdoor architectural
- Post tops

Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
RH23-UNV-254-LT5	1 x	F54T5HO, FT55W, FT50W, FT36W, FC12T5 55W
	2 x	F54T5HO, FT55W, FT50W, FT36W, FC12T5 55W
RH28-UNV-454-LT5	3 x	F54T5HO, FT55W, FT50W, FT36W, FC12T5 55W
	4 x	F54T5HO, FT55W, FT50W, FT36W, FC12T5 55W

Common Specifications

Operating Voltage:	Universal Voltage	High Power Factor:	> .98
Frequency:	50/60 Hz	Open Circuit Voltage:	600 V RMS Max.
ATHD:	< 10%	Ballast Min. Operating Temp.:	-18° C (0° F)
Protection/Output:	End-of-Life	Ballast Maximum Case Temp.:	167° F (75° C) - 5 year warranty
Protection/Input:		Ballast Maximum Case Temp.:	194° F (90° C) - 3 year warranty
Over Current:	Fuse	Ballast Lamp Starting Mode:	Programmed Start
Voltage Transients:	ANSI C62.41	Inherent Thermal Protection	Class P
EMI: FCC CFR Title 47 Part 18-B consumer		Sound Rating	A
Regulatory Approvals:	UL & cUL Listed Type 1 Outdoor		

RACEHORSE 23

Model No.: RH23-UNV-254LT5
Max. Load: 120W
Max. Current: 1.04 AMP
Ballast Case Size: H 1" W 1.23" L 16.88"
Connector Type: Push-in
Case Qty: 30

RACEHORSE 28

Model No.: RH28-UNV-454LT5
Max. Load: 235W
Max. Current: 1.95 AMP
Ballast Case Size: H 1" W 2.29" L 16.88"
Connector Type: Leads
Case Qty: 15

Contact Customer Service for Case Weight: 1-323-599-5000

RACEHORSE T5HO FLUORESCENT ELECTRONIC BALLASTS

120-277V 50/60 Hz



Advanced Features:

- Program preheat start for extended lamp life in frequent switching applications
- End-of-lamp-life protection to safely remove power from the lamp as it nears end-of-life
- Cold starting to ensure proper functionality even in low temperature applications (-30°C)
- Improved reliability due to precision control flicker-free operation
- Auto-restart which eliminates the need to reset the power mains after lamp replacement



Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
RHA-UNV-254-LT5	1 x	F54T5HO, FT55W, FT50W, FC12T5 55W
	2 x	F54T5HO, FT55W, FT50W, FT36W, FC12T5 55W
	2 x	F54T5HO, FT36W, FT55W
RHA-UNV-454-LT5	3 x	F54T5HO, FT36W, FT55W
	4 x	F54T5HO, FT36W, FT55W

Common Specifications

Operating Voltage:	Universal Voltage	High Power Factor:	> .98
Frequency:	50/60 Hz	Open Circuit Voltage:	600 V RMS Max.
ATHD:	< 10%	Ballast Min. Operating Temp.:	-30° C (0° F)
Protection/Output:	End-of-Life	Ballast Maximum Case Temp.:	(158°F) (70°C) - 5 Year Warranty
Protection/Input:		Ballast Maximum Case Temp.:	(194°F) (90°C) - 3 Year Warranty
Over Current:	Fuse	Ballast Lamp Starting Mode:	Program Preheat Start
Voltage Transients:	ANSI C62.41	Inherent Thermal Protection	Class P
EM: FCC CFR Title 47 Part 18-A Non-Consumer		Sound Rating	A
Regulatory Approvals:	UL & cUL Listed Type 1 Outdoor		
Typee HL Approval	Approved for Hazardous Location		

RACEHORSE A2

Model No.:	RHA-UNV-254-LT5
Max. Load:	120W
Max. Current:	1.0 AMP
Ballast Case Size:	H 1.05" W 1.32" L 9.53"
Connector Type:	Leads
Case Qty:	20

RACEHORSE A4

Model No.:	RHA-UNV-454-LT5
Max. Load:	240W
Max. Current:	2.0 AMP
Ballast Case Size:	H 1.18" W 1.69" L 16.88"
Connector Type:	Leads
Case Qty:	20

Contact Customer Service for Case Weight: 1-323-599-5000

RACEHORSE™ CFL FLUORESCENT ELECTRONIC BALLASTS

EUROPEAN SERIES
230V 50/60 Hz



Advanced Features:

- According to all CE requirements
- ENEC / VDE certified (VDE Cert: 40025490)
- Pre-Heat Lamp Start
- Cut-Off Technology
- End-Of-Life Protection (EOL)
- High Power Factor
- Active Power Factor Control (APFC)
- Auto-Restart
- Standard distances between the mounting holes
- Solid Housing and Electronics

Applications

- Decorative Lighting
- Indoor Architectural Lighting
- Outdoor Architectural Lighting
- Industrial and Commercial Lighting
- Wall Washing and Flood Lighting



CFL Lamp Operation

Case Size 1 (L/W/H in mm): 103 x 67 x 31

Case Size 2 (L/W/H in mm): 123 x 79 x 31

BALLASTS	CASE SIZE	TC-DEL (Quad)				TC-TEL (Triple)					TC-L (Twin Hi-Lumen)		TC-SEL (Twin)	
		10W	13W	18W	26W	13W	18W	26W	32W	42W	18W	21W	9W	11W
RHS-230-113-C-CFL	1	1	1			1							1	1
RHS-230-118-C-CFL	1			1			1							
RHS-230-142-C-CFL	1				1			1	1	1	1	1		
RHS-230-213-C-CFL	2	2	2			2							2	2
RHS-230-218-C-CFL	2			2			2							
RHS-230-232-C-CFL	2				2			2	2					

Common Specifications for CFL, T5, & T8

Input Voltage:	220 - 240 VAC (±10%)	Automatic restart after lamp change	Yes
Power Line Frequency	50/60 Hz	Cut-Off Technology	Yes
Overvoltage Consistency (V AC, 1h)	320	End-Of-Life Protection (EOL)	Yes
Power Factor - APFC (λ)	≥ 0.96	Case Material	CFL: Thermoplast - T5/T8: Metal
Line Current Harmonics	< 10%	Immunity	EN 61547
Lamp Operating Frequency	> 40,000 Hz	Harmonic Content	EN 61000-3-2
Pre-Heat Lamp Start (Seconds)	≤ 1.5	Radio Interference Suppression	EN 55015
Max. Case Hot Spot Temperature Tc	70°C	ENEC, VDE, CE	EN 60929:2006-03
Ambient Temperature CFL: -25°C to +60°C T5/T8: -25°C to +50°C			EN 61347-1:2001+A1
Expected Service Life at Ta max.	50,000 hours		EN 61347-2-3: +A1+A2

RACEHORSE™ T5/T8 FLUORESCENT ELECTRONIC BALLASTS

EUROPEAN SERIES
230V 50/60 Hz



Advanced Features:

- According to all CE requirements
- ENEC / VDE certified (VDE Cert: 40025490)
- Pre-Heat Lamp Start
- Cut-Off Technology
- End-Of-Life Protection (EOL)
- High Power Factor
- Active Power Factor Control (APFC)
- Auto-Restart
- Standard distances between the mounting holes
- Solid Housing and Electronics

Applications

- Decorative Lighting
- Indoor Architectural Lighting
- Outdoor Architectural Lighting
- Industrial and Commercial Lighting
- Wall Washing and Flood Lighting



T5 Lamp Operation

Case Size 1 (L/W/H in mm): 280 x 30 x 21

Case Size 2 (L/W/H in mm): 360 x 30 x 21

BALLASTS	CASE SIZE	T16 (T5)							TC-L (Twin-Hi-Lumen)
		14W	21W	28W	35W	39W	54W	80W	
RHS-230-135-L-T5	1	1	1	1	1				
RHS-230-149-L-T5	1					1			
RHS-230-154-L-T5	1						1		
RHD-230-154-L-T5*	1						1		
RHS-230-180-L-T5	2							1	1
RHS-230-235-L-T5	2	2	2	2	2				
RHS-230-414-L-T5	2	3/4							
RHS-230-249-L-T5	2					2			
RHS-230-254-L-T5	2						2		

T8 Lamp Operation

Case Size 1 (L/W/H in mm): 280 x 30 x 21

Case Size 2 (L/W/H in mm): 360 x 30 x 21

BALLASTS	CASE SIZE	T26 (T8)			TC-L (Twin Hi-Lumen)			
		18W	36W	58W	18W	24W	36W	40W
RHS-230-118-L-T8	1	1			1			
RHS-230-136-L-T8	1		1			1	1	1
RHS-230-158-L-T8	1			1				
RHS-230-218-L-T8	1	2						
RHS-230-236-L-T8	1		2		2		2	
RHS-230-258-L-T8	1			2				
RHS-230-418-L-T8	2	3/4						

RACEHORSE™

CFL/T5/T8 FLUORESCENT DIMMING ELECTRONIC BALLAST

EUROPEAN SERIES
230V 50/60 Hz



Advanced Features:

- According to all CE requirements
- ENEC/VDE certified
- Pre-heat Lamp start
- Dimming 0-10V, 3% to 100% light
- 5-years warranty, 50,000 hour life



Common Specifications for CFL, T5, & T8

Input Voltage	220 - 240 VAC	End Of Life (EOL) Protection	Yes
Power Line Frequency	50/60 Hz	Case Material	CFL Series=Thermoplast; T5/T8 Series= Metal
Input Power Factor (PF) (λ)	>0.98	Max. Case Hot Spot Temperature	+ 70°C
Line Current Harmonics (THD)	<10%	Min. Ambient Temperature	+ 10°C
Dimming Interface	1 to 10V	Max. Ambient Temperature	+ 50°C
Dimming Range	Min. 3% Max. 100%	Product Life	50,000 hours
Lamp Operating Frequency	> 40,000 Hz	EEL Classification	EEL = A1, (EEL=A2 at dimming volt 10V)
Lamp Starting Type	Pre-Heat	CE (with compliance RoHS)	EN 61347-2-3
Preheat Time [S]	< 1,5	EMC Immunity	EN 61547
Overvoltage protection [V, hr]	Yes	Harmonic Content	IEC / EN 61000-3-2
Undervoltage protection [V]	Yes	Radio Interference Suppression	DIN VDE 0875 / EN 55015
Automatic restart after lamp change	Yes	Performance ENEC	IEC 60929
Thermal Protection (EN 61347-2-3)	Yes		

CFL Lamp Operation Case Size (L/W/H in mm): 123 x 79 x 31

BALLASTS	TC-DEL (Quad)				TC-TEL (Triple)			
	10W	13W	18W	26W	13W	18W	26W	32W
RHD-230-213-C-CFL	2	2			2			
RHD-230-218-C-CFL			2			2		
RHD-230-232-C-CFL				2			2	2

T5 Lamp Operation Case Size 1 (L/W/H in mm): 280 x 270 x 30 Case Size 2 (L/W/H in mm): 360 x 350 x 30

BALLASTS	CASE SIZE	T16 (T5)					
		14W	21W	28W	35W	39W	54W
RHD-230-135-L-T5	1	1	1	1	1		
RHD-230-235-L-T5	2	2	2	2	2		
RHD-230-139-L-T5	1					1	
RHD-230-239-L-T5	2					2	
RHD-230-254-L-T5	2						2
RHD-230-414-L-T5	2	4					

T8 Lamp Operation Case Size 1 (L/W/H in mm): 280 x 270 x 30 Case Size 2 (L/W/H in mm): 360 x 350 x 30

BALLASTS	CASE SIZE	T26 (T8)		
		18W	36W	58W
RHD-230-136-L-T8	1		1	
RHD-230-236-L-T8	2		2	
RHD-230-158-L-T8	1			1
RHD-230-418-L-T8	2	4		

WORKHORSE®

T8 FLUORESCENT ELECTRONIC BALLASTS

HIGH EFFICIENCY / PROGRAM START

UNV 120-277V 50/60 Hz

Advanced Features:

- WHHE: Instant Start
- WHPS: Program Start for Long Lamp Life
- High Efficiency
- WHPS: End of Life Protection
- Multiple Lamp Operation
- WHHE: CEEE Qualified

Applications

- Decorative Lighting
- Indoor Architectural Lighting
- Outdoor Architectural Lighting
- Industrial and Commercial Lighting

Common Specifications

Operating Voltage:	WHHE: 120-277 VAC WHPS: 120-277 VAC $\pm$ 10%	Ballast Maximum Case Temp.:	WHHE: 194° F (90° C) WHPS: 158° F (70° C)
Frequency:	50/60 Hz	Ballast Lamp Starting Mode:	WHHE: Instant Start WHPS: Rapid Start
Power Factor::	WHHE: 98% WHPS: 98.6% Min.	Min. Operating Temp. :	0° F, (-18° C)
ATHD:	$\leq$ 10%	Protection:	Class P Inherent Thermal Protection
EMI: FCC CFR Title 47 Part 18 non-consumer		Ballast Size:	H 1.05" x W 1.32" x L 8.91" (H 26.7mm x W 33.5mm x L 226.3mm)
Ballast Factor:	>.93 as ANSI specified	Sound Rating	A
Lamp CF:	< 1.7	Regulatory Approvals:	UL & cUL Listed Type1 or Type 2 Type HL, CC

Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
WHHE2-UNV-T8-IS	1 x	F40T8;
	1 or 2	F32 / FB32 / FB31 / FB28 / F25 / F17 T8; F32T8/ES/30; F32T8/ES/28; F32T8/ES/25
	2 x	F40T8
WHHE3-UNV-T8-IS	2 or 3	F32/FB32 / FB31 / F28 / F25 T8; F32T8/ES/30; F32T8/ES/28; F32T8/ES/25
	3 x	F17T8
	3 x	F40T8
WHHE4-UNV-T8-IS	3 or 4	F32 / FB32 / FB31 / FB28 T8; F32T8/ES/30; F32T8/ES/28; F32T8/ES/25;
	4 x	F25/F17 T8
WHPS2-UNV-T8-PS	2 x	F32T8, FB32T8, FB31T8, FB28T8, F32T8/ES/30, F32T8/ES/28, F32/ES/25
WHPS3-UNV-T8-PS	3 x	F32T8, FB32T8, FB31T8, FB28T8, F32T8/ES/30, F32T8/ES/28, F32/ES/25

WHHE 2

Maximum Power: 59 Watts
Model No.: WHHE-UNV-T8-IS
Maximum Current: 0.46A
Case Quantity: 25

WHHE 3

Maximum Power: 84 Watts
Model No.: WHHE3-UNV-T8-IS
Maximum Current: 0.71A
Case Quantity: 25

WHHE 4

Maximum Power: 114 Watts
Model No.: WHHE4-UNV-T8-IS
Maximum Current: 0.95A
Case Quantity: 25

WHPS 2

Maximum Power: 57 Watts
Model No.: WHPS2-UNV-T8-PS
Maximum Current: 0.48A

WHPS 3

Maximum Power: 87 Watts
Model No.: WHPS3-UNV-T8-PS
Maximum Current: 0.72A

WORKHORSE[®]

COMMERCIAL GRADE T8/T12 FLUORESCENT ELECTRONIC BALLASTS

120V 50/60 Hz



Applications:

- Offices
- Schools
- Residential
- Hotels
- Apartments
- Retirement Complexes
- Industrial
- Retail Stores



Common Specifications

Power Factor:	97.5% Min.	Min. Starting Temp. :	0° F, (-18° C)
ATHD:	Less than 20%	Protection:	Class P Inherent Thermal Protection
EMI: FCC CFR Title 47 Part 18 non-consumer		Ballast Size:	H 1.2" x W 1.7" x L 9.5"
Ballast Factor::	>.87 as ANSI specified		(H 30mm x W 43mm x L 240mm)
Lamp CF:	< 1.7	Ballast weight:	1.7 lb (760g)
Starting Method:	T8 Parallel Instant Start	Black/White Wires:	25 Inches
	T12: Series Rapid Start	Red Wires:	46.5 Inches
Regulatory Approvals:	UL & cUL Listed Type1 or Type 2	Blue Wires:	30.7 Inches

WHCG 1

Model No. WHCG1-120-T8-IS
Input Voltage: 120v 60 Hz (108v~132v)
Input Power: 30w (with T8 32w lamp)
Maximum Current (120VAC) .26 AMP

Black/White Wires 24"
Red Wires 48"
Blue Wires 32"
Case Qty: 25

WHCG 2

Model No. WHCG2-120-T8-IS
Input Voltage: 120v 60 Hz (108v~132v)
Input Power: 58w (with T8 32w lamp)
Maximum Current (120VAC) .50 AMP

Black/White Wires 24"
Red Wires 48"
Blue Wires 32"

WHCG 3

Model No. WHCG3-120-T8-IS
Input Voltage: 120v 60 Hz (108v~132v)
Input Power: 85w (with T8 32w lamp)
Maximum Current (120VAC) .71 AMP

Black/White Wires 24"
Red Wires 48"
Blue Wires 32"
Case Qty: 25



Advanced Features:

- Drop In Replacement for Magnetic Ballasts
- Parallel Lamp Operation
- Series Lamp Operation for CG5 & CG6
- Commercial Grade = < 20% THD

Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
WORKHORSE COMMERCIAL GRADE: Dedicated Voltage (120V) for T8 - (IS) <20% ATHD		
WHCG1-120-T8-IS	1 x	F17T8, F25T8, F32T8
WHCG2-120-T8-IS	1 x	F25T8, F32T8, F40T8, FB031T8
	2 x	F17T8, F25T8, F32T8, FB031T8
WHCG3-120-T8-IS	2 x	F25T8, F32T8, F40T8
	3 x	F17T8, F25T8, F32T8
WHCG4-120-T8-IS	2 x	F40T8
	3 x	F17T8, F25T8, F32T8, F40T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
	4 x	F17T8, F25T8, F32T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
WORKHORSE COMMERCIAL GRADE: Dedicated Voltage for T12 - (RS) <20% ATHD		
WHCG5-120-T12RS	1 x	F36T8, F34T12, F40T12
	2 x	F18T8, F36T8, F40T8, F20T12, F34T12, F40T12
WHCG6-120-T12RS	1 x	F18T8, F36T8, F20T12, F34T12, F40T12
	2 x	F18T8, F20T12

IS: Instant Start - RS: Rapid Start

WHCG 4

Model No. WHCG4-120-T8-IS
 Input Voltage: 120v 60 Hz (108v~132v)
 Input Power: 112w (with T8 32w lamp)
 Maximum Current (120VAC) .93 AMP
 Black/White Wires 28"
 Red Wires 30"
 Blue Wires 30"
 Yellow Wires 46"
 Case Qty: 25

WHCG 5

Model No. WHCG5-120-T12-RS
 Input Voltage: 120v 60 Hz (108v~132v)
 Input Power: 74w (with T12 40w lamp)
 Maximum Current (120VAC) .62 AMP
 Black/White Wires 24"
 Red Wires 32"
 Blue Wires 32"
 Yellow Wires 48"
 Case Qty: 25

WHCG 6

Model No. WHCG6-120-T12-RS
 Input Voltage: 120v 60 Hz (108v~132v)
 Input Power: 36w (with T12 20w lamp)
 Maximum Current (120VAC) .31 AMP
 Black/White Wires 24"
 Red Wires 32"
 Blue Wires 32"
 Yellow Wires 48"
 Case Qty: 25

WORKHORSE®

SPECIFIER GRADE

T8/T12 FLUORESCENT

ELECTRONIC BALLASTS

UNV 120-277V 50/60 Hz



Advanced Features:

- Drop In Replacement for Magnetic Ballasts
- Parallel Lamp Operation
- Specifier Grade = < 10%THD
- High Ballast Factor (1.18) Available
- Low Ballast Factor (0.78) Available

Applications:

- Offices
- Apartments
- Schools
- Retirement Complexes
- Residential
- Industrial
- Hotels
- Retail Stores



Common Specifications

Power Factor:	98.5 % Min.	Min. Starting Temp. :	0° F, (-18° C)
ATHD:	Less than 10%	Protection:	Class P Inherent Thermal Protection
EMI: FCC CFR Title 47 Part 18 non-consumer		Ballast Size:	T8: H 1.2" x W 1.7" x L 9.5" (H 30mm x W 43mm x L 240mm)
Ballast Factor::	>.87 as ANSI specified		T12HO: H 1.5" x W 3" x L 11.75" (H 38mm x W 76mm x L 268mm)
Lamp CF:	< 1.7		
Starting Method:	T8: Instant Start		
	T12HO: Modified Rapid Start	Ballast weight:	T8: 1.5 lb (700g)
Regulatory Approvals:	UL & cUL Listed Type1 or Type 2		T12HO: 4.0 lbs (1.8 kg)

WHSG UNV 1

Model No. WHSG1-UNV-T8-IS
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 33W
 Maximum Current .28 AMP
 Black/White Wires 24"
 Red Wires 46"
 Blue Wires 32"
 Case Qty 25

WHSG UNV 3

Model No. WHSG3-UNV-T8-IS
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 85W
 Maximum Current .71 AMP
 Black/White Wires 24"
 Red Wires 46"
 Blue Wires 32"
 Case Qty 25

WHSG 120 7

Model No. WHSG7-120-T12-HO
 Input Voltage: 120v 50/60 Hz
 Input Power: 200W
 Maximum Current 1.65 AMP
 Black/White Wires 22"
 Red/Blue Wires 46"
 Yellow Wires 70"
 Case Qty 10

WHSG UNV 2

Model No. WHSG2-UNV-T8-IS
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 59W
 Maximum Current .50 AMP
 Black/White Wires 24"
 Red Wires 46"
 Blue Wires 32"
 Case Qty 25

WHSG UNV 4

Model No. WHSG4-UNV-T8-IS
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 112W
 Maximum Current .93 AMP
 Black/White Wires 28"
 Red/Blue Wires 30"
 Yellow Wires 46"
 Case Qty 25

WHSG UNV 8

Model No. WHSG8-UNV-T8SL
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 109W
 Maximum Current .92 AMP
 Black/White Wires 25"
 Red Wire 79"
 Blue Wires 46"
 Case Qty 25



Model Number	# of Lamps	Lamp Type / Designation
WORKHORSE SPECIFIER GRADE: Universal Voltage for T8 - (IS) < 10% THD		
WHSYG1-UNV-T8-IS	1 x	F17T8, F25T8, F32T8, F40T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
WHSYG2-UNV-T8-IS	1 x	F17T8, F25T8, F32T8, F40T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
	2 x	F17T8, F25T8, F32T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
WHSYG3-UNV-T8-IS	2 x	F25T8, F32T8, F40T8
	3 x	F17T8, F25T8, F32T8
WHSYG4-UNV-T8-IS	3 x	F25T8, F32T8, F40T8
	4 x	F17T8, F25T8, F32T8
WHSYG8-UNV-T8SL	1 x	F96T8, F96T8H0,
	2 x	F96T8
WORKHORSE SPECIFIER GRADE: Universal Voltage for High and Low Ballast Factor T8 Applications		
WHSYG2-UNV-T8-LB	1 x	F25T8, F32T8, F40T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
	2 x	F17T8, F25T8, F32T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
WHSYG2-UNV-T8-HB	1 x	F32T8, F40T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
	2 x	F32T8, FB031T8, F32T8/30, F32T8/28, F32T8/25
WHSYG3-UNV-T8-LB	2 x	F32T8, F40T8
	3 x	F17T8, F25T8, F32T8
WHSYG3-UNV-T8-HB	2 x	F25T8, F32T8, F40T8
	3 x	F17T8, F25T8, F32T8
WHSYG4-UNV-T8-LB	3 x	F25T8, F32T8, F40T8
WHSYG4-UNV-T8-HB	4 x	F17T8, F25T8, F32T8
WORKHORSE SPECIFIER GRADE: Dedicated Voltage for T12H0 - (RS) <10%ATHD		
WHSYG7-120-T12H0	1 x	F96T12H0, F96T12/ESHO
	2 x	F96T12H0, F72T12H0, F60T12H0, F48T12H0, F96T12/ES/HO

WHSYG UNV HB 2

Model No. WHSYG2-UNV-T8-HB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 74W
 Maximum Current .62 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WHSYG UNV HB 3

Model No. WHSYG3-UNV-T8-HB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 104W
 Maximum Current .91 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WHSYG UNV HB 4

Model No. WHSYG4-UNV-T8-LB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 98W
 Maximum Current .82 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WHSYG UNV LB 2

Model No. WHSYG2-UNV-T8-LB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 52W
 Maximum Current .44 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WHSYG UNV LB 3

Model No. WHSYG3-UNV-T8-LB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 76W
 Maximum Current .64 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WHSYG UNV LB 4

Model No. WHSYG4-UNV-T8-LB
 Input Voltage: 120v~277v 50/60 Hz
 Input Power: 98W
 Maximum Current .82 AMP
 Black/White Wires 24"
 Red Wire 46"
 Blue Wires 32"
 Case Qty 25

WORKHORSE[®]

COMMERCIAL GRADE

T12 FLUORESCENT

ELECTRONIC BALLASTS

INTERNATIONAL SERIES

127/220V 50/60 Hz

Features

- Rapid start
- High Power Factor (HPF)
- End of Life protection
- Multiple lamp operation
- Suitable for T8 and T12 operation
- Solid housing and compact case

Applications

- Decorative Lighting
- Indoor Architectural Lighting
- Outdoor Architectural Lighting
- Industrial and Commercial Lighting



