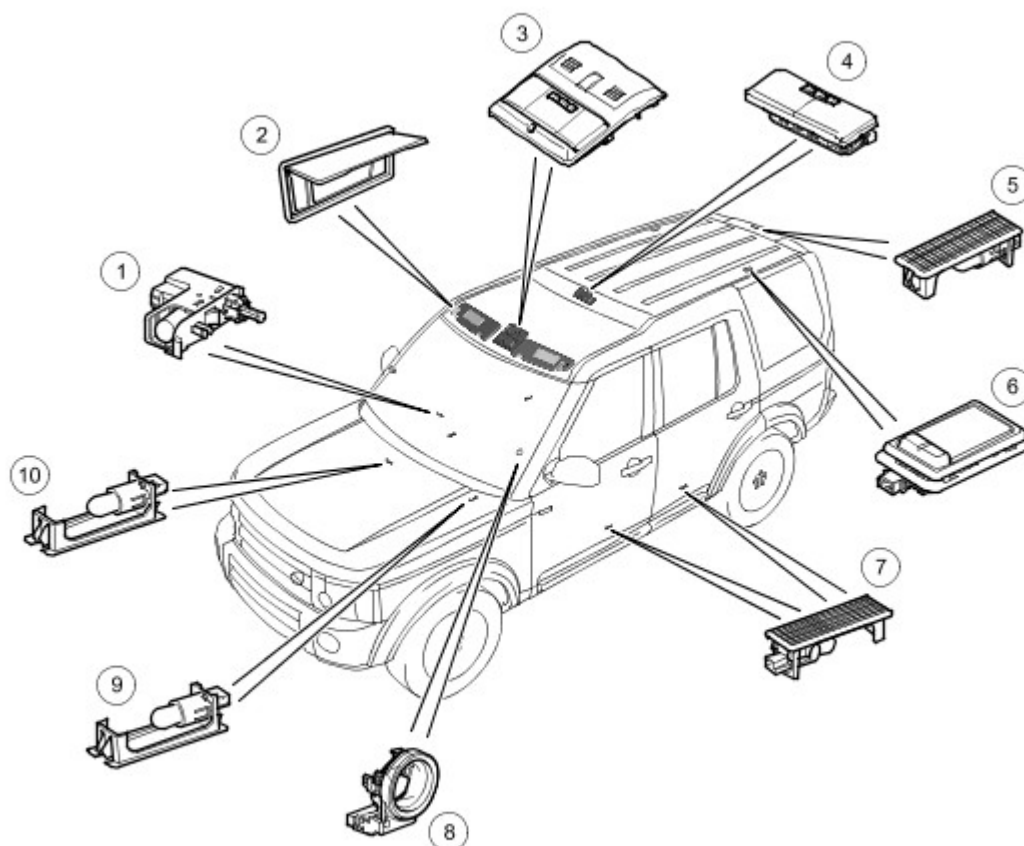


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## Interior Lighting

### Interior Lighting Component Location



E43678

Item	Part Number	Description
1	-	Glove compartment lamp and switch
2	-	Vanity mirror lamps
3	-	1st row interior lamp and map reading lamps
4	-	2nd row interior lamp and map reading lamps
5	-	Luggage compartment lamp
6	-	3rd row map lamps (if fitted)
7	-	Puddle lamps
8	-	Ignition switch glow ring
9	-	Driver footwell lamp
10	-	Passenger footwell lamp

### GENERAL

The interior lighting system comprises the following interior lamps:

- Interior lamps
- Map reading lamps
- Glove compartment lamp
- Luggage compartment lamps
- Vanity mirror lamps
- Footwell lamps
- Puddle lamps
- Ignition switch illumination

## Interior Bulb/Type Rating

The following table shows the bulbs used for the interior lighting system and their type and specification.

