

# Concealite Life Safety Products

## Model: F5000 Series

(Standard, SD & RT)

### Save These Instructions

#### Important Safeguards

When using electrical equipment, basic safety precautions should always be followed:

### Read and Follow All Safety Instructions

1. Do not use outdoors.
2. Do not let power cords touch hot surfaces. Do not mount units where they will be exposed to direct sunlight, radiators, gas or electric heaters. Prolonged exposure to temperatures exceeding 95 degrees Fahrenheit may reduce battery life and void warranty.
3. Failure to fully charge the batteries within 120 days from receipt will void the warranty on the batteries
4. Use caution when servicing batteries. Battery acid causes burns to skin and eyes. If acid is spilled on skin or in eye, flush with fresh water and contact a physician immediately.
5. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
6. CAUTION: Halogen or LED lamps are used in this equipment. To avoid shattering, do not operate lamp in excess of rated voltage, protect lamp against abrasion, scratches and liquids when lamp is operating. Dispose of lamp with care.
7. Halogen or LED lamps operate at high temperatures. Do not store or place flammable materials near lamps.
8. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, and void all warranties.
9. Do not use this equipment for other than intended use.
10. Qualified service personnel should perform servicing of this equipment.

### Model: F5000 Series

AC Supply Voltage:	120/277 Volts (+/- 10%)
Power Consumption:	Maximum 23 Watts
Battery Type:	Sealed Maintenance Free Storage Battery
Battery Float Voltage:	See Unit Model Label
Discharge Duty Cycle:	<b>90 Minutes - Example: F5-20-90</b> 1.5 Hours of illumination to 87.5% of battery voltage. <b>2 Hours - Example: F5-20-2</b> 2 Hours of illumination to 87.5% of battery voltage <b>4 Hours - Example: F5-35-4</b> 4 Hours of illumination to 87.5% of battery voltage
Recharge Duty Cycle:	48 Hours for full charge from 87.5% battery voltage. Continuous automatic float-charge after full charge is restored.
Charger Type:	Solid state—full wave silicone diode rectification, integrated circuit voltage regulation.
Transfer Means:	Transfer circuit energizes lamps on loss of AC.
Status Indication:	Pilot light shows AC is available and charger is in operation.
Test Means:	Pushbutton switch simulates AC failure to test transfer function, battery and lamp readiness and charger response to battery discharge.
Lighting Head	345 degrees universal swivel rotation. 180 degree tilt position adjustment.

Concealite Life Safety Products  
202 Elk Street - PO Box 160  
Elkton, SD 57026

Phone: 605-542-4444  
Fax: 605-542-3333  
Website: [www.concealite.com](http://www.concealite.com)

#### TROUBLE SHOOTING QUESTIONS?

Go to - <http://www.concealite.com/contact.html>

# Instructions for Installation...Operation...Service

Failure to follow published installation instructions or any modifications to the product may damage the unit and will void the warranty.

