OMEN WARNING LIGHTBAR SERIES INSTRUCTION MANUAL
OMEN Warning Lightbar

FT-HVC-OMEN Models
MANUAL VERSION 1.5 (January 23, 2025)
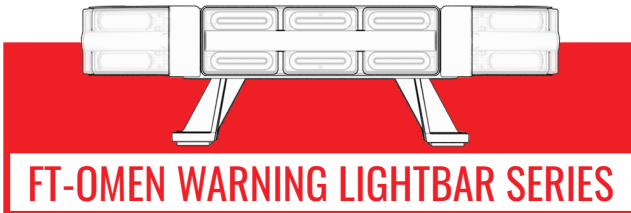
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FT-OMEN WARNING LIGHTBAR SERIES

SAFETY NOTICE & WARRANTY

WARNING: INSTALLATION MUST BE CONDUCTED BY A QUALIFIED TECHNICIAN.

IMPROPER INSTALLATION CAN RESULT IN INJURY OR DEATH.

- Installation must be conducted by a qualified automotive electrician or emergency vehicle technician in accordance with the applicable NFPA standard(s) and procedures (Including but not limited to NFPA 1901, 1906, 1911, 414, 1900)
- Improperly installed, aimed, or operated lights can create significant hazard to motorists which can result in collision. Ensure light fixtures are installed and operated such that their beam does not shine into oncoming traffic
- All circuits must be fused at 125% of the rated power consumption of the loads on the circuit
- A voltage drop greater than 10% in the power feed to a fixture could be an indicator of an under-sized conductor. Use of improperly sized conductors will, at a minimum, result in poor performance, and at a maximum could result in fire
- Verify input voltage is within fixture range before installation. Voltage range information can be found in this manual or printed on the fixture body
- The use of personal protective equipment (safety glasses and gloves) is highly recommended
- Allow proper cooling time before handling the fixture if it has been installed & powered to prevent burns
- Any modifications to the fixture will void warranty and are not authorized by the manufacturer
- Always inspect the fixture for any damage prior to installing and DO NOT install if any damage is present

⚠️ **PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION** ⚠️

Warranty Information: Full policy available Online at hivizleds.com/warranty

- Proof of purchase may be required to validate warranty. All FireTech products are warranted for the useful service life of the vehicle for which they were first installed
- Improper installation, accident, physical damage, neglect, and normal wear and tear are not covered under warranty
- Lights operated in environments over 150° Fahrenheit are not covered under warranty
- All advance-exchange warranty claims must be validated with HiViz Technical Support prior to issuance of a shipping label. Failure to return defective product will result in an invoice for the full replacement value of the product
- HiViz Lighting will repair or replace defective product at its discretion. Replacement product will be in similar or better cosmetic condition than the defective part.
- Warranties should be handled through the dealer/reseller the product was purchased from; customer is responsible for delivery
- If product is found to have damage not covered under warranty, customer will be responsible for return shipping charges and/or cost of repair
- Non-warranted items can be repaired at the customer's expense of parts and labor, at the discretion of HiViz LED Lighting, who will provide an estimated repair cost before proceeding with the repair.
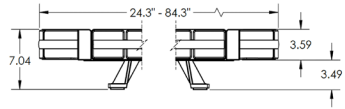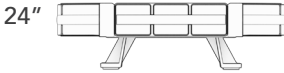
TECHNICAL SPECIFICATIONS
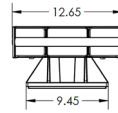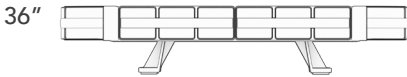
OMEN FACTORY MOUNTING FOOT*
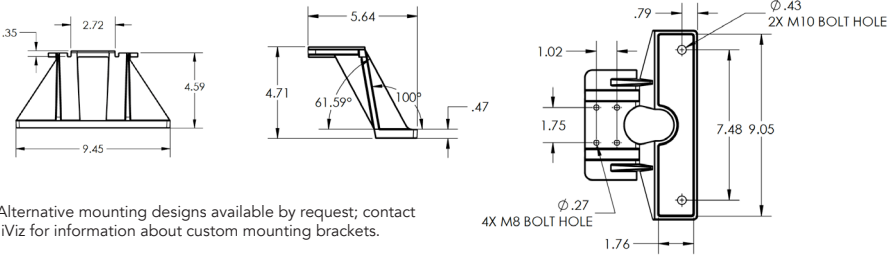
*Alternative mounting designs available by request; contact HiViz for information about custom mounting brackets.

OMEN FULL BAR SIZES

FT-HVC-OMEN-24

24"

FT-HVC-OMEN-36

36"

FT-HVC-OMEN-48

48"

FT-HVC-OMEN-60

60"

FT-HVC-OMEN-72

72"

FT-HVC-OMEN-84

84"

TECHNICAL SPECIFICATIONS CONT.

OMEN 12" MODULE DATA
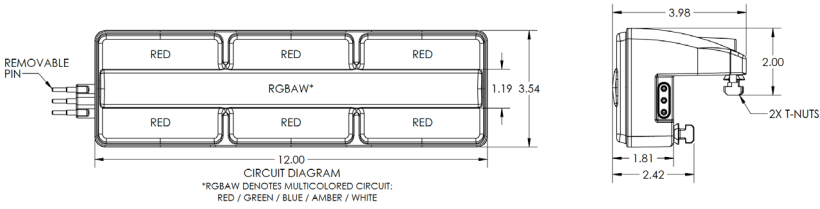
AVG. WATTAGE	29.3W
PEAK WATTAGE	76.1W
AVG. AMP DRAW (@12V)	2.3A
PEAK AMP DRAW (@12V)	5.7A
INPUT VOLTAGE	9-32V DC
WEIGHT	4.4 LBS.

