

	exterior mirror. REFER to: Exterior Mirror - Vehicles With: Long Arm Mirrors . REFER to: Exterior Mirror - Vehicles With: Short Arm Mirrors .
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DIAGNOSIS AND TESTING > REAR VIEW MIRRORS > PINPOINT TESTS > PINPOINT TEST G : THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR IS INOPERATIVE OR ALWAYS IN A DARKENED STATE

Refer to Power Mirrors for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description .

DTC	Description	Fault Trigger Conditions
B1286:14	Interior Mirror: Circuit Short To Ground or Open	A continuous memory DTC that sets in the IPMA when the IPMA detects a short to ground on the LH exterior auto-dimming mirror output circuit.

Possible Causes

- Wiring, terminals or connectors
- LH exterior mirror glass
- LH exterior mirror
- Interior auto-dimming mirror concern
- IPMA (integral to the interior auto-dimming mirror)

DIAGNOSIS AND TESTING > REAR VIEW MIRRORS > PINPOINT TESTS > PINPOINT TEST G : THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR IS INOPERATIVE OR ALWAYS IN A DARKENED STATE > PINPOINT TEST G : THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR IS INOPERATIVE OR ALWAYS IN A DARKENED STATE



NOTE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

G1 VERIFY THE INTERIOR AUTO-DIMMING MIRROR FORWARD AND REARWARD FACING SENSORS ARE NOT BLOCKED

Visually verify the forward and rearward facing sensors are not blocked or obstructed. Sources

of obstruction can include:

Stickers, window decals or tags.

Tool road or parking passes.

Fold-down screens for TVs or DVD players.

Non-OEM window tinting.

Dirt and debris.

Camper shells.

Decorative objects hung from mirror.

Are either of the sensors blocked?

Yes	If possible, REMOVE the obstruction. If it is not possible to remove the obstruction, ADVISE the customer the blockage will affect the operation of the interior and LH exterior auto-dimming mirrors.
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No	GO to G2
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G2 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - DAYLIGHT CONDITIONS

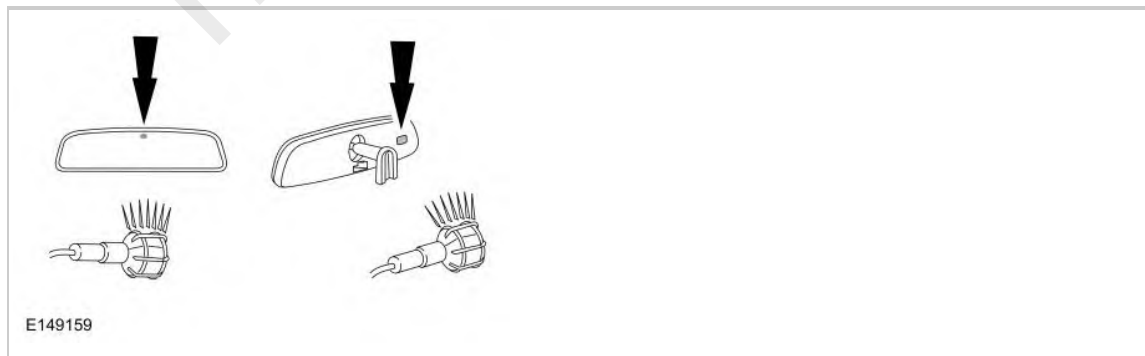
Ignition ON.

Select PARK.



NOTE: Base electrochromatic mirror shown. IPMA mirror is similar.

Use a bright lamp to illuminate the forward facing sensor and the rearward facing sensor. The mirror should adjust to a high reflectance state (mirror will be clear).



Did the interior auto-dimming mirror adjust to a high reflectance (clear) state?

