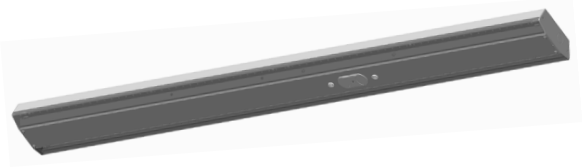
INSTRUCTIONS
TSLED™ INSTALLATION

RAB Lighting is committed to creating high-quality, affordable, well-designed and energy-efficient LED lighting and controls that make it easy for electricians to install and end users to save energy. We'd love to hear your comments. Please call the Marketing Department at 888-RAB-1000 or email: marketing@rablighting.com



TSLED- 2FT



TSLED - 4FT

IMPORTANT

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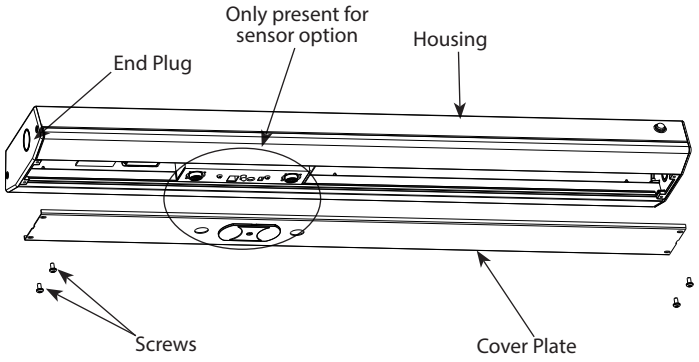
WARNING: Make certain power is OFF before installing or maintaining fixture. No user serviceable parts inside.
WARNING: To prevent wiring damage or abrasion, do not expose wiring to edges of sharp objects.

SURFACE MOUNTING

The fixture is suitable for indoor use only, for ceiling or wall mounting.

1. Remove tamperproof **Screws** *(4)* from **Cover Plate.**
2. Mount **Housing** directly to sturdy surface by using **Keyhole Slots** on either end of the fixture. Use appropriate mounting hardware for the mounting surface.
3. Make electrical splices, referring to page 2 for details. Supply can come from back or through either **End Plug**. Use appropriate UL approved wire connectors as required by code to complete wiring.
4. Being careful not to pinch wires, replace **Cover Plate** and tighten **Screws** *(4)*.

Fig: 1

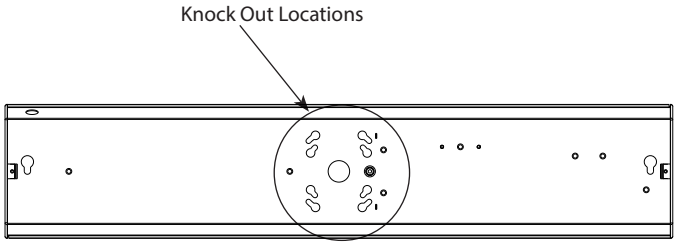


JUNCTION BOX MOUNTING

Mount to a recessed junction box *(provided by others)* as follows:

1. Remove tamperproof **Screws** *(4)* from **Cover Plate.**
2. Choose correctly spaced *(4)* **Knock Out Locations** as marked in Fig. 4 based on junction box size. Outer knock outs need to be knocked out for use. Use appropriate mounting hardware for the mounting surface.
3. Make electrical splices, referring to page 2 for details. Use appropriate UL approved wire connectors as required by code to complete wiring.
4. Once connections are made push all wires back through access hole into Junction Box. Be careful not to pinch wires. Replace **Cover Plate** and tighten **Screws** *(4)*.

Fig: 2



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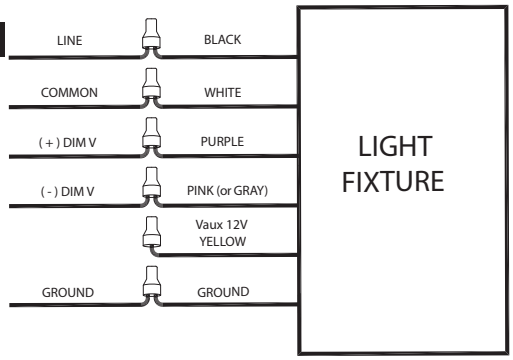
0-10V DIMMABLE WIRING

Universal voltage driver permits operation at 120V thru 277V, 50 or 60 Hz. For 0-10V Dimming, follow the wiring directions in Fig. 3.

