

**LED EXTERIOR LIGHTING - TROUBLESHOOTING****1. General**

- A. This section gives the troubleshooting procedures for the exterior LED lighting. For a general description of the exterior LED lights, refer to LED Exterior Lighting - Description and Operation.
- B. Use the Model 208 Wiring Diagram Manual with the procedures in this section.

**2. Tools and Equipment**

- A. No special tools or equipment are necessary to do the procedures in this section.

**3. Landing Light Troubleshooting**

- A. If the left (FL005) or the right (FR005) landing light does not come on when the applicable LEFT LNG (SI016)/RIGHT LNG (SI014) light switch is set to the ON position. Do the steps that follow:
  - (1) Make sure that the applicable LEFT LNG LIGHT or RIGHT LNG LIGHT circuit breaker found on the left circuit breaker panel is engaged.
    - (a) Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
  - (2) Replace the applicable landing light with a known serviceable light.
    - (a) Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
  - (3) If the circuit breaker is engaged and the serviceable light does not come on, remove the applicable landing light LED lamp to get access to the light wiring bundle and terminals. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.

**CAUTION:** Make sure that the applicable left or right landing light/taxi light assembly circuit breakers are not engaged before you examine the landing light wiring bundle or do a continuity check. Each of the two landing light and taxi light assemblies installations are supplied electrical power from separate circuit breakers.

- (4) Visually inspect the light wiring and terminals for signs of damage.
  - (a) Repair any damage.
  - (b) If wiring repairs were done do the steps that follow:
    - 1 Install a serviceable landing light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
- (5) If the wiring is serviceable, examine the wiring bundle for continuity between the landing light assembly and the ground terminal (GC002).
  - (a) Repair any damage.
  - (a) If wiring repairs were done do the steps that follow:
    - 1 Install a serviceable landing light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
- (6) If the wiring is serviceable, examine the wiring bundle for continuity between the applicable landing light switch and the left circuit breaker panel.
  - (a) Repair any damage.
  - (b) If wiring repairs were done do the steps that follow:
    - 1 Install a serviceable landing light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
- (7) If the wiring is serviceable, set the applicable landing light switch to the ON position and examine the wiring bundle for continuity between the landing light assembly and the left circuit breaker panel.
  - (a) If the switch is unserviceable replace it. Refer to External Light Switches - Maintenance Practices.

- (b) If the switch was replaced do the steps that follow:
  - 1 Install a serviceable landing light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
  - 2 Do an operational check of the landing light. Refer to LED Exterior Lighting - Adjustment/Test LED Landing Light Test.
- (8) If the wiring and the switch are serviceable, replace the applicable LEFT LNG LIGHT or RIGHT LNG LIGHT circuit breaker. Refer to Chapter 24, Flight Compartment Lighting - Maintenance Practices

#### 4. Taxi Light Troubleshooting

- A. If the left (FL006) and/or the right (FR006) landing light does not come on when the TAXI light switch (SI015) is set to the ON position. Do the steps that follow:
  - (1) Make sure that the TAXI LIGHT circuit breaker found on the left circuit breaker panel is engaged.
    - (a) Do an operational check of the taxi lights. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
  - (2) Replace the applicable taxi light with a known serviceable light.
    - (a) Do an operational check of the taxi lights. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
  - (3) If the circuit breaker is engaged and the serviceable light does not come on, remove the applicable taxi light LED lamp to get access to the light wiring bundle and terminals. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.

**CAUTION:** Make sure that the applicable left or right landing light/taxi light assembly circuit breakers are not engaged before you examine the taxi light wiring bundle or do a continuity check. The landing light and taxi light installed in each assembly are supplied power from separate circuit breakers.

