

## LED Illumination Package (Interior and Exterior)

**Part Number: 00016-00069**

**Accessory Code: LL1000**



## Conflicts

Note: Vehicles with Option Code BZ

## Kit Content

Item #	Quantity Req'd.	Description
1	4	Puddle Lights and Harnesses
2	1	Control Module
3	1	Power Harness
4	1	Hardware bag
5	2	Foot-well Lights
6	1	Foot-well Harness
7	4	Mounting Brackets

## Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	15	Wire Ties
2	4	Foil Tape
3	5	Foam Tape
4	14	Plastic Rivets
5	3	Red T-Taps
6	3	Black T-Tap
7	1	Blue T-Tap
8	8	Mounting Bracket Bolts
9	8	Mounting Bracket Nuts

### Additional Items Needed For Install

Item #	Quantity Req'd.	Description

## Recommended Tools

<b>Safety Tools</b>	
<b>Special Tools</b>	
<b>Installation Tools</b>	
Phillips Screwdriver	
Trim Removal Tool	
Pliers	Rivet Gun
Drill	Torque Wrench
11/64" Drill Bit	3mm Allen wrench
7/16" Drill Bit	Fish Tape
7 & 10mm Sockets/Ratchet	Utility Knife
<b>Special Chemicals</b>	
VPC Approved Sealant	

### Color Applicability/Trim Level

[illegible]

## General Applicability


All models without option code BZ


## Recommended Sequence of Application


Item #	Accessory	
1		
2		
3		


\*Mandatory


### Legend


 **STOP:** Damage to the vehicle may occur. Do not proceed until process has been complied with.

 **OPERATOR SAFETY:** Use caution to avoid risk of injury.

 **CAUTION:** A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.

 **TOOLS & EQUIPMENT:** Used in Figures calls out the specific tools and equipment recommended for this process.

 **REVISION MARK:** This mark highlights a change in installation with respect to previous issue.

 **SAFETY TORQUE:** This mark indicates that torque is related to safety.

**SPECIAL NOTE: Installation Sequences**

After TMS and Safety mandated preparatory steps have been taken, the installation sequence is the suggested method for completing the accessory installation. In some instances the suggested sequence is written for one associate to install and in others the sequence is given as part of a team accessory installation. Unless otherwise stated in the document, the associates may perform the installation steps in any order to make the installation as efficient as possible while maintaining consistent quality.

## Procedure

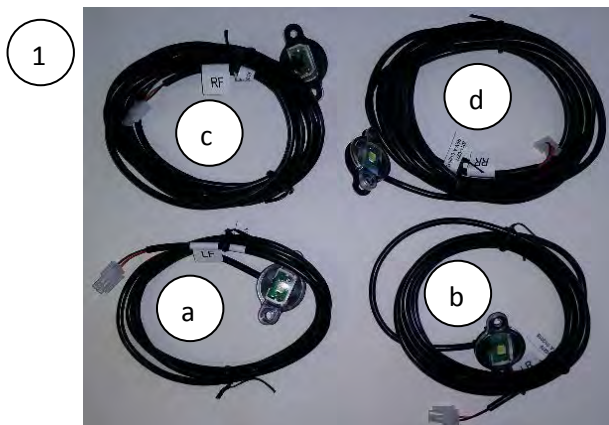
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

This document covers such items as:

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, re-checking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Item	Quantity	Description	Part Number
1.	4	Puddle Lights and Harnesses	
(a)	1	LF (4.9') Puddle Light	00016-00064-05
(b)	1	LR (7.8') Puddle Light	00016-00064-06
(c)	1	RF (10.8') Puddle Light	00016-00064-07
(d)	1	RR (13.8') Puddle Light	00016-00064-08
2.	1	Control Module	00016-00064-04
3.	1	Power Harness	00016-00064-01
4.	1	Foot-well Harness	00016-00064-02
5.	2	Foot-well Lights	00016-00064-03
6.	4	Puddle Light Mounting Brackets	00016-00069-01
7.	1	Hardware Bag	