OMEN 6" SIDE MODULE DATA

Red Primary Optic
RGBWA Secondary Optic
Red Primary Optic
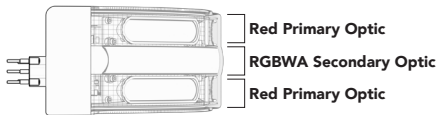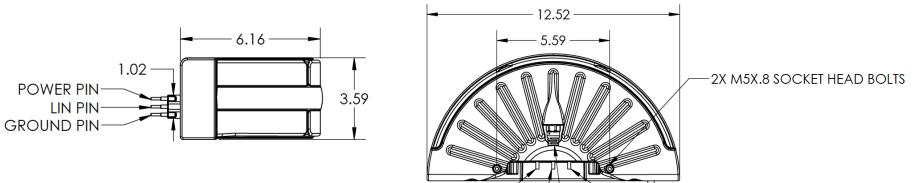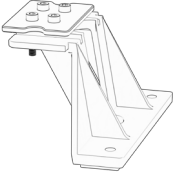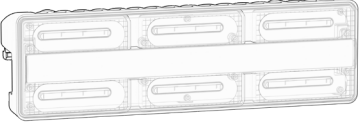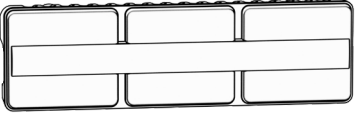
AVG. WATTAGE	29.3W
PEAK WATTAGE	73.1W
AVG. AMP DRAW (@12V)	2.3A
PEAK AMP DRAW (@12V)	5.7A
INPUT VOLTAGE	9-32V DC
WEIGHT	6.0 LBS.

OMEN WARNING LIGHTBAR ASSEMBLY

FULLY ASSEMBLED BAR
(SIZE WILL VARY)

1 **Extrusion (2)**

2 **Mounting Foot* (2)**

3 **12" Module (amount will vary)**
P/N: FT-HVC-OMEN-MOD-12

4 **8" Side Module (2)**
P/N: FT-HVC-OMEN-MOD-SIDE

5 **12" Blank Module (amount will vary)**
P/N: FT-HVC-OMEN-MOD-12-0

6 **Connector W/ Levers AWG 24-12**
P/N: P-FT-XHF2018

7 **120 Ohm Resistor (2)**
P/N: P-FT-E5P-003

8 **3 Pin Connector**
P/N: ACNBG2MOD6P

NOTE:
Tighten screws by hand/screwdriver. Power-tools can
cause an insecure attachment and damage.

6

*Alternative mounting feet designs available by request; contact HiViz for information about custom mounting brackets.

INSTALLATION INSTRUCTIONS

IDENTIFY THE MOUNTING LOCATION

The OMEN warning lightbar is designed to be mounted to a flat surface, such as the roof of a custom or commercial cab fire apparatus. To achieve the greatest flexibility in mounting to different cabs, two mounting feet come with all OMEN warning light bars greater than 12 inches.

Each mounting foot has two .43" holes for mounting onto a flat cab roof or other flat surface.

Each mounting foot is designed with the ability to be moved along the entire length of the extruded mounting rail. This is completed by loosening the four .43" bolts that are used to clamp the mounting foot and integrated plate to the extruded mounting rail.

NOTE: For customers that have special geometry with respect to their cab roofs, please reach out to HiViz Lighting at **support@hivizleds.com**. We are happy to work with you to develop a sheet metal bracket to allow for mounting in these cases.

INSTALLATION STEPS

If you are retrofitting a truck: Remove old warning light bar. Scrape any adhesive and remove old wiring so that you have a clean work surface.
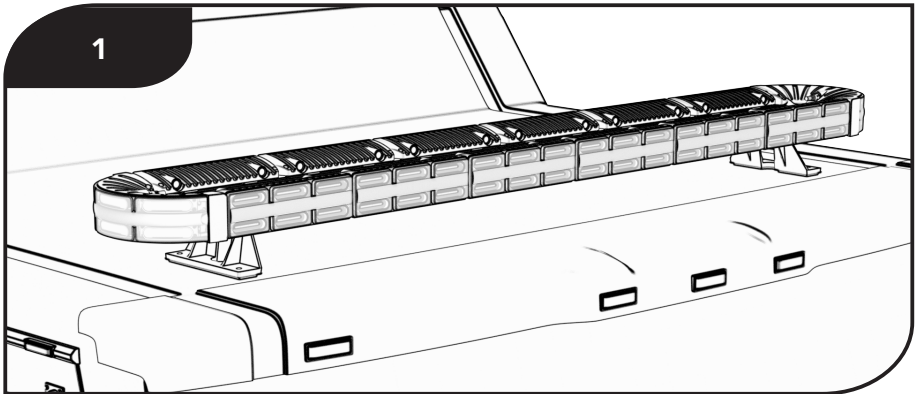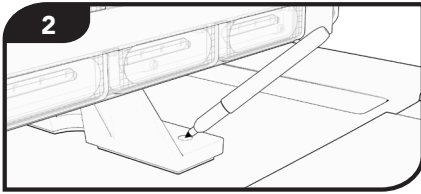

Set new warning light on roof of apparatus cab and align bar left/right so that center of bar is in the center of the cab.
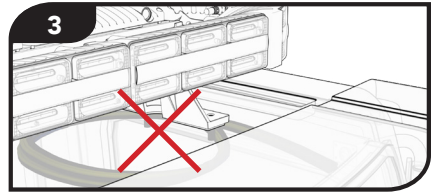
INSTALLATION INSTRUCTIONS

2

Mark location of mounting holes with sharpie.

3

Check under the roof to see if there are any obstructions, wiring, or HVAC plenum. If there is anything obstructing follow step 4a, if it is clear continue to step 4b.
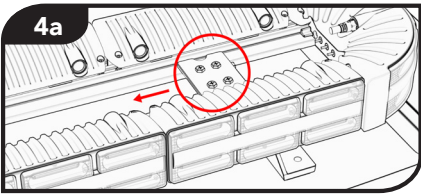
4a

If obstructions exist or mounting feet need adjustment for any other reason, loosen the four bolts on top of mounting plate and slide mounting feet left/right to desired location. Once set, tighten mounting foot to 10.7 ft. lbs.
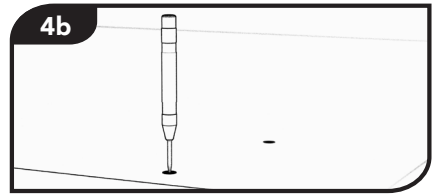
4b

If no obstructions are present, use a center punch, punch center of mounting holes.
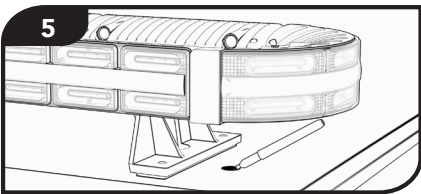
5

Mark location for wire passages.
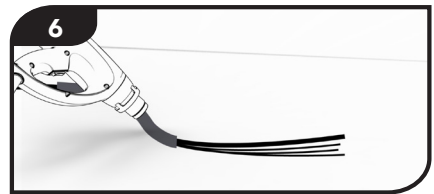
6

You can use 3/4" 3:1 adhesive lined heat shrink to secure all wire bundles together and reduce the number of holes in the cab. If used make sure to run the cables out and then down.

