

Headlamps

DTC Chart: BCM

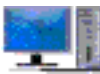
Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

BCM DTC Chart

DTC	Description	Action
B143B:11	Autolamp On Input: Circuit Short to Ground	GO to Pinpoint Test D
B143C:11	Headlamp Off Input: Circuit Short to Ground	GO to Pinpoint Test D
B143D:11	Headlamp On Input: Circuit Short to Ground	GO to Pinpoint Test D
B143E:11	Headlamp Switch Input: Circuit Short to Ground	GO to Pinpoint Test D
B1447:11	Parklamp On Switch Input: Circuit Short to Ground	GO to Pinpoint Test D
B1D00:11	Left Low Beam: Circuit Short to Ground	- For halogen or LED headlamps, GO to Pinpoint Test A - For High Intensity Discharge (HID) headlamps, GO to Pinpoint Test B

B1D00:15	Left Low Beam: Circuit Short to Battery or Open	• For halogen or LED headlamps, if the low beam is inoperative, GO to Pinpoint Test A • For halogen or LED headlamps, if the low beam is always on, GO to Pinpoint Test D • For High Intensity Discharge (HID) headlamps, if the low beam is inoperative, GO to Pinpoint Test B • For High Intensity Discharge (HID) headlamps, if the low beam is always on, GO to Pinpoint Test E
B1D01:11	Right Low Beam: Circuit Short to Ground	• For halogen or LED headlamps, GO to Pinpoint Test A • For High Intensity Discharge (HID) headlamps, GO to Pinpoint Test B
B1D01:15	Right Low Beam: Circuit Short to Battery or Open	• For halogen or LED headlamps, if the low beam is inoperative, GO to Pinpoint Test A • For halogen or LED headlamps, if the low beam is always on, GO to Pinpoint Test D • For High Intensity Discharge (HID) headlamps, if the low beam is inoperative, GO to Pinpoint Test B • For High Intensity Discharge (HID) headlamps, if the low beam is always on, GO to Pinpoint Test E
B1D02:11	Left High Beam Circuit: Circuit Short to Ground	GO to Pinpoint Test C
B1D02:15	Left High Beam Circuit: Circuit Short to Battery or Open	• If the high beam is inoperative, GO to Pinpoint Test C • If the high beam is always on, GO to Pinpoint Test F

B1D03:11	Right High Beam Circuit: Circuit Short to Ground	GO to Pinpoint Test C
B1D03:15	Right High Beam Circuit: Short to Battery or Open	• If the high beam is inoperative, GO to Pinpoint Test C • If the high beam is always on, GO to Pinpoint Test F
U1000:00	Solid State Driver Protection Active -Driver Disabled: No Sub Type Information	The module has temporarily disabled an output because an excessive current draw exists (such as a short to ground). The BCM cannot enable the output until the cause of the short is corrected. ADDRESS all other Diagnostic Trouble Codes (DTCs) first. After the cause of the concern is corrected, CLEAR the Diagnostic Trouble Codes (DTCs). REPEAT the self-test. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).
U3000:49	Control Module: Internal Electronic Failure	The module has permanently disabled an output because an excessive current draw fault (such as a short to ground) has exceeded the limits that the BCM can withstand. The cause of the excessive current draw MUST be corrected before a new BCM is installed. ADDRESS all other Diagnostic Trouble Codes (DTCs) first. After the cause of the concern is corrected,   Click here to access Guided Routine (BCM). For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).
For other BCM Diagnostic Trouble Codes (DTCs)	-	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) .

DTC Chart: SCCM

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).

SCCM DTC Chart

DTC	Description	Action
B1007:09	High-Beam Headlamp Switch: Component Failure	● INSTALL a new LH steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. ○ If the concern still exists, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
B1D36:09	Turn Indicator Switch: Component Failure	● INSTALL a new LH steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. ○ If the concern still exists, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).

All other SCCM Diagnostic Trouble Codes (DTCs)	-	REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components) .
--	---	--

DTC Chart: IPMA

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).

IPMA DTC Chart

DTC	Description	Action
B11C7:46	High Beam Sensor: Calibration / Parameter Memory Failure	GO to Pinpoint Test H
B11C7:97	High Beam Sensor: Component or System Operation Obstructed or Blocked	GO to Pinpoint Test H
All other IPMA Diagnostic Trouble Codes (DTCs)	-	REFER to: Lane Keeping System (419-07 Lane Keeping System) .

Symptom Chart(s)

Symptom Chart: Headlamps

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).