Lamp Operation

Model Number	# of Lamps	Lamp Type / Designation
WHCG5-127-T12-RS WHCG5-127-T12-RS-L*	1 x, 2 x	F36T8, F40T12
WHCG6-127-T12-RS WHCG6-127-T12-RS-L*	1 x 2 x	F18T8, F20T12, F36T8, F40T12 F18T8, F20T12
WHCG9-127-T12-RS	2 x 3 x, 4 x	F36T8, F40T12 F18T8, F20T12
WHCG5-220-T12-RS WHCG5-220-T12-RS-L*	1 x, 2 x	F36T8, F40T12
WHCG6-220-T12-RS WHCG6-220-T12-RS-L*	1 x, 2 x	F18T8, F20T12
WHCG9-220-T12-RS	2 x 3 x, 4 x	F36T8, F40T12 F18T8, F20T12

*Ballasts with lead wires

Case Sizes (Sizes in mm)

WHCG5/WHCG6-127 Case Size: 240.5 L x 43.7 W x 25.4 H
WHCG5-220 Case Size: 235 L x 40 W x 25.4 H
WHCG6-220 Case Size: 240.5 L x 43.7 W x 25.4 H
WHCG9-127/220 Case Size: 255 L x 40 W x 25.4 H

Common Specifications

Input Voltage	127V $\pm$ 10%, 50/60Hz 220V $\pm$ 10%, 50/60Hz	EMI/RFI Compliance	FCC PART 18-A (Non Consumer)
Power Factor	> 0.95	Ballast Type	Rapid Start
Efficacy Factor	> 88%	Voltage Transients	ANSI 62.41
Current Crest Factor	< 1.7	Min. Operating Temp	10°C (14°F)
Sound Rating	" A "	Max. Case Temp	75°C (167°F)

WORKHORSE®

SPECIFIER GRADE T12 FLUORESCENT ELECTRONIC BALLASTS

INTERNATIONAL SERIES
127/220V - MLT 120-240V



Features

- Rapid start
- High Power Factor (HPF)
- End of Life protection
- Multiple lamp operation
- Suitable for T8 and T12 operation
- Solid housing and compact case

Applications

- Decorative Lighting
- Indoor Architectural Lighting
- Outdoor Architectural Lighting
- Industrial and Commercial Lighting

Lamp Operation 127/220V

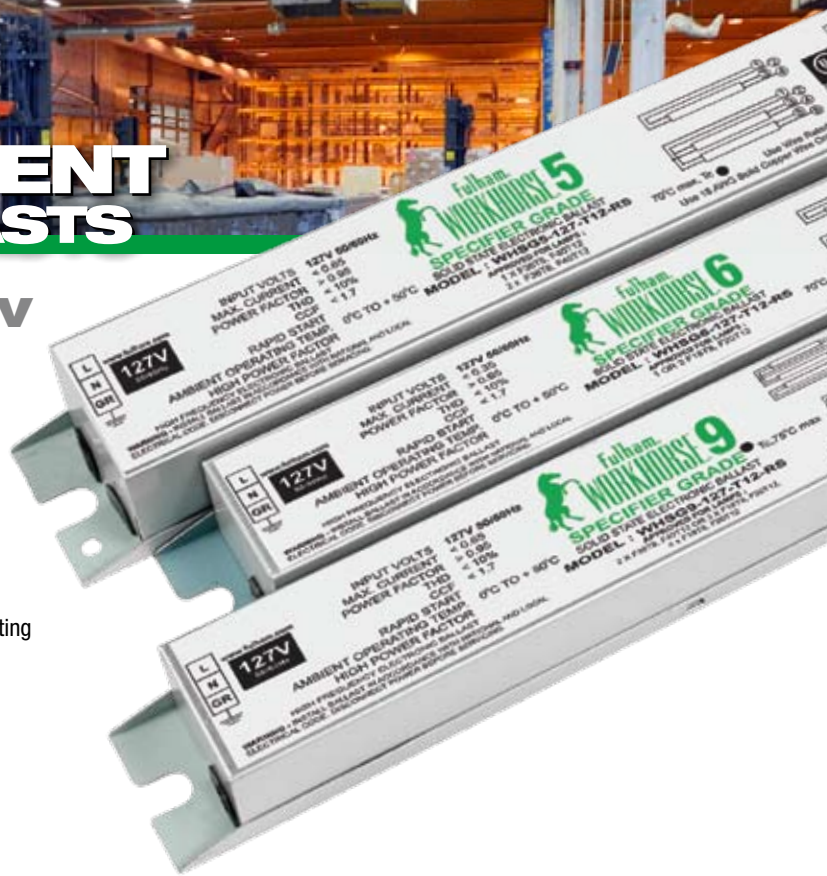
Model Number	# of Lamps	Lamp Type
WHS5-127-T12-RS	1 x, 2 x	F36T8, F40T12
WHS6-127-T12-RS	1 x, 2 x	F18T8, F20T12
WHS9-127-T12-RS	2 x 3 x, 4 x	F36T8, F40T12 F18T8, F20T12
WHS5-220-T12-RS	1 x, 2 x	F36T8, F40T12
WHS6-220-T12-RS	1 x, 2 x	F18T8, F20T12
WHS9-220-T12-RS	2 x 3 x, 4 x	F36T8, F40T12 F18T8, F20T12

WHCG5-127/220 - Case Size: 235 L x 40 W x 25.4 H

WHCG6-127/220 - Case Size: 235 L x 40 W x 25.4 H

Common Specifications

Input Voltage	127V ± 10%, 50/60Hz 220V ± 10%, 50/60Hz
Power Factor	> 0.95
Efficacy Factor	> 88%
THD	< 10%
Current Crest Factor	< 1.7
Emi/Rfi Compliance	FCC PART 18-A (Non Consumer)
Sound Rating	"A"
Ballast Type	Rapid Start
Voltage Transients	ANSI 62.41
Min. Operating Temp	10°C (14°F)
Max. Case Temp	75°C (167°F)
Approvals/Class	UL Listed, CLASS P 1 OUTDOOR



Lamp Operation MLT 120-240V

Model Number	# of Lamps	Lamp Type
WHS5-MLT-T12-RS	1 x, 2 x	F36T8, F40T12
WHS6-MLT-T12-RS	1 x 2 x	F18T8, F36T8, F20T12, F40T12 F18T8, F20T12
WHS9-MLT-T12-RS	2 x 3 x, 4 x	F36T8, F40T12 F18T8, F20T12

WHCG5-MLT - Case Size: 235 L x 40 W x 25.4 H

WHCG6-MLT - Case Size: 235 L x 40 W x 25.4 H

Common Specifications

Input Voltage	120V-240V ± 10%, 50/60Hz
Power Factor	> 0.95
Efficacy Factor	> 88%
THD	< 10%
Current Crest Factor	< 1.7
Emi/Rfi Compliance	FCC PART 18-A (Non Consumer)
Sound Rating	"A"
Ballast Type	Rapid Start
Voltage Transients	ANSI 62.41
Min. Operating Temp	10°C (14°F)
Max. Case Temp	75°C (167°F)
Approvals/Class	UL Listed, CLASS P 1 OUTDOOR

PONY[®]

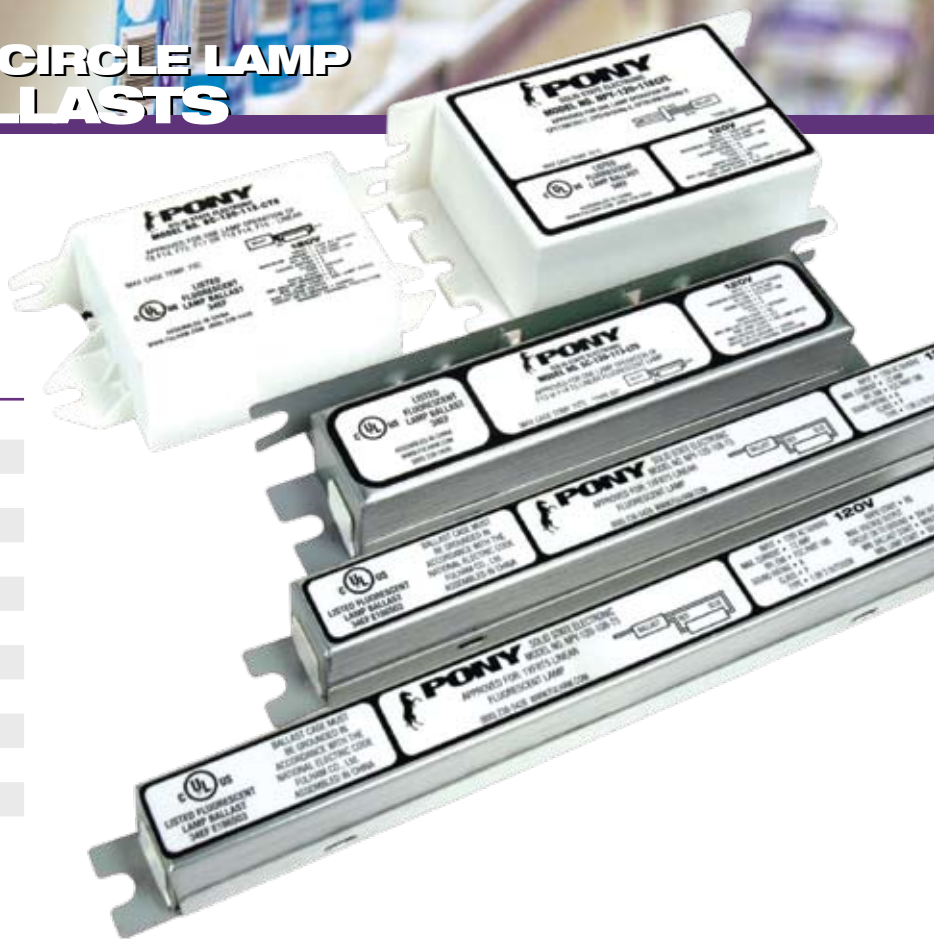
LINEAR, COMPACT & CIRCLE LAMP ELECTRONIC BALLASTS

120/230V 50/60 Hz



Common Specifications

Operating Voltage	120VAC±10%
Frequency	50/60Hz
Starting type	Rapid start
Starting temp	-10°C / 14°F
Ballast Max Case Temperature	158°F (70°C)
Transient protection	C62.41 Class A 7 strikes
Regulatory Approvals:	UL & cUL Listed Type1 or Type 2
EMI: FCC CFR Title 47 Part 18 non-consumer	
Sound Rating	A
CCF	< 1.7
Normal Power Factor	> .5
Meets all UL/cUL Certification and ANSI Specification where applicable	



SUGARCUBES FOR T5, T8, T12

Model Number	Operates Lamps
SC-120-115-CT8	1 x F14T8, F15T8, F17T8, F14T12, F15T12
SC-120-120-CT12	1 x F20T12
Case Size: H 1" x W 1.45" x L 3.09"	
SC-120-108-LT5	1 x F6T5, F8T5
SC-120-113-LT5	1 x F13T5, F14T5
SC-120-120-LT12	1 x F20T12
Case Size: H .76" x W 1.05" x L 4.76"	
SC-120-128-LT5	1 x F21T5, F28T5
Case Size: H 1.04" x W 1.09" x L 5.91"	
SC-120-115-T8XL	1 x F14T8, F15T8, F14T12, F15T12
SC-120-125-T8XL	1 x F17T8, F25T8
Case Size: H .73" x W .95" x L 6.30"	
SC-120-117-LT8	1 x F15T8, F17T8
SC-120-132-T8XL	1 x F15T8, F17T8, F25T8, F32T8
Case Size: H 1.01" x W 1.08" x L 6.30"	
SC-120-125-LT8	1 x F17T8, F25T8
Case Size: H .73" x W .95" x L 4.76"	
SC-120-208-LT5	1 x F13T5, F14T5, F6T5+F8T5 2 x F6T5, F8T5, F13T5
SC-120-213-LT5	1 x F21T5, F8T5+F13T5 2 x F8T5, F13T5, F14T5
Case Size: H 1.01" x W 1.27" x L 5.53"	

SUGARCUBES FOR CFL & CIRCLE

Model Number	Operates Lamps
SC-120-113-CTW	1 x 13CFT/E
SC-120-118-CFL	1 x 18CFQ/E, 18CFTR/E
SC-120-118-CTW	1 x 18CFT/E
Case Size: H 1" x W 1.45" x L 3.09"	

SUGARCUBES FOR UV LAMPS

SC-120-287-UV	1 x 180mm T5 UV, 287mm T5 UV
SC-230-287-UV	1 x 180mm T5 UV, 287mm T5 UV
Case Size: H 1" x W 1.46" x L 3.07"	