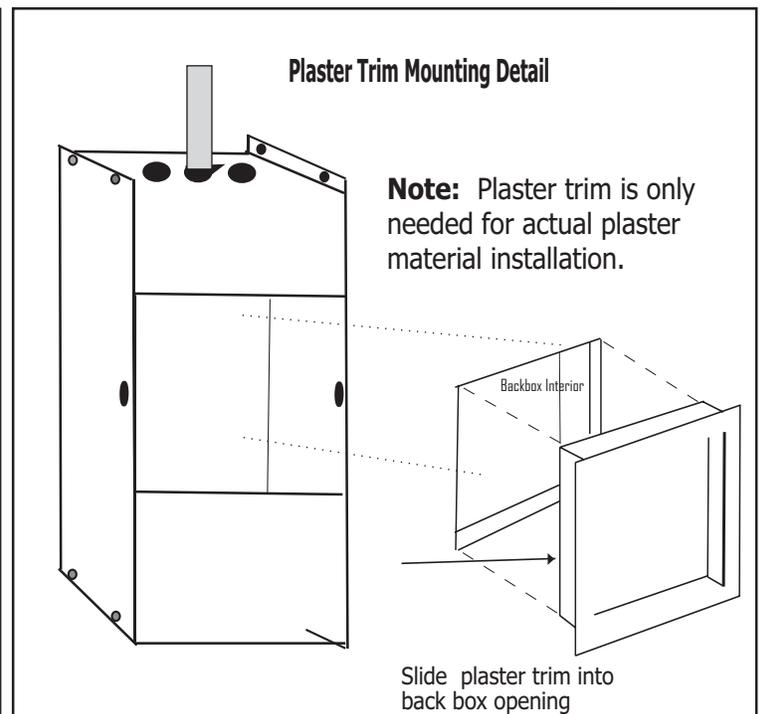
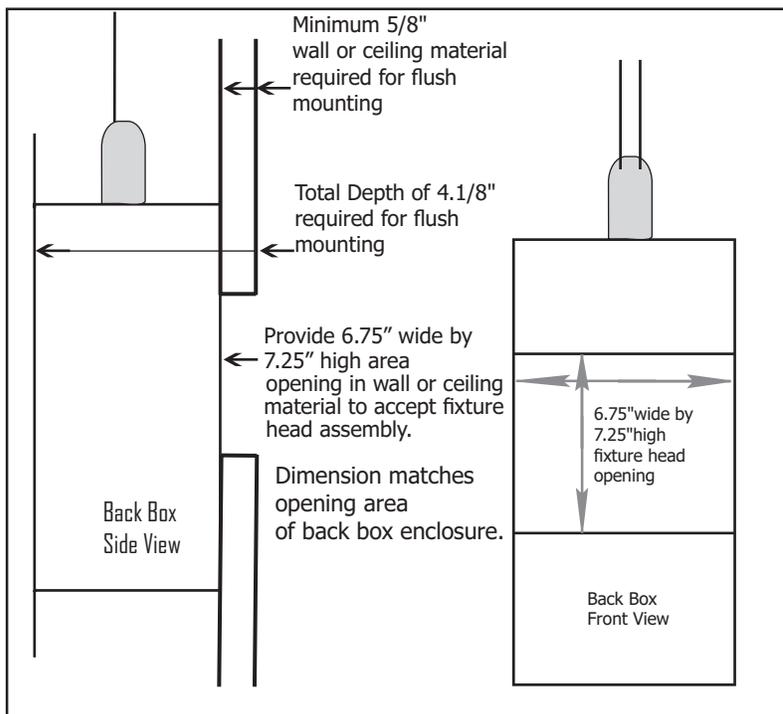
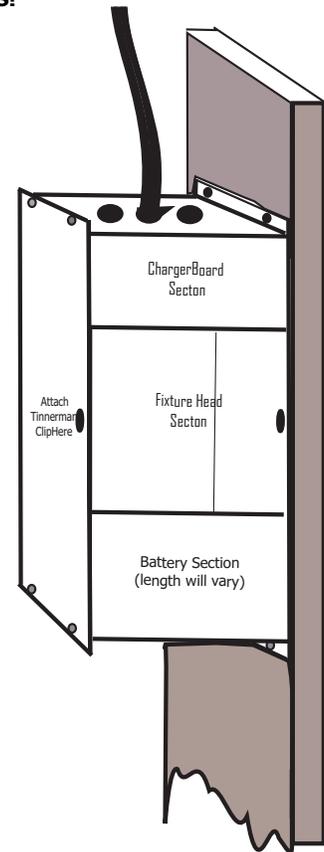
This unit is designed for recessed mounting in gypsum board or plaster wall or ceiling. (Surface mounted is designated with suffix SM). Locate unit within area to best maximize lighted area under anticipated conditions. FMS (Frameless Mounting System option) STOP RIGHT HERE AND REVIEW FMS INSTRUCTIONS!

## Step #1: Backbox Installation

The recessed backbox is standard. If your installation requires the Surface Mount or Retrofit Backbox, please refer to the separate instructions for backbox installation.