Symptom Chart

Condition	Possible Sources	Actions
A module does not respond to the diagnostic scan tool	• Fuse • Wiring, terminals or connectors • Module	REFER to: Communications Network (418-00 Module Communications Network) .
One or both low beams is inoperative - halogen or LED headlamps	Refer to the Pinpoint Test	GO to Pinpoint Test A
One or both low beams is inoperative - High Intensity Discharge (HID) headlamps	Refer to the Pinpoint Test	GO to Pinpoint Test B
One or both high beams is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test C
One or both low beams are on continuously - halogen or LED headlamps	Refer to the Pinpoint Test	GO to Pinpoint Test D
One or both low beams are on continuously - High Intensity Discharge (HID) headlamps	Refer to the Pinpoint Test	GO to Pinpoint Test E
One or both high beams are on continuously	Refer to the Pinpoint Test	GO to Pinpoint Test F
The flash-to-pass feature is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The automatic high beam feature is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test H
The manual headlamp leveling is inoperative/ does not operate correctly - except North America	Refer to the Pinpoint Test	GO to Pinpoint Test I

Pinpoint Tests

One Or Both Low Beams Is Inoperative - Halogen Or LED Headlamps

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1D00:11	Left Low Beam: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the LH low beam output circuit.
B1D00:15	Left Low Beam: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the LH low beam output circuit.
B1D01:11	Right Low Beam: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the RH low beam output circuit.
B1D01:15	Right Low Beam: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the RH low beam output circuit.
U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Information	This DTC sets when the BCM has temporarily shut down the output driver. The module has temporarily disabled an output because an excessive current draw exists (such as a short to ground). The BCM cannot enable the output until the cause of the short is corrected, the Diagnostic Trouble Codes (DTCs) have been cleared and a successful self-test is run. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic

		Modules, Description and Operation).
U3000:49	Control Module: Internal Electronic Failure	This DTC sets when the BCM has permanently shut down the output driver. The module has permanently disabled an output because an excessive current draw fault (such as a short to ground) has exceeded the limits that the BCM can withstand. CORRECT the cause of the excessive current draw before installing a new BCM. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- Bulb (halogen headlamps)
- Ballast (LED and headlamps)
- Headlamp assembly (LED headlamps)
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp assembly for damage.

PINPOINT TEST A : ONE OR BOTH LOW BEAMS IS INOPERATIVE - HALOGEN OR LED (LIGHT EMITTING DIODE) HEADLAMPS

A1 DETERMINE IF ONE OR BOTH LOW BEAMS ARE INOPERATIVE

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.

Are both low beams inoperative?

Yes	GO to A8
No	GO to A2

A2 CHECK FOR VOLTAGE FROM THE HEADLAMP LOW BEAM CIRCUIT

- Place the headlamp switch in the OFF position.
- Ignition OFF.
- Disconnect: With halogen headlamps, inoperative LH Headlamp C1021 or RH Headlamp C1041.
- Disconnect: With LED headlamps, inoperative LH Headlamp C1284 or RH Headlamp C1285.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-1		Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5		Ground

Is the voltage greater than 11 volts?

Yes	GO to A6
No	GO to A3

A3 REPEAT THE ON-DEMAND SELF-TEST AND CHECK FOR VOLTAGE HEADLAMP LOW BEAM CIRCUIT

- Place the headlamp switch in the OFF position.
- Using a diagnostic scan tool, perform the BCM self-test.
- Clear the Diagnostic Trouble Codes (DTCs) and repeat the self-test (required to enable the lamp output driver).
- Ignition OFF.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-1		Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5		Ground

Is the voltage greater than 11 volts?

Yes	For halogen headlamps, INSTALL a new low beam headlamp bulb. REFER to: Headlamp Bulb (417-01 Exterior Lighting) . For LED headlamps, GO to A7
No	GO to A4

A4 CHECK THE LOW BEAM CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Place the headlamp switch in the OFF position.
- Disconnect: BCM C2280G.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-1	Ω	Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A5
No	REPAIR the circuit. After the repair: If no Diagnostic Trouble Codes (DTCs) are present, TEST the system for normal operation. If any BCM Diagnostic Trouble Codes (DTCs) other than DTC U3000:49 are present, CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. TEST the system for normal operation. If DTC U3000:49 is present,   Click here to access Guided Routine (BCM).

A5 CHECK THE LOW BEAM CIRCUIT FOR AN OPEN

- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-1	Ω	C2280G-2

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5	Ω	C2280G-2

Is the resistance less than 3 ohms?

Yes	GO to A8
No	REPAIR the circuit.

A6 CHECK THE HEADLAMP GROUND CIRCUIT FOR AN OPEN

- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-1		C1041-3

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5		C1285-7

Is the voltage greater than 11 volts?