Bulb	Type	Rating
Front and rear interior lamps	Capless	5W
Front and rear map reading lamps	Capless	5W
Luggage compartment lamp	Capless	5W
Vanity mirror lamps	Festoon	14V 0.1A (0.14W)
Door puddle lamps	Capless	5W
Lower instrument panel footwell lamps	Capless	5W
Glove compartment lamp	Festoon	5W

## CENTRAL JUNCTION BOX

The Central Junction Box (CJB) is an integrated unit located behind the instrument panel on the passenger side of the bulkhead. The CJB contains fuses, relays and a number of microprocessors which control the power supply and functionality of the interior lighting system and other vehicle systems.

The interior lamps are controlled by the CJB and have two modes of operation: manual and automatic. In the manual mode the interior lamps can be switched on and off using the momentary and latching switches adjacent to each lamp or disabled completely using the same switches. In the automatic mode the interior lamp functionality is controlled by the CJB on receipt of various input signals.

## Input signals

The CJB receives the following inputs which affect the operation of the interior lamps:

- Ignition switch
- Door switches
- Tailgate switch
- Glove compartment lamp switch
- Unlock signal
- Interior lamp switches
- Map reading lamp switches
- Battery saver relay
- Vanity mirror lamp switches

## Circuit Protection

The CJB provides circuit protection for all interior lamp circuits. The following interior lamp circuits are protected by Field Effect Transistors (FETS):

- Luggage compartment lamps
- Footwell lamps
- Ignition switch glow ring
- Puddle lamps.

The above components are protected by FETs which can detect overloads and short circuits. The FETs respond to heat generated by increased current flow caused by a short circuit. On a normal circuit this would cause the fuse to blow, rendering that component and circuit inoperative. The FETs respond to the heat increase and disconnect the supply to the affected circuit. When the fault is rectified or the FET has cooled, the FET will reset and operate the circuit normally.

The following interior lamps circuits are protected by Fuse 1P (10A) in the CJB:

- Glove compartment lamp
- Map reading lamps
- Vanity mirror lamps.

## Interior Lamp Time-out

The interior lamps are controlled by a timer within the CJB which allows a 60 delay period for the lamps to remain on after the ignition has been switched off or when the vehicle is unlocked. The following interior lamps are subject to the delay period:

- Interior lamps
- Footwell lamps
- Luggage compartment lamps
- Puddle lamps
- Ignition switch glow ring.

The delay period can be adjusted to suit the driver's requirements, refer to following section for adjustment details.

The time-out delay is activated when the CJB receives one of the following signals:

- The CJB receives an unlock signal from the remote handset
- Ignition switch is moved from the crank position (III) or the ignition position (II) or to the auxiliary position (I) to the off position (0).

If a second occurrence of one of the above actions occurs within the time-out period, the timer will be reset and the delay period will start again.

The time-out delay is deactivated when the CJB receives one of the following signals:

- The CJB receives a lock signal from the remote handset
- Ignition switch is moved from the off position (0) or the auxiliary position (I) to the ignition position (II) or the crank position (III).
- The CJB receives a door opened signal (even if door is subsequently closed)

## Interior Lamp Time-out Personalisation

The vehicles customer personalisation options allow the driver or a Land Rover or authorised dealer to adjust the interior lamp switch-off delay period to suit their specific requirements. The default delay period of 60 seconds can be adjusted to the following values; OFF, 10 seconds, 20 seconds, 40 seconds, 60 seconds, 120 seconds or 240 seconds.

With the vehicle stationary and the ignition switch in nay position, pressing the trip computer button on the end of the left hand steering multifunction switch gives access to the Customer Personalisation options. Using the audio search buttons on the steering wheel the options can be scrolled through. The options are displayed in the message center. When the headlamp delay option is reached the settings can be changed using the audio search buttons on the steering wheel. When the selection has been made, confirmation is performed by pressing the trip computer button. For additional information, refer to [Information and Message Center](#) (413-08 )

## Battery Saver

The battery saver feature provides automatic shut-off of the interior lamps after a period of 15 minutes in order to prevent excessive drain on the battery. The lamp(s) fade off as described in the 'Interior Lighting' section that follows.

