

WHELEN[®]

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Installation Guide: ECE 65 Liberty™ LC Lightbar Dual Intensity

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with tape or Velcro™, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post.**
- **If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

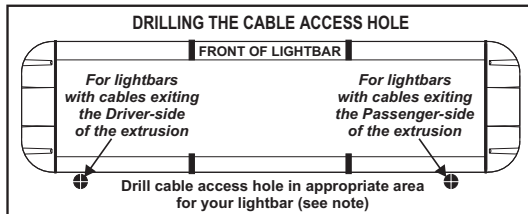
Mounting your Lightbar:

Refer to the Lightbar mounting guide included with your lightbar.

Routing your Lightbar Cable(s)

1. To protect the headliner from damage caused by drilling the cable access hole through the vehicle roof, allow a 5" to 7" distance between roof and headliner by lowering the headliner before drilling.

WARNING! There may be a roof support member that spans the distance between the driver's and passenger's side. DO NOT DRILL THROUGH THIS MEMBER! Adjust the location until the hole can be drilled without contacting this support member.



2. Using a 1" hole saw, drill the cable access hole. Use a round file to smooth and de-burr the edges then insert a 1" grommet.
3. Insert the cable(s) through the cable access hole into the vehicle. Use RTV silicone to weatherproof the access hole after the cable(s) are pulled completely into the vehicle.
4. Route the cable(s) through the vehicle following manufacturers recommendations.

WARNING: Many vehicles are now equipped with side curtain and B-pillar air bags. Alternate routing may be required.

Connecting the Cables:

WARNING! All Customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and **FUSED** at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

Power Cable:

Red / +12 volts DC Black / Ground

1. Follow the factory wiring harness through the firewall. It may be necessary to drill a hole in the firewall. If so, be absolutely sure that there are no components that could be damaged by drilling. After the hole has been drilled, insert a grommet to protect the cable.
2. Route cable along factory wiring harness to a 12 volt battery.

3. Install a 30 amp fuse block (customer supplied) on the end of the RED wire in the power cable. Remove the fuse from the fuse block before connecting any wires to the battery.
4. Connect the fuse block to the POSITIVE (+) terminal on the battery. There can not be more than two feet of wire between the fuse block and the battery. The wire between the fuse block and the battery is "unprotected", do not allow this wire to touch any other wires.
5. Connect the BLACK wire to the factory chassis ground.

Control Cable:

Extend the control cable to your switch panel and make the connections using the information on the next page. The control cable connects to your control head or switch box and is fused there. Applying +12VDC to a control wire activates its function.

Operation:

Hi/Low Power (VIOLET):

The type of switch used is dependant on how the operator wishes the Hi/Low feature to function:

Latching Mode: By applying +12 VDC voltage to the VIOLET wire for less than 1 second, the lightbar is "latched" into low power operation. The unit must be turned off and then back on to restore normal, high power operation (a momentary switch is preferred).

Level Mode: Applying +12 VDC voltage to the VIOLET wire for more than 1 second holds the lightbar in low power mode until voltage is removed (a toggle switch is preferred).

Scan-Lock™ (WHITE/VIOLET):

TO CYCLE FORWARD THROUGH AVAILABLE PATTERNS: Activate ONLY the control wire of the function you wish to effect and apply +12 volts to the Scan-Lock™ wire (WHITE/VIOLET) for less than 1 second and release. This will change the pattern. Repeat to advance to next pattern.

Example: To change the front, outboard LED pattern, apply +12VDC to the GREEN/WHITE wire and then *momentarily* apply +12VDC to the WHITE/VIOLET wire. Repeat until the desired pattern is displayed. Let this pattern run for at least 5 seconds to configure it as the pattern the front outboard LEDs will display when activated.

Important: Only ONE function may be active while changing patterns.