INSTALLATION INSTRUCTIONS
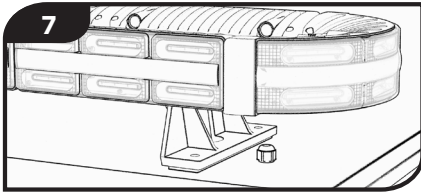
Choose a cable-gland and install per manufacturer in desired location.
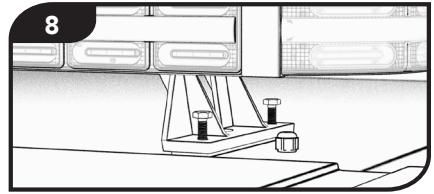
Through-bolt lightbar to apparatus cab. If sheet metal is thin, consider using fender washers or other backer plate on inside of apparatus cab if needed. Consult your apparatus manufacturer with questions.
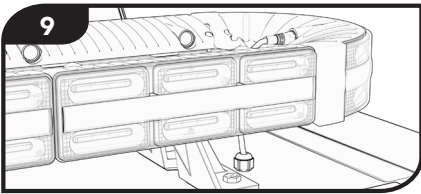
Run wiring through cable gland and pull through to back side.
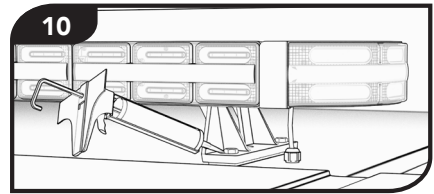
Seal bolt holes and fasteners with RTV silicone.

OMEN EXTERNAL NETWORK ARCHITECTURE

EXTERNAL NETWORKS - SIDE WARNING MODULES

Day/Night Sensor: Each of the two side modules of an OMEN warning lightbar have a sensor. By comparing data between the two sensors, the fixture is able to determine more accurately if it is truly "night" outside, or if part of the bar is simply in the shade on-scene.

Wiring: There are several wire bundles coming off each end-cap of the OMEN warning lightbar. These include an input trigger wire bundle of 4 wires, a LIN harness, a CAN harness, and the main power wires for the fixture.

Bluetooth: There is a bluetooth module built in for communication.

1 Day/Night Sensor

2 4x Input Wires

3 Main Power & Ground

5 J1939 CAN Network

4 J2036 LIN Network
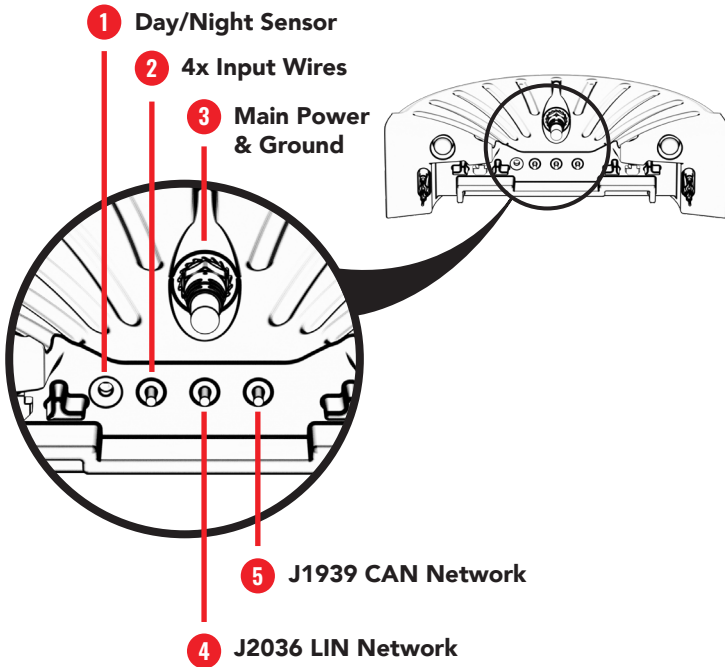
OMEN INTERNAL NETWORK ARCHITECTURE

INTERNAL NETWORKS - SIDE WARNING MODULE 3-PIN CONNECTORS

1 Bussed Power
2 N/A
3 Bussed Ground

1 Bussed Power
2 J2036 LIN Network 2
3 Bussed Ground

NOTE: EARLY MODELS OF THE OMEN MAY HAVE BLACK AND WHITE CAN WIRES AS SEEN HERE

White
Black
Black w/ Blue Heat Shrink

POWER & GROUND

INPUT WIRES

LIN WIRES

CAN WIRES

26 AWG
20 AWG
20 AWG
12 AWG

Wire Supplied with Lightbar

Customer Supplied Wire (if needed)

Wire	Input	Default	Fuse
Black	Input #1	Default: Traffic Director Left	1A
Green	Input #2	Default: Traffic Director Right	1A
Red	Input #3	Default: Cruise	1A
White	Input #4	Default: Aux Scene	1A
White		LIN	
Black		LIN Shield	

NOT USED
Only used if you are using other HVC warning lights (see HVC system manual)

Wire	Signal
Black	CAN Shield
Green	CAN LOW
Yellow	CAN HIGH
White	MAIN POWER
Black	MAIN GROUND

40A

INPUTS CAN BE TIED TO POWER OR GROUND

(-) TO GROUND

(+) TO POWER

ACTIVATED BY IGNITION WITH USE OF A RELAY (OPTION: TO +12V DC BATTERY IF USING IGNITION TIMERS)