Yes	For halogen headlamps, INSTALL a new low beam headlamp bulb. REFER to: Headlamp Bulb (417-01 Exterior Lighting) . For LED headlamps, GO to A7
No	REPAIR the circuit in question.

A7 CHECK THE HEADLAMP INTERNAL HARNESS

- CHECK the internal headlamp harness for open or shorted circuits and damaged or pushed-out pins.

Is the headlamp internal harness OK?

Yes	INSTALL a new ballast. REFER to: Ballast (417-01 Exterior Lighting, Removal and Installation). CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. TEST the system for normal operation. If the condition returns, INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .
No	INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .

A8 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both Low Beams Is Inoperative - High Intensity Discharge (HID) Headlamps

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1D00:11	Left Low Beam: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the LH low beam output circuit.
B1D00:15	Left Low Beam: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the LH low beam output circuit.
B1D01:11	Right Low Beam: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the RH low beam output circuit.

B1D01:15	Right Low Beam: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the RH low beam output circuit.
U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Information	This DTC sets when the BCM has temporarily shut down the output driver. The module has temporarily disabled an output because an excessive current draw exists (such as a short to ground). The BCM cannot enable the output until the cause of the short is corrected, the Diagnostic Trouble Codes (DTCs) have been cleared and a successful self-test is run. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).
U3000:49	Control Module: Internal Electronic Failure	This DTC sets when the BCM has permanently shut down the output driver. The module has permanently disabled an output because an excessive current draw fault (such as a short to ground) has exceeded the limits that the BCM can withstand. CORRECT the cause of the excessive current draw before installing a new BCM. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- Headlamp relay
- Bulb
- Ballast
- Headlamp assembly
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp assembly for damage.

PINPOINT TEST B : ONE OR BOTH LOW BEAMS IS INOPERATIVE - HIGH INTENSITY DISCHARGE (HID) HEADLAMPS

B1 DETERMINE IF ONE OR BOTH LOW BEAMS ARE INOPERATIVE

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.

Are both low beams inoperative?

Yes	GO to B13
No	GO to B2

B2 CHECK FOR VOLTAGE FROM THE HEADLAMP RELAY SWITCH CIRCUIT

- Place the headlamp switch in the OFF position.
- Ignition OFF.
- Disconnect: inoperative headlamp relay.
- Ignition ON.
- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 5		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 5		Ground

Is the voltage greater than 11 volts?

Yes	GO to B3
No	VERIFY the BJB fuse 41 (15A) (LH headlamp) or 21 (15A) (RH headlamp) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.

B3 CHECK THE HEADLAMP RELAY OUTPUT

- Connect a fused jumper:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 5		LH Headlamp Relay Socket Pin 3

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
---------------	----------------------	---------------

RH Headlamp Relay Socket
Pin 5



RH Headlamp Relay Socket
Pin 3

Does the inoperative headlamp illuminate?

Yes REMOVE the fused jumper wire. GO to [B8](#)

No REMOVE the fused jumper wire. GO to [B4](#)

B4 CHECK THE HEADLAMP RELAY OUTPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: inoperative LH Headlamp C1758A or RH Headlamp C1759A.
- Measure:

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 3	Ω	C1759A-2

Is the resistance less than 3 ohms?

Yes GO to [B5](#)

No REPAIR the circuit.

B5 CHECK THE HEADLAMP GROUND CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-6	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to B6
No	REPAIR the circuit.

B6 CHECK THE HEADLAMP INTERNAL HARNESS

- CHECK the internal headlamp harness for open or shorted circuits and damaged or pushed-out pins.

Is the headlamp internal harness OK?

Yes	GO to B7
No	INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .

B7 CHECK THE BULB

- Substitute a known good High Intensity Discharge (HID) bulb.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.

Does the inoperative headlamp illuminate?

Yes	REMOVE the known good bulb. INSTALL a new bulb. REFER to: Headlamp Bulb (417-01 Exterior Lighting) .
No	REMOVE the known good bulb. INSTALL a new ballast. REFER to: Ballast (417-01 Exterior Lighting) .

B8 CHECK FOR VOLTAGE FROM THE HEADLAMP LOW BEAM CIRCUIT

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead

RH Headlamp Relay Socket Pin 2		Ground
--------------------------------	--	--------

Is the voltage greater than 11 volts?

Yes	GO to B9
No	GO to B10

B9 CHECK THE HEADLAMP RELAY GROUND CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2		Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new headlamp relay.
No	REPAIR the circuit.

