

BAL3000

FLUORESCENT EMERGENCY BALLAST

Specification-grade: Up to 3500 lumens
One or two-lamp emergency illumination



APPLICATION

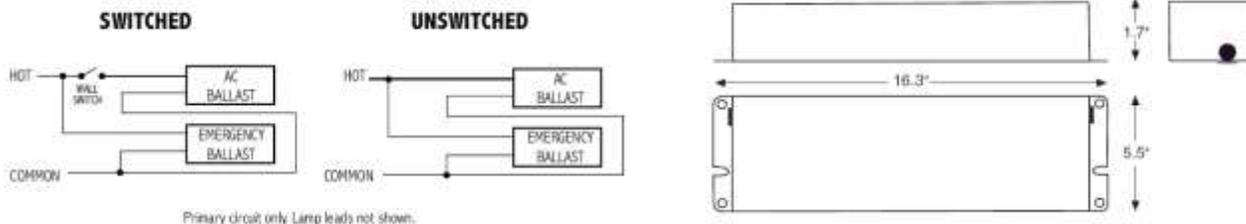
The BAL3000 fluorescent emergency ballast works in conjunction with an AC ballast to convert new or existing fluorescent fixtures into emergency lighting. The emergency ballast consists of a field-replaceable nickel-cadmium battery, charger and electronic circuitry in one red case. The BAL3000 can be used with most 17 - 215 W (2'-8") T8, T9, T10 or T12 fluorescent lamps without integral starters, including U-shaped, HO, VHO, circline, energy-saving and (4-pin) twin, quad and triple twin-tube compacts. One- or two-lamp operation may be selected. It is also compatible with most one-, two-, three-, and four-lamp electronic, standard, energy-saving and dimming AC ballasts. If used in an emergency-only fixture, no AC ballast is necessary. The BAL3000 is suitable only for indoor locations and not for wet or hazardous locations. For information about specific lamp and ballast compatibility, please call the factory. Recommended applications include: hospital surgical suites and areas along the path of egress with high ceiling heights, as well as health care, educational and commercial facilities needing higher levels of emergency illumination.

OPERATION

When AC power fails, the BAL3000 immediately switches to the emergency mode, operating either one or two lamps at high lumen output for a minimum of 90 minutes. When AC power is restored, the ballast automatically returns to the charging mode.

INSTALLATION

The BAL3000 does not affect normal fixture operation and may be used with either a switched or unswitched fixture. If a switched fixture is used, an unswitched hot lead must be connected to the emergency ballast. The emergency ballast must be fed from the same branch circuit as the AC ballast. The BAL 3000 may be installed on top of or remote from the fixture. The emergency ballast may be remotely installed up to half the distance the AC ballast manufacturer recommends removing the AC ballast from the lamp or up to 50 feet, whichever is less. Installation is not recommended with fixtures where the ambient temperature may fall below 0°C. A charging indicator light and double-pole test switch are provided. Upon request, a single-pole test switch/monitor plate is provided for remote installation of the test switch and charging indicator light.



UL AND CODE COMPLIANCE

The BAL3000 has been tested by Underwriters Laboratories in accordance with the standards set forth in UL924, "Emergency Lighting and Power Equipment," and is UL Listed for factory and field installation. Emergency illumination time exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-LSC) and UL 90-minute requirements.

BATTERY

The BAL3000 uses a field-replaceable nickel-cadmium battery specifically designed and constructed for high-temperature applications. This battery requires no maintenance and has a life expectancy of 7 – 10 years.

EMERGENCY ILLUMINATION

Depending on the number (one or two), wattage and type of lamps selected, the BAL3000 produces 1450 – 3500 lumens initial emergency light output. If two-lamp operation is selected, light output is evenly divided between the lamps for better distribution of emergency illumination.

SPECIFICATION

Emergency lighting shall be provided by using a standard fluorescent fixture equipped with a Howard BAL3000 emergency ballast. The BAL3000 shall consist of a field-replaceable, high-temperature, maintenance-free nickel-cadmium battery, charger and electronic circuitry contained in one 16 5/16" x 5 7/16" x 1 3/4" red metal case with a 2' length of flexible conduit. A solid-state charging indicator light to monitor the charger and battery, double-pole test switch and installation hardware shall be provided. The emergency ballast shall be capable of operating One or Two 17 - 215 W (2'-8") T8, T9, T10 or T12 fluorescent lamps without integral starters, including U-shaped, HO, VHO, Circline, Energy-saving and (4-pin) twin, quad and triple twin-tube compacts in the emergency mode for a minimum of 90 minutes. The BAL 3000 shall have 8 Watts of input power and a 57.6 Watt-hour battery capacity and shall exceed emergency standards set forth by the current NEC. The emergency ballast shall be UL Listed for installation on top of or remote from the fixture and shall be warranted for a full five years from date of purchase.