Backbox is designed for recessed mounting in gypsum board or plaster wall or ceiling. The mounting contact area of the wall or ceiling must be straight, without deformity. When used in plaster wall or ceiling, install plaster trim option. (See plaster trim instructions). **PLASTER TRIM IS USED ONLY ON PLASTER. NOT NEEDED FOR SHEETROCK INSTALLATION.**

1. Securely fasten back box to stud, joist or blocking material using tabs at top and bottom of backbox with screws (not furnished).
2. For Wall Mounting – Mount with knockouts at top end.
3. For Ceiling Mounting – Mount with opening of backbox downwards. When mounting in grid ceiling see T-Bar installation instructions.
4. Route branch circuiting in metallic raceway. Securely terminate into enclosure by KO's provided.
5. Install tinnerman clips over oblong holes in sides of backbox.
6. Install gypsum board or plaster wall or ceiling material.
7. Provide a 6.75" wide by 7.25" opening in wall or ceiling material to accept fixture head assembly. Dimension matches opening area of back box enclosure.



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## Step #2: Branch Circuit Installation

Determine the fixture type (Standard, SD or RT) Verify primary input voltage as either 120VAC or 277VAC.

**NOTE:** The BLACK and ORANGE wires are NEVER used together in the same application. Always cap the unused wire.

Provide each unit with a single unswitched supply from (normal power) 120 VAC/277 VAC branch circuit used for normal lighting in the area to be illuminated.

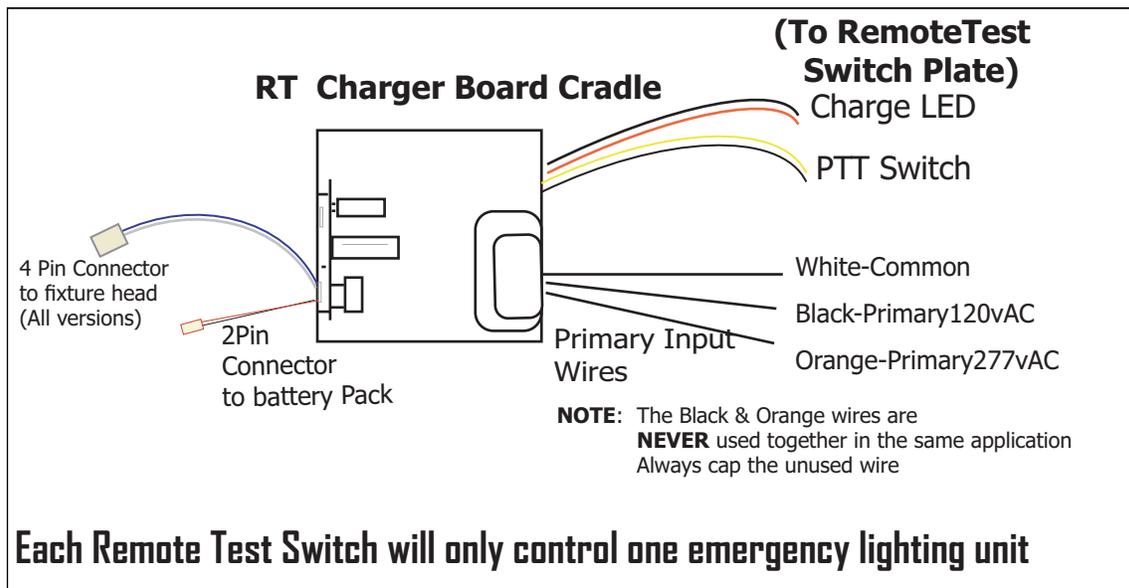
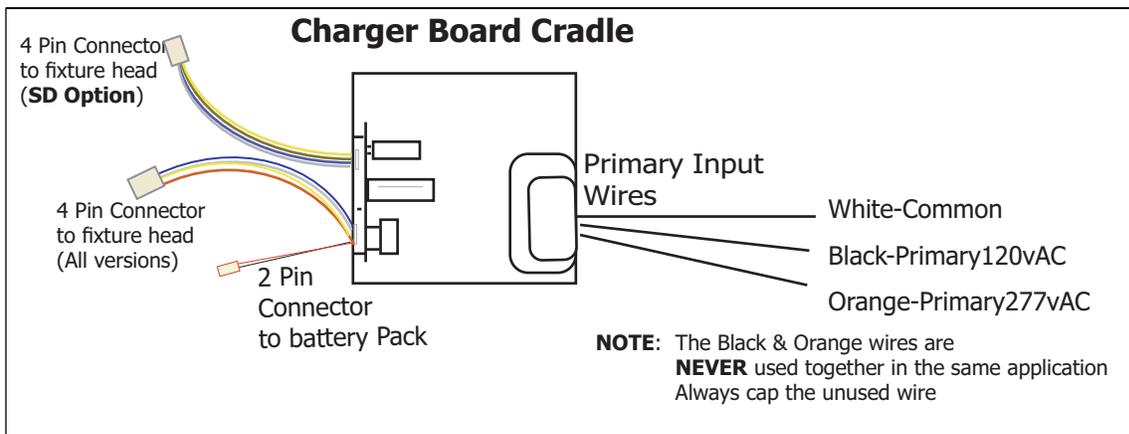
The wiring should be a permanent installation using metal enclosed wiring raceway.