B10 REPEAT THE ON-DEMAND SELF-TEST AND CHECK FOR VOLTAGE FROM THE HEADLAMP LOW BEAM CIRCUIT

- Place the headlamp switch in the OFF position.
- Using a diagnostic scan tool, perform the BCM self-test.
- Clear the Diagnostic Trouble Codes (DTCs) and repeat the self-test (required to enable the lamp output driver).
- Ignition OFF.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2		Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new headlamp relay.
No	GO to B11

B11 CHECK THE LOW BEAM CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Place the headlamp switch in the OFF position.
- Disconnect: BCM C2280G.
- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2	Ω	Ground

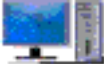
Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B12
------------	---------------------------

No REPAIR the circuit. After the repair:
If no Diagnostic Trouble Codes (DTCs) are present, TEST the system for normal operation.
If any BCM Diagnostic Trouble Codes (DTCs) other than DTC U3000:49 are present, CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. TEST the system for normal operation.
If DTC U3000:49 is present,   [Click here to access Guided Routine \(BCM\).](#)

B12 CHECK THE LOW BEAM CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2	Ω	C2280G-2

Is the resistance less than 3 ohms?

Yes	GO to B13
No	REPAIR the circuit.

B13 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both High Beams Is Inoperative

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

B1D02:11	Left High Beam Circuit: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the LH high beam output circuit.
B1D02:15	Left High Beam Circuit: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the LH high beam output circuit.
B1D03:11	Right High Beam Circuit: Circuit Short To Ground	A continuous memory and on-demand DTC that sets when the BCM detects a short to ground from the RH high beam output circuit.
B1D03:15	Right High Beam Circuit: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects an open from the RH high beam output circuit.
U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Information	This DTC sets when the BCM has temporarily shut down the output driver. The module has temporarily disabled an output because an excessive current draw exists (such as a short to ground). The BCM cannot enable the output until the cause of the short is corrected, the Diagnostic Trouble Codes (DTCs) have been cleared and a successful self-test is run. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).
U3000:49	Control Module: Internal Electronic Failure	This DTC sets when the BCM has permanently shut down the output driver. The module has permanently disabled an output because an excessive current draw fault (such as a short to ground) has exceeded the limits that the BCM can withstand. CORRECT the cause of the excessive current draw before installing a new BCM. For additional information on BCM Field Effect Transistor (FET) protection, REFER to: Module Controlled Functions - Overview (419-10 Multifunction Electronic Modules, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- LH steering column multifunction switch
- Bulb (halogen headlamps)
- Ballast (LED headlamps)
- Headlamp assembly (LED headlamps)
- SCCM
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp assembly for damage.

PINPOINT TEST C : ONE OR BOTH HIGH BEAMS IS INOPERATIVE

C1 CHECK THE LOW BEAM OPERATION	
• Ignition ON. • Place the headlamp switch in the HEADLAMPS position. • Place the LH steering column multifunction switch in the high beam position and observe the headlamps. • Place the LH steering column multifunction switch in the low beam position and observe the headlamps.	
Do the low beams illuminate?	
Yes	If an individual high beam is inoperative, GO to C3 If both high beams are inoperative, GO to C2
No	For halogen and LED headlamps, GO to Pinpoint Test A For High Intensity Discharge (HID) headlamps, GO to Pinpoint Test B
C2 CHECK THE LH (LEFT-HAND) MULTIFUNCTION SWITCH INPUT	

- Using a diagnostic scan tool, view SCCM Parameter Identifications (PIDs).
- Monitor the SCCM High Beam Switch (HIGH_BEAM_SW) PID while placing the LH steering column multifunction switch in the HIGH BEAM and LOW BEAM positions.

Do the PID values agree with the LH steering column multifunction switch position?

Yes	GO to C10
No	INSTALL a new LH steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the concern still exists, GO to C9

C3 CHECK FOR VOLTAGE FROM THE HEADLAMP HIGH BEAM CIRCUIT

- Ignition OFF.
- Place the headlamp switch in the OFF position.
- Disconnect: With halogen headlamps, inoperative LH Headlamp C1021 or RH Headlamp C1041.
- Disconnect: With LED headlamps, inoperative LH Headlamp C1284 or RH Headlamp C1285.
- Disconnect: With High Intensity Discharge (HID) headlamps, inoperative LH Headlamp C1758A or RH Headlamp C1759A.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position and the LH steering column multifunction switch in the HIGH BEAM position.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2		Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-6		Ground

- With High Intensity Discharge (HID) headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-1		Ground

Is the voltage greater than 11 volts?

