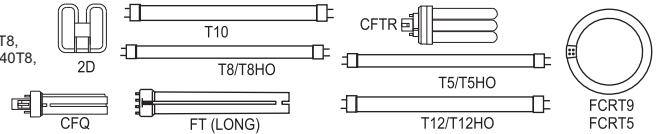# FIREHORSE
FULHAM

FH12-UNV-1400L-CEC

Description: Firehorse Emergency Ballast for use with or without AC ballast designed to add emergency lighting when main AC power is interrupted for minimum of 90 minutes at reduced illumination. The emergency ballast is not intended for general purpose lighting applications. Complies with minimum light output for emergency lighting equipment as per UL 924, supplement "SH". Consult with factory when using EM Ballast with low mercury lamps (TCP).

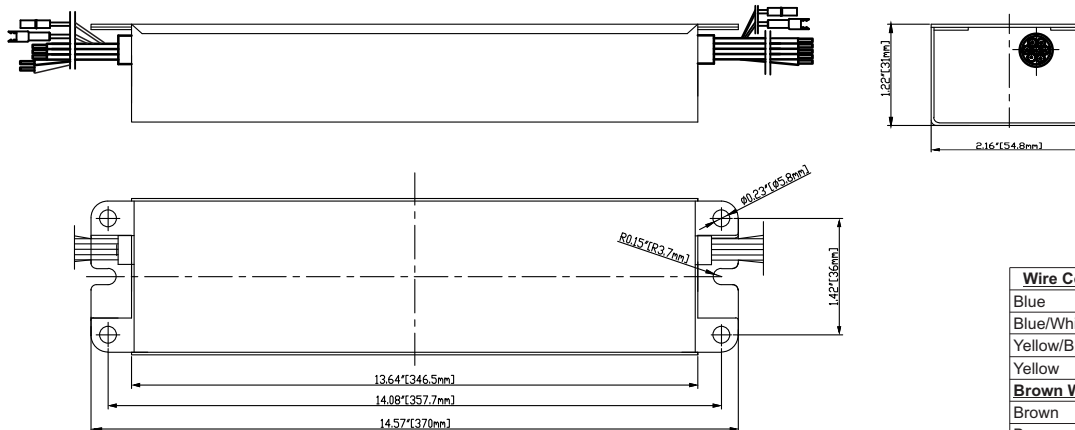## This Ballast Will Operate Following Lamps:

1X - 22W CRT5, 2D28W, 2D38W, 32WCRT9, 40WCRT9, 40WCRT5, 55W CRT5, CFM57W. CFQ 18W, CFQ13W, F14T5, F17T8, F21T5, F24T5HO, F25T8, F28T5, F30T12, F32T8, F32T8(25W), F32T8(28W), F32T8(30W), F35T5,F39T5HO, F40T12, F40T8, F48T10VHO(110W), F49T5HO, F54T5HO, F58T8, F60T12HO, F60T12SL, F60T8HO, F70T8, F72T12HO, F72T12SL, F72T8HO, F84T12HO, F96T12HO(110W), F96T12HO(95W), F96T12SL(60W), F96T12SL(72W), F96T8SL, FBO16T8, FBO24T8, FBO29T8, FBO31T8, FT18W, FT24W, FT36W, FT40W, FT50W, FT55W

2X - 2D28W, 2D38W, CFQ18W, CFQ13W, CFQ26W, CFTR13W, CFTR18W, F14T5, F17T8, F20T12, F21T5, F24T5HO, F25T8, F30T12, F32T8, F32T8(28W), F39T5HO, F40T12, F54T5HO, FBO31T8, FT18W, FT24W, FT36W, FT50W, FT55W

Lamp type diagrams: 2D, T10, T8/T8HO, CFTR, T5/T5HO, CFQ, FT (LONG), T12/T12HO, FCRT9 / FCRT5

