

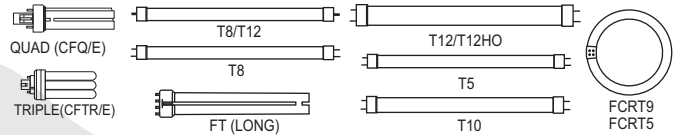
Project \_\_\_\_\_ Type \_\_\_\_\_ Model # \_\_\_\_\_

Remarks \_\_\_\_\_

**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.

**This Ballast Will Operate Following Lamps.**

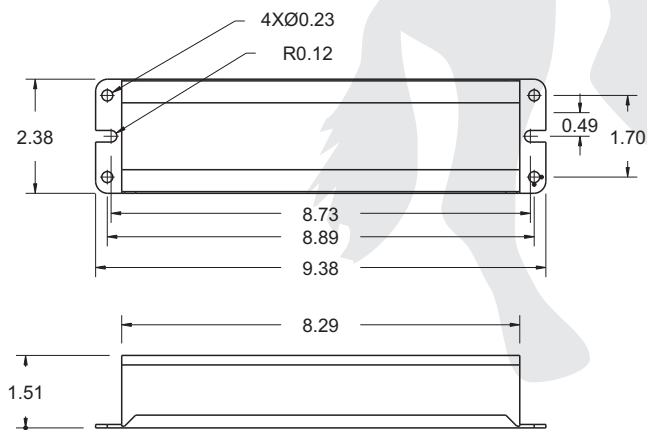
**ONE** 42W 4-PIN CFL OR **ONE** OR **TWO** 9W TO 32W 4-PIN CFL OR **ONE** 18W TO 55W 4-PIN LONG COMPACT OR **ONE** OR **TWO** 17W TO 40W(2'-4') T8/T10/T12 OR **ONE** (MOST) 17W TO 215W (2'-8') T8/T10/T12 INCLUDING HO, VHO, U-SHAPE, CIRCLINE OR **ONE** 8W TO 28W T5 FLUORESCENT LAMPS AT REDUCED ILLUMINATION (ALL WITHOUT INTEGRAL STARTER)



**ELECTRICAL DATA**

|                                 |   |
|---------------------------------|---|
| INPUT VOLT: 120V OR 277V        | ± 10%, 60Hz   |
| APPROVAL CLASS                  | UL - LISTED FOR DAMP LOCATION – FACTORY OR FIELD INSTALLATION           |
| CODE COMPLIANCE                 | MEETS OR EXCEEDS UL924 – N.E.C. AND LSC EMERGENCY OPERATING REQUIREMENT |
| AC INPUT POWER RATING           | 3.5 WATTS   |
| AC INPUT CURRENT                | 280mA   |
| BALLAST TYPE                    | EMERGENCY   |
| MINIMUM ILLUMINATION TIME       | 90 MINUTES  |
| RECHARGE TIME                   | 24 HOURS  |
| MAXIMUM INITIAL LIGHT OUTPUT    | 700 LUMENS  |
| BATTERY TYPE                    | HIGH TEMPERATURE RECHARGABLE NI-CAD – MAINTENANCE FREE                  |
| TEMPERATURE RATING (AMBIENT)    | 0°C TO 50°C (32°F TO 122°F)   |
| BATTERY VOLTAGE                 | 3.6Vdc  |
| BATTERY CHARGING CURRENT        | 280mA Max.  |
| BATTERY RATING                  | 14.4W h   |
| MINIMUM BATTERY RATING          | 4.0Ah   |
| TEST SWITCH                     | SINGLE POLE   |
| CHARGING INDICATOR LIGHT        | LED   |
| CASE TYPE                       | VANDAL RESISTANT – SEALED   |
| CASE CONSTRUCTION               | PAINTED STEEL   |
| CASE PROFILE                    | 9.4" L X 2.4" W X 1.5" H X 8.9" MOUNTING CENTER                         |
| CASE WEIGHT                     | 2.8 lbs.  |
| AC BALLAST COMPATIBILITY        | ELECTRONIC FLUORESCENT – STANDARD AND DIMMING                           |
| 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 & LED INDICATOR   |