PONY FOR T8, T12

NPY-120-130-T8-L	1 x F30T8, F40T8, F40T12
Case Size: H .96" x W .90" x L 6.72"	
NPY-120-140-T8-L	1 x F32T8, F40T8, F40T12
Case Size: H .96" x W 1.85" x L 6.72"	
NPY-120-230-T8-L	2 x F30T8, F30T12
NPY-120-240-T8-L	2 x F32T8, F40T8, F40T12
Case Size: H 1.02" x W 1.74" x L 9.49"	

PONY ULTRASLIM FOR T5

NPY-120-108-T5US	1 x F8T5
NPY-120-113-T5US	1 x F14T5, F13T5
Case Size: H .69" x W .67" x L 6.81"	

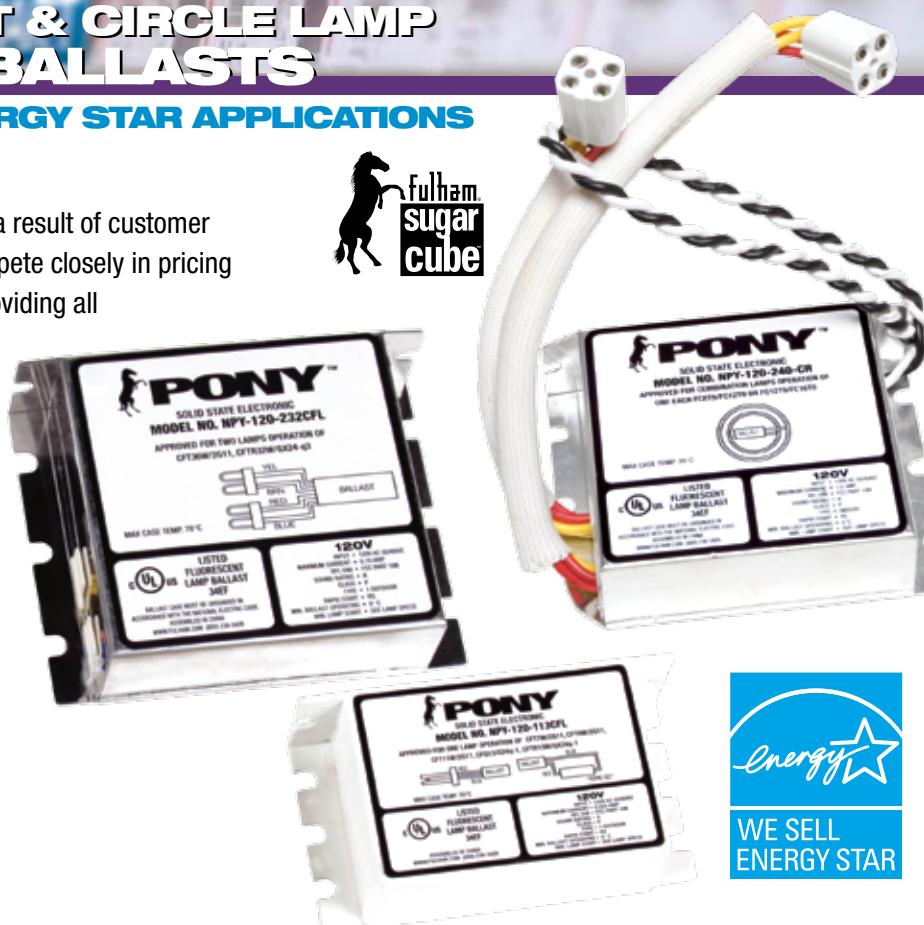
PONY

LINEAR, COMPACT & CIRCLE LAMP ELECTRONIC BALLASTS

QUALIFIED FOR RLF ENERGY STAR APPLICATIONS
120V 50/60 Hz

Pony, the utility ballast, was created as a result of customer demand for an electronic ballast to compete closely in pricing with magnetic ballast systems while providing all the benefits of electronics: flicker-free, more energy efficient, cooler running, lightweight, small size design friendly packages. These solid-state electronic ballasts are engineered to perform efficiently with the lamps they operate and meet FCC Part 18-A and 18-B. These economically priced ballasts are applicable for under cabinet lighting, sconces, down lights, troffers, UV, fish tanks and more.

Ballast Max Case Temperature for Energy Star
PONY 167°F (75°C)



ENERGY STAR - SUGARCUBE & PONY

PONY & SUGARCUBES FOR CFL

Model Number	Operates Lamps
SC-120-113-CFL	1 x 13CFQ/E, F15T8, F17T8, 13W Spiral
Case Size: H 1" x W 1.45" x L 3.09"	
NPY-120-113CFL	1 x 7CFT/E, 9CFT/E, 11CFT/E, 13CFQ/E, 13CFTR/E
NPY-120-118CFL	1 x 13CFT/E, 18CFQ/E, 18CFTR/E
Case Size: H 1.03" x W 1.76" x L 3.36"	
NPY-120-113-BL	1 x 7CFT/E, 9CFT/E, 11CFT/E, 13CFQ/E, 13CFTR/E
NPY-120-118-BL	1 x 13CFT/E, 18CFQ/E, 18CFTR/E
Case Size: H 1" x W 1.77" x L 3.34"	
NPY-120-126CFL	1 x 18CFT/E, 24/27CFT/E, 26CFQ/E, 26CFTR/E, 32CFTR/E, 22CRT9
NPY-120-126-BLS	1 x 18CFT/E, 24/27CFT/E, 26CFQ/E, 26CFTR/E, 32CFTR/E, 22CRT9
NPY-120-132CFL	1 x 36/39CFQ/E, 32CFTR/E, 32CRT9, 24/27CFT/E
Case Size: H 1.02" x W 2.39" x L 3.36"	

Model Number	Operates Lamps
NPY-120-213CFL	2 x 7CFT/E, 9CFT/E, 13CFQ/E, 13CFTR/E
NPY-120-218CFL	2 x 13CFT/E, 18CFQ/E, 18CFTR/E
Case Size: H 1.02" x W 2.39" x L 3.36"	
NPY-120-226CFL	2 x 18CFT/E, 24/27CFT/E, 26CFQ/E, 26CFTR/E, FC22T9
NPY-120-232CFL	2 x 36/39CFQ/E, 32CFTR/E, 32CRT9
Case Size: H 1.02" x W 2.39" x L 3.36"	
PONY FOR CIRCLE	
NPY-120-240CR	1 x FC22T9 + FC32T9, 1 x FC32T9 + FC40T9,
Case Size: H 1.04" x W 3.11" x L 3.84"	
NPY-120-126-CR	1 x FC8T9-22W
NPY-120-132-CR	1 x FC12T9-32W
Case Size: H 1.02" x W 2.39" x L 3.36"	

PONY T5

NPY-120-214-LT5	1 or 2 x F14T5
NPY-120-221-LT5	1 or 2 x F21T5
NPY-120-228-LT5	1 or 2 x F28T5
Case Size: H 1.01" x W 1.01" x L 11.5"	

PONY T5 & T8

Model Number	Operates Lamps
NPY-120-139-LT5	1 x F39T5H0
NPY-120-154-LT5	1 x F54T5H0
Case Size: H .91" x W 1.23" x L 9.06"	
NPY-120-232-LT8	1 or 2 x F32T8 2 x F25T8, F40 / F34 / F30 / F25 T12 1 x F32T8 + F25T8, 1 x F32T8 + F17T8
NPT-120-217-LT8	2 x F17T8 or F20T12
Case Size: H .83" x W .96" x L 12.01"	
NPY-120-432-T8IS	2 x F40T8 3 x F17T8, F25T8, F32T8, F40T8, F32T8(30W/28W/25W), FB031T8, FB024, FB016, F20T12, F25T12, F30T12, F34T12, F40T12 4 x F17T8, F25T8, F32T8, F32T8(30W), FB031T8, FB024, FB016, F20T12, F25T12, F30T12, F34T12, F40T12
Case Size: H 1.02" x W 1.67" x L 9.45"	

WHAM™

FLUORESCENT T5 ULTRA SLIM ELECTRONIC BALLASTS

120V 50/60 Hz



Advanced Features:

- All the Features of WorkHorse
- Designed for Thin Undercabinet Applications
- 3/4" x 1" Cross Section Allows the WHAM to Easily Fit Extrusions
- See the WorkHorse 1 for another 3/4" x 1" Case for T2 & T5 Lamps



2 BALLASTS OPERATE 41 LAMPS IN 70 COMBINATIONS

Common Specifications

Operating Voltage:	120 VAC $\pm$ 10%	Regulatory Approvals:	UL Listed Type 1 or Type 2
Frequency:	50/60 Hz	High Power Factor:	> .90
ATHD:	Meets ANSI C82.11-1993	Open Circuit Voltage:	600 V RMS Max.
Protection/Input:		Ballast Min. Operating Temp.:	-20° F (-30° C)
Over Current:	Fuse	Ballast Maximum Case Temp.:	158° F (70° C)
Voltage Transients:	MOV (PER ANSI C82.11 – 1993)	Ballast Lamp Starting Mode:	Instant Start
EMI: FCC CFR Title 47 Part 18 non-consumer		Class P Inherent Thermal Protection	
Open/Shorted Lamp:		Sound Rating	A

WHAM 1

Maximum Power: 35 Watts
Model No.: WHAM1-120-135-L
Maximum Current: (120VAC).33 AMP

Black/White Wires: 18"
Red/Yellow Wires: 24"

Ballast Case Size: H .75", W 1", L 7.5"
Ballast Weight: 5 oz.
Case Quantity & Weight: 50 pcs. 22 lbs.

WHAM 2

Maximum Power: 28 Watts
Model No.: WHAM2-120-213-L
Maximum Current: (120VAC).22 AMP

Black/White Wires: 18"
Red/Yellow Wires: 24"

Ballast Case Size: H .75", W 1", L 7.5"
Ballast Weight: 5 oz.
Case Quantity & Weight: 50 pcs. 22 lbs.

LONGHORSE™

FLUORESCENT REMOTE MOUNT ELECTRONIC BALLASTS

120/277V - 50/60 HZ



Advanced Features:

- Solid-State Electronics
- High Power Factor
- Operates up to 20 ft. from Lamp
- Lightweight
- Versatile
- Energy Saving

6 BALLASTS
OPERATE 124 LAMPS
IN 628 COMBINATIONS

Common Specifications

Operating Voltage:	120/277 VAC ± 10%	Regulatory Approvals:	UL Listed Type 1 or Type 2
Frequency:	50/60 Hz	High Power Factor:	> .90
ATHD:	Meets ANSI C82.11-1993	Open Circuit Voltage:	600 V RMS Max.
Protection/Output:	Open Lamp Shorted Lamp	Ballast Min. Operating Temp.:	-20° F (-30° C)
Protection/Input:		Ballast Maximum Case Temp.:	158° F (70° C)
Over Current:	Fuse	Ballast Lamp Starting Mode:	Instant Start
Voltage Transients:	MOV (PER ANSI C82.11 – 1993)	Class P Inherent Thermal Protection	
EMI: FCC CFR Title 47 Part 18 non-consumer		Sound Rating	A
Open/Shorted Lamp:			

NOTE: Frequently switched, short duration ON/OFF cycles with any Instant Start ballast will reduce received Lamp Life. Please contact your lamp manufacturer for additional information.

LONGHORSE 1

Maximum Power: 28 Watts
Model No.: LH1-120-L
Maximum Current: (120VAC) .26 AMP

Model No.: LH1-277-L
Maximum Current: (277VAC) .10 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: H 1", W 1.5", L 6.5"
Weight: 7 oz.
Case Quantity & Weight: 50 pcs. 15 lbs.

LONGHORSE 2

Maximum Power: 35 Watts
Model No.: LH2-120-L
Maximum Current: (120VAC) .36 AMP

Model No.: LH2-277-L
Maximum Current: (277VAC) .15 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: H 1", W 1.72", L 9.5"
Weight: 14 oz.
Case Quantity & Weight: 50 pcs. 44 lbs.

LONGHORSE 3

Maximum Power: 64 Watts
Model No.: LH3-120-L
Maximum Current: (120VAC) .61 AMP

Model No.: LH3-277-L
Maximum Current: (277VAC) .25 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: H 1", W 1.72", L 9.5"
Weight: 14 oz.
Case Quantity & Weight: 50 pcs. 44 lbs.

LONGHORSE 4

Maximum Power: 70 Watts
Model No.: LH4-120-L
Maximum Current: (120VAC) .65 AMP

Model No.: LH4-277-L
Maximum Current: (277VAC) .22 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: H 1", W 1.72", L 9.5"
Weight: 14 oz.
Case Quantity & Weight: 50 pcs. 44 lbs.

LONGHORSE 5

Maximum Power: 128 Watts
Model No.: LH5-120-L
Maximum Current: (120VAC) 1.25 AMP

Model No.: LH5-277-L
Maximum Current: (277VAC) 0.48 AMP

Black/White Wires: 18 Inches
Red/Yellow Wires: 36 Inches

120-L Case: H 1", W 1.72", L 13.3"
277-L Case: H 1", W 1.72", L 16"
Weight: 120: 24 oz. / 277: 26.4 oz.
Case Quantity & Weight: 25 pcs. 29 lbs.