- (4) Visually inspect the light wiring and terminals for signs of damage.
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable taxi light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the taxi light. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
- (5) If the wiring is serviceable, examine the wiring bundle for continuity between the taxi light assembly and the ground terminal (GC002).
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable taxi light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the taxi light. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
  - (c) Install a serviceable taxi light. Refer to TAXI/RECOG switch and the left circuit breaker panel LED Landing/Taxi/Recognition Light - Removal/Installation.
  - (d) Do an operational check of the taxi light. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
- (6) If the wiring was serviceable, examine the wiring bundle for continuity between the TAXI/RECOG switch and the left circuit breaker panel.
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable taxi light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the taxi light. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
- (7) If the wiring was serviceable, set the applicable landing light switch to the ON position and examine the wiring bundle for continuity between the taxi light assembly and the left circuit breaker panel.
  - (a) If the switch is unserviceable replace it. Refer to External Light Switches - Maintenance Practices.

- (b) If the switch was replaced do the steps that follow:
  - 1 Install a serviceable taxi light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
  - 2 Do an operational check of the taxi light. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
- (8) If the wiring and the switch are serviceable, replace the LAND/TAXI LTS circuit breaker. Refer to Chapter 24, Flight Compartment Lighting - Maintenance Practices

## 5. NAV and Position Light Troubleshooting

**NOTE:** The steps that follow include the troubleshooting procedures for the tail position light. The NAV and tail position light is an integral part of the NAV/Anti-Collision light assembly.

- A. If the left (FL003) NAV, the right (FR003) NAV and position lights do not come on when the NAV light switch (SI017) and the Strobe switch (SI018) are set to the ON position. Do the steps that follow:
  - (1) Make sure that the NAV LIGHT circuit breaker found on the left circuit breaker panel is engaged.
    - (a) If the circuit breaker was not engaged, do an operational check of the NAV lights. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.

**CAUTION:** Make sure that the NAV LIGHT and the STROBE LIGHT circuit breaker are not engaged before you examine the NAV/Anti-Collision light assembly wiring bundle or do a continuity check. Each of the two NAV and the Anti-Collision light installations are supplied electrical power from separate circuit breakers.

- (2) Disengage the circuit breakers that follow:
  - (a) Disengage the NAV LIGHTS circuit breaker.
  - (b) Disengage the STROBE LIGHTS circuit breaker.
- (3) Do a continuity check of the wiring bundle from the NAV LIGHT switch to the left circuit breaker panel.
  - (a) Repair any damage.
  - (b) If wiring bundle repairs were done, do an operational check of the NAV and position light. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.
- (4) If the wiring is serviceable:
  - (a) Do a continuity check of the wiring bundle from the NAV/Anti-Collision light assembly to the NAV switch.
  - (b) Repair any wiring faults.
  - (c) Do an operational check of the NAV and Anti-Collision lights. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.
- (5) If wiring is serviceable get access to the NAV switch wiring terminals. Refer to External Light Switches - Maintenance Practices
  - (a) Set the NAV switch to the ON position.
  - (b) Do a continuity check of the switch.
  - (c) If the switch is not serviceable replace it. Refer to External Light Switches - Maintenance Practices.
  - (d) Do an operational check of the NAV and Anti-Collision lights. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.
- (6) If the wiring and the switch are serviceable, replace the NAV circuit breaker. Refer to Chapter 24, Flight Compartment Lighting - Maintenance Practices
- B. If the left NAV light (FL003) or the right NAV (FR003) and related tail position lights do not come on when the NAV light switch (SI017) and the Strobe switch (SI018) are set to the ON position.
  - (1) Replace the applicable NAV/Anti-Collision light assembly light with a known serviceable light assembly. Refer to NAV/Anti-Collision Lights - Removal/Installation.
    - (a) Do an operational check of the NAV and Anti-Collision lights. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.
  - (2) If the serviceable light does not come on, remove the applicable Nav/Anti/Collision light assembly to get access to the light wiring bundle and terminals. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.