## VEHICLE PREPERATION:



1. DISCONNECT THE NEGATIVE BATTERY CABLE FOR 90 SECONDS BEFORE BEGINNING INSTALLATION, TO AVOID UNINTENDED AIR BAG DEPLOYMENT. NOTE AND RECORD ANY ANTI- THEFT RADIO CODES PRIOR TO DISCONNECTING.
2. Mark and drill locations for the rear light pod brackets using 11/64" drill bit. These should be centered in line with the 3rd grommet from the rear for both C & D cabs. (Fig.1)

**NOTE: Flip brackets to the outside of the pinch weld and hold flush to the bottom to mark the drill locations.**

3. Mark and drill locations for the front light pod brackets using 11/64" drill bit. They should be centered in line with the 3rd grommet from the front, for both C&D cabs (Figure 2).
4. Install all 4 mounting brackets using included bracket hardware. Brackets should be in-board of pinch weld, with bolts being fed through the pinch weld then the bracket (Figure 3).

**NOTE: Apply VPC approved sealant to all pinch weld holes before mounting brackets.**

5. Mount appropriate light in corresponding location (RR-Right Rear) securing in place with plastic rivets.

**NOTE: Arrow on puddle light lens must face out, away from bracket tabs .**



Figure 1



Figure 2



Figure 3

6. Remove left and right front drain plugs (Figure 4).

7. Remove Front Door Scuff Plate (LH)

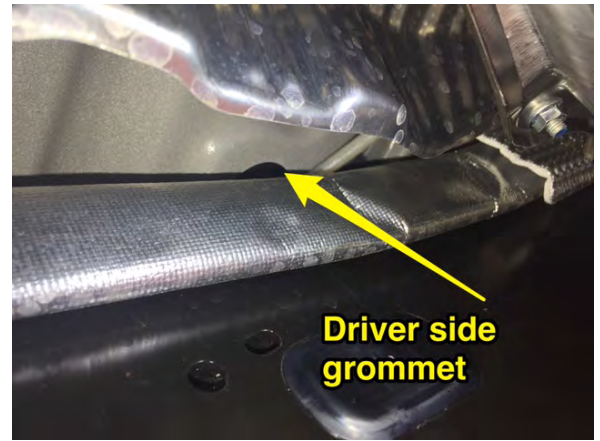


Figure 4

- (a) Detach the 6 claws and the 3 clips and remove the front door scuff plate, LH (Figure 5).

8. Remove the Cowl Side Trim Board LH (Figure 6)

- (a) Remove the nut.

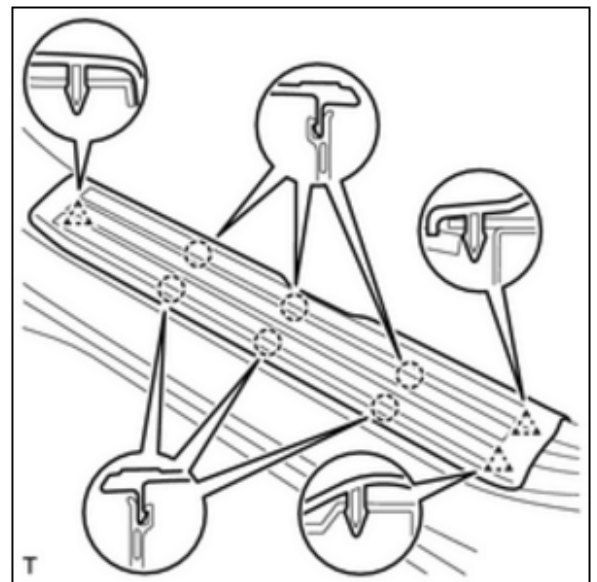


Figure 5

- (b) Detach the 2 clips and remove the cowl side trim board LH.

- (c) Repeat for RH side.