12

WIRING INFORMATION - DRIVER SIDE

NOTE: EARLY MODELS OF THE OMEN MAY HAVE BLACK AND WHITE CAN WIRES AS SEEN HERE
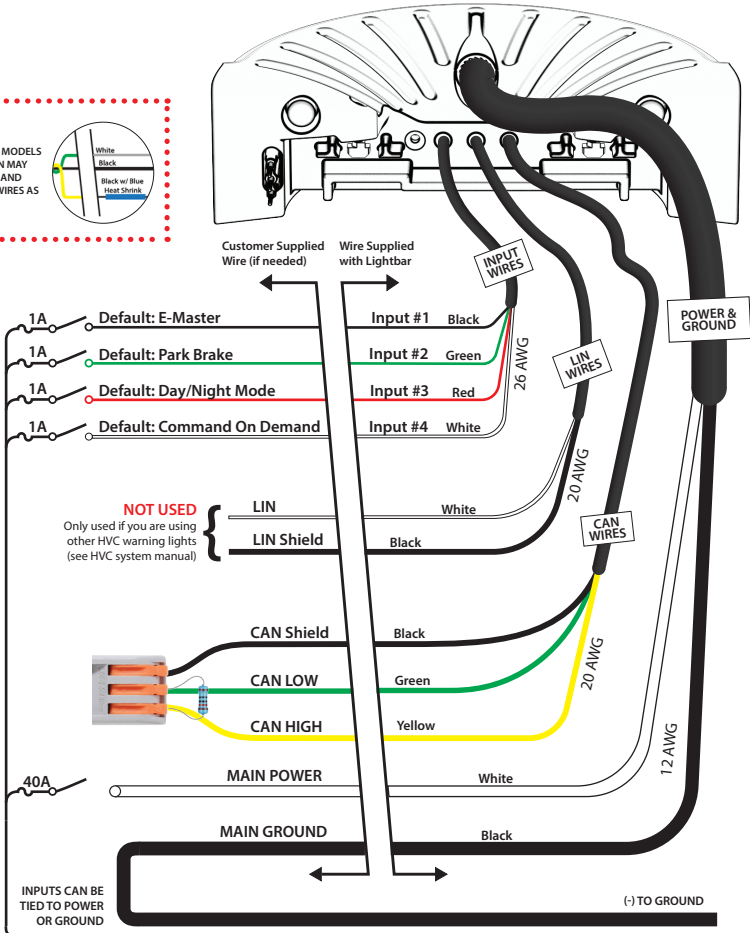
White
Black
Black w/ Blue Heat Shrink

Customer Supplied Wire (if needed)
Wire Supplied with Lightbar

INPUT WIRES

1A	Default: E-Master	Input #1	Black
1A	Default: Park Brake	Input #2	Green
1A	Default: Day/Night Mode	Input #3	Red
1A	Default: Command On Demand	Input #4	White

26 AWG

LIN WIRES

POWER & GROUND

NOT USED
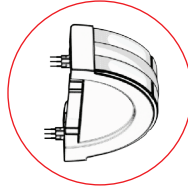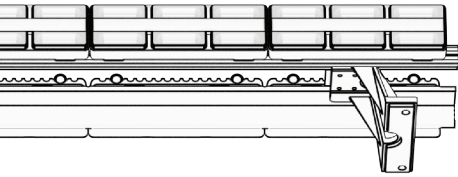Only used if you are using other HVC warning lights (see HVC system manual)

LIN	White
LIN Shield	Black

20 AWG

CAN WIRES

CAN Shield	Black
CAN LOW	Green
CAN HIGH	Yellow

20 AWG

12 AWG

40A MAIN POWER	White
MAIN GROUND	Black

INPUTS CAN BE TIED TO POWER OR GROUND

(-) TO GROUND

(+) TO POWER

ACTIVATED BY IGNITION WITH USE OF A RELAY (OPTION: TO +12V DC BATTERY IF USING IGNITION TIMERS)

13

OMEN WIRING
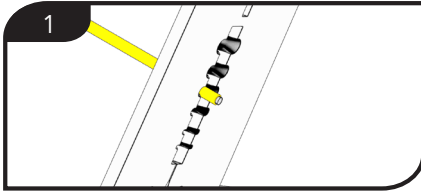
1 Strip the CAN conductors with your wire strippers just enough to fully fit inside the connector (9-10mm). Ensure that none of the wires inside of the conductors were nicked or broken off.
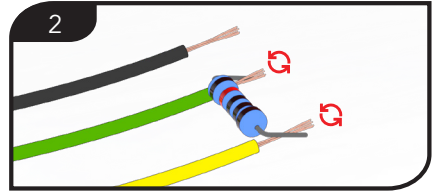
2 Taking the wires from one omen side module: Twist the ends of one of the resistors to the stripped wires from CAN high and CAN low to ensure proper connection, ensuring the resistor is on top of the wires not making contact with the truck. Do the same thing with the other omen side module.
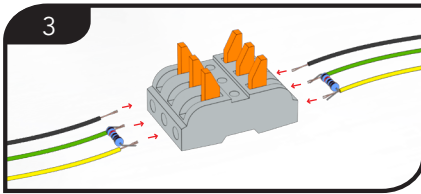
3 Lift the orange levers and insert each of the wires. All CAN high, low, and shield wires from the drivers side will go in one side of the connector and all CAN high, low, and shield wires from the passengers side will go in the other side of the connector.
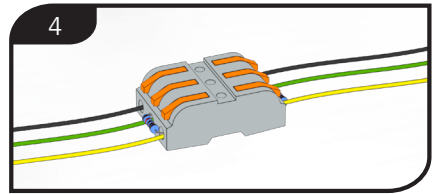
4 After each wire is inserted, push lever down to lock the connection.
Note: if there is an issue with the connection, push the lever up to release the connection and try again.

- Run power (white wire) that is fused at 40 A to chassis battery (+12V DC).
- Connect ground (black wire) to a known good vehicle ground.
- Connect E-Master to E-Master switch or an output from system that turns on with E-master.
- Connect the Park Brake input so that when it is triggered with power it will indicate that the vehicle is in responding mode (not parked). The default state with no power applied is the parked mode.
- All other inputs can be wired to switches (optional).

WIRING TROUBLE SHOOTING

Problem:	Solutions:
Omen does not boot up	• Check that the lightbars power and ground are properly connected to a fully charged 12-volt battery. Check the 40 A fuse.
Individual Omen module doesn't light up	• Check that the modules are all connected with their 3 pin connectors to each other.

