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EXTERIOR LIGHTING

PARKING, REAR AND LICENSE PLATE LAMPS (G2401024)

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DIAGNOSIS AND TESTING

PRINCIPLE OF OPERATION

For a detailed description of the exterior lighting system and operation, refer to the relevant description and operation section of the workshop manual. REFER to: [Exterior Lighting](#) (417-01 Exterior Lighting, Description and Operation).

INSPECTION AND VERIFICATION

ⓘ CAUTION:

Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle

△ NOTES:

- If the control module or a component may be at fault and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual (section B1.2), or determine if any prior approval program is in operation, prior to the installation of a new module/component.
- When performing voltage or resistance tests, always use a digital multimeter accurate to three decimal places, and with an up-to-date calibration certificate. When testing resistance, always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. Verify the customer concern

2. Visually inspect for obvious signs of mechanical or electrical damage

Visual Inspection

MECHANICAL

ELECTRICAL

MECHANICAL	ELECTRICAL
■ Rear lamp(s) condition and installation ■ License lamp(s) condition and installation ■ Steering column multifunction switch and installation ■ Rain/Light sensor condition and installation	■ Fuses ■ Relays ■ Wiring harness ■ Loose or corroded connector(s) ■ Body control module ■ Headlamp control module ■ Battery junction box ■ Rain/Light sensor ■ LIN circuits ■ CAN circuits

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step
4. If the cause is not visually evident, verify the symptom and refer to the symptom chart, alternatively check for diagnostic trouble codes (DTCs) and refer to the relevant DTC index
5. Check JLR claims submission system for open campaigns. Refer to the corresponding bulletins and SSMS which may be valid for the specific customer complaint and complete the recommendations as required

SYMPTOM CHART

SYMPTOM	POSSIBLE CAUSE	ACTION
Rear/License lamp(s) inoperative	■ Fuse(s) blown ■ Circuit fault ■ Steering column multifunction switch	Check the fuse condition. Check the rear/license lamp circuits. Check the steering column multifunction switch function. Refer to the electrical guides. Check for DTCs indicating a rear/license lamp circuit fault
Rear/License lamp(s) dim	■ Circuit fault ■ Steering column multifunction switch	Check the rear/license lamp circuits. Check the steering column multifunction switch function. Refer to the electrical guides

SYMPTOM	POSSIBLE CAUSE	ACTION
Rear/License lamp(s) stuck on	■ Circuit fault ■ Steering column multifunction switch	Check the rear/license lamp circuits. Check the steering column multifunction switch function. Refer to the electrical guides. Check for DTCs indicating a rear/license lamp circuit fault
Rear/License lamp(s) inoperative when the automatic headlamp switch option is selected	■ Fuse(s) blown ■ Steering column multifunction switch ■ Circuit fault ■ Rain/Light sensor fault ■ LIN circuit fault	Check the fuse(s). Check the steering column multifunction switch function. Check the automatic headlamp circuit. Refer to the electrical guides. Check for DTCs indicating a rain/light sensor or LIN system fault

FRONT AND REAR LAMP CONDENSATION

Some customers may complain of condensation/misting/fogging inside the exterior lamps. Condensation/misting/fogging is a natural phenomenon which can occur under wet and/or humid atmospheric conditions. It is triggered by temperature differences between the inside and outside of the lamp unit. Exterior lights have vents and are not completely closed to the environment, therefore replacing the light unit will not correct this symptom. With the introduction of clear plastic lenses, condensation is likely to be more noticeable but does not affect the performance of the lamp. Condensation will clear with regular use of the lights under warmer and drier atmospheric conditions

A lamp that exhibits condensation should be evaluated under warm (20°C ± 5°C) and dry conditions (50% RH ± 5% RH) with all functions operating for a minimum of 60 minutes for LED lamps or 30 minutes for all other lamps. If the condensation **improves** (i.e.: it starts to clear, but has not necessarily completely cleared) during this time, it indicates that the lamp is functioning as normal . This means the lamp integrity has NOT been breached and **the lamp must NOT be replaced**

ⓘ CAUTION:

Where appropriate, make sure that bulb covers are correctly installed and make sure that all breathers (tubes or weathershield patches) are free from dirt/debris and installed correctly (contamination or poor fitting can all contribute to the formation of condensation). If any of these are determined to be the cause of the condensation, measures should be taken to dry out the lamps and to make sure that the bulb covers /breathers are installed correctly



NOTES:

- The owner's handbook clearly states that condensation may form on the inside of lamp lenses and is caused by atmospheric conditions. It explains that it is not detrimental to lamp performance and will clear during normal usage
- Pools of water and high levels of condensation would indicate that the lamps' sealing has been compromised. Check for damage and inspect the condition of caps and breathers
- Differing layout on the opposing sides of the vehicle can lead to different levels of condensation inside the lamps from side to side. As a result of this, the rate at which condensation clears may also differ from side to side
- Photographic evidence of the condensation levels prior to and after drying time should be provided with every returned part. Failure to do so may result in the claim being rejected
- This information bulletin contains examples of normal condensation generated from atmospheric conditions. A thin mist can form on the interior of clear plastic lenses, this is not detrimental to the lamp's performance. This thin mist will eventually clear through normal use, exiting through the lamp's venting system

Condensation or moisture can be more noticeable during the months of spring and autumn when there is a likelihood of a higher moisture content in the air. It can occur when there is a temperature difference on either side of the lens surface. This can often be seen in the evening and morning sunshine or when cold water makes contact with a warm lamp lens. When a lamp is warmed unevenly by the sunshine, the surface area in direct sunlight will be approximately 10°C higher than the remainder of the lamp. When warm air circulates within the lamp and makes contact with the colder surfaces, moisture can appear on the lens as water condenses out of the warmer air. Condensation may occur when washing a vehicle with cold water on a warm day or when the lamps are warm and vice versa. This is the same phenomena as with the formation of dew on the surface of a glass window pane

LED lamps project less heat towards the clear lens and therefore condensation can occur and can take longer to clear than in other types of lamps

The following process describes the formation and clearance of condensation:

1. Air and moisture enter the device through the ventilation when the vehicle is OFF
2. The temperature of the lens surface falls below the dew point, due to driving/rain/washing or daily temperature variations
3. Condensation is formed on the cold lens surface
4. The temperature of the cold surface rises again due to sunshine and/or lamp operation and the moisture inside the lamp is removed through the ventilation, the condensation will clear
5. Time to clear depends on the lamp design, environmental conditions and the amount of condensation formed

Shown below are examples of normal exterior lamp condensation. This would NOT be covered by warranty and the lamp(s) must not be replaced



E170433



In the photograph shown below, note the standing water within the lamp, this is not acceptable and clearly shows a water ingress related fault with the lamp



E170437

DTC INDEX

For a list of diagnostic trouble codes (DTCs) that could be set on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code Index - DTC: Body Control Module \(BCM\)](#) (100-00 General Information, Description and Operation).

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