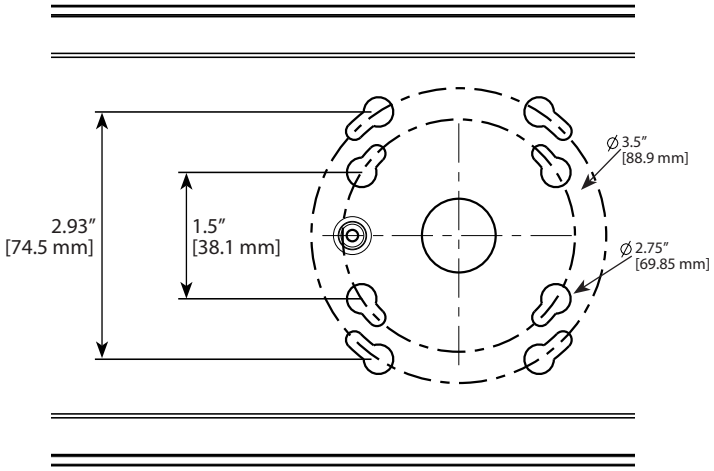
1. Connect the black fixture lead to the **LINE** supply lead.
2. Connect the white fixture lead to the **COMMON** supply lead.
3. Connect the **GROUND** wire from fixture to supply ground. Do **NOT** connect the **GROUND** of the dimming fixture to the output.
4. Connect the purple fixture lead to the (V+) DIM lead.
5. Connect the pink *(or gray)* fixture lead to the (V-) DIM lead.
6. Cap the yellow fixture lead, if present. Do ***NOT*** connect.

Fig. 3



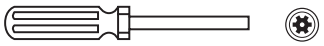
KNOCK OUT LOCATIONS

Fig. 4



TAMPERPROOF SCREWS

TSLED STAIRWELL fixtures are shipped with tamperproof screws for use with a **Torx Screwdriver.**



CLEANING & MAINTENANCE

CAUTION: Be sure fixture temperature is cool enough to touch. Do not clean or maintain while fixture is energized.

1. Clean polycarbonate lens with non-abrasive cleaning solution.
2. Do not open the fixture to clean the LEDs. Do not touch the LEDs.

TROUBLESHOOTING

1. Check that the line voltage at the fixture is correct. Refer to wiring directions.
2. Be sure the fixture is grounded properly.

Note: *These instructions do not cover all details or variations in equipment nor do they provide for every possible situation during installation, operation or maintenance.*

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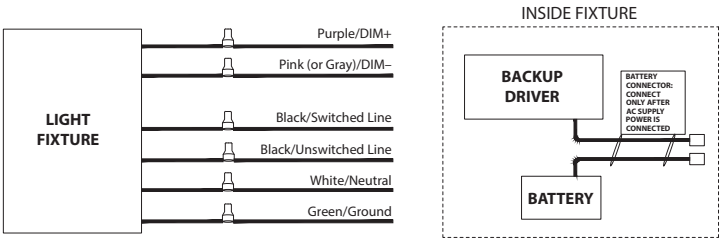
BATTERY BACKUP MODELS

WIRING

CAUTION: FOR BATTERY BACKUP FIXTURE. Voltage can be present in **BATTERY.** To prevent high voltage from being present on output leads, Inverter connector must be open. Do not join **BATTERY** connector until installation is complete and AC power is supplied to the emergency driver *(Fig. 5)*.
NOTE: Make sure that the necessary branch circuit wiring is available. An UNSWITCHED AC source of power is required. The emergency driver must be fed from the same branch circuit as the LED driver.
CAUTION: Do not use any supply voltage other than 120-277V 50/60 HZ.