LONGHORSE 6

Maximum Power: 140 Watts
Model No.: LH6-120-L
Maximum Current: (120VAC) 1.25 AMP

Model No.: LH6-277-L
Maximum Current: (277VAC) 0.50 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

120-L Case: H 1", W 1.72", L 13.3"
277-L Case: H 1", W 1.72", L 16"
Weight: 120: 22.4 oz. / 277: 27.2 oz.
Case Quantity & Weight: 25 pcs. 29 lbs.

WORKHORSE®

FLUORESCENT IN-FIXTURE ELECTRONIC BALLASTS

120/230/277V 50/60 Hz



Advanced Features:

- Solid-State Electronics
- High Power Factor
- Small Case Size
- Lightweight
- Versatile
- Energy Saving

10 BALLASTS
OPERATE 132 LAMPS
IN 860 COMBINATIONS

Common Specifications

Operating Voltage:	120 VAC ± 10% 230 VAC ± 10% 277 VAC ± 10%	Protection/Output:	Open/Shorted Lamp
Frequency:	50/60 Hz	Regulatory Approvals:	UL Listed Type1 or Type 2
ATHD:	Meets ANSI C82.11-1993	High Power Factor:	> .90
Protection/Input:		Open Circuit Voltage:	600 V RMS Max.
Over Current:	Fuse	Ballast Min. Operating Temp.:	-20° F (-30° C)
Voltage Transients:	MOV (PER ANSI C82.11 – 1993)	Ballast Maximum Case Temp.:	158° F (70° C)
EMI: FCC CFR Title 47 Part 18 non-consumer		Ballast Lamp Starting Mode:	Instant Start
		Class P Inherent Thermal Protection	
		Sound Rating	A

NOTE: Frequently switched, short duration ON/OFF cycles with any Instant Start ballast will reduce received Lamp Life. Please contact your lamp manufacturer for additional information.

WORKHORSE 1

Maximum Power: 28 Watts
Model No. WH1-120-L
Maximum Current (120VAC) .20 AMP

Model No. WH1-277-L
Maximum Current (277VAC) 11 AMP

Black/White Wires 12 Inches
Red/Yellow Wires 24 Inches

Case: 120-L: H .75", W 1", L 6"
277-L: H .75", W 1", L 7.5"

Weight: 4.5 oz.
Case Quantity & Weight: 50 pcs. 15 lbs.

WORKHORSE 2

Maximum Power: 35 Watts
Model No. WH2-120-L, WH2-120-C (BLS)
Maximum Current (120VAC): .33 AMP

Model No. WH2-230-L
Maximum Current (230VAC): .26 AMP

Model No. WH2-277-L, WH2-277-C (BLS)
Maximum Current (277VAC): .15 AMP

Black/White Wires: L-18" C-12"
Red/Yellow Wires: L-36" C-12"

Case: L=H 1", W 1", L 5.5"
C=H 1", W 1.75", L 3.3"

Weight: 7 oz.
Case Quantity & Weight: 50 pcs. 22lbs.

WORKHORSE 22

Maximum Power: 35 Watts
Model No. WH22-120-L, WH22-120-C (BLS)
Maximum Current (120VAC): .32 AMP

Model No. WH22-277-L, WH22-277-C (BLS)
Maximum Current (277VAC): .15 AMP

Black/White Wires: L-18" C-12"
Red/Yellow Wires: L-36" C-12"

Case: L=H 1.25", W 1", L 5.5"
120 C=H 1", W 1.75", L 3.3"
277 C=H 1", W 2.3", L 3.3"

Weight: 7 oz.
Case Quantity & Weight: 50 pcs. 22lbs.



WORKHORSE 3

Maximum Power: 64 Watts
Model No. WH3-120-L, WH3-120-C (BLS)
Maximum Current (120VAC): .56 AMP

Model No. WH3-230-L
Maximum Current (230VAC): .29 AMP

Model No. WH3-277-L, WH3-277-C (BLS)
Maximum Current (277VAC): .24 AMP

Black/White Wires: L-18" C-12"
Red/Yellow Wires: L-36" C-12"

Case: L=H 1", W 1.5", L 6.5"
120 C=H 1", W 2.5", L 3.8"
277 C=H 1", W 3.1", L 3.8"

Weight: 10 oz.
Case Quantity & Weight: 50 pcs. 32 lbs.

WORKHORSE 33

Maximum Power: 64 Watts
Model No. WH33-120-L
Maximum Current (120VAC): .53 AMP

Model No. WH33-120-C (BLS)
Maximum Current (120VAC): .53 AMP

Black/White Wires: L-18" C-12"
Red/Yellow Wires: L-36" C-12"

Case: L=H 1", W 1.5", L 6.5"
C=H 1", W 3.1", L 3.82"

Weight: 10 oz.
Case Quantity & Weight: 50 pcs. 32 lbs.

WORKHORSE 4

Maximum Power: 70 Watts
Model No. WH4-120-L
Maximum Current (120VAC): .56 AMP

Model No. WH4-277-L
Maximum Current (277VAC): .21 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Ballast Case Size: H 1", W 1.5", L 6.5"
Ballast Weight: 10 oz.
Case Quantity & Weight: 50 pcs. 32 lbs.

WORKHORSE 5

Maximum Power: 128 Watts
Model No. WH5-120-L
Maximum Current (120VAC): 1.15 AMP

Model No. WH5-230-L
Maximum Current (230VAC): 0.57 AMP

Model No. WH5-277-L
Maximum Current (277VAC): 0.48 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: 120 L=H 1", W 1.72", L 8.5"
277 L=H 1", W 1.72", L 9.5"

Weight: 14 oz.
Case Quantity & Weight: 50 pcs. 44 lbs.

WORKHORSE 6

Maximum Power: 140 Watts
Model No. WH6-120-L
Maximum Current (120VAC): 1.04 AMP

Model No. WH6-277-L
Maximum Current (277VAC): 0.50 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case 120 L=H 1", W 1.72", L 8.5"
277 L=H 1", W 1.72", L 9.5"

Weight: 15 oz.
Case Quantity & Weight: 50 pcs. 47.5 lbs.

WORKHORSE 7

Maximum Power: 220 Watts
Model No. WH7-120-L
Maximum Current (120VAC): 1.82 AMP

Model No. WH7-120-H
Maximum Current (120VAC): 1.82 AMP

Model No. WH7-230-L
Maximum Current (230VAC): 1.10 AMP

Model No. WH7-277-L
Maximum Current (277VAC): .85 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: L = H 1", W 1.72", L 19.25"
H = H 1.25", W 3.25", L 11.75"

Weight: 32.8 oz.
Case Quantity & Weight: 25 pcs. 57 lbs.

WORKHORSE 8

Maximum Power: 220 Watts
Model No. WH8-120-L
Maximum Current (120VAC): 1.8 AMP

Model No. WH8-230-L
Maximum Current (230VAC): 1.1 AMP

Model No. WH8-277-L
Maximum Current (277VAC): .74 AMP

Black/White Wires: 18"
Red/Yellow Wires: 36"

Case: H 1", W 1.72", L 19.25"

Weight: 34 oz.
Case Quantity & Weight: 25 pcs. 57 lbs.

fulham **4-PIN** **CFL LAMPS**

ELECTRONIC TWIN **TWIN HI-LUMEN T5**



Lamp Series	Watts	Item Number*	CCT (K)* Color Temp	Initial Lumens	Rated Life (1)	Base	MOL (IN)	Case Qty
Twin	5W	FCFTE5W8	27, 35, 41	250	10,000 HRS	2G7	3.6	100
Twin	7W	FCFTE7W8	27, 35, 41	400	10,000 HRS	2G7	4.7	100
Twin	9W	FCFTE9W8	27, 35, 41	600	10,000 HRS	2G7	5.9	100
Twin	13W	FCFTE13W8	27, 35, 41, 50	900	10,000 HRS	2GX7	6.4	100
Twin Hi-Lumen T5	18W	FCFTE18W8	27, 30, 35, 41	1250	10,000 HRS	2G11	8.9	50
Twin Hi-Lumen T5	24W	FCFTE24W8	27, 30, 35, 41	1800	10,000 HRS	2G11	12.8	50
Twin Hi-Lumen T5	36W	FCFTE36W8	27, 30, 35, 41	2900	10,000 HRS	2G11	16.4	50
Twin Hi-Lumen T5	40W	FCFTE40W8	27, 30, 35, 41	3150	10,000 HRS	2G11	22.5	50
Twin Hi-Lumen T5	55W	FCFTE55W8	27, 30, 35, 41, 50	4800	10,000 HRS	2G11	21.2	50

*ADD COLOR TEMP CCT (K) REQUIRED TO ITEM NUMBER WHEN ORDERING: EXAMPLE: FCFTE5W827

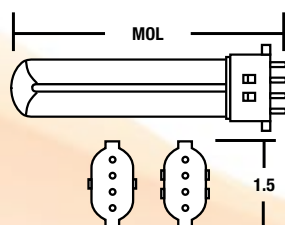
LAMP NOTES: (1) RATED LAMP LIFE BASED ON 3 HOURS PER START (MIN.).

(2) CUSTOM COLORS (CCT) ARE AVAILABLE 27K THRU 64K, AS SPECIAL ORDER. CALL 323-599-5000.

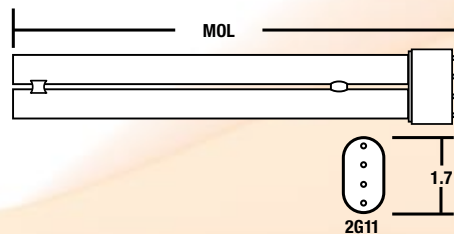
(3) ALL LAMPS CARRY A CRI RATING OF 80 TO 84 MIN. CRI.

(4) DETAILED LAMP SPECIFICATIONS ARE AVAILABLE. CALL 323-599-5000 OR VISIT WWW.FULHAM.COM

TWIN SERIES



TWIN SERIES HI-LUMEN T5



fulham® **4-PIN** **CFL LAMPS**

ELECTRONIC **QUAD T4 • TRIPLE**



Lamp Series	Watts	Item Number*	CCT (K)* Color Temp	Initial Lumens	Rated Life (1)	Base	MOL (IN)	Case Qty
Quad T4	13W	FCFQE13W8	27, 30, 35, 41	900	10,000 HRS	G24Q1	5.1	100
Quad T4	18W	FCFQE18W8	27, 30, 35, 41	1250	10,000 HRS	G24Q2	5.8	100
Quad T4	26W	FCFQE26W8	27, 30, 35, 41	1850	10,000 HRS	G24Q3	6.5	100
Triple	13W	FCFTRE13W8	27, 30, 35, 41, 50	900	10,000 HRS	GX24Q-1	4.1	100
Triple	18W	FCFTRE18W8	27, 30, 35, 41	1250	10,000 HRS	GX24Q-2	4.5	100
Triple	26W	FCFTRE26W8	27, 30, 35, 41, 50	1850	10,000 HRS	GX24Q-3	4.9	100
Triple	32W	FCFTRE32W8	27, 30, 35, 41, 50	2400	10,000 HRS	GX24Q-3	5.5	100

*ADD COLOR TEMPERATURE CCT (K) REQUIRED TO ITEM NUMBER WHEN ORDERING: EXAMPLE: FCFQE26W841

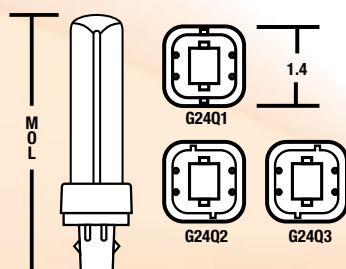
LAMP NOTES: (1) RATED LAMP LIFE BASED ON 3 HOURS PER START (MIN.).

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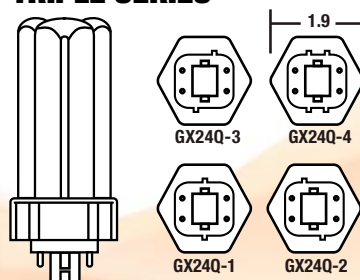
(3) ALL LAMPS CARRY A CRI RATING OF 80 TO 84 MIN. CRI.

