

Broadcast Message	Originating Module	Message Purpose
Ambient light color/intensity request	GWM	Indicates the color and brightness setting selected from the display interface. This commands the ambient color and brightness setting as requested by the operator.

Battery Saver

NOTE: Time-out is 10 seconds if the vehicle is in factory mode or 1 minute if the vehicle is in transport mode.

The BCM provides automatic shut-off of the courtesy and demand lamps after a time-out period when the ignition is OFF. A timer in the BCM starts when:

- the ignition transitions to OFF.
- the front or rear interior lamp was switched ON.
- any door becomes ajar.
- any button of a RKE transmitter is pressed.
- a door is unlocked using the passive entry feature.
- a valid code was entered on the keyless entry keypad.

When 10 minutes (30 minutes for demand lamps) have elapsed, the BCM automatically shuts off voltage to the lamps. The timer restarts (voltage is restored if the BCM is in battery saver mode) when:

- the ignition transitions out of OFF.
- the front or rear interior lamp was switched ON.
- any door becomes ajar.
- any button of a RKE transmitter is pressed.
- a door is unlocked using the passive entry feature.
- a valid code was entered on the keyless entry keypad.

Courtesy Lamps

The BCM controls the courtesy lighting functions and timing by monitoring inputs from the following:

- Ignition state
- Courtesy lamp switch (integrated into the front interior lamp assembly)
- Door ajar switches
- Liftgate ajar switch (manual liftgate)
- RGTM (power liftgate)
- RKE system

The BCM sends a voltage signal to each door ajar switch. When the doors are closed, the circuit is switched to ground and the voltage is pulled low, indicating closed doors.

For manual liftgate, the BCM sends a voltage signal to the liftgate ajar switch. When the liftgate is closed, the circuit is switched to ground and the voltage is pulled low, indicating a closed liftgate.

For power liftgate, the BCM sends a voltage signal to the RGTM. When the liftgate is closed, the circuit is switched to ground and the voltage is pulled low, indicating a closed liftgate.

The BCM monitors the ignition state and inputs from the RKE system to determine when to energize the interior light relay. When the interior light relay is energized, voltage is provided to the interior lamps. The BCM controls the voltage side of the courtesy lamps for the illuminated entry and exit features.

For keyless entry, the BCM monitors input from the RKE transmitter (directly from the integrated keyhead transmitters (IKTs) on vehicles without push button start) or from the RFA module (on vehicles with push button start) to determine when to activate/deactivate the illuminated entry and exit functions.

When the puddle lamps are requested, the BCM sends a message over the HS-CAN1 to the GWM then the GWM sends the message to the DDM and the PDM over the MS-CAN.

The DDM and the PDM provide voltage to the left and right puddle lamps based on messaged input from the BCM.

The interior courtesy lamps can also be activated from the courtesy lamp switch mounted on the front interior lamp. The front interior lamp controls the courtesy lamp function of the rear interior lamps. When the courtesy lamp button is pressed on the front interior lamp, the courtesy lamp function for all the lamps is turned on/off. If any door is open, the BCM command overrides the function of the front courtesy lamp switch and

activates the courtesy lamps.

There are three control switches on the front row lamp:

- Global On
- Global Off
- Door Defeat

The global on and off buttons activate or de-activate the courtesy lamps while the doors are closed.

The door defeat button deactivates the courtesy lamps so when the doors are opened the courtesy lamps remain off. When the door defeat function is activated, the door defeat button illuminates amber in color and when de-activated, the button illuminates blue and the courtesy lamps return to normal operation.

If any door is open and the door defeat function is activated, the global on and off buttons will continue to function and activate or de-activate the courtesy lamps.

Illuminated Entry and Exit

The illuminated entry and exit features provide temporary illumination of the parking lamps, the dimmable backlighting, the ambient backlighting and the courtesy lamps. Refer to the table for additional information.

NOTE: An arbitrator (software programming) within the BCM determines which actions take precedence over others (for example, an open door keeps the courtesy lamps on even when a command to lock the doors is received).

Action	Parking Lamps	Courtesy Lamps	Dimmable Backlighting	Ambient Lighting
RKE transmitter or mechanical unlocking of the doors	On for 25 seconds	On for 25 seconds	On for 25 seconds	Off
RKE transmitter or mechanical locking of the doors	Off	Off	Off	Off 3 seconds after courtesy lamps turned off
Open a closed door after previously unlocking (no ignition state change since unlock)	Off (on for remaining time if unlocked from transmitter or mechanical unlocking of the doors)	On	Off	On
Close all doors	Off	On for 25 seconds	On for 25 seconds	On for 25 seconds
Ignition changed to ON	Off	On for 25 seconds	Off	On
Ignition changed out of ON	Off	On for 25 seconds	On for 25 seconds	On for 25 seconds
Open a door after the ignition is changed to OFF	Off	On	Off	On (color is red on the open door)
Ignition is OFF and doors are unlocked from the door lock switch	Off	On for 25 seconds	Off	Off
Ignition is OFF and doors are locked from the door lock switch	Off	Off	Off	Off

Demand Lamps

When the BCM is in not in battery saver mode, the interior light output is energized to provide voltage to the demand lamps.