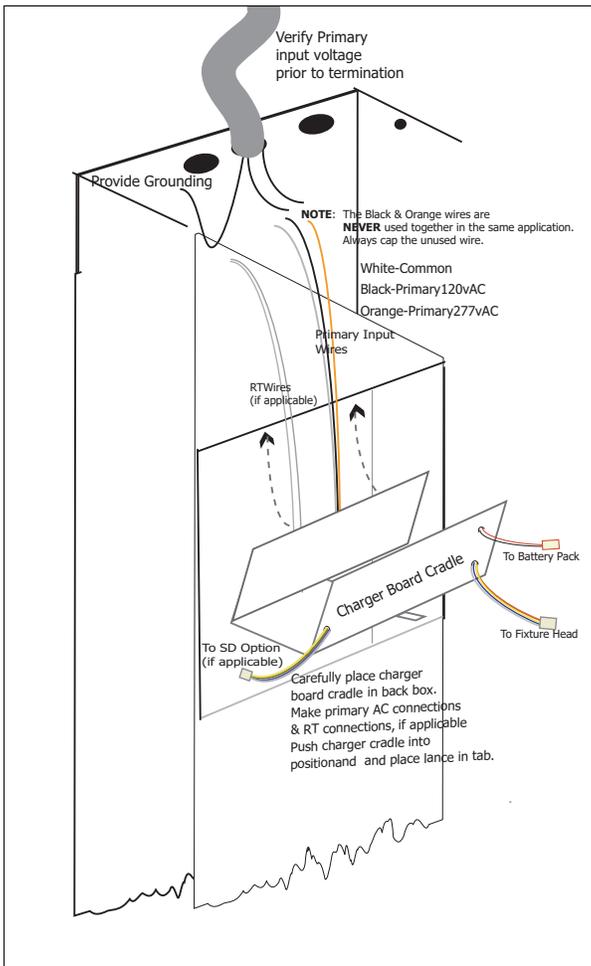
A 13/16" diameter knockout is provided on the top of the recessed or retrofit backbox.

If unit is a Remote Test (RT) version, review voltage drop table to determine appropriate wire gauge requirements for the distance between switch plate and fixture. Run wires from Remote Test Switch Plate through the top of the back box and make connections to the corresponding wires on the charger board cradle.

Each Remote Test Switch will control only one emergency lighting unit.

**Note:** remote test switch is a normally closed switch if you have an erratic connection the fixture will not CHARGE. Verify all connections.





### Step #3: Charger Board Installation

Carefully slide charger board into the top of the backbox.