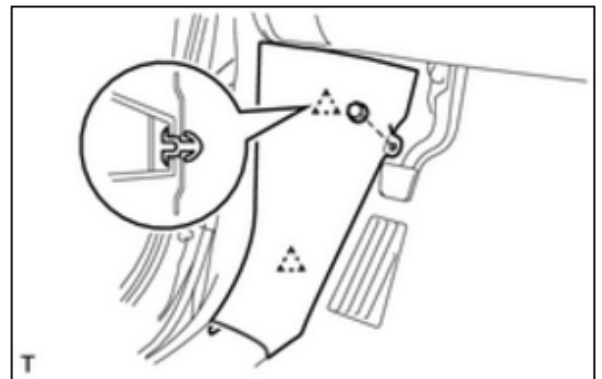


Figure 6



9. Route rear harnesses forward along frame rails, wire tying to factory harness on passenger side and e-brake cable on driver side. Secure front harnesses in the same fashion (Figure 7 & 7b).



Figure 7

10. Using a sharp blade, cut an 'X' in the middle of each drain plug, in order to route the harnesses through and into the vehicle.

11. Lift carpet to gain access to the drain holes and route puddle light harnesses up and into the vehicle.



Figure 7b

12. Re-install drain plugs, with both front and rear harnesses threaded through the plugs (Figure 8).



Figure 8

13. Seal harnesses to drain plugs using VPC approved sealant. Make sure to work sealant completely around wires for a water tight seal.

14. Remove foam foot-board with phillip head screw driver and route passenger harnesses towards the center console, taping in place using foam tape (Figure 9).



Figure 9

15. Fish harnesses over to driver side foot-well.

16. Route driver side harnesses under foam foot-board towards kick panel. (Figure 10) Tape in place, using foam tape (Figure 11).



Figure 10



17. Remove Instrument Panel Lower Finish Panel Sub-Assembly, LH (Figure 12).

(a) Operate the tilt lever to fully extend and raise the steering column.

(b) Apply protective tape as shown in the illustration.



Figure 11

**Text in Illustration**

*1	Protective Tape
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(c) Remove the 2 bolts <A>.

(d) Detach the 9 clips, claws and remove the lower instrument panel finish panel sub-assembly, LH

(e) Disconnect each connector.

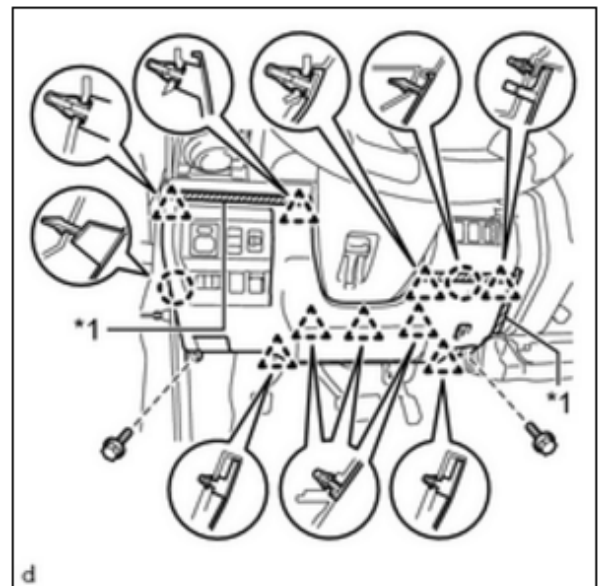


Figure 12

- (f) Detach the 3 hooks and disconnect the hood lock control lever from the lower instrument panel sub-assembly LH.

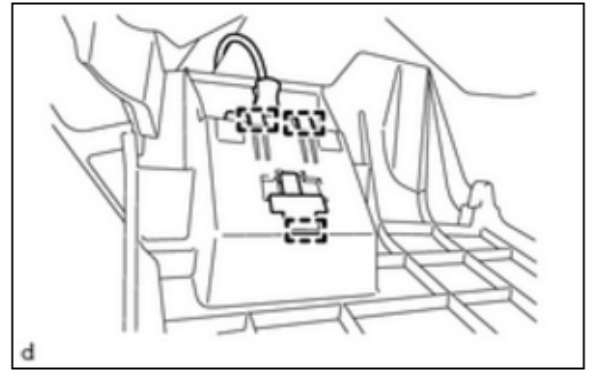
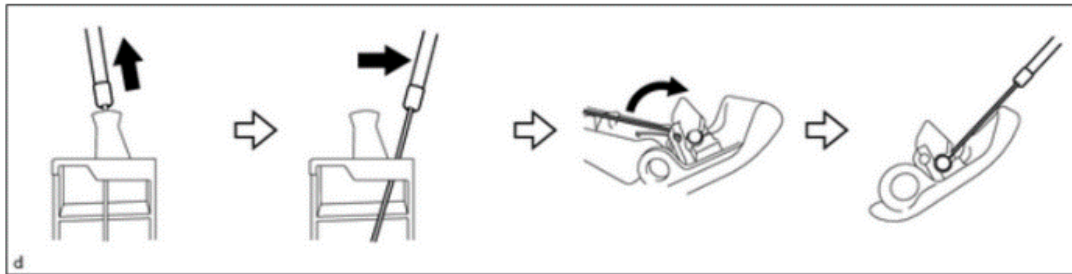