(4) DETAILED LAMP SPECIFICATIONS ARE AVAILABLE. CALL 323-599-5000 OR VISIT WWW.FULHAM.COM

QUAD SERIES T4



TRIPLE SERIES





fulham[®] LINEAR LAMPS

T2 LINEAR LAMPS

T5 & T5 HIGH OUTPUT - HIGH EFFICIENCY LINEAR LAMPS



- Energy Efficient
- TCLP Compliant (T5, T5HO)
- Long Life up to 35,000



Lamp Series	Watts	Item Numer*	CCT (K)* Color Temp	Initial Lumens	Rated Life (1)	Base	NOM. LENGTH (IN)	Diameter	Case Qty
T2	6W	FLFT2E6W8	27,30,35,40,41,50,60	330	7,000 HRS	T2 AXIAL	8.6	.25"	100
T2	8W	FLFT2E8W8	27,30,35,40,41,50,60	540	7,000 HRS	T2 AXIAL	12.6	.25"	100
T2	11W	FLFT2E11W8	27,30,35,40,41,50,60	750	7,000 HRS	T2 AXIAL	16.5	.25"	100
T2	13W	FLFT2E13W8	27,30,35,40,41,50,60	930	7,000 HRS	T2 AXIAL	20.6	.25"	100
T5	8W	FLFT58W8	27, 35, 41, 65	400	8,000 HRS	MNBIPIN	12.0	.625"	100
T5	13W	FLFT513W8	27, 41	800	8,000 HRS	MNBIPIN	21.0	.625"	200
T5	14W	FLFT514W8	27, 30, 35, 41, 50, 65	1350	35,000 HRS	MNBIPIN	22.0	.625"	200
T5	21W	FLFT521W8	27, 30, 35, 41, 50, 65	2100	35,000 HRS	MNBIPIN	34.0	.625"	100
T5	28W	FLFT528W8	27, 30, 35, 41, 50, 65	2900	35,000 HRS	MNBIPIN	46.0	.625"	100
T5	35W	FLFT535W8	27, 30, 35, 41, 50, 65	3650	35,000 HRS	MNBIPIN	58.0	.625"	100
T5 HIGH OUTPUT	24W	FLFT5EH24W8	30, 35, 41, 50, 65	2000	35,000 HRS	MNBIPIN	22.0	.625"	200
T5 HIGH OUTPUT	39W	FLFT5EH39W8	30, 35, 41, 50, 65	3500	35,000 HRS	MNBIPIN	34.0	.625"	100
T5 HIGH OUTPUT	54W	FLFT5EH54W8	30, 35, 41, 50, 65	5000	35,000 HRS	MNBIPIN	46.0	.625"	100

*ADD COLOR TEMPERATURE CCT (K) REQUIRED TO ITEM NUMBER WHEN ORDERING: EXAMPLE: FLCCM4E2W835

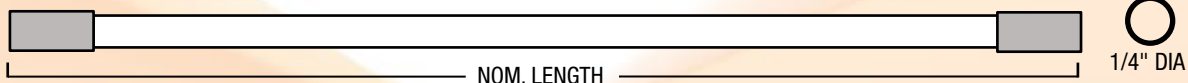
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(3) ALL LAMPS CARRY A CRI RATING OF 80 TO 84 MIN. CRI.

(4) DETAILED LAMP SPECIFICATIONS ARE AVAILABLE. CALL 323-599-5000 OR VISIT WWW.FULHAM.COM

T2 SERIES



T5 SERIES



PONY ET DIMMABLE ELECTRONIC TRANSFORMERS

120V - 50/60 HZ



- Solid State Electronic
- Operates MR16 & MR11
- Short Circuit, Overload & Thermal Protection
- Operates Multiple Lamps up to Stated Wattage
- UR (UL recognized components)

Common Specifications

Dimmer Capability: Leading Edge Or Trailing Edge

Maximum Ambient Temperature: 50°C

Auto Reset Electronic Short Circuit
And Overload Protection

High Power Factor, Low Total Harmonic Distortion

Aluminum Case, Waterproof Potting

Minimum Load Requirement: 20W



PONY ET 60W CLASS 2

Max. Load: 60W
Model No.: PET-120-12-60W CLASS 2
Lead Wire Lengths: 6"
Case Size: H 0.78" x W 1.29" x L 2.08"
Case Qty: 100

PONY ET 75W

Max. Load: 75W
Model No.: PET-120-12-75W
Lead Wire Lengths: 6"
Case Size: H 0.78" x W 1.29" x L 2.08"
Case Qty: 100

HALOGEN LAMP ELECTRONIC TRANSFORMERS

220-240V - 50/60 HZ

Common Specifications

Input Voltage:	220V~240V, 50/60Hz	Temperature Protection	Yes
Output Voltage	10.6~12V	Approvals/Class	TUV, ROHS
EMI/RFI compliance	EN55015	Sound Rating	" A "
Power Factor	>0.99	Max. Case Temp	75°C (167°F)
Dimmable	100%~20% trailing edge	Max. Ambient Temp	40°C (104°F)
Short Circuit Protection	Auto-Reset	Hi-Pot	Input & Output 3750VAC
Over Load Protection	Auto-Reset		

PET-230-12-060

Input Power: 20~60W
Max. Line Current: 0.25A
THD: <12% IEC 61000-3-2
Over Load Range: <150W

Lamp Watts/Type:
3*20W/1*50W/6*10W 12V Halogen Lamp

Case Size (mm): H 22 x W 33 x L 107
Warranty Period : 2 Years

PET-230-12-105

Input Power: 35~105W
Max. Line Current: 0.42A
THD: <8% IEC 61000-3-2
Over Load Range: <250W

Lamp Watts/Type:
3*35W/2*50W/5*20W/1*75W/1*100W 12V Halogen Lamp

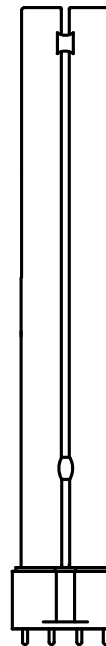
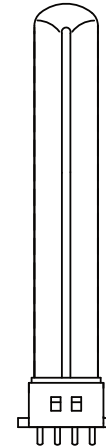
Case Size (mm): H 23 x W 45 x L 166
Warranty Period: 2 Years

LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

LAMPS	WORKHORSE										WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
TWIN																		
1 X 5W	3	2				2					15	2	3	2		2		
2 X 5W		1	1			1		9						1		1		9
3 X 5W								8										8
4 X 5W					7		7	7									7	7
1 X 7W	3	2									15	2	3	2				
2 X 7W		1				1		9				1		1		1		9
3 X 7W								8										8
4 X 7W								7										7
1 X 9W	3	2									15	2	3	2				
2 X 9W		1				1						1		1		1		
3 X 9W								8										8
4 X 9W								7										7
1 X 11W	3										15	2	3					
2 X 11W		1				1						1		1		1		
3 X 11W								8										8
4 X 11W								7										7
1 X 13W		3	2	2		2		14				3		3	2	2		14
2 X 13W			1	1	9		9	11							1		9	11
3 X 13W					8		8											8
4 X 13W					7		7											7
1 X 18W		3	2	2	14	2		14				3		3	2	2		14
2 X 18W			1	1	9		9	9							1		9	9
3 X 18W					8		8											8
4 X 18W							7											7
1 X 24W		3	2	2	14	3	14	14				3		3	2	3	14	14
2 X 24W				1	9		9	11							1		9	11
3 X 24W							8											8
1 X 27W		3	2	2	14	3	14	14				3		3	2	3	14	14
2 X 27W					9		9	11									9	11
4 X 27W								7										
1 X 28W PA			3	3	14		14	10							3		14	10
2 X 28W PA					11		11										11	
3 X 28W PA								8										
4 X 28W PA								7										
1 X 36/39W			2	2	14	3	14	10							2	3	14	10
2 X 36/39W							9	11		22							9	11
3 X 36/39W								8		25								
4 X 36/39W								7		27								
5 X 36/39W										28								
6 X 36/39W										29								
1 X 40W				2	14	2		14							2	2		14
2 X 40W							9	11									9	11
3 X 40W							8			25								8
4 X 40W								7		27								
5 X 40W										28								
1 X 50W				3	14	3	14	10							3	3	14	10
2 X 50W							11	11		22							11	11
3 X 50W								8		25								
4 X 50W								7		27								
1 X 55W				3	10		10	12		16					3		10	12
2 X 55W							11		9								11	

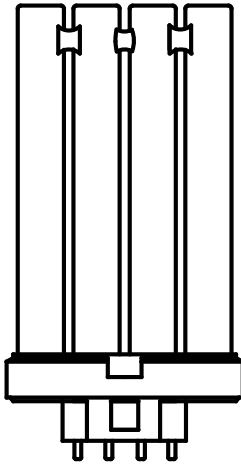
1. Find your lamp type.
2. Find the quantity and wattage of lamps.
3. Look across and find the ballast you need.
4. The colored number represents wiring diagram.

TWIN

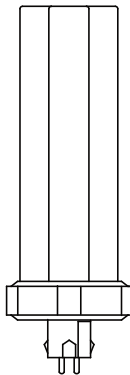


LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

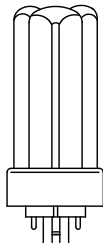
FLAT QUAD



QUAD



TRIPLE



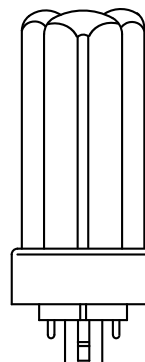
LAMPS	WORKHORSE								WHAM		LONGHORSE							
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
3 X 55W								8	26									
1 X 55WPA					10		12	13	14								12	13
2 X 55WPA									11	23								
3 X 55WPA										26								
1 X 96W							12		14	17							12	
2 X 96W									11	24								
FLAT QUAD																		
1 X 18W		3	2	2	14	3	14	14			3		3	2	3	14	14	
2 X 18W					9		9	11								9	11	
3 X 18W							8									8		
3 X 18W PA																		
4 X 18W PA								7										
1 X 24W		3	2	2	14	3		14			3		3	2	3		14	
2 X 24W				1	9		9	11						1		9	11	
3 X 24W							8									8		
1 X 28W PA				3	10		10	13						3		10	13	
2 X 28W PA								9										
1 X 36W				2	14	3	14	10						2	3	14	10	
2 X 36W					9		9	11								9	11	
3 X 36W									25									
4 X 36W								7										
1 X 55W PA					10		12	13	14								12	13
2 X 55W PA									11									
1 X 96W PA							12		14								12	
2 X 96W PA									11									
QUAD																		
1 X 10W	3	2				2					15	2	3	2		2		
2 X 10W		1	1			1		9						1		1		9
3 X 10W								8										8
4 X 10W					7			7										7
1 X 13W	3	2									15	2	3	2				
2 X 13W		1				1						1		1		1		
3 X 13W								8										8
4 X 13W								7										7
1 X 18W	3	2				2					15	2	3	2		2		
2 X 18W				1		1		9							1	1		9
3 X 18W					8		8	8									8	8
4 X 18W							7										7	
1 X 26W		3	2	2	14	3		14			3		3	2	3		14	
2 X 26W				1	9		9	11						1		9	11	
3 X 26W							8										8	
4 X 26W							7										7	
1 X 27W PA					10		10	13	14								10	13
2 X 27W PA									9									
TRIPLE																		
1 X 13W	3	2									15	2	3	2				
2 X 13W		1				1						1		1		1		
3 X 13W								8										8
4 X 13W								7										7
1 X 18W	3	2				2					15	2	3	2		2		
2 X 18W				1				9							1			9

LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

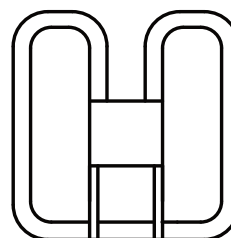
LAMPS	WORKHORSE											WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	
3 X 18W					8			8										8	
4 X 18W							7										7		
1 X 26W		3	2	2	14	3		14				3		3	2	3		14	
2 X 26W				1	9		9	11									9	11	
3 X 26W							8										8		
4 X 26W							7										7		
1 X 32W		3	2	2	14	3	14	14						3	2	3	14	14	
2 X 32W					9		9	11									9	11	
3 X 32W							8										8		
1 X 42W				2	14	3	14	14							2	3	14	14	
2 X 42W							9	11									9	11	
3 X 42W							8										8		
2-D																			
1 X 10W	3	2									15	2	3	2					
2 X 10W		1				1		9				1		1		1		9	
3 X 10W								8										8	
4 X 10W								7										7	
1 X 16W	3	2				2					15	2	3	2		2			
2 X 16W			1					9										9	
3 X 16W								8										8	
4 X 16W					7		7	7									7	7	
1 X 21W		2				2							2		2				
2 X 21W				1				9							1			9	
3 X 21W					8		8	8									8	8	
4 X 21W							7										7		
1 X 28W		3	2	2		2		14				3		3	2	2		14	
2 X 28W				1	9		9	11							1		9	11	
3 X 28W							8										8		
4 X 28W							7										7		
1 X 38W				2	14	3	14	14							2	3	14	14	
2 X 38W							9	11									9	11	
4 X 38W								7											
1 X 55W					12		12	14									12		
2 X 55W								11											
CIRCLINE																			
1 X 20W		3	2	2	14	3	14	14				3		3	2	3	14	14	
2 X 20W					9		9	11									9	11	
4 X 20W								7											
1 X 22W		3	2	2	14	3	14	14				3		3	2	3	14	14	
2 X 22W					9		9	11									9	11	
4 X 22W								7											
1 X 32W			3	3	14		14	10							3		14	10	
2 X 32W					11		11										11		
3 X 32W								8											
4 X 32W								7											
1 X 40W				2	14	3	14	10							2	3	14	10	
2 X 40W							9	11									9	11	
4 X 40W								7											
1 X 22+32				1			9	11							1		9	11	
1 X 32+40							11										11		
T5 CIRCLINE																			
1 X 22W		3	2	2	14	3		14				3		3	2	3		14	
2 X 22W					9		9	11									9	11	

1. Find your lamp type.
2. Find the quantity and wattage of lamps.
3. Look across and find the ballast you need.
4. The colored number represents wiring diagram.