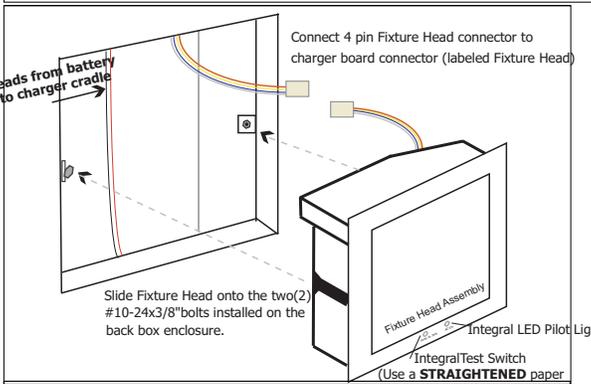
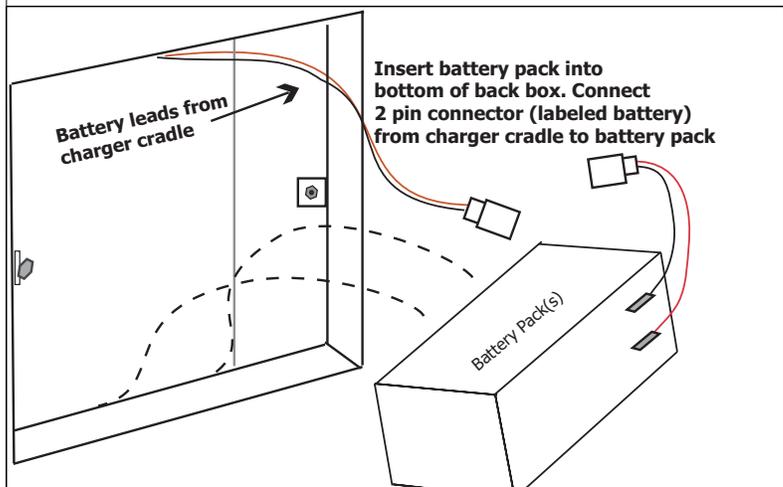
Place tab in backbox lance.

### Step #4: Battery Installation

Slide the battery pack into the bottom of the back box enclosure. ALWAYS USE HANDLE ON BATTERY BACKING to move & install battery pack.

On a multiple battery pack, with the sheeting toward you grip the handle and flex sheeting outward to assist in placing the battery pack into the back box enclosure.

Connect the 2-pin connector (labeled battery) from the charger board to the battery pack.

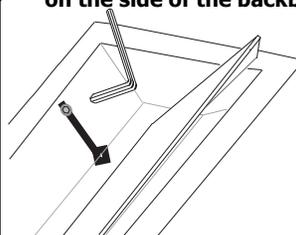


### Step #5: Fixture Head Installation

Connect the 4-pin Molex connector from the charger board to the connector on the Fixture Head.

### Step #6: Fixture Head Mounting

Screw the socket head bolts partially into the tinnerman clip on the side of the backbox.

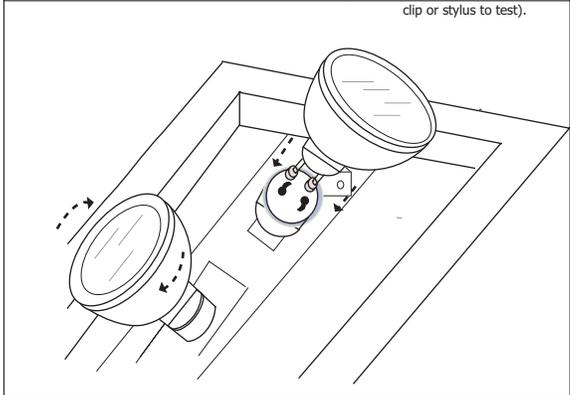


Slide fixture head onto the heads of the two socket head bolts until flush with wall or ceiling surface.

With the door in a half open position; securely tighten the socket head bolts evenly to each side of the backbox with the allen wrench provided.

### Step #7: Lamp Installation

Insert the locking bi-pin lamps by inserting the lamp into the lamp socket and rotate clockwise until locks in place. Verify Lamps are properly turned into sockets.