GENERAL WIRING TROUBLE SHOOTING

- Check to make sure the wires are all the way seated and clamped into the connector, a small tug on the conductor should confirm.
- Check to make sure sealing plugs are installed to any open holes in the connectors, if they are not installed water gets inside and kills the connection.
- Check to make sure you don't have any cut wires, if you do restrip and clamp the wires.
- Check to make sure your twisted shielded CAN wires are across from the same wires in the connector see figure 4 on previous page.
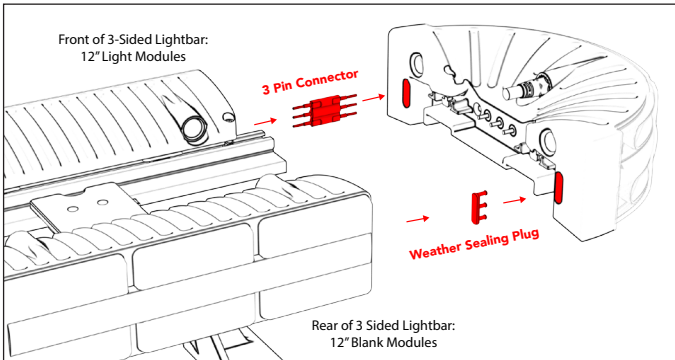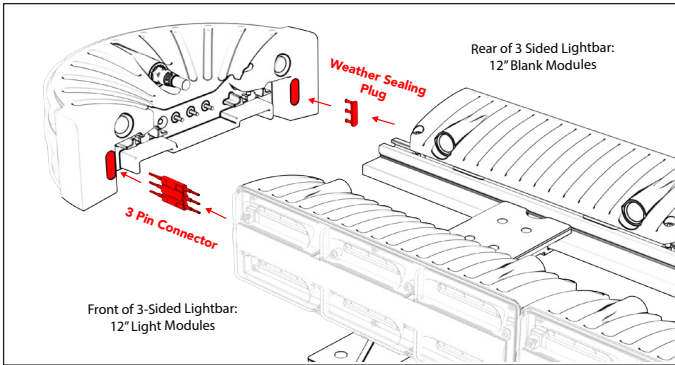
BLANK MODULES & WEATHER SEALING PLUGS

WEATHER SEALING OUTER PLUGS & BLANK MODULES

The OMEN warning lightbar comes standard with three sides having warning light functionality, with the rear having blank 12" light modules. These blank light modules carry no power or data across them, and are not connected using a 3-pin connector. To eliminate any water ingress into the 6" side light module that can damage internal components, a three-prong weather sealing plug is placed in the area where the connector would be present.

Additionally, the OMEN 6" and 12" warning lightbar's are available as a rear beacon offering. When utilizing these configurations, it is critical that a three-prong weather sealing plug is placed in the area where the connector would be present to connect another warning light module.

NOTE: While this weather sealing plug ships pre-installed on all OMEN products that require this component, a quick inspection is recommended to ensure that no accidental unseating of the plug has occurred. This component is critical to ensure a lifetime of service on all OMEN products.

Weather Sealing Plug

Rear of 3 Sided Lightbar:
12" Blank Modules

3 Pin Connector

Front of 3-Sided Lightbar:
12" Light Modules

Front of 3-Sided Lightbar:
12" Light Modules

3 Pin Connector

Weather Sealing Plug

Rear of 3 Sided Lightbar:
12" Blank Modules

OPTIONAL J1939 CAN NETWORK KITS (AVAILABLE FOR PURCHASE SEPERATELY):

Listed below are alternative wiring options for an OMEN warning lightbar with no perimeter lights. Order **MPN** from your supplier of choice or **HPN** from Hiviz. Kits may include generic alternatives.

Kit HPN: P-FT-J1939-BACKBONE12
For installation of OMEN warning lightbar (J1939 CAN backbone) if you already have connector parts seen in figure below.

(2) Deutsch DT 3-way plug connectors
MPN: DT06-3S
HPN: P-DT06-3S

(2) Deutsch DT 3-way blue plug wedgelock (backbone)
MPN: W3S-1939
HPN: P-WS3-1939

Misc. shielded twisted pair J1939 CAN automotive cable, 20 AWG
MPN: 32053076
HPN: P-FT-J1939-WIRE

Kit HPN: P-FT-J1939-BACKBONE12KIT
For installation of OMEN warning lightbar (no perimeter lights).

(2) Deutsch DT 3-way gray J1939 "Y" receptacle connector
MPN: DT04-3P-P007
HPN: P-FT-J1939-3WAY

(2) Deutsch DT 3-way J1939 terminating plug connector with 120 ohm resistor
MPN: DT06-3S-P006
HPN: P-FT-J1939-TERMPLUG

(2) Deutsch DT 3-way plug connectors
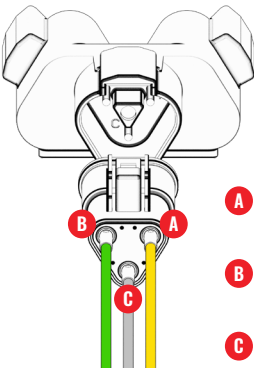**MPN: DT06-3S**
HPN: P-DT06-3S

Misc. shielded twisted pair J1939 CAN automotive cable, 20 AWG
MPN: 32053076
HPN: P-FT-J1939-WIRE

(2) Deutsch DT 3-way blue plug wedgelock (backbone)
MPN: W3S-1939
HPN: P-WS3-1939

(2) Deutsch DT 3-way orange plug wedgelock
MPN: W3S-AS
HPN: P-W3S

(6) Deutsch size 6 nickel machined solid socket; 18-16 AWG
MPN: 0462-201-16141
HPN: P-DTSOCKET-18-16
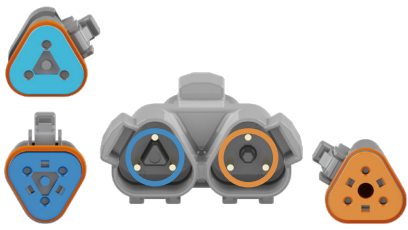
WIRING (OPTION B) INSTRUCTIONS

Figure A: Visual of which traditional twisted shielded CAN conductors should be inserted into the proper A, B, and C slots of the plugs.

Figure B: When assembling the CAN system you will see that the Y receptacle connector will have compatibility with triangle wedgelock plugs and a circle wedgelock plug. The triangle wedgelock connectors should be used with the CAN backbone and the terminating resistors. The circle wedgelock connector should be used with the CAN conductors coming off of the OMEN and HVC Zone Modules.

FIGURE A:
CAN WIRING

A CAN High (Yellow)

B CAN Low (Green)

C CAN Shield (exposed wire)

FIGURE B:
WEDGELOCK KEY

Compatible with blue/triangle wedgelocks

Compatible with orange/circle wedgelocks

## FIGURE C:
WHEN TO USE THE GOLD VS NICKEL SOCKETS

Use the gold plated sockets with the CAN backbone plugs (blue wedgelock plugs).

Use the nickel sockets with the tail plugs (orange wedgelock plugs).