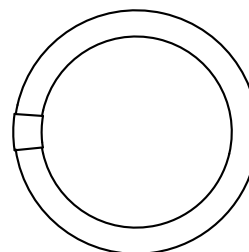
TRIPLE



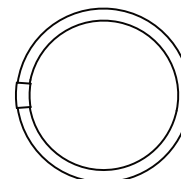
2-D



CIRCLINE

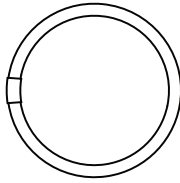


T5 CIRCLINE

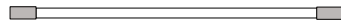


LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

T5 CIRCLINE

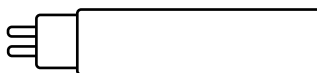


T2 LINEAR



1/4" DIA

T5 LINEAR



5/8" DIA

LAMPS	WORKHORSE											WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8		WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
3 X 22W					8			8										8	
1 X 40W				2	14	3		14	14							2	3	14	14
2 X 40W								9	11									9	11
1 X 55W OS				3	10			12								3			12
2 X 55W OS								11	9									11	
1 X 22+40				1				9	11							1		9	11
T2 LINEAR																			
1 X F6	2													2					
2 X F6	1													1					
1 X F8	2													2					
2 X F8	1													1					
1 X F11	2													2					
2 X F11	1													1					
1 X F13	2													2					
2 X F13	1													1					
T5 LINEAR																			
1 X F4	3	2										15	2	3	2				
2 X F4		1				1							1		1		1		
3 X F4								8											8
4 X F4								7											7
1 X F6	3	2										15	2	3	2				
2 X F6		1				1							1		1		1		
3 X F6								8											8
4 X F6								7											7
1 X F8	2	2										15	2	2	2				
2 X F8		1				1							1		1		1		
4 X F8								7											7
1 X F13	3	2										15	2	3	2				
2 X F13		1				1							1		1		1		
3 X F13								8											8
4 X F13								7											7
1 X F14	3	2										15	2	3	2				
2 X F14		1				1							1		1		1		
3 X F14								8											8
4 X F14								7											7
1 X F21	3	2										15	2	3	2				
2 X F21		1				1									1		1		
3 X F21								8											8
4 X F21								7											7
1 X F28	3	2										15	2	3	2				
2 X F28						1											1		
3 X F28								8											8
4 X F28								7											7
1 X F35		2										15			2				
2 X F35						1											1		
3 X F35								8											8
4 X F35								7											7
T5 HO																			
1 X F24 HO		3	2	2	14	3		14						3	2	3			14
2 X F24 HO				1	9		9	11							1			9	11
3 X F24 HO								8										8	
4 X F24 HO								7		27								7	

LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

LAMPS	WORKHORSE										WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
5 X F24 HO										28								
6 X F24 HO										29								
1 X F39 HO				2	14	3	14	14							2	3	14	14
2 X F39 HO							9	11									9	11
3 X F39 HO							8			25							8	
4 X F39 HO									7	27								
5 X F39 HO										28								
1 X F54 HO				3	14		14	12		16					3		14	12
2 X F54 HO							11			22							11	
3 X F54 HO									8	25								
4 X F54 HO									7									
1 X F80 HO							10	12		16							10	12
2 X F80 HO									9									
T6 LINEAR																		
1 X F42	3	2				2							3	2		2		
2 X F42				1		1		9							1	1		9
3 X F42								8										8
4 X F42								7										7
1 X F64						2										2		
2 X F64						1		9								1		9
3 X F64								8										8
T8 LINEAR																		
1 X F13		3	2	2	14	3		14				3		3	2	3		14
2 X F13				1	9		9	11							1		9	11
3 X F13					8		8										8	
4 X F13									7	27								
5 X F13										28								
6 X F13										29								
1 X F14		3	2	2	14	3	14	14				3		3	2	3	14	14
2 X F14					9		9	11									9	11
3 X F14							8			25							8	
4 X F14									7	27								
5 X F14										28								
6 X F14										29								
1 X F15		3	2	2		3		14				3		3	2	3		14
2 X F15			1	1	9		9	11							1		9	11
3 X F15					8		8										8	
4 X F15					7		7										7	
5 X F15										28								
6 X F15										29								
1 X F17		3		2		2						3		3	2	2		
2 X F17			1	1				9							1			9
3 X F17					8		8										8	
4 X F17					7		7										7	
6 X F17										29								
1 X F18		3	2	2	14	3		14				3		3	2	3		14
2 X F18					9		9	11									9	11
3 X F18							8			25							8	
4 X F18										27								
5 X F18										28								
6 X F18										29								
1 X F25		3		2		2						3		3	2	2		
2 X F25				1				9							1			9

1. Find your lamp type.
2. Find the quantity and wattage of lamps.
3. Look across and find the ballast you need.
4. The colored number represents wiring diagram.

T5 HO



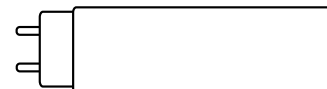
5/8" DIA

T6 LINEAR



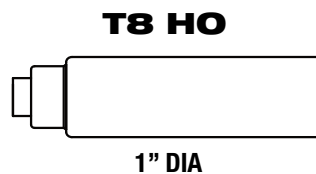
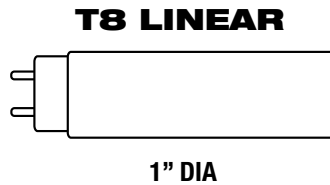
3/4" DIA

T8 LINEAR



1" DIA

LAMP CHART for WORKHORSE, WHAM AND LONGHORSE



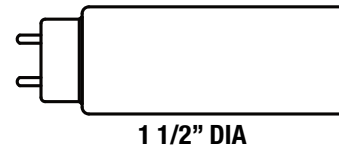
LAMPS	WORKHORSE										WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
3 X F25							8										8	
4 X F25							7										7	
6 X F25										29								
1 X F30		3	2	2	14	3		14						3	2	3		14
2 X F30					9		9	11									9	11
3 X F30							8			25							8	
4 X F30									7	27								
5 X F30										28								
6 X F30										29								
1 X F32		3		2		2								3	2	2		
2 X F32				1				9							1			9
3 X F32							8										8	
4 X F32							7										7	
6 X F32										29								
1 X F40				2		2									2	2		
2 X F40								9										9
3 X F40							8										8	
1 X F58								10										10
2 X F58								11		22							11	
3 X F58									8									
1 X F70								10										10
2 X F70								11		22							11	
1 X F72						2										2		
2 X F72						1		9								1		9
3 X F72								8										8
4 X F72								7										7
T8 HO																		
1 X F48 HO				3	14		14	10							3		14	10
2 X F48 HO							11			22							11	
3 X F48 HO									8	25								
4 X F48 HO									7	27								
1 X F60 HO				3	14		14	10							3		14	10
2 X F60 HO							11			22							11	
3 X F60 HO									8	25								
4 X F60 HO									7	27								
1 X F72 HO				3	14		14	10							3		14	10
2 X F72 HO										22								
3 X F72 HO									8	25								
T10 LINEAR																		
1 X F40				3	14	3	14	10							3	3	14	10
2 X F40							11	11		22							11	11
3 X F40									8	25								
4 X F40									7	27								
5 X F40										28								
T10 VHO																		
1 X F48 VHO									12	19								
1 X F60 VHO									12	19								
1 X F72 VHO									12	19								
1 X F96 VHO									12	19								
T12 LINEAR																		
1 X F14		3	2	2	14	3	14	10			3		3	2	3	14	10	
2 X F14					9		9	11								9	11	
3 X F14										25								

LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

LAMPS	WORKHORSE										WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6
4 X F14									7	27								
5 X F14										28								
6 X F14										29								
1 X F15		3	2	2		3		14				3		3	2	3		14
2 X F15				1	9		9	11							1		9	11
3 X F15					8		8										8	
4 X F15							7			27							7	
5 X F15										28								
6 X F15										29								
1 X F20		3	2	2	14	3	14	14				3		3	2	3	14	14
2 X F20					9		9	11									9	11
3 X F20										25								
4 X F20									7	27								
5 X F20										28								
6 X F20										29								
1 X F24			3		14	3	14	10				3				3	14	10
2 X F24					11		11	11		22							11	11
3 X F24									8	25								
4 X F24									7	27								
5 X F24										28								
1 X F25			3	3	14		14	10							3		14	10
2 X F25					11		11			22							11	
3 X F25									8	25								
4 X F25									7	27								
1 X F30			3	3	14	3	14	10							3	3	14	10
2 X F30					11		11	11		22							11	11
3 X F30									8	25								
4 X F30									7	27								
5 X F30										28								
1 X F36				3	14	3	14	10							3	3	14	10
2 X F36					11		11	11		22							11	11
3 X F36									8	25								
4 X F36									7	27								
5 X F36										28								
1 X F40				3	14	3	14	10							3	3	14	10
2 X F40							11	11		22							11	11
3 X F40									8	25								
4 X F40									7	27								
5 X F40										28								
1 X F42				3	14	3	14	10							3	3	14	10
2 X F42							11	11		22							11	11
3 X F42									8	25								
4 X F42									7	27								
5 X F42										28								
1 X F48				3	1	3	14	10							3	3	14	10
2 X F48							11	11		22							11	11
3 X F48									8	25								
4 X F48									7	27								
5 X F48										28								
1 X F60				2	14	3	14	10							2	3	14	10

1. Find your lamp type.
2. Find the quantity and wattage of lamps.
3. Look across and find the ballast you need.
4. The colored number represents wiring diagram.

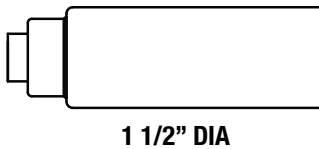
T12 LINEAR



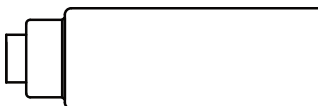
LAMP CHART for WORKHORSE, WHAM AND LONGHORSE

LAMPS	WORKHORSE												WHAM		LONGHORSE					
	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WH 9	WH 10	WH 11	WH 12	WH 13	WH 14	WH 15	WH 16	WH 17	WH 18
2 X F60																				
3 X F60																				
4 X F60																				
1 X F64																				
2 X F64																				
3 X F64																				
4 X F64																				
1 X F72																				
2 X F72																				
3 X F72																				
4 X F72																				
1 X F84																				
2 X F84																				
3 X F84																				
1 X F96																				
2 X F96																				
3 X F96																				
T12 HO																				
1 X F18 HO																				
2 X F18 HO																				
3 X F18 HO																				
1 X F24 HO																				
2 X F24 HO																				
3 X F24 HO																				
1 X F30 HO																				
2 X F30 HO																				
3 X F30 HO																				
1 X F36 HO																				
2 X F36 HO																				
3 X F36 HO																				
1 X F42 HO																				
2 X F42 HO																				
3 X F42 HO																				
1 X F48 HO																				
2 X F48 HO																				
3 X F48 HO																				
1 X F60 HO																				
2 X F60 HO																				
3 X F60 HO																				
1 X F64 HO																				
2 X F64 HO																				
1 X F72 HO																				
2 X F72 HO																				
1 X F84 HO																				
2 X F84 HO																				
1 X F96 HO																				
2 X F96 HO																				
T12 VHO																				
1 X F48 VHO																				
1 X F60 VHO																				
1 X F72 VHO																				
1 X F96 VHO																				