The battery saver feature is additional to the time-out delay feature and prevents battery drain when an lamp is accidentally left switched on, e.g. glove compartment left open.

When the ignition switch is moved from the ignition position (II) or the auxiliary position (I) to the off position (0), the CJB starts a timer which automatically switch off all interior lamps when the 15 minute period has expired.

Once the timer has expired and the lamps are off, any one of the following will 'wake-up' the battery saver and the interior lamps will function again. The timer will be restarted as soon as an input from one of the following is received by the CJB:

- Ignition switch position changed to auxiliary (I), ignition (II) or crank (III)
- Any door, including the tailgate is opened
- Unlock request is received
- Front interior lamp switch is pressed.

## DELIVERY MODE

Delivery mode is set at the factory on vehicles to minimise battery drain. The modes enables the switching off of non-critical electrical components, including the interior lighting. The delivery mode feature can be cancelled by the dealer at pre-delivery inspection using T4.

## CRASH ILLUMINATION

When a crash signal is received from the restraints control module, the central junction box activates the interior lamps once the vehicle speed has reduced to 5 km/h (3.1 mph). The lamps remain on until they are switched off manually or the crash signal no longer exists. For additional information, refer to [Air Bag and Safety Belt Pretensioner Supplemental Restraint System \(SRS\)](#) (501-20B )

## INTERIOR LIGHTING

Interior lighting is lighting provided to enable the safe entry and departure from the vehicle for the driver and passengers in low ambient light conditions, without any manual switching of the interior lamps.

### NOTE :

The term interior lamps also includes the door mirror approach lamps.

When the interior lighting system switches the interior lamps on, the central junction box ramps the lamps on up to full power over period of 1.3 seconds. When the system switches the lamps off, after the time-out delay period has expired, the central junction box fades the lamps off over a period of 2.6 seconds.

The interior lighting system will illuminate the interior lamps when one of the following events occurs:

- The central junction box receives an unlock signal from the remote handset
- Any door is opened including the tailgate
- The ignition switch is turned from the ignition position (II) or the auxiliary position (I) to the off position (0).

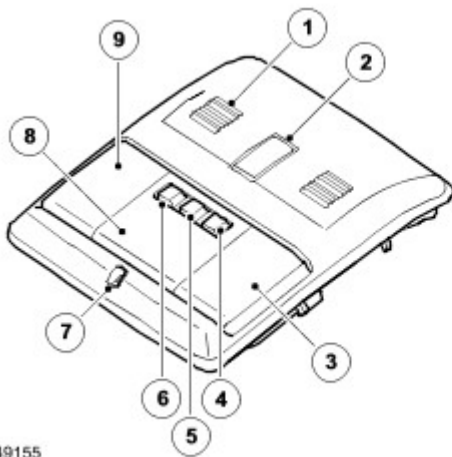
The interior lighting system will turn off the interior lamps when one of the following events occurs:

- Once the delay time-out timer has expired since the lamps were either activated or the last door is closed and the vehicle is not locked
- The ignition switch is in the off position (0) and an external lock (using the key or the remote handset) is requested with all doors closed
- The ignition switch is turned from the off position (0) or the auxiliary position (I) to the ignition position (II) with all doors closed
- The last door is closed while or after the vehicle is externally locked using the key or the remote handset
- The last door is closed when the ignition switch is in the ignition position.