### Step #8: Energize primary branch circuit.

Step #9: Allow the fixture to charge for a minimum of 48 hours (longer for multiple battery packs) prior to testing. Verify that the branch circuit supply to the fixture is not interrupted.

## Troubleshooting

## Possible Corrective Measure(s)

### Symptom

Unit does not operate when power is lost, or test switch is depressed

Verify AC power is energized to the unit.  
Verify the battery is properly connected  
Verify the battery level is at or above 13.8 VDC  
Verify the unit has charged for 48 hours

Unit only operates for a short period of time

Allow the unit to fully charge to a nominal battery level of 13.8 VDC, then retest. Charge for 48 hours

Lamp(s) does not energize when in Emergency mode, but door rotates open

Remove lamp(s) and check lamp with resistance meter to verify condition.  
Resistance indicated good lamp.  
Open (no) resistance indicates bad lamp, replace lamp & retest.

## Routine Care

The batteries used in this model are sealed and require no maintenance, but will benefit from certain procedures. During routine standby operation, charger output fluctuates only slightly in floating the battery at its full-charge voltage. But after an AC failure and subsequent battery discharge, charger output increases greatly to recharge the battery as quickly as cell temperature rise and gas cycling considerations permit. This vigorous charging action also agitates the electrolyte and tends to reverse physical and chemical changes that can slowly occur in a battery that stands for a long period without cycling. It follows that if power failures are infrequent, occasional deliberate cycling may extend battery life.

## Test Cycling

Every month, if there has been no power failure, press the unit test switch for 15 seconds. Once the switch is released, the battery will recharge to full charge condition.

## Conditioning Cycles

Once a year, if power failures have been infrequent or non-existent, perform a full battery conditioning cycle. De-energize the AC circuit to which the unit is connected and let the emergency lights operate for the period of operation for which the unit is listed. Then restore AC power. This puts the battery through a discharge/recharge cycle over its full-intended range, and provides a rigorous test of over-all unit operation.

## Taking a Unit Out of Service

If a unit is to be deliberately taken out of service for an extended period, the battery lead should be disconnected from the charger so that the battery will go into storage in a fully charged condition.

## Warranty

**All Concealite fixtures are tested and are guaranteed to be free from defective materials and workmanship for a period of three years from date of shipment under normal operations and proper use. Correction of all defects shall be by replacement or repair (at our option) and shall constitute fulfillment of all manufacturer's obligations. We will not allow any charge for labor, materials, etc that does not have our written approval before the work is begun. Damage incurred in handling or in transit are not covered by this guarantee. Any other warranty, expressed or implied, is hereby void. Modifications to the product or failure to follow installation instructions will void the warranty. Batteries provided as part of this unit's equipment carry a three-year warranty. Failure to fully charge the batteries within 120 days from receipt will void the warranty on the batteries.**

## On Site Painting Instructions

1. The door and frame of the unit have been factory painted with a powder-coated paint with a hard finish. This finish should be roughened with a coarse steel wool or sandpaper before a new finish is applied to ensure the paint adheres to the factory finish.
2. When the new finish is applied, extreme care should be taken that a seal is not formed between the door and the frame, which would prevent the door from opening. Also, assure that the paint is not so heavy that it runs into the gearing mechanism. This damage will void the warranty on the unit.
3. If the finish is sprayed on, we suggest that a thin cardboard or plastic strip be inserted between the door and the frame to prevent a paint seal from being formed.
4. After the new finish is applied, a sharp edge such as a single edge razor or utility knife may be inserted in the opening between the door and frame and run around the circumference of the unit to ensure that no seal has been formed. The finish should be completely dry before this step is performed.
5. If the unit is being covered with material (wallpaper, cloth, laminate, etc.), allow the mastic used to apply the covering to completely set up. Use a sharp edge such as single edge razor or a utility knife held at a 20 to 30 degree angle against the frame and run the blade around the frame. Repeat this procedure holding the edge against the door. This will provide a beveled edge that will prevent the material from fraying as the unit operates. Assure that the mastic adhesive does not run or be allowed to coat between door and frame. This will void warranty.