Figure 13

- (g) Pull and slide the hook lock control cable, rotate the hood lock control cable, and then disconnect the hood lock control cable from the hood lock control lever.



## 18. Remove the No. 2 Instrument Panel Under Cover Sub-Assembly.

- (a) Detach the clip, 4 claws and 2 guides and remove the No. 2 instrument panel under cover sub-assembly.

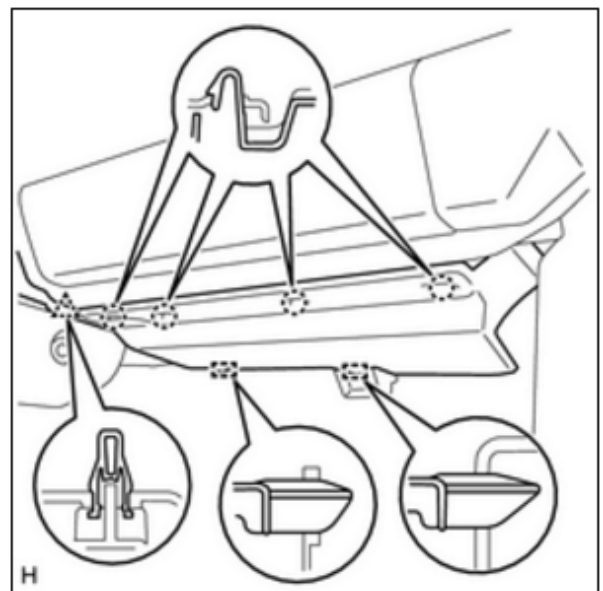


Figure 14

19. Make a ½" x ½" notch in the middle of the driver side lower finish panel (Figure 15).



Figure 15

20. Align foot-well light with the flat side facing towards the seats. Using an 11/64" drill bit drill mounting holes. Attach using included rivets.

21. Mark where passenger side foot-well light will be mounted, ½" from front rib and ½" from right side rib (Figure 16).



Figure 16



22. Drill a 7/16" hole where the foot-well light will be mounted.

23. Align light with the connector through the hole and flat side facing the seats. Using an 11/64" drill bit, drill mounting holes. Mount light using included rivets.

24. Route the long side of the foot-well power harness from the driver side to the passenger side, securing to the blower motor factory harness (Figure 17).



Figure 17

25. Connect foot-well light and reinstall the No. 2 instrument panel under cover sub-assembly.



26. Using a Red T-tap, connect the **Red** wire from the puddle light power harness to the **Blue** wire of the factory Foot Light harness (Figure 18).

27. Using a Red T-tap, connect the **Black** wire of the puddle light power harness to the **Brown** wire of the factory Foot Light harness (Figure 18).

28. Connect the **Red** wire from the foot-well harness to the **Red** wire from the puddle light power harness. Connect the **White** wire from the foot-well harness to the **White** wire from the puddle light harness.

29. Using a Blue T-tap, connect the **Yellow** wire to the **Red** wire in **Pin 6** of the **DB** connector at the JB.

30. Using a Red T-tap, connect the **Black** wire to the **White/Black** wire in **PIN 5** of the J104 headlight leveling switch.