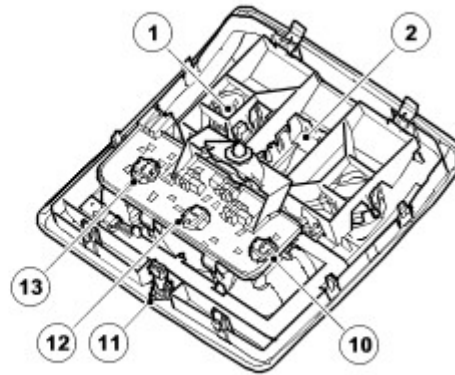
The interior lamps can be permanently switched off, preventing automatic operation when a door is opened or the vehicle is unlocked using the remote handset. This is achieved by pressing and holding the central switch of the 1st row interior lamp for 3 seconds. The interior lamps will remain off until the procedure is repeated.

## ROW 1 AND 2 INTERIOR LAMP ASSEMBLY

## Row 1 Interior Lamp

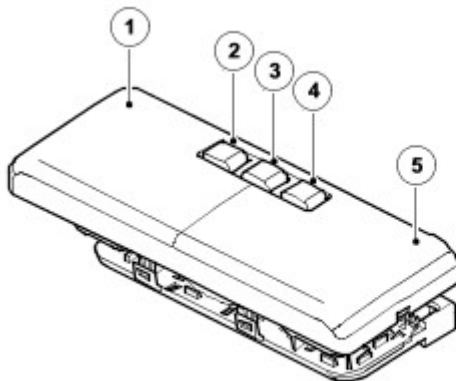


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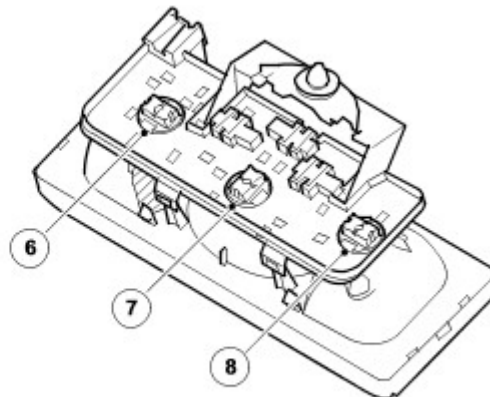


Item	Part Number	Description
1	-	Microphone
2	-	Sunroof switch
3	-	Map reading lamp
4	-	Map reading lamp switch
5	-	Interior lamp switch
6	-	Map reading lamp switch
7	-	Waterfall lighting LED
8	-	Interior lamp
9	-	Map reading lamp
10	-	Map reading lamp bulb holder
11	-	LED connector
12	-	Interior lamp bulb holder
13	-	Map reading lamp bulb holder

## Row 2 Interior Lamp (Low line shown)



E49156



Item	Part Number	Description

1	-	Map reading lamp
2	-	Map reading lamp switch
3	-	Interior lamp switch
4	-	Map reading lamp switch
5	-	Map reading lamp
6	-	Map reading lamp bulb holder
7	-	Interior lamp bulb holder
8	-	Map reading lamp bulb holder

The row 1 and 2 interior lamp assemblies are common to all models, however, their location can differ between model specification. Both lamp assemblies have three switches; one for the main interior lamp and two for the map reading lamps.

On low line specification vehicles, the interior lamps are located directly into apertures in the headlining with a bezel finish surround.

On high line specification vehicles, the row 1 (front) interior lamp is located in a housing which can also contain the sunroof switch and/or the voice activation microphones, depending on specification. The row 2 (rear) interior lamp is also located in a housing which contains the rear heating controls.

The main interior lamps operate as part of the automatic interior lighting system. The map reading lamps only operate manually.

Both the interior and map reading lamps use 5W capless bulbs.

The row 1 interior lamp unit also contains an LED for the waterfall lighting. Waterfall lighting is part of the lighting control switch functionality which also controls the brightness of the switch and instrument cluster display illumination. Waterfall lighting provides very limited illumination for the center of the fascia and the center console, when the vehicle is being driven, without affecting the driver's night vision.