General Specifications

Input Voltage	120V - 277V + 10% ,50 / 60Hz
Input Current	60mA @ 120VAC / 40mA @ 277VAC
Input Power	4W
Stand By Power	0.85W
Ballast Type	Emergency
Minimum Illumination Time	90 Minutes
Recharge Time	24 Hours
Max Initial Light Output	1400 Lumens
Temperature Range (Ambient)	0°C to 55°C (32°F to 131ºF)
Battery Type	High Temperature Rechargeable Ni-CAD - Maintenance Free
Battery Voltage	10.8Vdc
Minimum Battery Rating	32.4Wh
Battery Capacity	3.0Ah
Compliance	Meets or exceeds UL 924 - N.E.C and LSC Emergence Operation Requirement
	UL For Damp Location - Factory and Field Installation
Charging Indicator Light	LED
Case Type	Sealed - Vandal Resistant - Painted Steel
Ballast Weight	2.7 lbs.
AC Ballast Compatibility	Electronic Fluorescent - Standard and Dimming
AC Ballast EOL Compatibility	Time Delay Circuit
Lamp Compatibility	Fluorescent Single / Bi-Pin / 4-Pin Without Starter
Fixture Compatibility	Indoor Switched and Unswitched Type
Wire Connection (Standard)	Standard Wire Leads
LED Test Switch Type (Standard)	Test Switch and LED Indicator
*Note	Designed for use with standard and TCLP "Green" lamps

Mechanical Data

Wire Color	Length
Blue	46"± 2"
Blue/White	46"± 2"
Yellow/Black	46"± 2"
Yellow	46"± 2"
Brown With Connector	
Brown	10"± 1"
Brown	10"± 1"

Wire Color	Length
Black	22"± 2
White	22"± 2"
White/Black	22"± 2"
Red	46"± 2"
Inverter Connectors	
Red	7.5"± 2"
White	7.5"± 2"
LED Test Switch	
Red/White	34"± 2"
Red	34"± 2"

BC — Ni-Cd — RoHS COMPLIANT — UL LISTED E313578

APPLICATION

The FireHorse emergency ballast can be used to add emergency lighting with or without an AC ballast and with most fluorescent luminaires without affecting normal luminaire operation. The emergency ballast is designed for factory or field installation and can be mounted on top, inside, or remote from the luminaire.

If used in an emergency-only luminaire, no AC ballast is required. The FireHorse emergency ballast is not suitable for use in air handling heated air outlets, outdoor, wet, or hazardous locations. The emergency ballast should not be installed near gas or electric heaters. The FireHorse emergency ballast is rated for Indoor Dry/Damp locations, including luminaires rated for UL wet locations .

OPERATION

The FireHorse emergency ballast is designed to immediately switch to the emergency mode when the primary AC power is interrupted, illuminating one or two lamps at a reduced lumen output for a minimum of 90 minutes. Upon restoration of primary AC power; the FireHorse emergency ballast immediately returns to a battery charging mode. The LED indicator light source when illuminated indicates battery is in charge mode when AC power is applied.

It is recommended and by code required to test the emergency ballast every 30 days to ensure that the ballast is functioning as evidenced by reduced illumination of one or two lamps when pushing the test switch. It is also recommended a 90 minute discharge test is performed one time every 12 months. Battery requires 24 hours to fully re-charge.

INSTALLATION

The FireHorse emergency ballast may be used with either a switched or un-switched luminaire. If a switched luminaire is used, an un-switched hot lead must be connected to the emergency ballast to ensure the ballast remains in an uninterrupted charge condition while primary AC power source is active. Reference Installation Instructions for appropriate wiring or contact Fulham Customer Service.

The FireHorse emergency ballast must be fed from the same branch circuit as the AC ballast. Installation is not recommended with luminaires where the ambient temperature may fall below 0° C for extended periods as this may affect the operation of the emergency ballast.

REMOTE MOUNTING

The FireHorse emergency ballast may be remote-installed up to half the distance the AC ballast manufacturer recommends for remote mounting the AC ballast from the lamp, or up to 50 feet, whichever is less distance. The remote test switch plate may be mounted within 50 feet of the luminaire and is subject to NEC and applicable local electrical code.

UL and CODE COMPLIANCE

The FireHorse emergency ballast has been tested by Underwriters Laboratories in accordance with the standards contained in UL924, "Emergency Lighting and Power Equipment", and is UL approved for factory or field installations. Emergency illumination time meets or exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-LSC) and UL 90 minute requirements. This product does meet CEC Title 20 Code of Regulations.

BATTERY

The FireHorse emergency ballast contains a uniquely constructed, high-temperature rechargeable nickel cadmium battery. The battery is sealed within the ballast housing and is not replaceable. The battery must be recycled or disposed of properly and in compliance with federal, state and local regulations.