Ambient Lighting

The ambient lighting subsystem consists of the BCM, and the Light Emitting Diodes (LEDs) located within the floor console, front and rear door panels, instrument panel and front footwell areas. The ambient lighting is operational when the ignition is in any state other than OFF (the exception is when it is used in conjunction with the illuminated entry/exit features), the headlamps are on and the outside ambient light level is low. The BCM provides the voltage to the ambient lighting system, while the touchscreen (FDIM) is used to cycle through the different color variations or turn the

ambient lighting feature on or off. A LIN circuit is routed from the BCM to most of the Light Emitting Diodes (LEDs). There are 3 Light Emitting Diodes (LEDs) (red, blue and green) housed within each LED assembly. By illuminating various color combinations, the Light Emitting Diodes (LEDs) are able to produce different colors of ambient light.

The APIM uses software to monitor the user interface from the touchscreen. Based on the ambient lighting system selections made using the touchscreen, the APIM sends ambient light color request and ambient light intensity request messages over the communication network for color and brightness settings. The BCM retains the last color and brightness setting between uses.

Dark Car Feature

The dark car feature disables activation of courtesy lamps due to a door unlock, door ajar or removing the key from the ignition cylinder. The courtesy lamps may still be activated by the dome lamp switch, post crash alert, and perimeter and panic alarms.

The dark car feature is enabled/disabled through programmable parameters in the BCM.

Component Description

Door and Liftgate Ajar Switches

The door and liftgate ajar switches (ground switches) each receive a voltage signal from the BCM on independent circuits. When the door is closed, the door ajar switch is closed, routing the signal to ground. When the door is opened, the door ajar switch opens.

Interior Lamp

All of the interior demand lamps receive voltage from the demand lamp relay (integrated into the BCM) when the battery saver feature is not active. This is used by each interior lamp to power the demand LED within it.

All of the interior courtesy lamps receive voltage from the interior lighting output of the BCM. This is used by each interior lamp to power the courtesy LED within it.

The front interior lamp sends a message to the rear lamp(s) to activate/deactivate them through a LIN circuit.

Diagnosis and Testing

Interior Lighting

DTC (Diagnostic Trouble Code) Chart: BCM (Body Control Module)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

DTC	Description	Action <i>New; hover over Pinpoint Test links to show title</i>
B1175:01	Driver Door Ajar Switch: General Electrical Failure	- If the courtesy lamps are always on, GO to Pinpoint Test C - If the courtesy lamps are inoperative, GO to Pinpoint Test A
B1176:01	Passenger Door Ajar Switch: General Electrical Failure	- If the courtesy lamps are always on, GO to Pinpoint Test C - If the courtesy lamps are inoperative, GO to Pinpoint Test A
B11C0:01	Driver Side Rear Door Ajar Switch: General Electrical Failure	- If the courtesy lamps are always on, GO to Pinpoint Test C - If the courtesy lamps are inoperative, GO to Pinpoint Test A
B11C1:01	Passenger Side Rear Door Ajar Switch: General Electrical Failure	- If the courtesy lamps are always on, GO to Pinpoint Test C - If the courtesy lamps are inoperative, GO to Pinpoint Test A
B12C2:11	Puddle Lamp: Circuit Short To Ground	GO to Pinpoint Test B
B12C2:15	Puddle Lamp: Circuit Short To Battery or Open	- If the illuminated scuff plates are always on, GO to Pinpoint Test D - If one or both illuminated scuff plates are inoperative, GO to Pinpoint Test B
B1306:01	Liftgate Ajar Switch: General Electrical Failure	- If the courtesy lamps are always on, GO to Pinpoint Test C - If the courtesy lamps are inoperative, GO to Pinpoint Test J
B1313:11	Interior Lighting Output: Circuit Short To Ground	GO to Pinpoint Test B
B1313:15	Interior Lighting Output: Circuit Short To Battery or Open	- If the courtesy lamps are always on, GO to Pinpoint Test D - If the courtesy lamps are inoperative, GO to Pinpoint Test B
B145C:11	Ambient Lighting Power Supply Output: Circuit Short To Ground	GO to Pinpoint Test H
B145C:15	Ambient Lighting Power Supply Output: Circuit Short To Battery or Open	GO to Pinpoint Test H