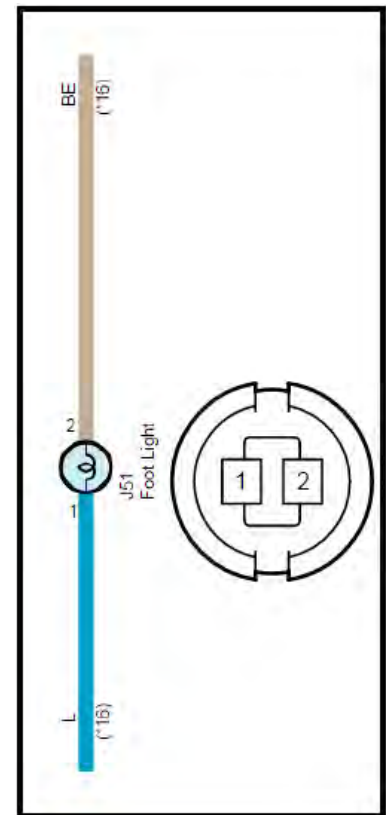


Figure 18

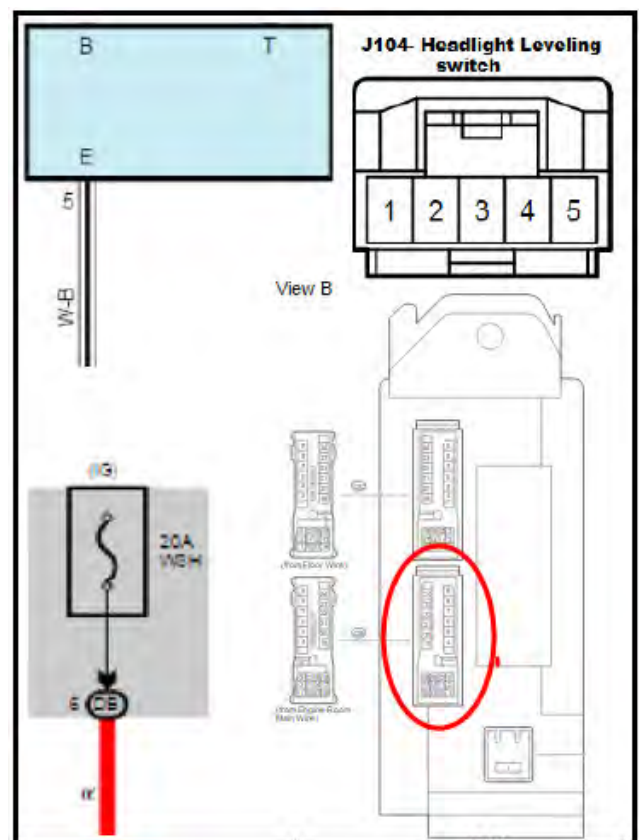


Figure 19

31. Secure all passenger side harnesses behind the driver side lower instrument panel air bag assembly wire tying to the factory harness. (Figure 20, 20b & 20c).



Figure 20



Figure 20b



Figure 20c

32. Route additional foot-well connector to driver side foot-well light, wire tying to OBD2 mount (Figure 21).

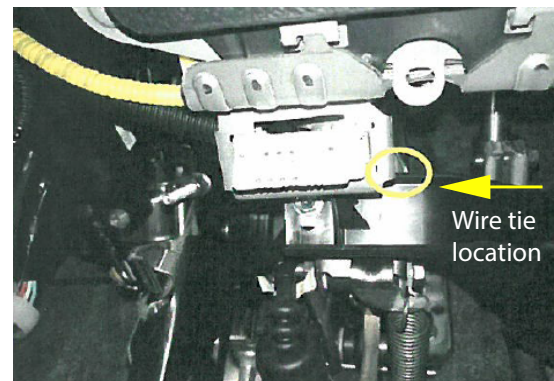


Figure 21

33. Connect all harnesses to the control module and mount to the factory harnesses in the driver side kick panel (Figure 22).