WARRANTY

Model BAL3000 is warranted for five (5) full years from date of purchase. This warranty covers only properly installed Howard emergency ballasts used under normal conditions. For the warranty period Howard will, at its option, repair or replace without charge a defective emergency ballast, provided it is returned to the factory transportation prepaid, and our inspection determines it to be defective under terms of the warranty. Repair or replacement, as stated above, shall constitute the purchaser's exclusive warranty, which does not extend to transportation, installation, labor or any other charges; nor does it apply to any equipment of another manufacturer used in conjunction with the emergency ballast.

PRODUCT SUMMARY

UL LISTED Factory or Field Installation	DUAL VOLTAGE INPUT 120/277VAC 60 Hz	BATTERY Field Replaceable High Temperature Maintenance-Free Nickel-Cadmium Battery 7-10 Year Life Expectancy	TEMPERATURE RATING (AMBIENT) 0°C TO 50°C (32°F TO 112°F)
ILLUMINATION 90 Minutes	AC INPUT CURRENT 280mA	BATTERY CHARGING CURRENT 280mA	DIMENSIONS 16.3" X 5.5" X 1.7" (414mm x 138mm x 44mm) Mounting center 8.9" (226mm)
INITIAL LIGHT OUTPUT 1450-3000 Lumens	AC INPUT POWER RATING 8.0 Watts	RECHARGE TIME 24 Hours	WEIGHT 8.7 lbs (1kg)
FULL WARRANTY 5 Years (NOT pro-rata)	TEST SWITCH Double pole Single pole (optional, used only with Test/Monitor plate)	CHARGING INDICATOR LIGHT LED	



CAUTION :Contains nickel-cadmium rechargeable battery. Must be recycled or disposed of properly.



Installation Instructions

When using this lighting device the safety precautions should be followed at all times.

PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS FOR YOUR OWN SAFETY

1. This device is designed for indoor use. Do not use outdoors.
2. Prior to installation, battery connector must be open to prevent high voltage from being present on our put leads (red & yellow).
3. This device is designed for use with most 17W through 215W single pin or bipin fluorescent lamps, from 2' - 8'. These fluorescent lamps are commonly available on the market. Please use standard, energy saving, HO, VHO, PG17, circline or (4-pin) long compacts with no integral starter.
4. Please ensure the electrical connections conform to the National Electrical Code and local regulations if applicable.
5. To avoid electric shock, please disconnect normal and emergency power supplies and battery connector of the emergency ballast before servicing.
6. This device is designed for factory or field installation in either the ballast channel or on top of the indoor fixtures. Do not install this device near gas or electric heaters.
7. AC power source of 120VAC or 277VAC is required.
8. The battery is sealed, non-maintenance, and is not replaceable in the field. Please contact manufacturer for information on service. Do not attempt to service the battery please.
9. Do not use accessory equipment that is not recommended by manufacturer. Failure to do so may cause unsafe conditions. Servicing should only be performed by qualified service personnel.
10. Do not use the product for other purpose that is the product is NOT designed for.



CAUTION :Contains nickel-cadmium rechargeable battery. Must be recycled or disposed of properly.



HOWARD
LIGHTING PRODUCTS

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Specifications subject to change without notice
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Installation Instructions

NOTE: All the branch circuit wiring has to be ready as well as an unswitched source of power before the fixture is installed. Confirm that the same branch circuit runs the emergency ballast and the AC ballast.

CAUTION: Battery connector has to be opened for preventing high voltage on output leads (red & yellow). Wait until all the installation process is completed and AC is supplying power to the emergency ballast then join the battery connector.