## Main Interior Lamp

The main interior lamps operate independently of the ignition switch position and can be operated automatically by one of a number of inputs to the CJB or manually by pressing the central switch on the lamp assembly. The switch is a momentary switch which is connected directly to and completes a circuit to the CJB. This completed circuit is a signal for the CJB to activate or deactivate the row 1 interior lamp (and also the row 2 interior lamp, if fitted). The lamps will remain on until the switch is pressed a second time.

The interior lamps can be permanently switched off as previously described by pressing and holding the central switch for at least 3 seconds. The 3 second completion of the circuit is sensed by the CJB which grants the permanent off request.

## Map Reading Lamps

Both row 1 and 2 interior lamp assemblies contain map reading lamps which are located adjacent to the main interior lamp. The lamps are operated by two momentary switches on the lamp unit, which are located on either side of the main interior lamp switch.

## ROW 3 MAP READING LAMPS

The row 3 map reading lamps are located in the headlining, above the rear side windows. These map reading lamps are only fitted to vehicles fitted with the seven seat, third row seating option.

The lamps operate independently of the ignition switch position. The lamps have a latching rocker switch which allows the lamps to be manually switched on and off. The map reading lamps have a non-adjustable beam.

The lamps are not part of the automatic interior lighting system and therefore can only be switched on manually.

The map reading lamps use 5W capless bulbs.

## **GLOVE COMPARTMENT LAMP**

The glove compartment lamp is located inside the glove compartment and contains an integral switch. The switch is operated when the glove compartment lid is opened and closed, switching the lamp on and off.

The glove compartment lamp uses a 5W festoon bulb.

## **PUDDLE LAMPS**

Each door is fitted with a puddle lamp which illuminates the ground below the door when the door is opened. The puddle lamps are located in the bottom of the door trim panel on each front and rear door.

The puddle lamps are part of the automatic interior lighting functionality. Each lamp uses a 5W capless bulb.

## **FOOTWELL LAMPS**

Two footwell lamps are located under the instrument panel, one on each side, to illuminate the footwell area. The footwell lamps are controlled by the CJB and operate as part of the interior lighting functionality.

The footwell lamps use a 5W capless bulb.

## **LUGGAGE COMPARTMENT LAMP**

A luggage compartment lamp is located in a central position in the rear header trim panel at the rear of the vehicle, above the tail gate aperture. The luggage compartment lamp is controlled by the CJB and operates as part of the interior lighting functionality.

The luggage compartment lamp uses a 5W capless bulb.