T12 HO

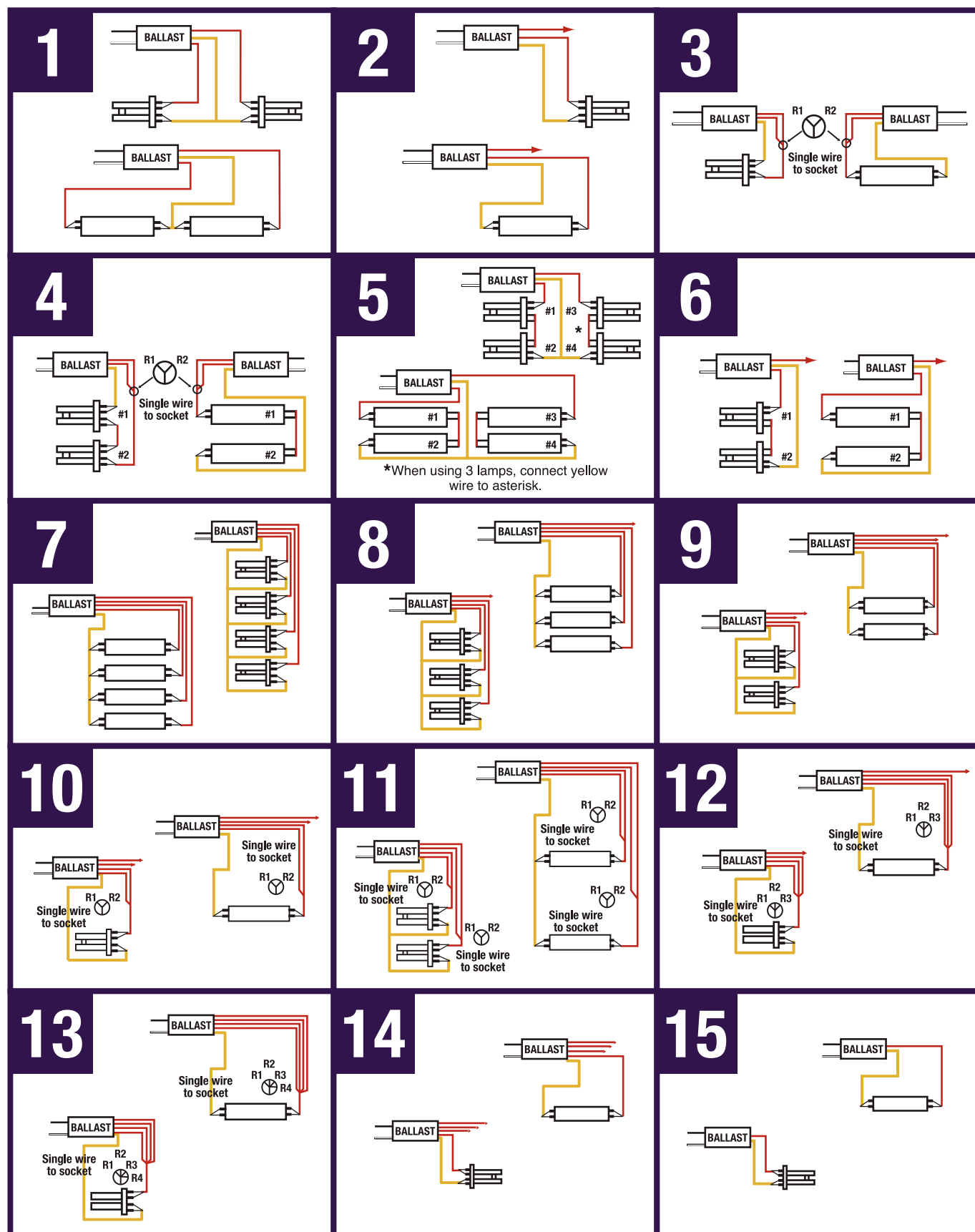


T12 VHO



WIRING DIAGRAMS

for WORKHORSE, WHAM AND LONGHORSE

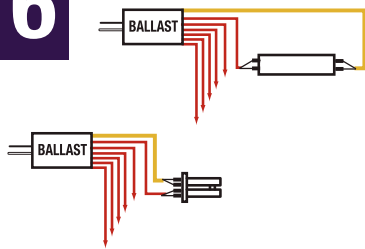


OPERATION & INSTALLATION TIPS

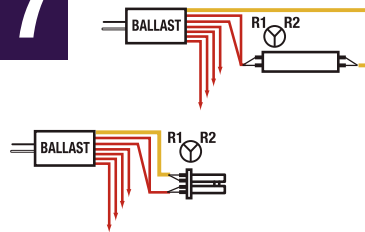
1. Connect both pin sets of the socket before connecting "RED" & "YELLOW" wires.
2. Ground case in accordance with the "National Electric Code."
3. With Linear lamp use a starting aid.
4. Ballast case temperature can not exceed 70°C.
5. Remote mounting distance varies with lamp type. Contact customer service.
6. Ballast can not be used with dimmer switch but can be used with occupancy sensor. (Note: Sensor will shorten lamp life.)

7. Cap and insulate any unused red power wire.
8. When connecting two red power wires, they must be joined to make one wire before attaching to the socket.
9. BLS (Back Leads with Studs) Dimensions:
Stud Length: 5/8", Stud Size: 8/32, Center to Center: 2"
10. Running lamps in series will reduce the turn-on cycles of both lamps.
(Configuration diagrams 4, 5, 6)

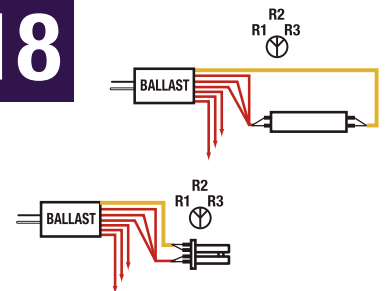
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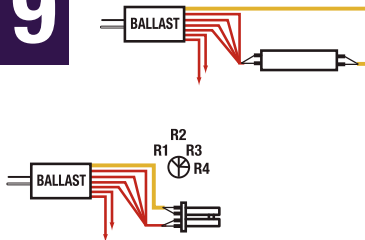
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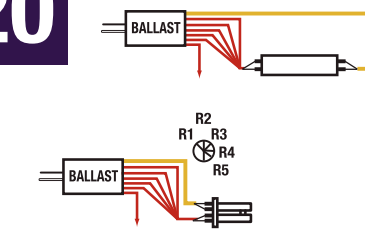
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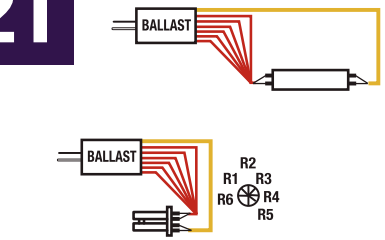
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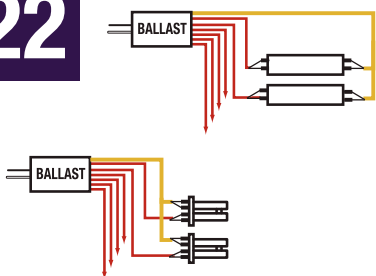
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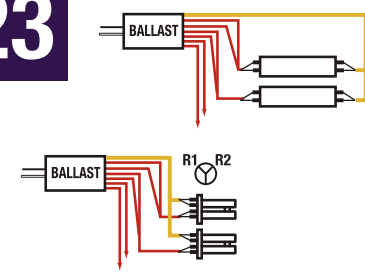
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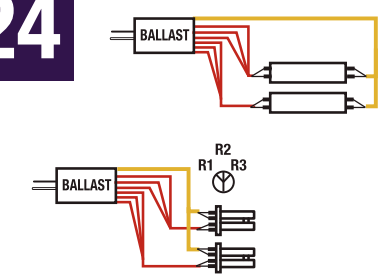
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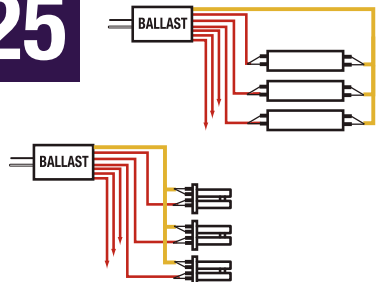
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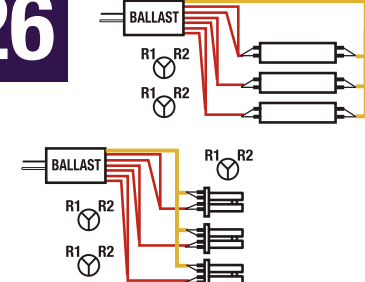
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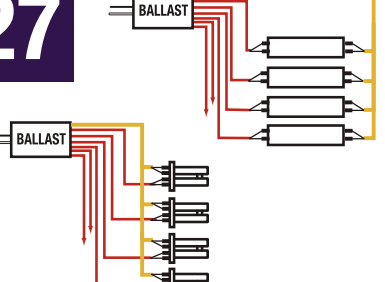
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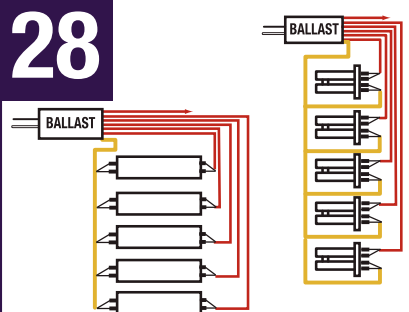
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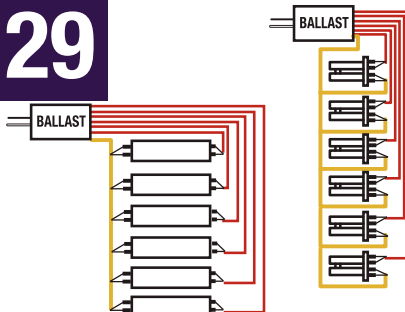
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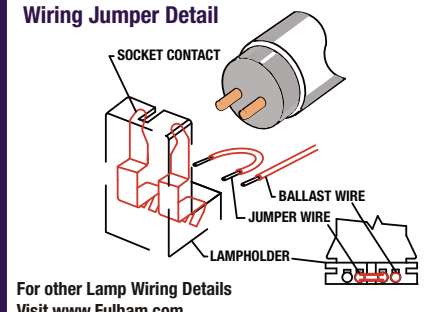
28



29



Wiring Jumper Detail



For other Lamp Wiring Details
Visit www.Fulham.com

Custom Products

Fulham is your technology partner when it comes to custom applications and solutions to your lighting needs.

We can design and build:

Custom Lamps

Built to customer specifications, available in a wide array of special colors, shapes, and sockets including UV/Germicidals.

Custom Ballasts

Built to customer specifications, available in different sizes and shapes and can operate custom compact and linear lamps. (CCFL thru T12)

Electrical Control Systems

Custom Controls built to customer specifications.

Custom Assemblies

Wiring Harnesses, custom ballast lead lengths, Kits including ballasts with lampholders and lamps. To customer specifications.





Limited Warranty

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:

WorkHorse Electronic Fluorescent Ballast - 5 Years

HighHorse Electronic HID Ballast - 3 Years

Long Horse Electronic Remote Fluorescent Ballast - 5 Years

PONY Electronic Ballast - 2 Years

PONY Electronic SugarCube - 2 Years

RaceHorse Electronic Ballast - 70°C 5 Years, 90°C 3 Years

FireHorse - 2 to 5 Years

IceHorse - 3 Years

SunHorse - 3 Years

ThoroLED Lamps and Light Engines - 2 Years

ThoroLED Drivers - 2 to 5 Years

ThoroLED Arrays - 1 Year

Induction - 5 Years (If installed per instructions)

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 ballast.

Fulham is not responsible for any auxiliary equipment not furnished by Fulham, which is used in connection with or attached to the ballast, or for operation of the ballast 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 ballast resulting from the use of auxiliary equipment not supplied by Fulham.

Warranty Conditions Not Covered

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

- * Underwriters Laboratories Inc. (UL)
- * National Electrical Code (NEC)
- * Applicable international federal, state and local codes
- * Remote applications beyond specifications
 - WorkHorse - Length of the leads
 - HighHorse - 9 feet
 - Long Horse - 20 feet
- * Fulham specific, most recent instructions and application guidelines provided for installation of the ballast

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

Obtaining Warranty Service

If within the warranty period it appears that the installed ballast does not meet the warranty conditions specified, the purchaser must notify Fulham Co., Inc. at 323-599-5000 of its warranty claim. Fulham or its authorized service company will provide warranty service directly to you.

General Provisions

All responsibilities regarding the ballast are set forth by this warranty. Replacement or repairs of the ballast is your exclusive remedy. This warranty is given in lieu of all other express warranties. Implied warranties, including those without limitation, warranties of merchant ability 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 ballast, 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.

State Law Exceptions

Some states 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 from state to state.

Returned Goods Authorizations (RGA)

Customers shall contact Fulham directly at 323-599-5000 for all RGA's.

After receiving the RGA, the user shall promptly return the product at the user's expense to Fulham Co., Inc. 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 RGA either +/-, the customer will be notified and adjustments will be made at that time.

Fulham Co. Inc. reserves the right to examine all failed ballasts and reserves the right to be the sole judge as to whether any ballasts are defective and covered under this warranty.

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www.fulham.com

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2010-2011 Catalog