1. AC power has to be off before installation.
2. Choose the right wiring diagram to connect the emergency ballast to AC ballast and lamp.
3. Please ensure the electricity connections conform to the National Electrical Code and local regulations if applicable. Follow diagram 1, install the emergency ballast on the top of the fixture or follow diagram 3 to remotely install up to half distance the AC ballast manufacturer recommends install the AC ballast from the lamp or within 50 feet is recommended. (Choose the one in less distance).
4. To install the test switch, it would go through the side of a strip fixture or the ballast channel cover of a troffer. Follow diagram 4 to drill a 1/2" hole and install the test switch. In order to remove AC power from both the emergency ballast and the AC ballast, the test switch has to be connected properly (check diagram 2).
5. Matching violet and brown leads to connect the charging indicator light to the emergency ballast (Check diagram 4).
6. Please search in readily visible location and stock the label with "CAUTION: This Unit Has More Than One Power Supply Connection Point. To Reduce The Risk Of Electric Shock, Disconnect Both The Branch Circuit-Breakers Or Fuses And Emergency Power Supplies Before Servicing."
7. Do not join the inverter connector until the fixture is completely installed and supply AC power to the emergency ballast.
8. The battery needs to be charged for one hour in order to have short-term testing on the emergency function. Before having a long-term emergency function testing, the battery in emergency ballast has to be charged for 24 hours.

DIAGRAM 1

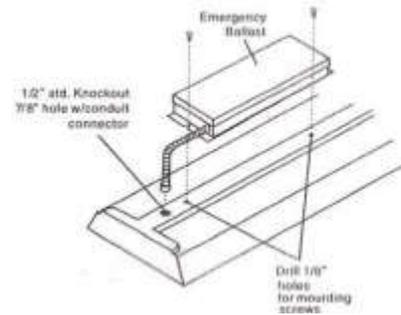


DIAGRAM 2

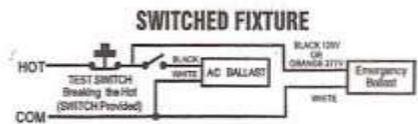
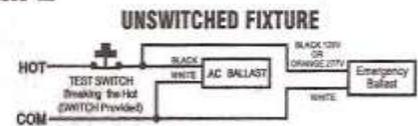
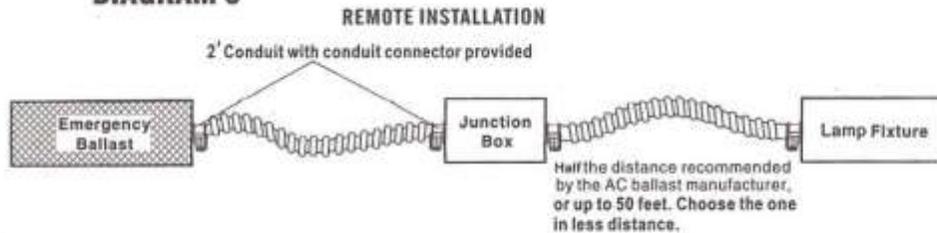


DIAGRAM 3

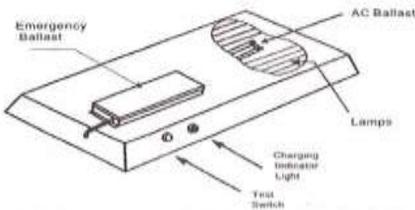
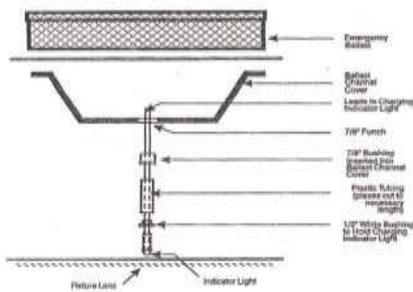


- Note: 1 - Please be advised the inverter connector and lamp selector brown lead CAN NOT be extended.
 2 - For remote installation. Be sure to use conduit and junction box. (Not supplied)

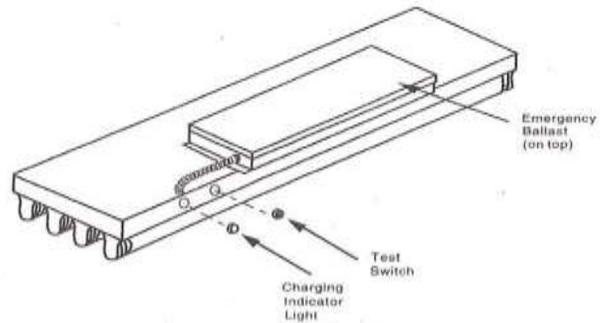
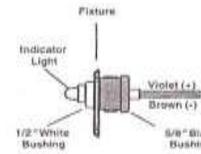
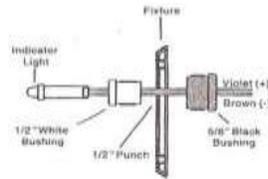
NOTE: MARK AN APPROPRIATE LABEL ON INDICATOR LIGHT AND TEST SWITCH AFTER INSTALLATION

DIAGRAM 4

TROFFER STYLE FIXTURE



STRIP STYLE FIXTURE



NOTE: After installing the charging indicator light and test switch, mark each with the appropriate label.