**MECHANICAL DATA**



Where : L = Length, W = Width, H = Height all in inches

**TABLE 1  
LUMEN OUTPUT CHART**

| FH4-DUAL-700L<br>WITHOUT INTEGRAL STARTER | WATTS    | BASE TYPE      | INITIAL LUMEN OUTPUT |         |
|---|----------|----------------|----------------------|---------|
|   |          |                | 1 LAMP               | 2 LAMPS |
| T12                                       | 20/30    | G13/med-bipin  | 400-600              | 650     |
| T12                                       | 40       | G13/med-bipin  | 650                  | 650     |
| F60/72/96T12                              | 50/55/60 | FA8/single pin | 600-700              | X       |
| F24/36/48/60/72/84/96T12HO                | 35-100   | R17D/REC       | 600-700              | X       |
| F48T10                                    | 110      | R17D/REC       | 600-700              | X       |
| T8  | 17/25/32 | G13/med-bipin  | 400-700              | 600-700 |
| T8  | 40       | G13/med-bipin  | 600-700              | X       |
| F96T8                                     | 59       | FA8/single pin | 600-700              | X       |
| T9  | 32/40    | G10Q-4         | 600-700              | X       |
| FT(LONG)                                  | 39/36    | 2G11           | 550-600              | X       |
| FT(LONG)                                  | 55/50    | 2G11           | 600-650              | X       |
| T5(CIRCULAR)                              | 22/40/55 | 2GX13          | 400-650              | X       |
| T5  | 14/21/28 | min-bipin      | 400-700              | X       |
| CFQ                                       | 26       | G24Q-3         | 550-600              | 650-700 |
| CFTR                                      | 32       | GX24Q-3        | 550-600              | 650-700 |
| CFTR                                      | 42       | GX24Q-4        | 700                  | X       |

Partial list of lamps operated - contact Fulham Customer Service when referencing alternative lamps - lumen ratings may vary with lamp specifications, light loss, lamp and luminaire maintenance and other utilization factors.

**NOTE: WIRING DIAGRAMS SHOWN ON A SEPARATE SHEET**

Fulham extends a limited warranty only to the original purchaser or to the first user for a period of 3 years from the date of manufacture when properly installed and operated under normal conditions of use. For complete terms and conditions, please reference the Fulham product catalog ([www.fulham.com](http://www.fulham.com))  
 Due to a program of continuous improvement, Fulham reserves the right to make modifications or variations in design or construction to the equipment described.

#### APPLICATION

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

If used in an emergency-only fixture, 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 and for sealed and gasketed fixtures, including fixtures 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 fixture. If a switched fixture 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.

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 fixture and is subject to NEC and applicable local electrical code.

Installation is not recommended with fixtures where the ambient temperature may fall below 0° C for extended periods as this may affect the operation of the emergency ballast.

#### 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.

#### 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 **FH4-DUAL-700L** is designed to produce 400-700 initial emergency lumens 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.

#### SPECIFICATION

Emergency lighting shall be provided by using a **FireHorse** emergency ballast with a standard fluorescent fixture 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 fixture.

#### NOTE: USE OF LOW MERCURY, "GREEN" LAMPS

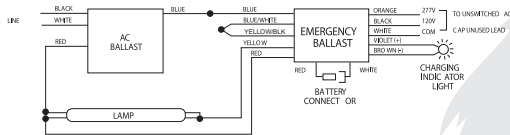
A growing number of fluorescent lamp manufacturers have reduced the level of mercury content in their products. While this is helpful to the environment, the lower mercury content makes the lamp more difficult to start in emergency mode, particularly in a compact fluorescent cold-start emergency-only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