# WIRING (OPTION B) INSTRUCTIONS (CONT.)
HOW TO ASSEMBLE DEUTSCH CONNECTORS

⚠️ **WARNING: TURN OFF POWER BEFORE WIRING** ⚠️

1
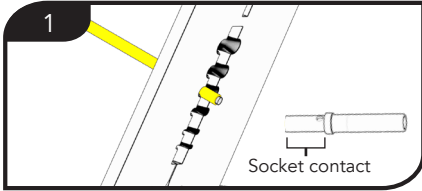
Socket contact

Strip the conductor with your wire strippers just enough so that it will fit inside the socket contact. Ensure that none of the wires inside of the conductor were nicked or broken off.

2
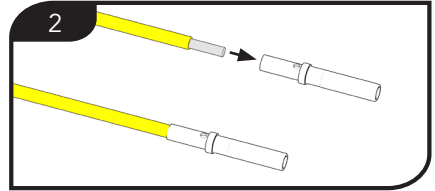
Insert the wire into the socket contact and ensure there are no stray wires sticking out from the socket. You want to see the wires from the hole in the side of the socket. Make sure you don't have wire exposed at the bottom of the socket as well.

3
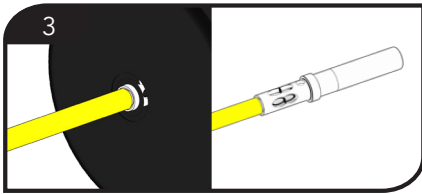
Once you have done the above steps: crimp the socket contact onto the stripped conductor per your crimp tool's instructions.

4
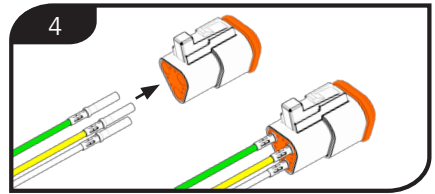
Insert the socket contact with attached conductor into the rear of the Deutsch connector (see Figures A and B for proper layout). Push until a click is heard and felt. A slight tug will confirm it is in place.

5
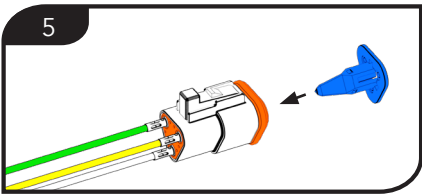
Once all contacts are in place, the wedgelock may be inserted by hand. Press until it clicks into place. The arrow on the wedgelock should point towards the exterior locking mechanism.
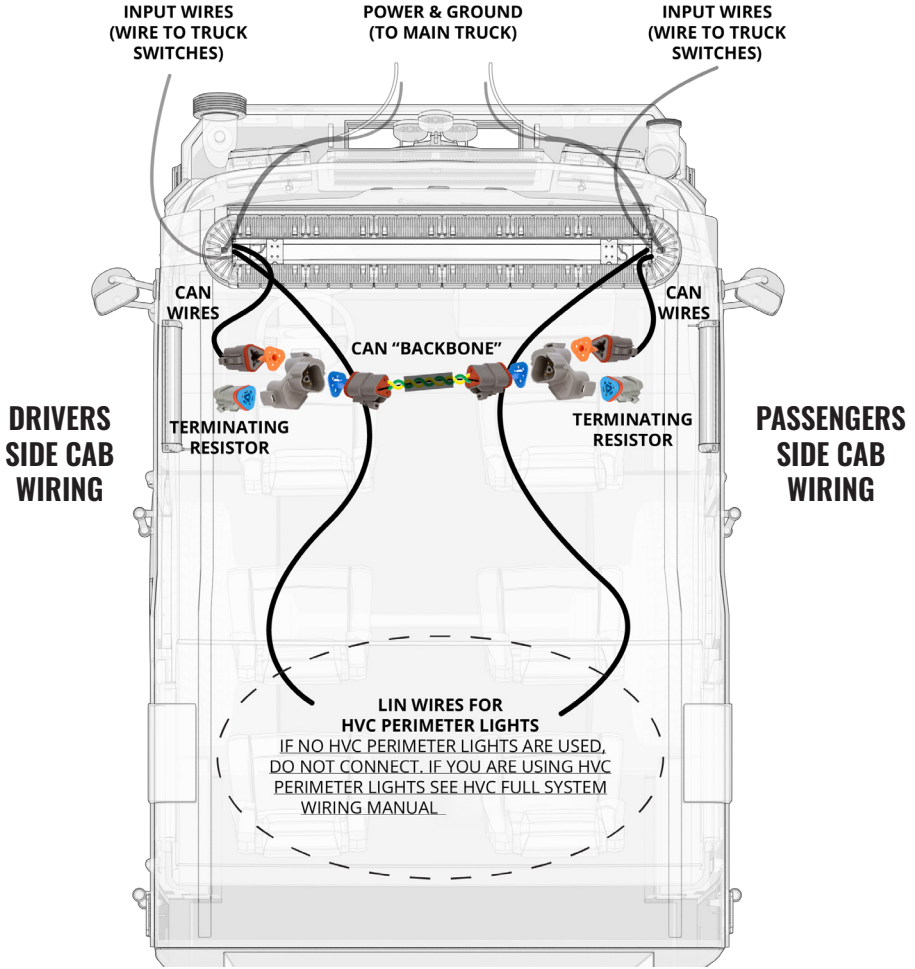
6
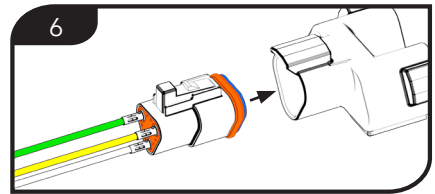
Insert the assembled plug into the correct receiving section of the Y Receiver.