Yes	For halogen headlamps, GO to C7 For LED headlamps, GO to C8 For High Intensity Discharge (HID) headlamps, INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .
No	GO to C4

C4 REPEAT THE ON-DEMAND SELF-TEST AND CHECK FOR VOLTAGE HEADLAMP LOW BEAM CIRCUIT

- Place the headlamp switch in the OFF position and the LH steering column multifunction switch in the LOW BEAM position.
- Using a diagnostic scan tool, perform the BCM self-test.
- Clear the Diagnostic Trouble Codes (DTCs) and repeat the self-test (required to enable the lamp output driver).
- Ignition OFF.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position and the LH steering column multifunction switch in the HIGH BEAM position.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2		Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-6		Ground

- With High Intensity Discharge (HID) headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-1		Ground

Is the voltage greater than 11 volts?

Yes	For halogen headlamps, INSTALL a new high beam headlamp bulb. REFER to: Headlamp Bulb (417-01 Exterior Lighting) . For LED headlamps, GO to C8 For High Intensity Discharge (HID) headlamps, INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .
No	GO to C5

C5 CHECK THE HIGH BEAM CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Place the headlamp switch in the OFF position.
- Disconnect: BCM C2280G.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2	Ω	Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-6	Ω	Ground

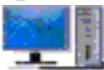
- With High Intensity Discharge (HID) headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-1	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to C6
No	REPAIR the circuit. After the repair: If no Diagnostic Trouble Codes (DTCs) are present, TEST the system for normal operation. If any BCM Diagnostic Trouble Codes (DTCs) other than DTC U3000:49 are present, CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. TEST the system for normal operation. If DTC U3000:49 is present,   Click here to access Guided Routine (BCM).

C6 CHECK THE HIGH BEAM SUPPLY CIRCUIT FOR AN OPEN

- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2	Ω	C2280G-6

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-6	Ω	C2280G-6

- With High Intensity Discharge (HID) headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-1	Ω	C2280G-6

Is the resistance less than 3 ohms?

Yes	GO to C10
No	REPAIR the circuit.

C7 CHECK THE HEADLAMP GROUND CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2		C1041-4

Is the voltage greater than 11 volts?

Yes	For halogen headlamps, INSTALL a new high beam headlamp bulb. REFER to: Headlamp Bulb (417-01 Exterior Lighting) .
No	REPAIR the circuit in question.

C8 CHECK THE HEADLAMP INTERNAL HARNESS

- CHECK the internal headlamp harness for open or shorted circuits and damaged or pushed-out pins.

Is the headlamp internal harness OK?

Yes	INSTALL a new ballast. REFER to: Ballast (417-01 Exterior Lighting, Removal and Installation). CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. TEST the system for normal operation. If the condition returns, INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .
No	INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .

C9 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Disconnect and inspect all SCCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the SCCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

C10 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both Low Beams Are On Continuously - Halogen Or LED Headlamps

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B143B:11	Autolamp On Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the autolamp on input circuit.
B143C:11	Headlamp Off Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the headlamp off input circuit.
B143D:11	Headlamp On Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the headlamp on input circuit.
B143E:11	Headlamp Switch Input: Circuit Short to Ground	A continuous memory DTC that sets when the BCM detects a short to ground on the headlamp switch input circuits.

B1447:11	Parklamp On Switch Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the parklamps on input circuit.
B1D00:15	Left Low Beam: Circuit Short to Battery or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the LH low beam output circuit.
B1D01:15	Right Low Beam: Circuit Short to Battery or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the RH low beam output circuit.

Possible Sources

- Wiring, terminals or connectors
- Headlamp switch
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp switch for damage.

PINPOINT TEST D : ONE OR BOTH LOW BEAMS ARE ON CONTINUOUSLY - HALOGEN OR LED (LIGHT EMITTING DIODE) HEADLAMPS

D1 CHECK LOW BEAMS OPERATION

- Ignition ON.
- Place the headlamp switch in the OFF position.
- Observe the operation of the LH and RH low beam.

Are both low beams illuminated?

Yes	GO to D2
No	GO to D7

D2 CHECK THE HEADLAMP SWITCH

- Ignition OFF.
- Disconnect: Headlamp Switch C205.
- Carry out the headlamp switch component test.
Refer to Wiring Diagrams Cell 149 for schematic and connector information.

Does the headlamp switch pass the component test?

Yes	GO to D3
No	INSTALL a new headlamp switch. REFER to: Headlamp Switch (417-01 Exterior Lighting, Removal and Installation).

D3 CHECK THE HEADLAMP SWITCH GROUND CIRCUIT FOR AN OPEN

Is the resistance less than 3 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE HEADLAMP SWITCH CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Disconnect: BCM C2280B.

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to D5

D5 CHECK THE HEADLAMP SWITCH CIRCUITS FOR A SHORT TO GROUND

Are the resistances greater than 10,000 ohms?

Yes	GO to D6
No	REPAIR the circuit in question.

D6 CHECK THE HEADLAMP SWITCH CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to D8
No	REPAIR the circuit in question.