OPERATION:

THE CHARGING INDICATOR LIGHT WOULD BE ON TO INDICATE THE BATTERY IS BEING CHARGED WHEN AC POWER IS APPLIED.

THIS EMERGENCY BALLAST WOULD FUNCTION AND OPERATE ONE OR TWO LAMPS AT LEAST 90 MINUTES WHEN THE AC POWER IS FAILED.

THE DEVICE OF THIS EMERGENCY BALLAST WILL OPERATE 17 WATT TO 215 WATT LAMPS AT LEAST 90 MINUTES.

MAINTENANCE:

NOTE: SERVICES SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL.

THE EMERGENCY BALLAST SHOULD BE CHECKED PERIODICALLY TO CONFIRM FUNCTIONING AND THE FOLLOWING SCHEDULE IS RECOMMENDED

- 1) TO INSPECT THE CHARGING INDICATOR EVERY MONTH AND CONFIRM THAT IS ILLUMINATED.
- 2) PUSH THE TEST SWITCH FOR 30 SECONDS TO ENSURE THE EMERGENCY BALLAST IS FUNCTIONING, RECOMMENDED TO PERFORM THIS TEST EVERY 30 DAYS.
- 3) PERFORMING A LONG-TERM (90 MINUTE BATTERY DISCHARGE) IN EVERY YEAR. ONE OR TWO LAMPS SHOULD BE OPERATED FOR NO LESS THAN 90 MINUTES.
- 4) BEFORE THE BATTERY IS REPLACED, DISCONNECT INVERTER CONNECTOR, SWITCHED AC POWER AND UNSWITCHED AC POWER FROM THE FIXTURE. AFTER THE BATTERY IS REPLACED, SUPPLY THE AC POWER TO THE FIXTURE AND RECONNECT INVERTER CONNECTOR. THE CHARGING INDICATOR SHOULD BE ON AFTER THE BATTERY IS REPLACED. IF THE BATTERY NEEDS TO BE REPLACED, CONTACT THE MANUFACTURER.

TABLE 1 (FOR BROWN CONNECTOR)

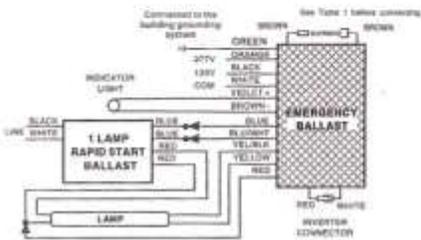
Lamp Diameter	1", 1-1/4", 1-1/2" (T8, T10, T12)		LONG COMPACT		COMPACT		2D				
Base Type	SINGLE OR BIPIN		4-PIN (2G11)		4-PIN (G24q, GX24q)		4-PIN (GR10q)				
Power (Length)	17-24W 2'-4'	40-215W 5'-8'	18-39W	40-50W	18-42W	16-38W	55W				
Number of Lamps Emer.	1	2	1	1	2	1	1	2	1	2	1
Brown Connector	CLOSE	OPEN	OPEN	CLOSE	OPEN	OPEN	CLOSE	OPEN	CLOSE	OPEN	OPEN

WIRING DIAGRAMS FOR 1-LAMP EMERGENCY OPERATION

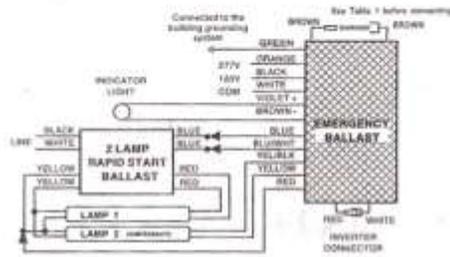
EMERGENCY BALLAST AND AC BALLAST MUST BE FED FROM THE SAME BRANCH CIRCUIT

TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER BALLASTS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAMS.