1. Connect **UNSWITCHED HOT** fixture lead to **HOT AC** supply line.
2. If using an **UNSWITCHED** circuit, connect **UNSWITCHED** and **SWITCHED** lines together.
3. If using a **SWITCHED** circuit, connect **SWITCHED HOT** AC fixture lead to the external.
4. Connect the pink *(or gray)* fixture lead to the (V-) DIM lead.
5. For 0-10V Dimming, connect **DIM** (+) and **DIM** (-) to the supply ground. Do not connect **GROUND** to the output leads.
6. All unused leads must be capped and insulated.
7. After installation is complete, supply AC power to the fixture and connect the **BATTERY.**
8. When power is on, the fixture should be on and the Charging Indicator Light should illuminate to indicate the battery is charging.
9. Once the BATTERY has charged for at least one hour, a short duration test may be performed by pressing the test button.
10. After the battery has charged for 24 hours, a long duration test can be performed by shutting power to the fixture.

Fig. 5



OPERATION

1. When AC power is applied, the charging indicator light is illuminated, indicating that the **BATTERY** is being charged.
2. When power fails, the standby power automatically switches to emergency power *(internal battery)*, operating at reduced illumination. The emergency driver supplies 5W of power for TSLED2 and 12W of power for TSLED4 in standby power for a minimum of 90 minutes.
3. When AC power is restored, the emergency driver automatically returns to charging mode.

MAINTENANCE

Although no routine maintenance is required to keep the emergency driver functional, it should be checked periodically to ensure that it is working. The following schedule is recommended:

1. Visually inspect the charging indicator light monthly. It should be illuminated.
2. Test the emergency operation of the fixture at 30-day intervals for a minimum of 30 seconds.
3. Conduct a 90-minute discharge test once a year. Fixture would operate at reduced illumination for a minimum of 90 minutes.

TROUBLESHOOTING

1. Is the fixture grounded properly?
2. If the charging indicator light does not illuminate after pressing the test button, check if battery is connected properly.

BILEVEL DIMMING

For 100% light output (disabling the dimmer), splice red wire with black line wire.

For chosen output only, leave red wire capped.

For Bilevel Function, connect red wire to switched device.

1. Determine what % light output is desired and set switch prior to installation.
Options are: 25%, 50%, and 75%.

2. Connect purple wire with driver's purple wire.

3. Connect pink *(or gray)* wire with driver's gray wire.

4. Connect black wire with driver and supply line wires.

5. Connect white wire with driver and supply neutral wires.

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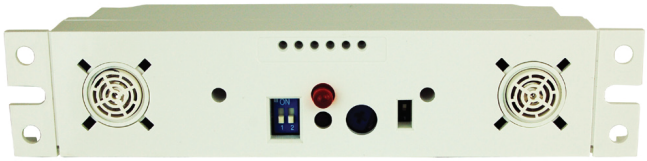
19400 ULTRASONIC SENSOR



19400

IMPORTANT

READ CAREFULLY BEFORE INSTALLING FIXTURE. RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.

FS-555 is used with a120-277VAC dimmable driver and is shipped pre-installed in each fixture with Factory Settings (refer to Specifications). Ultrasonic sensor may be used in ceiling or wall mounted fixtures.

SPECIFICATION

Indoor use only
Load: 1W at 120V, 1.2W at 277V
Operating Frequency: 40kHz
Operating Temperature: 0°C to +55°C (32°F to +131°F)

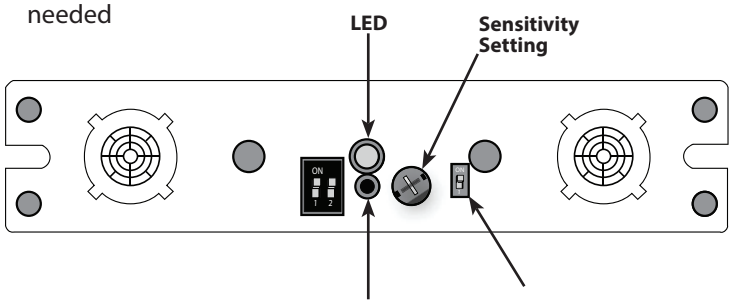
Factory Settings:

- **Time Delay***: 15 minutes*
  Lights remain at full output for this amount of time after motion is no longer detected in sensor's coverage area
- **Sensitivity:** *80%*

TESTING

Test Mode: use walk test to adjust coverage if needed

- Remove sensor cover from fixture
- Press Test Mode Button once to enter test mode
- Test period lasts 5 minutes with 5 second **Time Delay**
  - Sensor returns to previously set Time Delay following the test period
- Walk in and out of coverage area to check and adjust sensor:
  - Lights remain on and **LED** flashes until detection area is vacated (continuous flashing indicates motion detection)
  - After 5 seconds the LED should stop flashing and the light should turn off or dim
- Adjust sensitivity to desired coverage and repeat as needed



OPERATION

This ultrasonic sensor uses high frequency to detect room occupancy and motion.

- If settings other than Factory Settings are desired, see CUSTOMIZATION *(pg 2)* for more information
- If room is vacant for selected Time Delay, lights turn off or dim
- LED flashes upon sensing motion and lights turn back on

Override Mode

- Press and hold Test Mode Button for 15 seconds
- Depending on Occupancy Mode Setting, override will clear that setting so load remains ON
- LED remains on during Override Mode *(no blinking)*
- To cancel *Override Mode*, press Test Mode Button once

Burn-In Mode

- Press and hold Test Mode Button for 5 seconds
- Fixture remains lit for 72 hours, then returns to normal sensor settings
- LED flashes throughout entire *Burn-In* period

Fail-On Mode

- Using N/C (**Normally Closed**)* wiring, fixture will turn on if sensor fails

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CUSTOMIZATION

Occupancy Mode Setting

For normal operation, leave the switch down in POSITION 1



Time Delay Settings

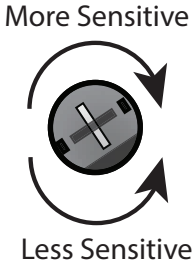
Period of time fixture remains on once sensor detects no motion

Use the following guide for selecting preferred Time Delay

DIP Switch 1	DIP Switch 2	Time Delay
OFF	OFF	5 min
OFF	ON	10 min
ON	OFF	15 min
ON	ON	30 min

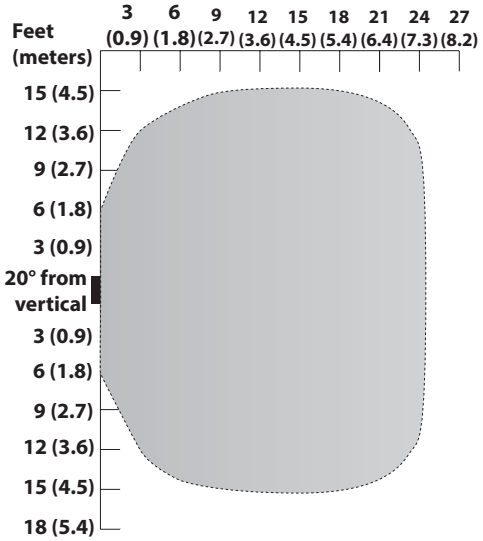
Sensitivity Setting

Adjust coverage zone by turning dial as shown below



COVERAGE PATTERN

*diagram based on ideal mounting conditions (no obstruction to sensor) and a 20° angle between sensor's line of sight and ground



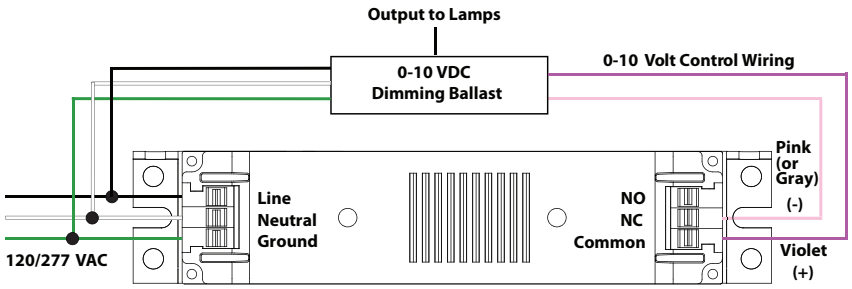
TROUBLESHOOTING

If the sensor does not detect motion as expected:

1. Check fixture mounting and compare fixture location and sensor coverage with coverage diagram. Adjust fixture location as necessary
2. Adjust sensitivity to maximum for best results with far away movement
3. Be sure sensor is not obstructed as this will diminish sensitivity to motion

WIRING DIAGRAM

Factory-wired as shown below if pre-installed in fixture



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BILEVEL DIMMER



16859

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16859 Bi-Level Dimmer is meant to control a 0-10VDC *(SELV/Class 2)* dim circuit with a120-277VAC dimmable driver.

For indoor use only.

OPERATION

This Bi-Level Dimmer functions with a switch *(such as a sensor, timer or photocell)* by allowing 2 choices of light output: full output or a dimmed output. The level of diminished light output will be selected at the time of installation.

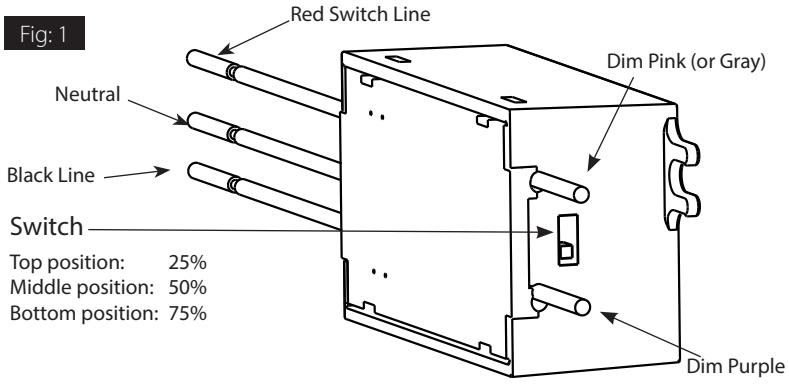
Full Light Output: Splice **Red** and **Black** leads together when wiring with fixture.

BI-LEVEL DIMMED OUTPUT WIRING

Dimmed Output *(level only)*:
Cap **Red wire** and select **Dimming Option** with **Switch** located on dimming end *(purple and pink or gray wires)* **Fig.1**

1. Determine what % light output is desired at bi-level function and set **Switch** prior to installation
   Options are: 25%, 50%, and 75% **Fig.1**
2. Connect **Purple wire** with driver's **Purple wire**
3. Connect **Pink *(or gray)* wire** with driver's **Pink *(or gray)* wire**
4. Connect **Black wire** with driver and **Supply Line wires**
5. Connect **White wire** with driver and **Supply Neutral wires**
6. Connect **Red wire** with selected device for **Bi-Level function** or cap for chosen level only. **Fig. 2**

Fig: 1



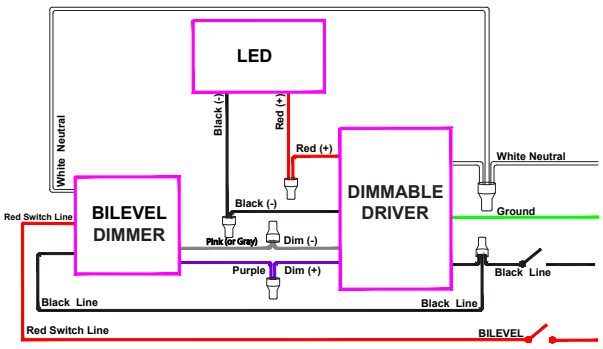
SPECIFICATIONS

Input Voltage:	120-277V, 50/60Hz
Input Current:	14-33mA
Input Wires:	Red *(switched line)*
	Black *(line)*
	White *(neutral)*
Output Voltage:	0-10VDC
Output Current:	1.0mA
Output Wires:	Pink or Gray *(dim -)*

GENERIC WIRING DIAGRAM

Switch can be a sensor, photocell or timer **Fig. 2**.

Fig. 2



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