D7 CHECK THE LOW BEAM CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM C2280G.
- Disconnect: With halogen headlamps, inoperative LH Headlamp C1021 or RH Headlamp C1041.
- Disconnect: With LED headlamps, inoperative LH Headlamp C1284 or RH Headlamp C1285.
- Ignition ON.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead

C1041-1		Ground
---------	--	--------

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-5		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to D8

D8 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both Low Beams Are On Continuously - High Intensity Discharge (HID) Headlamps

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B143B:11	Autolamp On Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the autolamp on input circuit.
B143C:11	Headlamp Off Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the headlamp off input circuit.
B143D:11	Headlamp On Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the headlamp on input circuit.
B143E:11	Headlamp Switch Input: Circuit Short to Ground	A continuous memory DTC that sets when the BCM detects a short to ground on the headlamp switch input circuits.

B1447:11	Parklamp On Switch Input: Circuit Short to Ground	An on-demand DTC that sets when the BCM detects a short to ground on the parklamps on input circuit.
B1D00:15	Left Low Beam: Circuit Short to Battery or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the LH low beam output circuit.
B1D01:15	Right Low Beam: Circuit Short to Battery or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the RH low beam output circuit.

Possible Sources

- Wiring, terminals or connectors
- Headlamp switch
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp switch for damage.

PINPOINT TEST E : ONE OR BOTH LOW BEAMS ARE ON CONTINUOUSLY - HIGH INTENSITY DISCHARGE (HID) HEADLAMPS

E1 CHECK LOW BEAMS OPERATION

- Ignition ON.
- Place the headlamp switch in the OFF position.
- Observe the operation of the LH and RH low beam.

Are both low beams illuminated?

Yes	GO to E2
No	GO to E7

E2 CHECK THE HEADLAMP SWITCH

- Ignition OFF.
- Disconnect: Headlamp Switch C205.
- Carry out the headlamp switch component test.
Refer to Wiring Diagrams Cell 149 for schematic and connector information.

Does the headlamp switch pass the component test?

Yes	GO to E3
No	INSTALL a new headlamp switch. REFER to: Headlamp Switch (417-01 Exterior Lighting, Removal and Installation).

E3 CHECK THE HEADLAMP SWITCH GROUND CIRCUIT FOR AN OPEN

Is the resistance less than 3 ohms?

Yes	GO to E4
No	REPAIR the circuit.

E4 CHECK THE HEADLAMP SWITCH CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Disconnect: BCM C2280B.

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to E5

E5 CHECK THE HEADLAMP SWITCH CIRCUITS FOR A SHORT TO GROUND

Are the resistances greater than 10,000 ohms?

Yes	GO to E6
-----	--------------------------

No	REPAIR the circuit in question.
----	---------------------------------

E6 CHECK THE HEADLAMP SWITCH CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to E10
-----	---------------------------

No	REPAIR the circuit in question.
----	---------------------------------

E7 CHECK THE HEADLAMP RELAY OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: LH or RH Headlamp Relay.
- Ignition ON.

Does the incorrectly operating headlamp illuminate?

Yes	REPAIR the circuit.
-----	---------------------

No	GO to E8
----	--------------------------

E8 CHECK THE LOW BEAM CIRCUIT FOR VOLTAGE

- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2		Ground

Is any voltage present?

Yes	GO to E9
No	INSTALL a new headlamp relay.

E9 CHECK THE LOW BEAM CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM C2280G.
- Ignition ON.
- Measure:

Click to display connectors

LH Low Beam

Positive Lead	Measurement / Action	Negative Lead
LH Headlamp Relay Socket Pin 2		Ground

Click to display connectors

RH Low Beam

Positive Lead	Measurement / Action	Negative Lead
RH Headlamp Relay Socket Pin 2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to E10

E10 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both High Beams Are On Continuously

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

B1D02:15	Left High Beam Circuit: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the LH high beam output circuit.
B1D03:15	Right High Beam Circuit: Circuit Short To Battery Or Open	A continuous memory and on-demand DTC that sets when the BCM detects a short to voltage from the RH high beam output circuit.

Possible Sources

- Wiring, terminals or connectors
- LH steering column multifunction switch
- SCCM
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the LH steering column multifunction switch for damage.

PINPOINT TEST F : ONE OR BOTH HIGH BEAMS ARE ON CONTINUOUSLY

F1 CHECK HIGH BEAMS OPERATION

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- Place the LH steering column multifunction switch in the LOW BEAM position and observe the headlamps.
- Observe the operation of the LH and RH headlamps.

Are both high beams illuminated?