NOTE: Use blank sealing plugs (PN A114017) for any holes not used to keep water from entering the connectors. These are available through waytekwire.com and other suppliers.
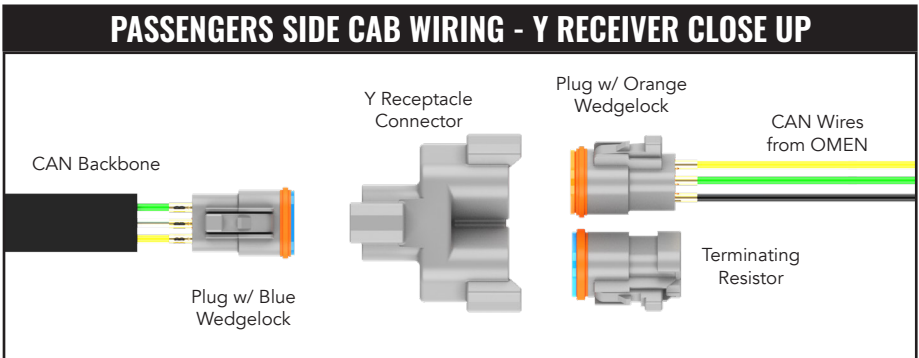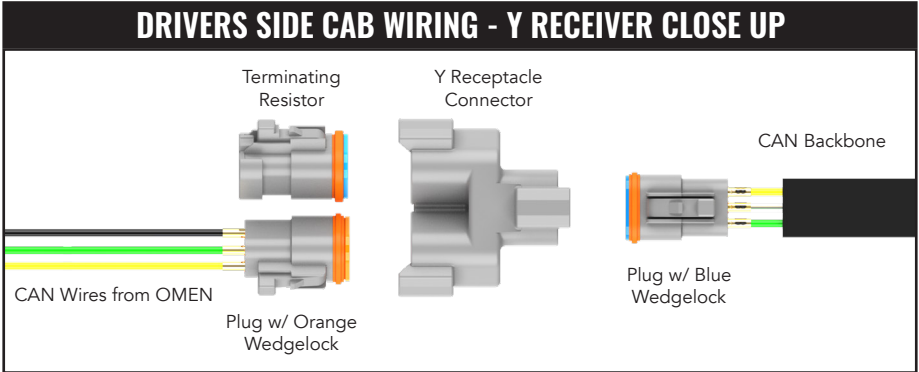
19

WIRING (OPTION B) INSTRUCTIONS
HVC (OMEN ONLY) CAN/LIN ARCHITECTURE

INPUT WIRES
(WIRE TO TRUCK
SWITCHES)

POWER & GROUND
(TO MAIN TRUCK)

INPUT WIRES
(WIRE TO TRUCK
SWITCHES)

CAN
WIRES

CAN
WIRES

CAN "BACKBONE"

DRIVERS
SIDE CAB
WIRING

TERMINATING
RESISTOR

TERMINATING
RESISTOR

PASSENGERS
SIDE CAB
WIRING

LIN WIRES FOR
HVC PERIMETER LIGHTS
IF NO HVC PERIMETER LIGHTS ARE USED,
DO NOT CONNECT. IF YOU ARE USING HVC
PERIMETER LIGHTS SEE HVC FULL SYSTEM
WIRING MANUAL

WIRING (OPTION B) INSTRUCTIONS (CONT.)
CLOSE UP OF WIRING ARCHITECTURE

DRIVERS SIDE CAB WIRING - Y RECEIVER CLOSE UP

Terminating Resistor

Y Receptacle Connector

CAN Backbone

CAN Wires from OMEN

Plug w/ Orange Wedgelock

Plug w/ Blue Wedgelock

PASSENGERS SIDE CAB WIRING - Y RECEIVER CLOSE UP

Y Receptacle Connector

Plug w/ Orange Wedgelock

CAN Wires from OMEN

CAN Backbone

Plug w/ Blue Wedgelock

Terminating Resistor

WIRING (OPTION B) TROUBLE SHOOTING

- Check for any missing wedgelocks.
- Check to make sure the sockets are all the way seated and latched before wedgelocks are installed, a small tug on the conductor should confirm.
- Check to make sure sealing plugs are installed to any open holes in the connectors, if they are not installed water gets inside and kills the connection.
- Check to make sure your sockets haven't been crimped too tight, if they are crimped too tight it will break the wire off in the terminal contact.
- Check to make sure your twisted shielded CAN wires are all in their correct seats in the plugs (see figure A on page 18).

# OMEN ACCESSORIES

J-FOOT MOUNTING FEET
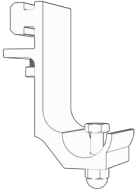
The OMEN warning lightbar is optionally available with a FireTech Brow or MiniBrow light included. If ordering this option, this scene light fixture should be mounted to the forward portion of the OMEN extruded mounting rail with the use of the FireTech J-Foot. The J-Foot is designed to attach a FireTech Brow Light along the length of the extrusion in several instances, in line with our mounting recommendations for all Brow and MiniBrow light fixtures.

NOTE: *Generally, FireTech recommends mounting a brow light as far forward as practicable to eliminate any shadowing on the ground in front of the fire apparatus. While easily achieved on most custom cabs in the fire apparatus industry, it is often more difficult on common commercial cabs. This option is especially geared towards customers that have an OMEN warning lightbar mounted on top a commercial cab, such as a Freightliner, International, Peterbilt, Kenworth, Ford, Chevy, or RAM, where mounting a standard FireTech Brow Light can be difficult.*
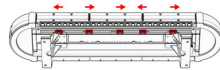
NOTE: *All FireTech Brow Light options recommended to be mounted on an OMEN DO NOT INCLUDE a marker light option.*

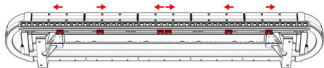## OMEN + BROW LIGHT COMBOS WITH J-FEET
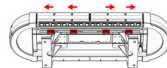
(1) FT-HVC-OMEN-84 & (1) FT-B-72-FT
(8) FT-MB-JFOOT-B
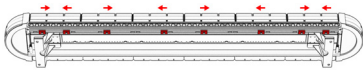
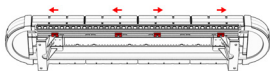**(1) FT-HVC-OMEN-48 & (1) FT-MB-27-FT**
(5) FT-MB-JFOOT-B

(1) FT-HVC-OMEN-72 & (1) FT-B-65-FT
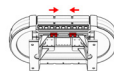**(6) FT-MB-JFOOT-B**

(1) FT-HVC-OMEN-36 & (1) FT-MB-18-FT
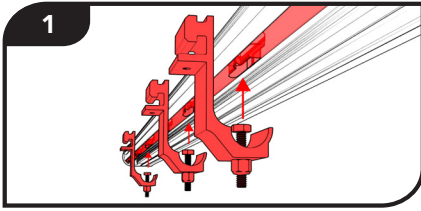**(4) FT-MB-JFOOT-B**

(1) FT-HVC-OMEN-60 & (1) FT-B-46-FT
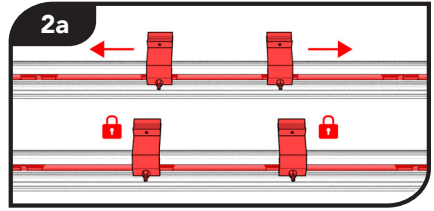**(4) FT-MB-JFOOT-B**

(1) FT-HVC-OMEN-24 & (1) FT-MB-9-FT
**(2) FT-MB-JFOOT-B**

INSTALL BROW LIGHT TO OMEN WITH J-FEET

Insert J-foot bottom bolts into the slots at the bottom of the brow light. The back of the J-feet should be on the back of the brow light.