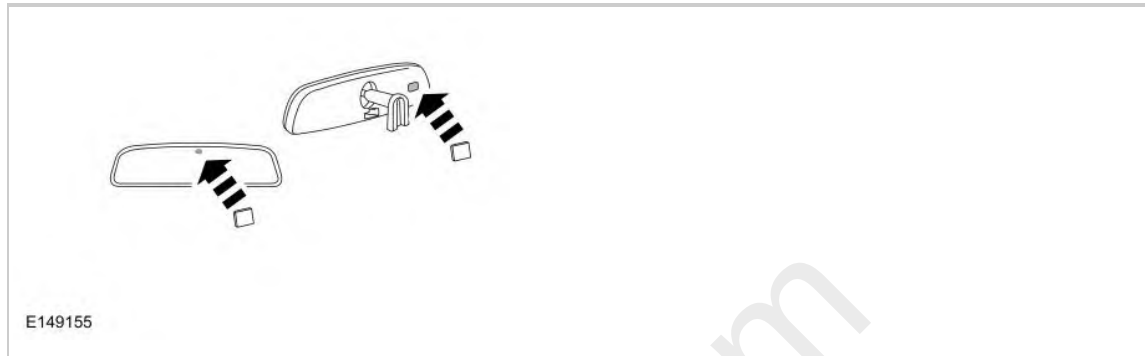
Yes	GO to G3
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No	GO to Pinpoint Test H
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G3 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - NIGHTTIME CONDITIONS

 **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Cover the forward and rearward facing sensors with black electrical tape or other dark material. The mirror should adjust to a high reflectance state (mirror will be clear).



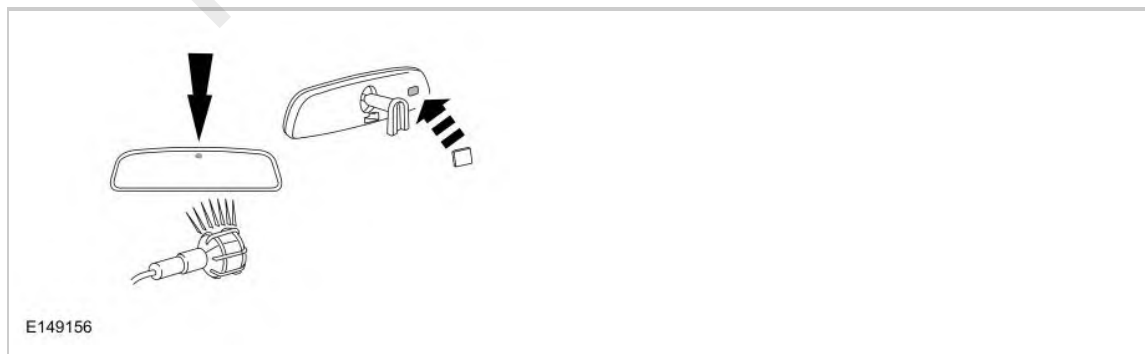
Did the interior auto-dimming mirror adjust to a high reflectance (clear) state?

Yes	GO to G4
No	GO to Pinpoint Test H

G4 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - NIGHTTIME CONDITIONS WITH GLARE

 **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Remove the black electrical tape or other dark material from the rearward facing sensor.



Use a bright light to illuminate the rearward facing sensor. The mirror should adjust to a lower reflectance state (mirror will be dark).

Did the interior auto-dimming mirror adjust to a low reflectance (dark) state?