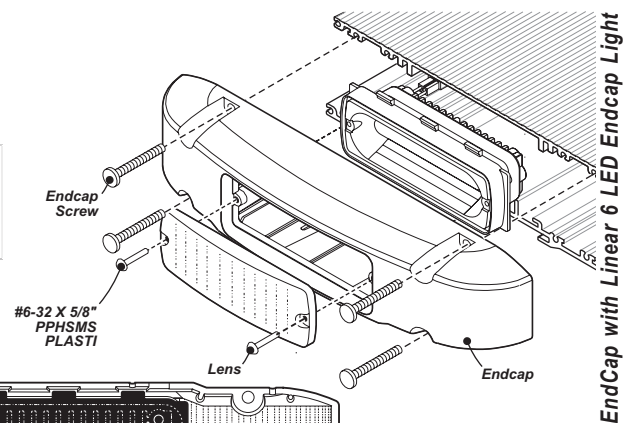
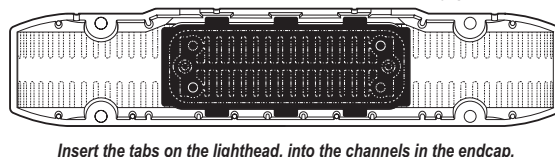
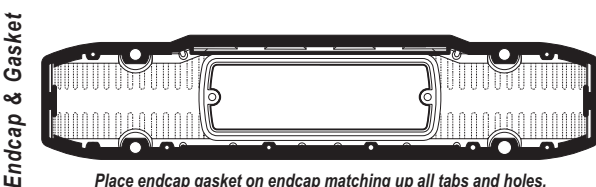
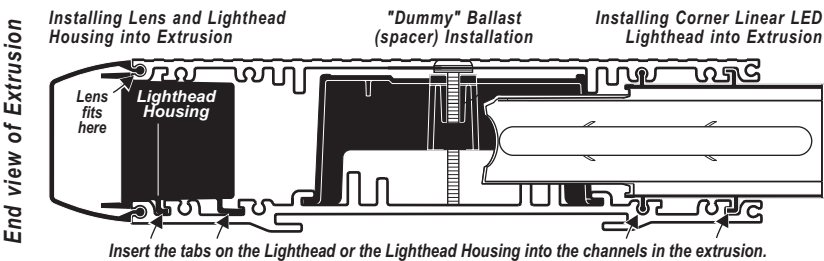
TO CHOOSE A PATTERN: Allowing the desired pattern to run for more than 5 seconds makes it the default pattern.

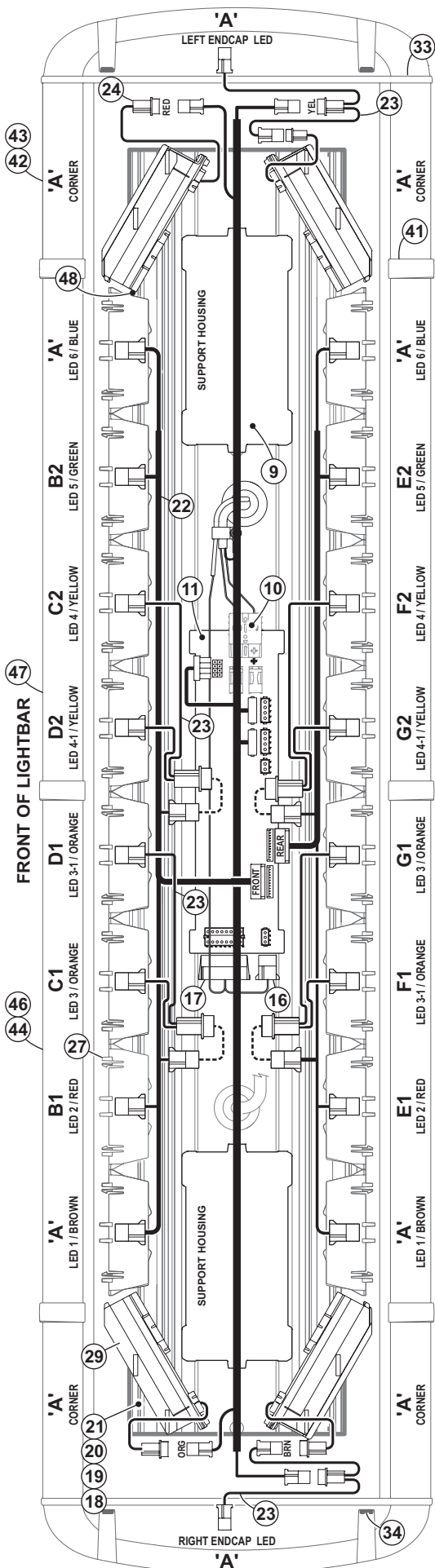
TO RESET TO THE FACTORY DEFAULT PATTERN: Turn off *all lightbar functions*. Apply +12 volts to the Scan-lock™ wire and turn the appropriate function back on and it is now restored to its factory default pattern.