EMERGENCY ILLUMINATION

Illumination output varies with number of lamps, either 1 or 2 lamps, and lamp wattage requirement. The FireHorse model FH12-UNV-1400L-CEC- is designed to produce 1400 initial emergency lumen output; if model works with 2 lamps the total initial lumens is distributed between the 2 illuminated lamps. Refer to Table 1 for average lumen output for selected lamps. This product will not operate more than one lamp in battery (EM) mode with a Rapid/Program start ballast.

SPECIFICATION

Emergency lighting shall be provided by using a FireHorse emergency ballast with a standard fluorescent luminaire equipped with or without an AC ballast. The emergency ballast shall be capable of operating one or two fluorescent lamps as referenced in Table 1. The emergency ballast shall conform to specifications contained in Electrical Data Table and comply with standards set forth by the current NEC. The emergency ballast shall be UL approved for installation on top, inside, or remote from the luminaire.

NOTE: USE OF LOW MERCURY "GREEN" LAMPS

A growing number of fluorescent lamp manufacturers have reduced the level of mercury content in their products. While this is helpful to the environment, the lower mercury content makes the lamp more difficult to start in emergency mode, particularly in a compact fluorescent cold-start emergency-only application without an AC ballast. Please contact Fulham Customer Service for further assistance if needed.

WARRANTY

Fulham Co., Inc. extends limited warranty only to the original purchaser or to the first user for the period of 5 years from the date of manufacture as indicated by the date code stamped on each product and when properly installed and under normal conditions of use. For additional warranty guide line, please refer to our Complete Product Catalog (www.fulham.com) OR call Customer Service at 1-323-779-2980. Due to a program of continuous improvement, Fulham Co., Inc. reserves the right to make any variation in design or construction to the equipment described.
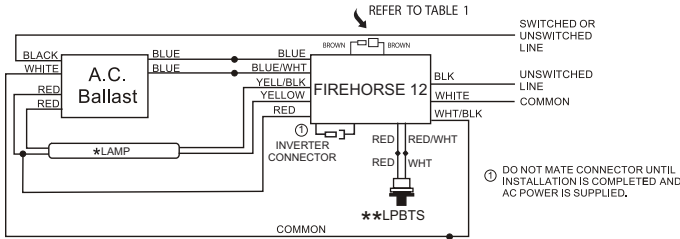
TABLE 1 Lamp Chart				
FH12-UNV-1400L-CEC	Lamp Wattage	Number Of Lamps		Brown Connector
		1 Lamp	2 Lamps	
22W CRT5	22W	OK	X	Closed
2D28W	28W	OK	X	Closed
2D38W	38W	OK	X	Closed
32W CRT9	32W	OK	X	Closed
40W CRT9	40W	OK	X	Closed
40W CRT5	40W	OK	X	Closed
55W CRT5	55W	OK	X	Closed
CFM57W	57W	OK	X	Closed
CFQ 18W	18W	OK	X	Closed
CFQ 13W	13W	OK	X	Closed
F14T5	14W	OK	X	Closed
F17T8	17W	OK	X	Closed
F21T5	21W	OK	X	Closed
F24T5HO	24W	OK	X	Closed
F25T8	26W	OK	X	Closed
F28T5	28W	OK	X	Closed
F30T12	30W	OK	X	Closed
F32T8	32W	OK	X	Closed
F32T8 (25W)	25W	OK	X	Closed
F32T8 (28W)	28W	OK	X	Closed
F32T8 (30W)	30W	OK	X	Closed
F35T5	35W	OK	X	Closed
F39T5HO	39W	OK	X	Closed
F40T12	40W	OK	X	Closed
F40T8	40W	OK	X	Open
F40T12VHO (110W)	110W	OK	X	Open
F49T5HO	49W	OK	X	Open
F54T5HO	54W	OK	X	Open
F58T8	58W	OK	X	Open
F60T12HO	60W	OK	X	Open
F60T12SL	60W	OK	X	Open
F60T8HO	60W	OK	X	Open
F70T8	70W	OK	X	Open
F72T12HO	72W	OK	X	Open
F72T12SL	72W	OK	X	Open
F72T8HO	72W	OK	X	Open
F84T12HO	84W	OK	X	Open
F96T12HO (110W)	110W	OK	X	Open
F96T12HO (95W)	95W	OK	X	Open
F96T12SL (60W)	60W	OK	X	Open
F96T12SL (72W)	72W	OK	X	Open
F96T8SL	96W	OK	X	Closed
FBO16T8	16W	OK	X	Closed
FBO24T8	24W	OK	X	Closed
FBO29T8	29W	OK	X	Closed
FBO31T8	31W	OK	X	Closed
FT18W	18W	OK	X	Closed
FT24W	24W	OK	X	Closed
FT36W	36W	OK	X	Closed
FT40W	40W	OK	X	Closed
FT50W	50W	OK	X	Closed
FT55W	55W	OK	X	Closed
2D28W	28W	X	OK	Open
2D38W	38W	X	OK	Open
CFQ18W	18W	X	OK	Open
CFQ13W	13W	X	OK	Open
CFQ26W	26W	X	OK	Open
CFTR13W	13W	X	OK	Open
CFTR18W	18W	X	OK	Open
F14T5	14W	X	OK	Open
F17T5	17W	X	OK	Open
F20T12	20W	X	OK	Open
F21T5	21W	X	OK	Open
F24T5HO	24W	X	OK	Open
F25T8	25W	X	OK	Open
F30T12	30W	X	OK	Open
F32T8	32W	X	OK	Open
F32T8 (28W)	28W	X	OK	Open
F39T5HO	39W	X	OK	Open
F40T12	40W	X	OK	Open
F54T5HO	54W	X	OK	Open
FBO31T8	31W	X	OK	Open
FT18W	18W	X	OK	Open
FT24W	24W	X	OK	Open
FT36W	36W	X	OK	Open
FT50W	50W	X	OK	Open
FT55W	55W	X	OK	Open