Slide each J-foot (reference the red arrows on page 21 of your OMEN & brow light configuration to see which direction to slide each J-foot), make sure the bolt is all the way inserted to slide across. Tighten the J-foot bolts to hand tight.
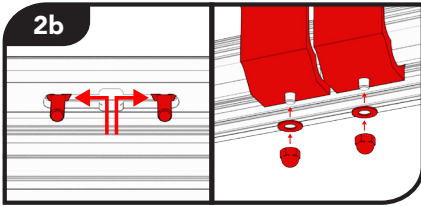

If you have a 72" OMEN: For the center slot you will want 2 J-feet in the same slot. To do this remove the bottom bolts from feet, insert bolts into brow light railing slot and slide one to each end. Then reattach each foot to the bolts.
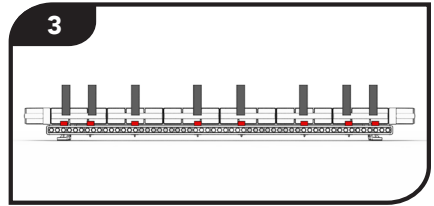
Hold the brow light with J-feet centered to the front of your OMEN lightbar and use a piece of masking tape to mark approximately where each J-foot will go on your OMEN extrusion.
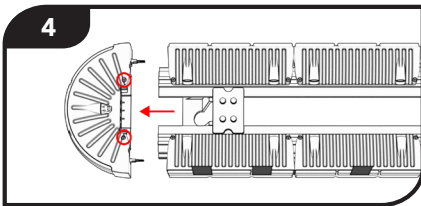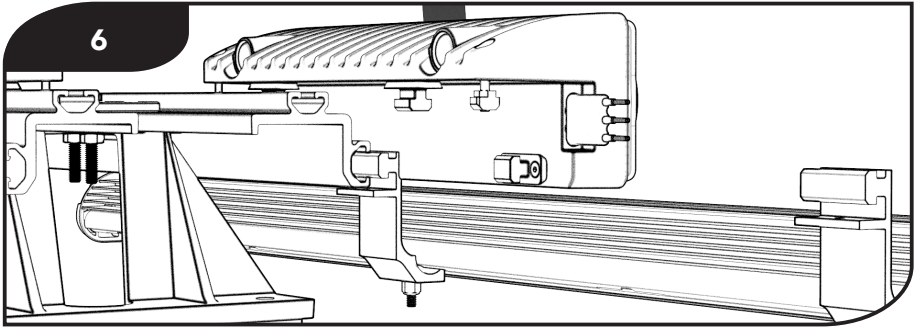

Loosen OMEN light module bolts with 4mm allen key on one side module and remove it from the extrusion.
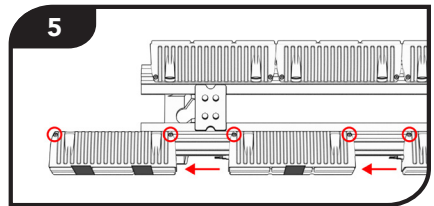

Loosen OMEN light module top bolts (on front modules only) with 4mm allen key and remove them from the extrusion.

INSTALL BROW LIGHT WITH J-FEET (CONT.)

Slide each 12" front module partially on the extrusion adding a J-foot on the extrusion in between the light (only where you marked with tape) then continue to slide the module on. **It is important to keep the light modules in order!**
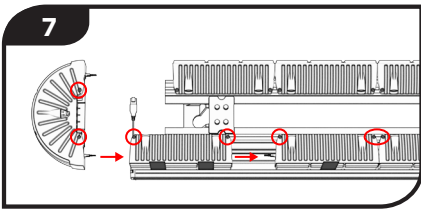

Repeat process until all modules are tightly back on the extrusion with the J-feet in place. Tighten the OMEN light module top bolts with a 3 ft-lbs. torque wrench.
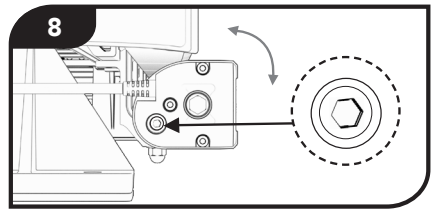
Before tightening, make sure your brow light is pointed forward and aimed at the best angle for your apparatus. You can adjust it by loosening the side bolt of your brow light with an allen key and loosening the bottom J-feet bolts and manually adjusting it to the desired angle.
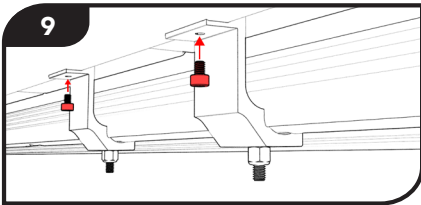
Insert the top bolts into each J-foot and finish tightening all nuts and bolts on each J-foot (and on the side of your brow light if you adjusted it to angle your light).
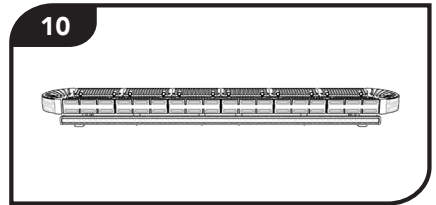
Remove tape and installation is complete. For wiring instructions please see the appropriate brow light or minibrow instruction manual (available on our website).

PROGRAMMING - FIELD SUPPORT TOOL

FireTech "Smart" products like our HiViz Connect warning lights and OMEN warning lightbar are all programmable. Currently the system in programmed using a product called the Field Support Tool, this tool allows you to configure these products as well as install software updates as they become available. This tool is also extremely helpful in diagnosing problem areas, even connecting back to the HiViz engineering team to "talk to your truck" and see exactly what sort of messages are being sent/received by the lighting system. Future software updates will enable bluetooth functionality on all fixtures and this tool will be replaced by a bluetooth mobile app for most customers.

This tool is NOT required to use our systems, only to configure it. As such, training is required and this tool is restricted to dealers, OEMs, and up-fitter partners who are in good standing with HiViz. If you are an end-user looking to make updates to your system, contact HiViz and our team will provide more information about shipping a loaner field support tool or scheduling a visit from a qualified HiViz smart product technician.

Field Support Tool
P/N: FT-FIELDSUPPORTTOOL