## **VANITY MIRROR LAMPS**

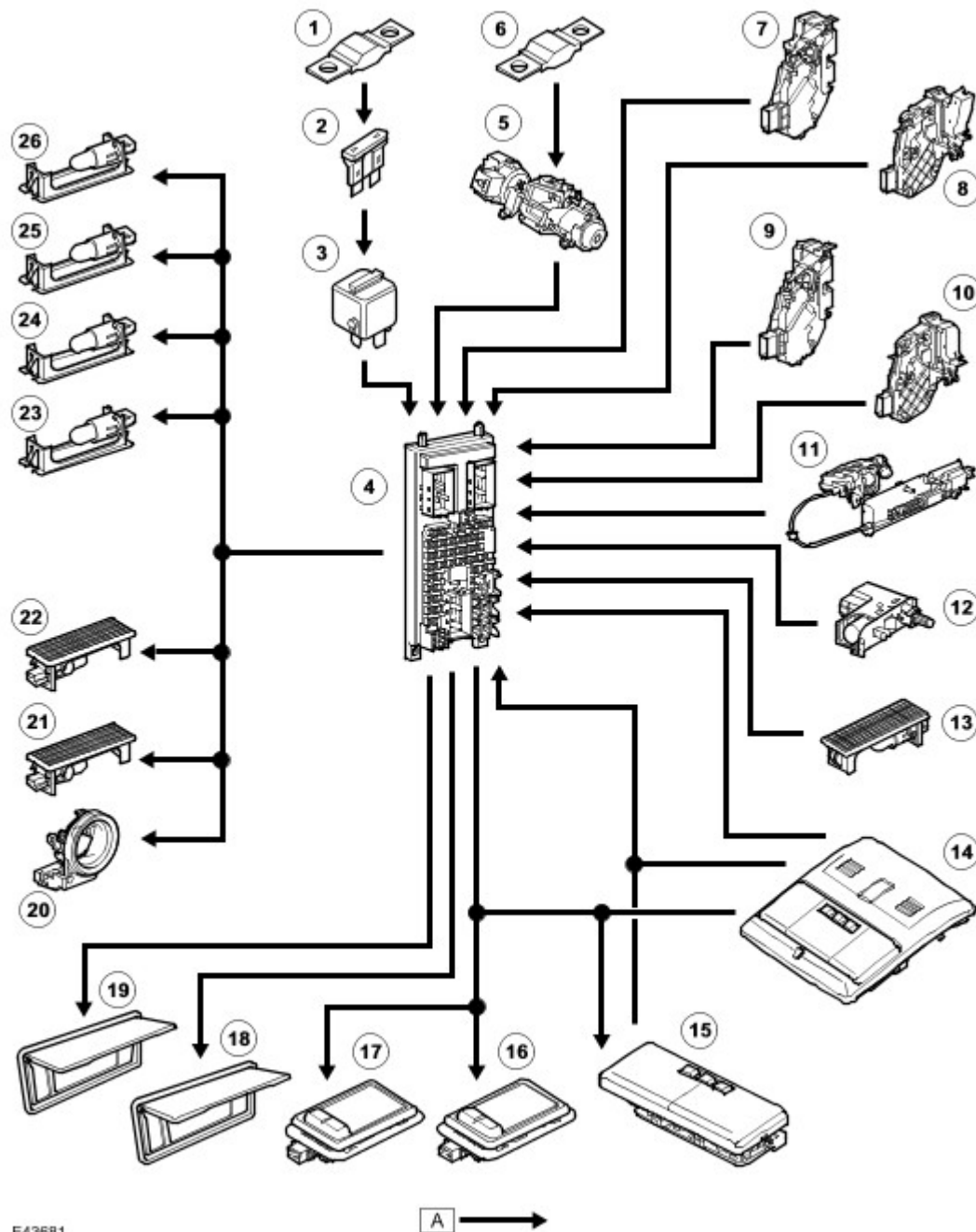
Four vanity mirror lamps are fitted, two in each vanity mirror. The lamps are illuminated when the mirror cover is raised. The vanity mirror lamps operate independently of the ignition switch position and separately to the interior lighting functionality, although they are subject to the battery saver feature of the CJB.

The vanity mirrors use low voltage, 1.2W festoon type bulbs.

## **CONTROL DIAGRAM**

### **NOTE :**

A = Hardwired



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Item	Part Number	Description
1	-	Fusible link 15E (40A) (Permanent 12V supply)
2	-	Fuse 1P (10A)
3	-	Battery saver relay (located inside CJB)
4	-	Central Junction Box (CJB)
5	-	Ignition switch
6	-	Fusible link 11E (30A)
7	-	Passenger door CDL motor
8	-	Driver's door CDL motor
9	-	RH rear door CDL motor
10	-	LH rear door CDL motor



11	-	Tailgate release motor
12	-	Glove compartment lamp
13	-	Luggage compartment lamp
14	-	Row 1 interior lamp assembly
15	-	Row 2 interior lamp assembly
16	-	Row 3 RH map reading lamp
17	-	Row 3 LH map reading lamp
18	-	RH vanity mirror lamp
19	-	LH vanity mirror lamp
20	-	Ignition switch glow ring illumination
21	-	RH footwell lamp
22	-	LH footwell lamp
23	-	RH rear puddle lamp
24	-	LH rear puddle lamp
25	-	RH front puddle lamp
26	-	LH front puddle lamp