NOTE: Lumen output may vary depending on lamp specifications, light loss, lamp and luminaire maintenance, and other utilization factors.
Wiring diagrams shown on separate sheet.
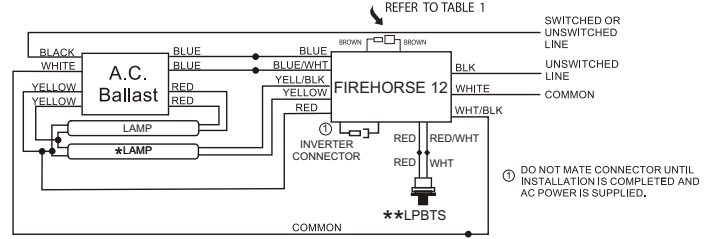"X" Indicates lamp combination not compatible.

Fulham Co. Inc.: 12705 South Van Ness Ave., Hawthorne, CA 90250 Tel.: 1-323-779-2980 Fax.: 1-323-754-9060. order@fulham.com www.fulham.com
Specifications subject to change without notice.

Page 1 of 3
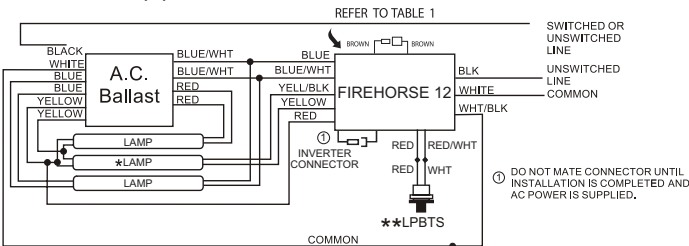2017-711 Rev B

FH12-UNV-1400L-CEC

1. ONE (1) LAMP RAPID START AC BALLAST
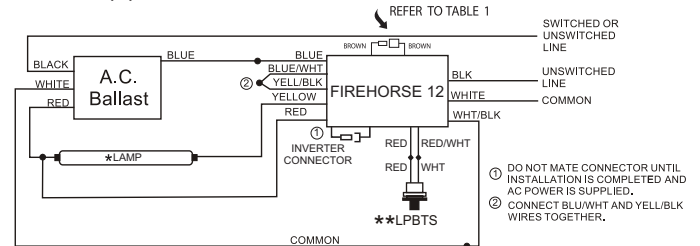

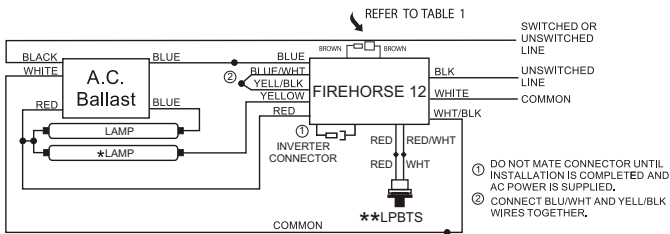## 2. TWO (2) LAMPS RAPID START AC BALLAST