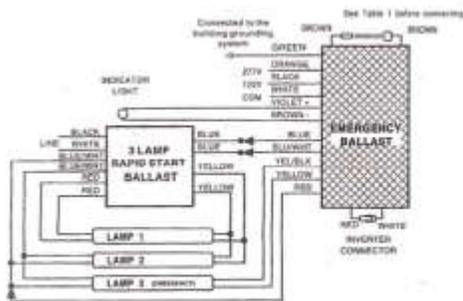
A. ONE (1) LAMP RAPID START BALLAST



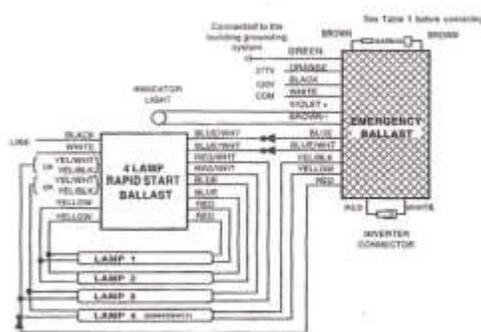
B. TWO (2) LAMP RAPID START BALLAST



C. THREE (3) LAMP RAPID START BALLAST



D. FOUR (4) LAMP RAPID START BALLAST



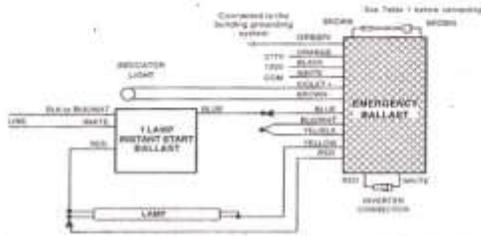
NOTE : TO UNUSED LEAD USE THE PROPER TAP CAP TO UNSWITCHED AC LEAD.

WIRING DIAGRAMS FOR 1-LAMP EMERGENCY OPERATION

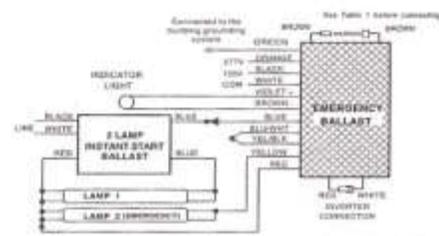
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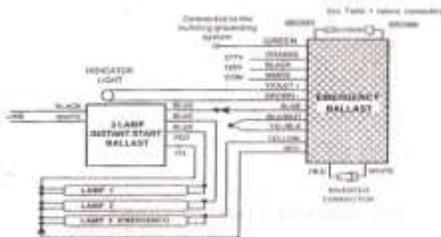
E. ONE (1) LAMP INSTANT START BALLAST



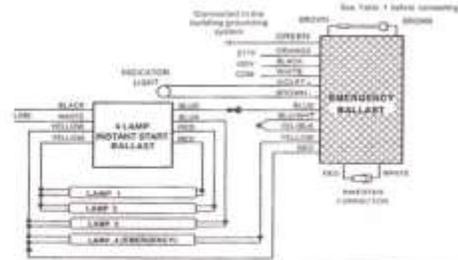
F. TWO (2) LAMP INSTANT START BALLAST



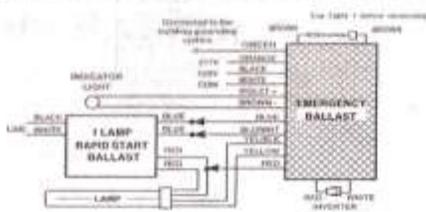
G. THREE (3) LAMP INSTANT START BALLAST



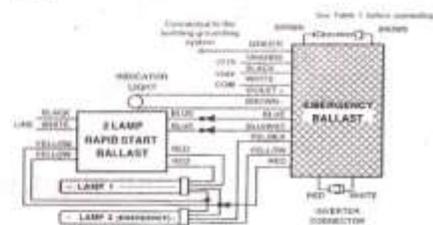
H. FOUR (4) LAMP INSTANT START BALLAST



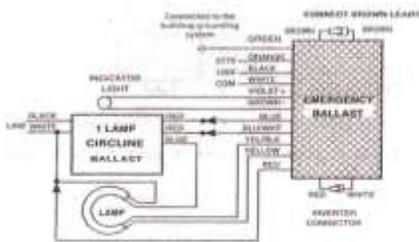
I. ONE (1) 4-PIN COMPACT LAMP RAPID START BALLAST



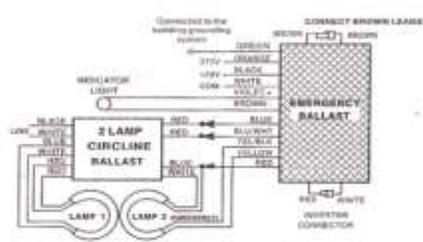
J. TWO (2) 4-PIN COMPACT LAMP RAPID START BALLAST



K. ONE (1) LAMP CIRCLINE REPID START BALLAST



L. TWO (2) LAMP CIRCLINE REPID START BALLAST



NOTE : TO UNUSED LEAD USE THE PROPER TAP CAP TO UNSWITCHED AC LEAD.