**CAUTION:** Make sure that the NAV LIGHT and the STROBE LIGHT circuit breaker are not engaged before you

**examine the NAV/Anti-Collision light assembly wiring bundle or do a continuity check. Each of the two NAV and the Anti-Collision light installations are supplied electrical power from separate circuit breakers.**

- (3) Visually inspect the light wiring and terminals for signs of damage.
  - (a) Repair any damage.
  - (b) If wiring bundle repairs were done do the steps that follow:
    - 1 Install a serviceable NAV/Anti-collision light. Refer to LED Nav/Anti-Collision Light - Removal/Installation.
    - 2 Do an operational check of the NAV light. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.
- (4) If the wiring is serviceable, examine the wiring bundle for continuity between the NAV switch and the Nav/Anti-Collision light assembly.
  - (a) Repair any damage.
  - (b) If wiring bundle repairs were done do the steps that follow:
    - 1 Install a serviceable taxi light. Refer to LED Landing/Taxi/Recognition Light - Removal/Installation.
    - 2 Do an operational check of the NAV light. Refer to LED Exterior Lighting - Adjustment/Test NAV/Anti-Collision Light Operational Test.

## 6. Wing Inspection Light Troubleshooting

- A. If the wing inspection light, left (FC0094) does not come on when the WING LIGHT switch (SI021) is set to the ON position. Do the steps that follow:

- (1) Make sure that the WING ICE DET LIGHT circuit breaker found on the left circuit breaker panel is engaged.
  - (a) If the circuit breaker was not engaged, do an operational check of the wing inspection light. Refer to LED Exterior Lighting - Adjustment/Test Wing Inspection Light Operational Test.
- (2) Replace the applicable wing inspection light with a known serviceable light.
  - (a) Do an operational check of the taxi lights. Refer to LED Exterior Lighting - Adjustment/Test LED Taxi Light Assembly Test.
- (3) If the circuit breaker is engaged and the serviceable light does not come on, remove the wing inspection light to get access to the light wiring bundle and terminals. Refer to LED Wing Inspection Light - Removal/Installation.

**CAUTION: Make sure that the WING ICE DET LIGHT circuit breaker is not engaged before you examine the wing inspection light wiring bundle or do a continuity check.**

- (4) Visually inspect the light wiring and terminals for signs of damage.
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable wing inspection light. Refer to LED Wing Inspection Light - Removal/Installation.
    - 2 Do an operational check of the wing inspection light. Refer to LED Exterior Lighting - Adjustment/Test LED Wing Inspection Light.
- (5) If the wiring is serviceable, examine the wiring bundle for continuity between the taxi light assembly and the ground terminal (GF011).
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable wing inspection light. Refer to LED Wing Inspection Light - Removal/Installation.
    - 2 Do an operational check of the wing inspection light. Refer to LED Exterior Lighting - Adjustment/Test LED Wing Inspection Light.
- (6) If the wiring was serviceable, examine the wiring bundle for continuity between the WING LIGHT switch and the left circuit breaker panel.
  - (a) Repair any damage.
  - (b) If wiring repair was done do the steps that follow:
    - 1 Install a serviceable wing inspection light. Refer to LED Wing Inspection Light - Removal/Installation.

- 2 Do an operational check of the wing inspection light. Refer to LED Exterior Lighting - Adjustment/Test LED Wing Inspection Light.
- (7) If the wiring was serviceable, set the WING LIGHT switch to the ON position and examine the wiring bundle for continuity between the wing inspection light assembly and the left circuit breaker panel.
  - (a) If the switch is unserviceable replace it. Refer to External Light Switches - Maintenance Practices.
  - (b) If the switch was replaced do the steps that follow:
    - 1 Install a serviceable wing inspection light. Refer to LED Wing Inspection Light - Removal/Installation.
    - 2 Do an operational check of the wing inspection light. Refer to LED Exterior Lighting - Adjustment/Test LED Wing Inspection Light.
- (8) If the wiring and the switch are serviceable, replace the WING ICE DET LIGHT circuit breaker. Refer to Chapter 24, Flight Compartment Lighting - Maintenance Practices.