Yes	GO to F2
No	GO to F3

F2 CHECK THE LH (LEFT-HAND) MULTIFUNCTION SWITCH INPUT

- Using a diagnostic scan tool, view SCCM Parameter Identifications (PIDs).
- Monitor the SCCM High Beam Switch (HIGH_BEAM_SW) PID while placing the LH steering column multifunction switch in the HIGH BEAM and LOW BEAM positions.

Do the PID values agree with the LH steering column multifunction switch position?

Yes	GO to F5
No	INSTALL a new LH steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the concern still exists, GO to F4

F3 CHECK HIGH BEAM VOLTAGE SUPPLY CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM C2280G.
- Disconnect: With halogen headlamps, inoperative LH Headlamp C1021 or RH Headlamp C1041.
- Disconnect: With LED headlamps, inoperative LH Headlamp C1284 or RH Headlamp C1285.
- Disconnect: With High Intensity Discharge (HID) headlamps, inoperative LH Headlamp C1758A or RH Headlamp C1759A.
- Ignition ON.
- For halogen headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1041-2		Ground

- For LED headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-6		Ground

- With High Intensity Discharge (HID) headlamps, measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759A-1		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to F5

F4 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Disconnect and inspect all SCCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the SCCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

F5 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Flash-To-Pass Feature Is Inoperative

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

Possible Sources

- LH steering column multifunction switch
- SCCM
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the LH steering column multifunction switch for damage.

PINPOINT TEST G : THE FLASH-TO-PASS FEATURE IS INOPERATIVE

G1 CHECK THE HIGH BEAM OPERATION

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS ON position.
- Activate and deactivate the high beams using the high beam function of the LH steering column multifunction switch.

Do the high beams operate correctly?

Yes	GO to G2
No	If one or both high beams are inoperative, GO to Pinpoint Test C If one or both high beams are always on, GO to Pinpoint Test F

G2 CHECK THE LH (LEFT-HAND) MULTIFUNCTION SWITCH INPUT

- Using a diagnostic scan tool, view SCCM Parameter Identifications (PIDs).
- Monitor the SCCM Flash to Pass Switch (FLASH-to-PASS) PID while placing the LH steering column multifunction switch in the FLASH-TO-PASS position.

Does the PID value agree with the LH steering column multifunction switch position?

Yes	GO to G4
No	INSTALL a new LH steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the concern still exists, GO to G3

G3 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Disconnect and inspect all SCCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the SCCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

G4 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM and all related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Automatic High Beam Feature Is Inoperative

Normal Operation and Fault Conditions

The IPMA controls the automatic high beam feature when active.

The IPMA turns the high beam headlamps on when the following conditions are met:

- The feature has been enabled using the message center
- The headlamp switch is in the AUTOLAMPS position and the autolamps feature has turned the exterior lamps on
- The vehicle speed is greater than 51 km/h (32 mph)
- The IPMA determines the ambient lighting conditions are dark enough
- The IPMA does not detect any light source that can be interpreted as an illuminated vehicle lamp

The IPMA turns the high beams off if any of the following occur:

- The IPMA detects any light source that can be interpreted as an illuminated vehicle lamp
- The IPMA determines the ambient lighting conditions are not dark enough
- The vehicle speed falls below 44 km/h (27 mph)
- The autolamps are turned off
- The IPMA determines the view is blocked

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B11C7:46	High Beam Sensor: Calibration / Parameter Memory Failure	A continuous memory DTC that sets when the IPMA detects a software problem with the calibrations.
B11C7:97	High Beam Sensor: Component or System Operation Obstructed or Blocked	A continuous memory and on-demand DTC that sets when the IPMA detects a blockage in front of the high beam sensor.

Possible Sources

- Windshield debris
- IPMA (part of the interior rear view mirror)

PINPOINT TEST H : THE AUTOMATIC HIGH BEAM FEATURE IS INOPERATIVE

NOTE: In cold weather conditions (4°C [40°F] or less), the auto high beams are inhibited for 10 minutes to allow the camera windshield defrost heater to clear the windshield in front of the auto high beam camera.

H1 VERIFY THE HIGH BEAM HEADLAMP OPERATION

- Place the headlamp switch in the HEADLAMPS ON position.
- Place the LH steering column multifunction switch in the HIGH BEAM position while observing the headlamps.

Do the high beam headlamps illuminate?

Yes	GO to H2
No	GO to Pinpoint Test C

H2 CHECK FOR IPMA (IMAGE PROCESSING MODULE A) DIAGNOSTIC TROUBLE CODE (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform the IPMA self-test.

Is DTC B11C7:97 present?