# Self Diagnostic Option Features

The SD (Self-Diagnostic) option makes routine maintenance as effortless as looking at the diagnostic panel. The SD option automatically provides battery exercise and extended testing. The LED panel indicates specific component status.

The self-diagnostic option provides the following features:

- Monthly battery exercise
- Battery monitoring
- Charger monitoring
- Replacement battery indication
- LED lamp status

The SD self-diagnostic option allows maintenance personnel to monitor system status at a glance.

This SD option automatically cycles the unit every 24-30 days. While it is cycling, the monitoring circuits check the battery to ensure that it will deliver the power needed to maintain the load for a 1Z/x hours. The SD option does not use the lamps to test the battery; rather there is a predetermined resistive load within the option, thus avoiding lamp life reduction.

The SD option also recognizes problems while the unit is in a standby mode. During this period, the monitoring circuits check the charger voltage to see if an overcharge or undercharge is occurring. If either an overcharge or undercharge exists, the fault indicator will illuminate.

The yellow LED indicates cycling and will only illuminate if the unit is self-testing. The LED stays lit for the duration of the test cycle, normally 15-20 minutes.

The red LED indicates a fault condition. The LED will come on and flash when a fault condition exists. The unit does not have to go through a cycle test to indicate a fault. The circuits are monitoring the charger at all times.

The green LED indicates charge and utility power. This LED is on during the standby mode.

The test switch is used to test the unit at any time. When a fault condition occurs, the indicator will flash. Once the problem is corrected, the test switch is used to reset the SD circuit.

# Concealite Self-Diagnostic (SD) System Operation and Troubleshooting Guide

The Self Diagnostic (SD) system automatically monitors both battery performance and electronic functions of an emergency lighting unit. Not using the emergency lights during this test greatly improves lamp life, thus increasing the possibility of proper lamp operation.

## 1. SD System Operation (Refer to Chart 1 for LED Description)

- a) Upon initial power up, the SD system will indicate a bad or unconnected battery termination. A flashing fault LED will remind the installer to connect the battery.
- b) During normal operation of the emergency lighting unit, the SD system will monitor the battery charger for proper operation. An over or under charge will be indicated by a flashing fault LED.
- c) The SD system automatically exercises the battery every 24 - 30 days. This test is indicated by having the "RX Mode" LED "on". A ten minute discharge is performed by using a "Dummy Load". This exercise assures that the battery is performing properly. A fault LED will indicate if a battery is weak or dead.

2. Trouble Shooting Aid. The following is a guide to determine the cause of a flashing fault LED. The steps must be followed in sequence to properly determine cause.

Note: After each step, depress the test switch for approximately two seconds to reset the SD system. If fault LED stays "off" the problem has been corrected. If not, proceed to the next step.

- a) Make sure battery connections are connected and free of corrosion; clean terminal if necessary.
- b) Measure battery voltage. It should be within the following limits:

Battery Volts	12V
Low	9.60+/- .10
High	14.40 +/- .10

If not within the limits.

- a) Make sure that the charge LED is "on". If not, make sure that power is available to the unit.
- b) If the battery voltage is low and charge LED is "on", replace the charger board.
- c) If the battery voltage is high, consult factory to determine if charger is out of tolerance or charger board is defective.

Reset SD system before performing this test. Fault LED must be "off". Discharge unit between ten to ninety minutes by removing AC input. If during this test the fault LED flashes, the battery is weak. Replace battery and repeat test.

## Chart 1

Yellow LED	SD Mode	Steady "on" when self-testing
Red LED	Fault	Flashing when fault is determined
Green LED	Charge	"ON" when charger is charging
	Test Switch	To test & reset SD Board

F5 & R4 12 VOLT MR 16		
Maximum Mounting Height		
Watts	Height	
12W	13'	
20W	15'	
35W	32'	
50W	49'	
75W	50'	
3W 30 DEGREE GU10 (14.25 VOLT)		32'
3W 45 DEGREE GU10 (14.25 VOLT)		23'