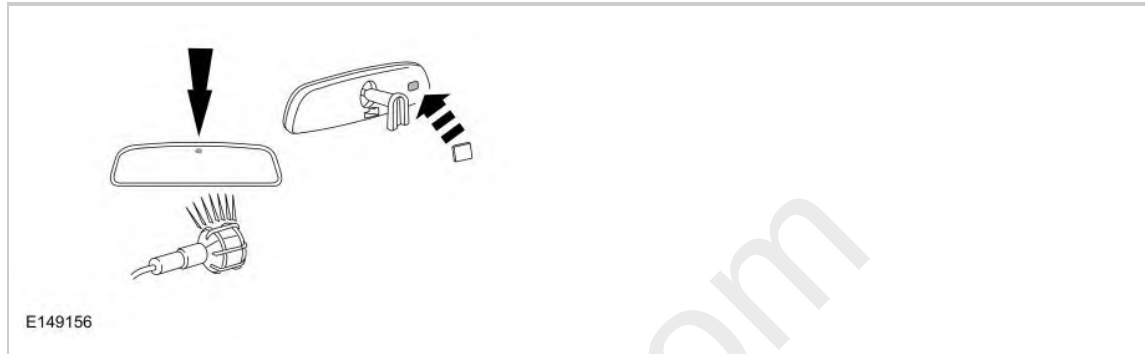
Yes	GO to G5
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No	GO to Pinpoint Test H
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G5 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - VEHICLE IN REVERSE AND NIGHTTIME CONDITIONS WITH GLARE

 **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Continue to illuminate the rearward facing sensor with the forward facing sensor covered.



Select REVERSE.

Did the interior auto-dimming mirror adjust to a high reflectance (clear) state after reverse was selected?

Yes	If the LH exterior auto-dimming mirror is inoperative, GO to G6 If the LH exterior auto-dimming mirror is always in a low reflectance (dark) state, GO to G9
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No	GO to Pinpoint Test H
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G6 CHECK FOR VOLTAGE AT THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR WHILE SIMULATING NIGHTTIME CONDITIONS WITH GLARE

Select PARK.

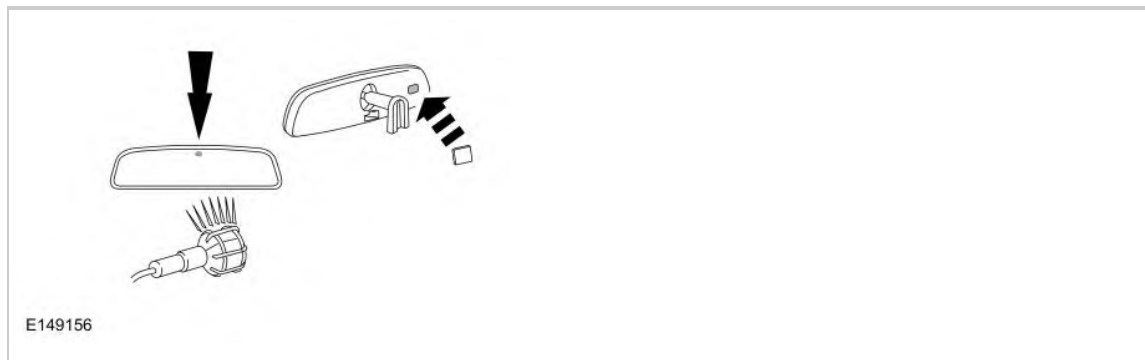
Ignition OFF.

Disconnect: LH Exterior Mirror C516 (without memory mirrors) or LH Exterior Mirror C521 (with memory mirrors).

Ignition ON.

 **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Illuminate the rearward facing sensor with the forward facing sensor covered.



Measure:

Without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2		C516-6

With memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C521-2		C521-6

Is any voltage present?

Yes	GO to G12
No	GO to G7

G7 CHECK FOR AN OPEN BETWEEN THE LH (LEFT-HAND) EXTERIOR MIRROR AND THE INTERIOR AUTO-DIMMING MIRROR

Ignition OFF.

Disconnect: Interior Auto-Dimming Mirror C9039 (without IPMA) or Interior Auto-Dimming Mirror C9012 (with IPMA).

Measure:

Without IPMA, without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2	Ω	C9039-11
C516-6	Ω	C9039-15

Without IPMA, with memory mirrors

Positive Lead	Measurement / Action	Negative Lead
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C521-2	Ω	C9039-11
C521-6	Ω	C9039-15

With IPMA, without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2	Ω	C9012-5
C516-6	Ω	C9012-6

With IPMA, with memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C521-2	Ω	C9012-5
C521-6	Ω	C9012-6

Are the resistances less than 3 ohms?