Available Flash Patterns: ECE DoubleFlash (default pattern) > ECE SingleFlash

Traffic Advisor Patterns: Sequence to Solid (default setting) > Sequence On-Sequence Off > Single Lamp: Sequence On to TripleFlash™ > Two Lamp: Sequence On to TripleFlash™

Liberty LC Lightbar: Servicing your Lightbar





- 16 POS. CONNECTOR**
(ITEM 17)
P1 - VIOLET
P2 - GREEN/BLACK
P3 - GREEN/WHITE
P4 - BLUE/BLACK
P5 - WHITE/BLUE
P6 - WHITE/ORANGE
P7 - WHITE/VIOLET
P8 - WHITE/RED
P9 - GREEN
P10 - WHITE/BROWN
P11 - BLUE/WHITE
P12 - YELLOW
P13 - BLUE
P14 - WHITE
P15 - SHIELD
P16 - WHITE/BLACK

- 3 POS. CONNECTOR**
(ITEM 16)
P1 - WHITE/YELLOW
P2 - WHITE/GREEN
P3 - N/C

Control Cable

Wire Color & Function:

- 1 - GREEN**
Front Corner LED's
- 2 - BLUE**
Rear Corner LED's & Endcaps
- 3 - GREEN/WHITE**
Front Outboard LED's
- 4 - BLUE/WHITE**
Rear Outboard LED's
- 5 - GREEN/BLACK**
Front Inboard LED's
- 6 - BLUE/BLACK**
Rear Inboard LED's
- 7 - WHITE/GREEN**
Right TA / Optional
- 8 - WHITE/BLUE**
Not Active
- 9 - YELLOW**
Not Active
- 10 - WHITE**
Not Active
- 11 - WHITE/BLACK**
Not Active
- 12 - WHITE/ORANGE**
Not active
- 13 - WHITE/YELLOW**
Left TA / Optional
- 14 - WHITE/BROWN**
Rear Center LED's
- 15 - WHITE-VIOLET**
Scan-Lock™
- 16 - WHITE/RED**
Front Center LED's
- 17 - NONE**
RFI shield drain:
Ground
Activating WHT/GRN &
WHT/YEL = Split TA
(TA Optional)

Power Cable

Wire Color & Function:

- 1 - RED**
+12 VOLTS DC
- 2 - BLACK**
Ground

QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
		*			01-0684677-03	LIBERTY 60° ECE 65 DUAL INTENSITY
		*			01-0684677-02	LIBERTY 54° ECE 65 DUAL INTENSITY
	*				01-0684677-01	LIBERTY 48° ECE 65 DUAL INTENSITY
	*				01-0684677-00	LIBERTY 43° ECE 65 DUAL INTENSITY
1	1	1	1	1	21-11245004-1	GROMMET / 1.562"
1	1	1	1	2	46-0742957-17	INPUT CABLE ASSY. / 2C-10GA. / 17'
1	1	1	1	3	46-0742883-17	CABLE / 17-C 22GA / 17'
1	1	1	1	4	13-1041111-063	#10-24 WIZ NUT
1	1	1	1	5	26-0115663-10	5/8" CABLE CLAMP
1	1	1	1	6	14-104216-160	#10-24 X 1 PPHM SCREW
4	4	4	4	7	13-062C40-16J	#8 SCREW GROMMET
4	4	4	4	8	15-081416-080	#8 X 1/2" PPHSMS
2	2	2	2	9	11-483569-000	HOUSING / SUPPORT HOUSING
1	1	1	1	10	39-0017188-08	HOUSING / 2 POLE
1	1	1	1	11	01-0264877-00	ASSY / I/O CARD "LC" ECE 65 / 12VDC
2	2	2	2	12	14-104216-06J	#10-24 X 3/8 PPH SCREW
1	1	1	1	13	14-062216-160	#6-32 X 1 PPHMS
1	1	1	1	14	10-0522960-00	LABEL / MODEL & SERIAL NO.
2	2	2	2	15	21-7263998-00	PLUG / 3/4" VENT
1	1	1	1	16	39-0403023-04	HOUSING / 3 POSITON SOCKET / CMNL
1	1	1	1	17	39-0416323-04	HOUSING / 16 POS SOCKET
-	-	-	1	18	11-363312-054	BASE / EXTRUDED / 54.78"
-	-	1	-	19	11-363312-049	BASE / EXTRUDED / 49.39"
-	1	-	-	20	11-363312-044	BASE / EXTRUDED / 44.00"
1	-	-	-	21	11-363312-038	BASE / EXTRUDED / 38.61"
2	2	2	2	22	46-0963330-00	HARNESS / INBOARD LED
6	6	6	6	23	46-0784112-04	HARNESS / UPPER LED ADAPTER
1	1	1	1	24	46-0743151-00	HARNESS / CORNER LED
6	8	8	12	25	09-1363542-00	PANEL / FILLER / 500 SERIES
6	6	6	6	26	01-0264077220	SUB ASSY / LINEAR 6 LED / BLUE / AMP
10	12	12	16	27	11-483564-000	HOUSING / LIGHTHEAD / SNAP-IN
4	4	4	4	28	20-0042765-00	SPACER CORNER RETENTION
4	4	4	4	29	01-0263927220	ASSY / CORNER 12 LED / LIBERTY
2	2	2	2	30	68-1183566-2S	68-1183566-2S
6	6	6	6	31	68-1963583-30	LENS / 500 CLEAR OPTIC LED, 20 DEG
12	12	12	12	32	15-065410-100	#6-32 X 5/8" PPHSMS PLASTI
2	2	2	2	33	38-0283572-00	GASKET / ENDCAP
8	8	8	8	34	14-104286-16JB	#10-24 X 1-1/4" TX. PHD. / with SHOULDER
4	4	4	4	35	15-105A76-168	#10 X 1" TX. 100° FH PLAST-LOC / with SEAL
1	1	1	1	36	38-0142783-00	INSULATOR / FOAM PAD
-	-	-	1	37	11-263313-054	TOP / EXTRUDED / 54.78"
-	-	1	-	38	11-263313-049	TOP / EXTRUDED / 49.39"
-	1	-	-	39	11-263313-044	TOP / EXTRUDED / 44.00"
1	-	-	-	40	11-263313-038	TOP / EXTRUDED / 38.61"
8	6	6	8	41	02-0342791-00	LENS DIVIDER / BLACK
4	4	-	4	42	68-1983819-20	LENS / 5.687" LG. / BLUE
-	-	4	-	43	68-1963333B08	LENS / 8.375" LG. / BLUE
-	4	4	4	44	68-1983567-20	LENS / 15.800" LG. / BLUE
2	-	-	-	45	68-1983818-20	LENS / 5.062" LG. / BLUE
4	-	-	2	46	68-1963333B03	LENS / 10.500 LG. / BLUE
1	1	1	1	47	10-0322935-00	LABEL / "FRONT" LIGHTBAR ASSY.
-	-	4	-	48	07-243170-000	SPACER / CORNER