Yes	GO to H4
No	If no Diagnostic Trouble Code (DTCs) are present or only DTC B11C7:46 is present, GO to H3 If any other IPMA Diagnostic Trouble Code (DTCs) are present, REFER to: Lane Keeping System (419-07 Lane Keeping System) .

H3 CARRY OUT THE IPMA (IMAGE PROCESSING MODULE A) PMI (PROGRAMMABLE MODULE INSTALLATION) AND RETEST

- Carry out the IPMA PMI.
REFER to: Module Configuration (418-01 Module Configuration) .
- Clear the Diagnostic Trouble Codes (DTCs). Repeat the self-test.

Is the concern still present?

Yes	INSTALL a new interior rear view mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by a temporary sensor obstruction.

H4 VERIFY THAT THE AUTOMATIC HIGH BEAM SENSOR IS NOT BLOCKED

- Visually verify the automatic high beam sensor is not blocked. Sources of blockage can include:
 - stickers, window decals or tags.
 - non-OEM window tinting.

Was the automatic high beam sensor blocked?

Yes	If possible, REMOVE the blockage. TEST the system for normal operation. If the blockage cannot be removed, REVIEW the operation of the automatic high beams with the customer.
No	INSTALL a new interior rear view mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).

The Manual Headlamp Leveling Is Inoperative/Does Not Operate Correctly - Except North America

Refer to Wiring Diagrams Cell 85 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Exterior Lighting (417-01 Exterior Lighting) .

Possible Sources

- Fuse.
- Wiring, terminals or connectors
- Headlamp assembly
- Headlamp switch

Visual Inspection and Diagnostic Pre-checks

- Inspect the headlamp assembly for damage.
- Inspect the headlamp switch for damage.
- VERIFY BCM fuse 20 (7.5A) is OK.
- VERIFY BJB fuse 108 (10A) is OK.

PINPOINT TEST I : THE MANUAL HEADLAMP LEVELING IS INOPERATIVE/DOES NOT OPERATE CORRECTLY - EXCEPT NORTH AMERICA

I1 CHECK HEADLAMP LEVELING OPERATION

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- While observing both headlamps,
 - Press and release the headlamp leveling switch.
 - Adjust the headlamp leveling setting to 4.
 - Press the headlamp leveling switch until it locks down.

Does either headlamp change beam change?

Yes	GO to I3
No	GO to I2

I2 CHECK FOR VOLTAGE TO THE HEADLAMP SWITCH

- Ignition OFF.
- Place the headlamp switch in the OFF position.
- Disconnect: Headlamp switch C205.

Is the voltage greater than 11 volts?

Yes	GO to I5
No	VERIFY the BCM fuse 20 (7.5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagram manual to identify the possible causes for the short circuit.

I3 CHECK THE INOPERATIVE HEADLAMP LEVELING MOTOR VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: Inoperative LH Headlamp C1758B or RH Headlamp C1759B.
- Ignition ON.
- Measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759B-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to I4
No	VERIFY the BJB fuse 108 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagram manual to identify the possible causes for the short circuit.

I4 CHECK THE INOPERATIVE HEADLAMP LEVELING MOTOR GROUND CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1759B-1		C1759B-3

Is the voltage greater than 11 volts?

Yes	GO to I5
No	REPAIR the circuit.

I5 CHECK THE HEADLAMP LEVELING CIRCUIT TO THE HEADLAMP LEVELING MOTOR FOR AN OPEN

- Disconnect: Headlamp switch C205 (if not previously disconnected).
- Disconnect: LH Headlamp C1758B and RH Headlamp C1759B (both inoperative).
- Disconnect: LH Headlamp C1758B (LH only inoperative).
- Disconnect: RH Headlamp C1759B (RH only inoperative).
- Measure:

Click to display connectors

RH only inoperative

Positive Lead	Measurement / Action	Negative Lead
C1759B-2	Ω	C205-1

Is the resistance less than 3 ohms?

Yes	If only the LH or RH is inoperative, INSTALL a new headlamp assembly. REFER to: Headlamp Assembly (417-01 Exterior Lighting) .
------------	---

If both are inoperative, GO to [I6](#)

No	REPAIR the circuit.
-----------	---------------------

I6 CHECK THE HEADLAMP LEVELING CIRCUIT TO THE HEADLAMP LEVELING MOTOR FOR A SHORT TO VOLTAGE

- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit.
------------	---------------------

No	GO to I7
-----------	--------------------------

I7 CHECK THE HEADLAMP LEVELING CIRCUIT TO THE HEADLAMP LEVELING MOTOR FOR A SHORT TO GROUND

- Ignition OFF.

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new headlamp switch. REFER to: Headlamp Switch (417-01 Exterior Lighting, Removal and Installation).
------------	---

No	REPAIR the circuit.
-----------	---------------------