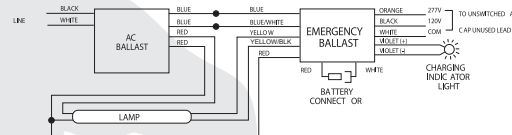
**EMERGENCY BALLAST AND AC BALLAST MUST BE FED FROM THE SAME BRANCH CIRCUIT.**  
TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER BALLASTS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAMS

**WIRING DIAGRAMS FOR ONE-LAMP EMERGENCY OPERATION**

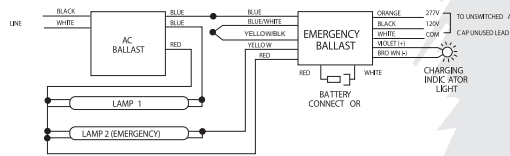
**A. ONE (1) LAMP INSTANT START BALLAST**



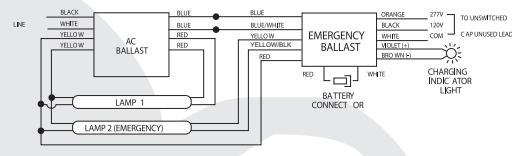
**B. ONE (1) LAMP RAPID START BALLAST**



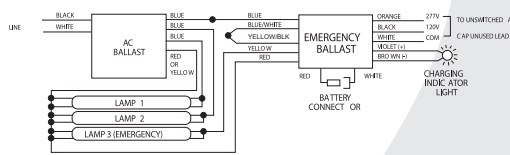
**C. TWO (2) LAMP INSTANT START BALLAST**



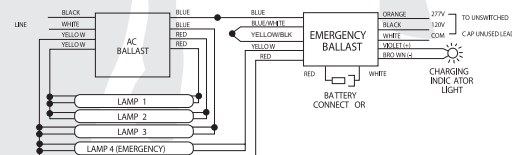
**D. TWO (2) LAMP RAPID START BALLAST**



**E. THREE (3) LAMP INSTANT START BALLAST**

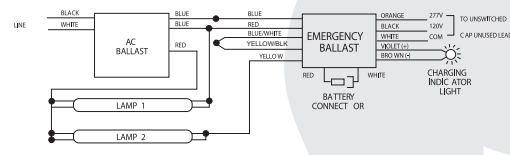


**F. FOUR (4) LAMP INSTANT START BALLAST**

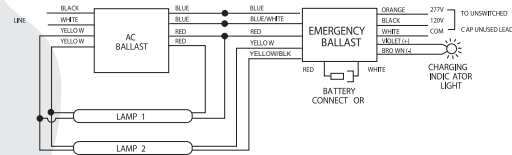


**WIRING DIAGRAMS FOR TWO-LAMP EMERGENCY OPERATION (2'-4', 17-32W LAMPS ONLY)**

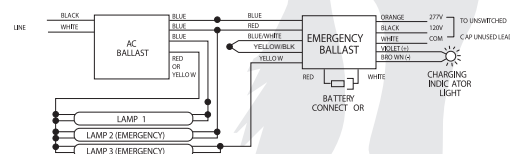
**G. TWO (2) LAMP INSTANT START BALLAST**



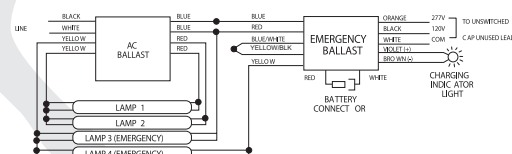
**H. TWO (2) LAMP RAPID START BALLAST**



**I. THREE (3) LAMP INSTANT START BALLAST**

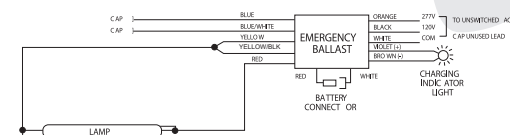


**J. FOUR (4) LAMP INSTANT START BALLAST**



**WIRING DIAGRAMS FOR EMERGENCY ONLY FIXTURES**

**K. ONE (1) 17-110W LAMP WITHOUT AC BALLAST**



**L. TWO (2) 17-32W LAMPS WITHOUT AC BALLAST**