## 7. Courtesy Light Troubleshooting

- A. If the courtesy lights, left (ZL001) and right (ZR001) do not come on when the CABIN switch (SI021) light switch is set to the ON position. Do the steps that follow:
  - (1) Make sure that the CABIN LTS circuit breaker in the electric power box, found in the engine compartment.
    - (a) If the circuit breaker was not engaged, do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (2) Replace the applicable courtesy light with a known serviceable light.
    - (a) Do an operational check of the taxi lights. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (3) If the circuit breaker is engaged and the serviceable light does not come on, remove one of the courtesy lights to get access to the light wiring bundle and terminals. Refer to LED courtesy light - Removal/Installation.

**CAUTION: Make sure that the CABIN LTS circuit breaker is not engaged before you examine the courtesy light wiring bundle or do a continuity check.**

  - (4) If the airplane has a cabin light timer (BC003) installed examine the wiring bundle for continuity as follows:
    - (a) Between the courtesy light assembly and the cabin timer.
    - (b) Between the passenger door switch (SZ002) and the cabin timer.
  - (5) For all airplanes examine the wiring bundle for continuity as follows:
    - (a) Between the passenger door switch and the cargo door switch (SC022).
    - (b) Between the passenger door switch and the CABIN switch.
    - (c) Between the electric power box and the CABIN switch.
    - (d) Repair any damage.
    - (e) If wiring repair was done do the steps that follow:
      - 1 Install a courtesy light. Refer to LED Courtesy Light - Removal/Installation.
      - 2 Do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (6) If the wiring is serviceable get access to the CABIN switch. Refer to Incandescent Passenger/Cargo Compartment Lighting - Maintenance Practices.
    - (a) Examine the switch for continuity when it is operated.
    - (b) If the switch is unserviceable replace it. Refer to Incandescent Passenger/Cargo Compartment Lighting - Maintenance Practices.
    - (c) If the switch was replaced do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (7) If the switch was serviceable, replace the passenger door switch. Refer to Incandescent Passenger/Cargo Compartment Lighting - Maintenance Practices.
    - (a) If the switch was replaced do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.

- (8) If the door switch was serviceable, replace the timer. Refer to Incandescent Passenger/Cargo Compartment Lighting - Maintenance Practices
    - (a) If the timer was replaced do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
    - (b) If the wiring, the door switch, the CABIN switch and timer are serviceable, replace the CABIN LTS circuit breaker. Refer to Chapter 24, Flight Compartment Lighting - Maintenance Practices.
  - B. If the left courtesy light (ZL001) or the right courtesy light ZR001) do not come on when the CABIN switch (SI0201 light switch is set to the ON position. Do the steps that follow:
    - (1) Replace the applicable courtesy light with a known serviceable light.
      - (a) Do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
    - (2) If the circuit breaker is engaged and the serviceable light does not come on, remove the applicable courtesy light to get access to the light wiring bundle and terminals. Refer to LED Courtesy Light - Removal/Installation.
- CAUTION: Make sure that the CABIN LTS circuit breaker is not engaged before you examine the courtesy light wiring bundle or do a continuity check.**
- (3) Visually inspect the light wiring and terminals for signs of damage.
    - (a) Repair any damage.
    - (b) If wiring repair was done do the steps that follow:
      - 1 Install a serviceable courtesy light. Refer to LED Courtesy Light - Removal/Installation.
      - 2 Do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (4) If the wiring is serviceable, examine the wiring bundle for continuity between the courtesy and the ground terminal, left (GL006), right (GR005).
    - (a) Repair any damage.
    - (b) If wiring repair was done do the steps that follow:
      - 1 Install a serviceable courtesy light. Refer to LED Courtesy Light - Removal/Installation.
      - 2 Do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.
  - (5) If the wiring was serviceable, examine the wiring bundle for continuity between the applicable courtesy light and the cabin light timer.
    - (a) Repair any damage.
    - (b) If wiring repair was done do the steps that follow:
      - 1 Install a serviceable courtesy light. Refer to LED Courtesy Light - Removal/Installation.
      - 2 Do an operational check of the courtesy light. Refer to LED Exterior Lighting - Adjustment/Test Courtesy Light Operational Test.