34. Connect driver side foot-well lamp and reinstall No. 1 instrument panel under cover subassembly.

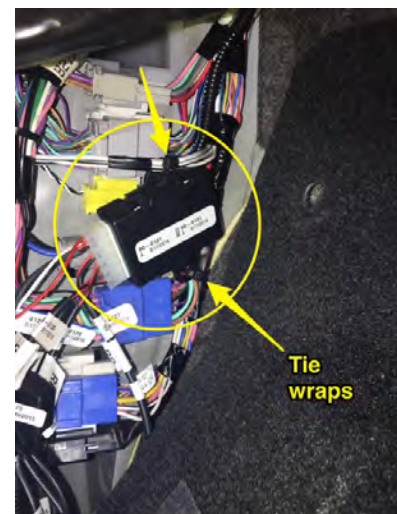


Figure 22

## TESTING AND REASSEMBLY



1. REINSTALL ALL TRIM PANELS IN THE ORDER OF REMOVAL TAKING SPECIAL CARE TO MAKE SURE ALL HARNESSSES AND WIRING ARE PROPERLY SECURED. MAKE SURE HARNESSSES ARE NOT PINCHED OR BOUND BY TRIM PIECES.



2. RECONNECT NEGATIVE BATTERY CABLE AND TORQUE TO 48 IN/LBS.

CHECKLIST - THESE POINTS MUST BE CHECKED TO ENSURE A QUALITY INSTALLATION

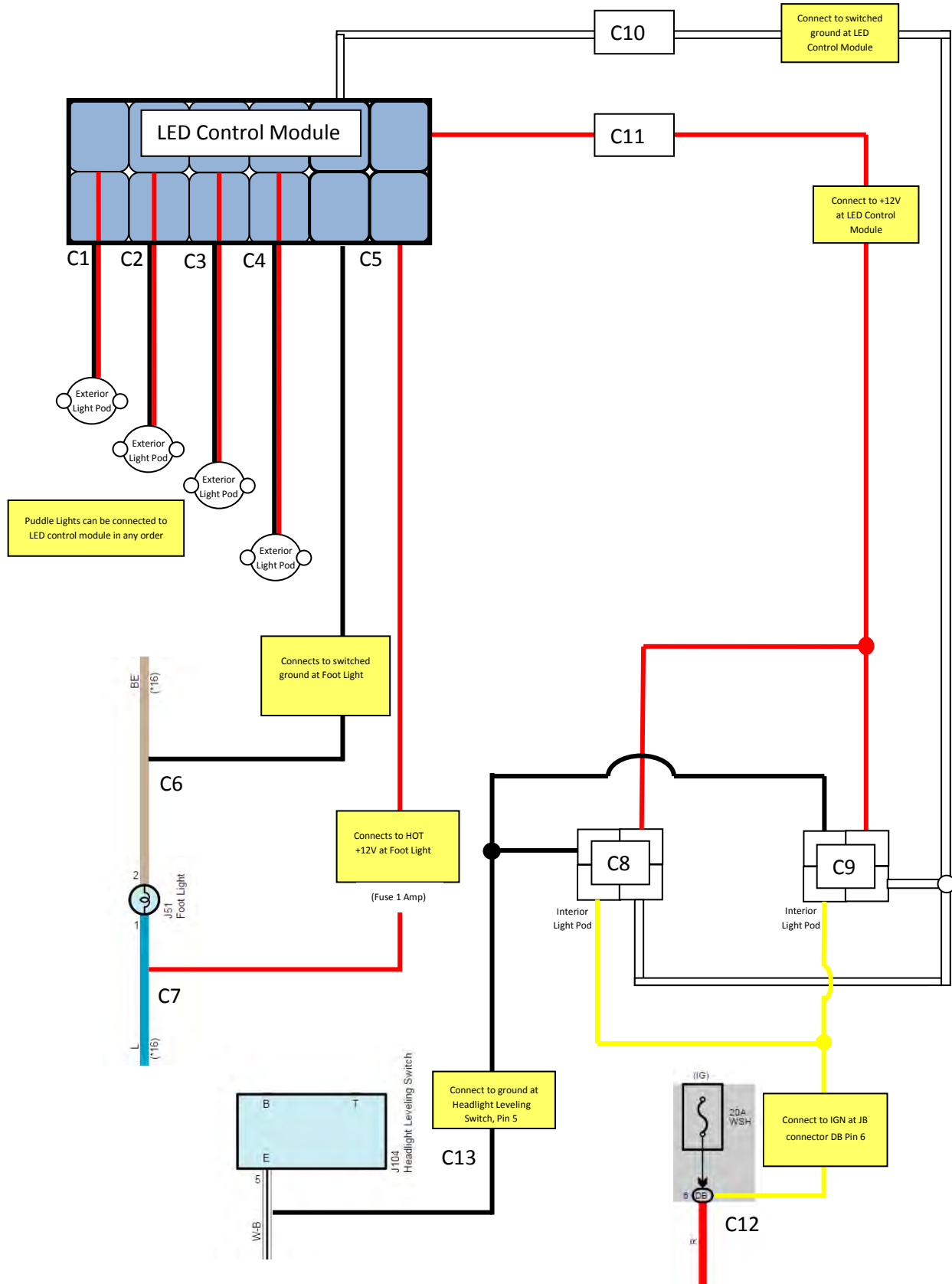
### ACCESSORY FUNCTION CHECK

	CHECK:		LOOK FOR:
	Test for Full Light condition		Close all doors and lock vehicle, do foot-well and puddle lights go out? Unlock vehicle, do foot-well lights come on full brightness? Do puddle lights come on?
	Test for Low Light condition		Start vehicle, do puddle lights go out? Do the foot-well lights dim to low level?

### VEHICLE FUNCTION CHECK

	VEHICLE FUNCTION:		VEHICLE FUNCTION DETAIL:
	Ignition		Verify that vehicle will crank.
	SRS warning light		Confirm SRS warning light illuminates for approximately 6 seconds with the ignition on, and then goes out.
	Hood Latch		Close hood and operate hood latch mechanism to assure proper operation.
	Headlight leveling system		Turn headlights on and operate headlight leveling system. Check that both headlights operate up and down through their full range of movement simultaneously.

# Block Diagram TUNDRA LED Lighting Package

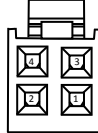






#### Connector C-1 thru C-4

Pin	Wire Color	Test Reference	Proper Orientation