Yes	GO to G8
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No	REPAIR the affected circuit.
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G8 CHECK THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR CIRCUITS FOR A SHORT TOGETHER

Measure:

Without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2	Ω	C516-6

With memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C521-2	Ω	C521-6

Is the resistance greater than 10, 000 ohms?

Yes	GO to G9
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No	REPAIR the affected circuits.
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G9 CHECK THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR CIRCUITS FOR VOLTAGE WHILE SIMULATING NIGHTTIME CONDITIONS

Select PARK.

Ignition OFF.

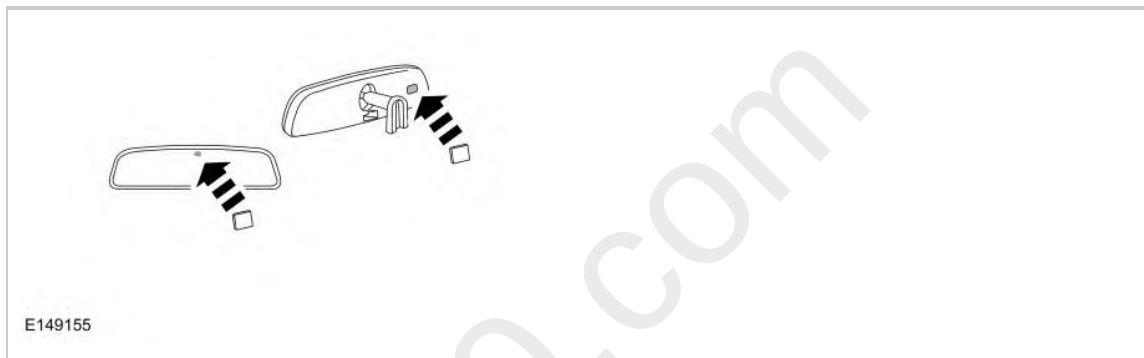
Disconnect: LH Exterior Mirror C516 (without memory mirrors) or LH Exterior Mirror C521 (with memory mirrors).

Ignition ON.



NOTE: Covering the sensor(s) with a finger or hand is not adequate for this step.

Cover the forward and rearward facing sensors with black electrical tape or other dark material. The mirror should adjust to a high reflectance state (mirror will be clear).



Measure:

Without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2		C516-6

With memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C521-2		C521-6

Is any voltage present?

Yes	GO to G10
No	GO to G12

G10 CHECK THE LH (LEFT-HAND) EXTERIOR AUTO-DIMMING MIRROR CIRCUITS FOR A SHORT TO VOLTAGE WITH THE INTERIOR AUTO DIMMING MIRROR DISCONNECTED

Ignition OFF.

Disconnect: Interior Auto-Dimming Mirror C9039 (without IPMA) or Interior Auto-Dimming Mirror C9012 (with IPMA).

Ignition ON.

Measure:

Without memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C516-2		Ground
C516-6		Ground

With memory mirrors

Positive Lead	Measurement / Action	Negative Lead
C521-2		Ground
C521-6		Ground

Is any voltage present?

Yes	REPAIR the affected circuit.
No	If the vehicle is equipped with an IPMA, GO to G11 If the vehicle is not equipped with an IPMA, INSTALL a new interior auto-dimming mirror. REFER to: Exterior Mirror - Vehicles With: Long Arm Mirrors . REFER to: Exterior Mirror - Vehicles With: Short Arm Mirrors .

G11 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

Disconnect and inspect all IPMA connectors and 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 IPMA connectors and related in-line connectors. Make sure they seat and latch correctly.

Operate the system to 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 the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPMA (integral to the interior auto-dimming mirror). REFER to: Interior Rear View Mirror .
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