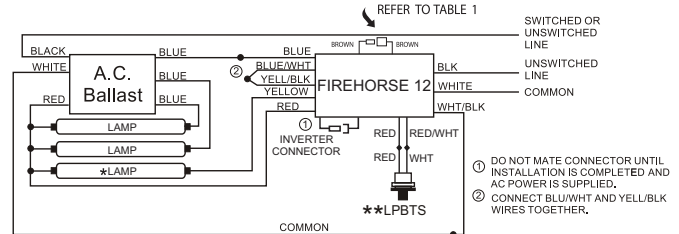## 3. THREE (3) LAMPS RAPID START AC BALLAST

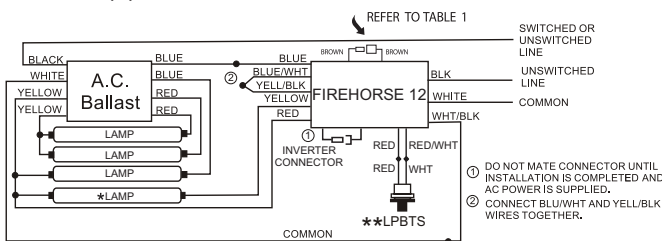## 4. ONE (1) LAMP INSTANT START AC BALLAST

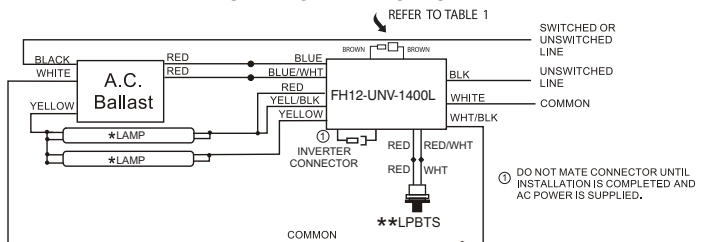## 5. TWO (2) LAMPS INSTANT START AC BALLAST

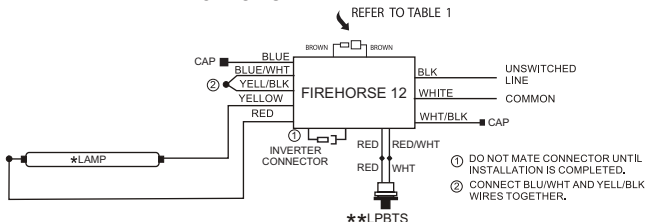## 6. THREE (3) LAMPS INSTANT START AC BALLAST

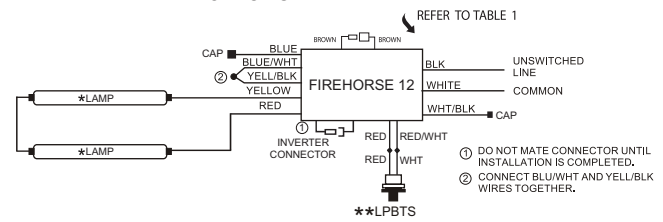## 7. FOUR (4) LAMPS INSTANT START AC BALLAST

8. TWO (2) LAMPS INSTANT START AC BALLAST
TWO LAMPS IN EMERGENCY

9. ONE (1) LAMP WITHOUT AC BALLAST
EMERGENCY ONLY

10. TWO (2) LAMPS WITHOUT AC BALLAST
EMERGENCY ONLY

*AC / EMERGENCY
**LIGHTED PUSH BUTTON TEST SWITCH (LPBTS)   USE PROPER WIRENUTS TO CAP UNUSED LEADS

NOTE: THIS PRODUCT **WILL NOT** OPERATE MORE THAN ONE LAMP IN BATTERY (EM) MODE WITH A RAPID/PROGRAM START BALLAST.