1	Black	Pin 1 to Ground	Exterior LEDs (-)
2	Red	Pin 2 to Ground	Exterior LED (+)



#### Connector C5

Pin	Wire Color	Test Reference	Proper Operation
1	Black	Pin 1 to Ground	Approximately 0 VDC
2	Red	Pin 2 to Ground	Approximately 0 VDC when Dome Light is ON +12 VDC when Dome Light is OFF
3	White	Pin 3 to Ground	Approximately 0 VDC (when disconnected from control module)
4	Red	Pin 4 to Ground	Approximately 0 VDC (when disconnected from control module)



#### Connector C6

Pin	Wire Color	Test Reference	Proper Operation
1		Pin 1 to Ground	Approximately 0 VDC when Dome Light is ON +12 VDC when Dome Light is OFF



#### Connector C7

Pin	Wire Color	Test Reference	Proper Operation
1			+12 VDC



#### Connector C8 & C9

Pin	Wire Color	Test Reference	Proper Operation
1	Red	Pin 1 to Ground	+12 VDC
2	Black	Pin 2 to Ground	Approximately 0 VDC
3	White	Pin 3 to Ground	Approximately 0 VDC when Dome Light is ON +12 VDC when Dome Light is OFF
4	Yellow	Pin 4 to Ground	Approximately 0 VDC ignition switch OFF +12 VDC when ignition ON

### Connector C10



Pin	Wire Color	Test Reference	Proper Operation
1	White	Pin 1 to Ground	Approximately 0 VDC when Dome Light is ON +12 VDC when Dome Light is OFF

### Connector C11



Pin	Wire Color	Test Reference	Proper Operation
1	Red	Pin 1 to Ground	+12 VDC

### Connector C12



Pin	Wire Color	Test Reference	Proper Operation
1	Yellow	Pin 1 to Ground	Approximately 0 VDC ignition switch OFF +12 VDC when ignition ON

### Connector C13



Pin	Wire Color	Test Reference	Proper Operation
1	Black	Pin 1 to Ground	Approximately 0 VDC