

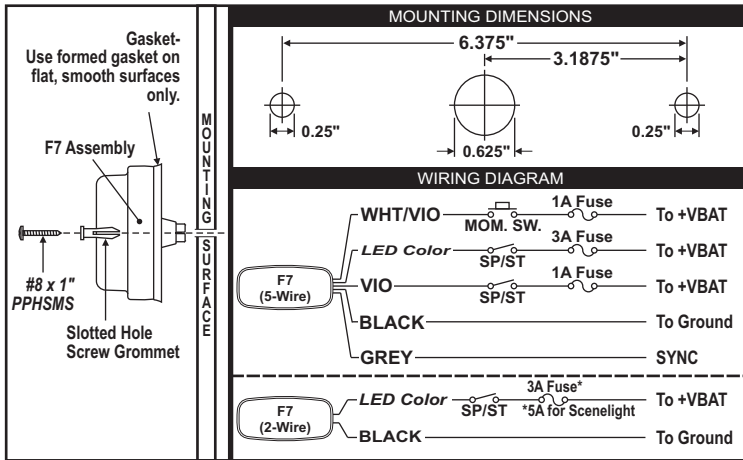
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**Safety First:** This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator 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.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- Failure to use specified installation parts and/or hardware will void the product warranty!
- 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.
- 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 owner's 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.
- **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!
- **FAILURE TO FOLLOW THESE PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

**Mounting**

- Using the dimensions below, mark the mounting and wire hole locations onto the proposed mounting surface. Drill two, .250" diameter mounting holes and a .625" (minimum) wire access hole into the mounting surface.
- Place the gasket into position on the rear of the F7 assembly. Insert the slotted hole screw grommet through the mounting holes on the F7/Gasket assembly.
- Feed the F7 wires through the wire access hole in the mounting surface. Press the F7/Gasket/Grommet assembly onto its mounting location so that it is flat against the mounting surface. With the assembly in position and using the hardware provided, tighten the mounting screws until the lighthouse assembly is drawn firmly against the mounting surface. DO NOT OVERTIGHTEN!
- Using appropriately sized wires (minimum 18 AWG), extend the M7 wires to their designated connections. Refer to the diagram below for wiring and fusing information.



**WHITE/VIO - Scan-Lock™ Pattern Selection:** This feature allows the user to select from several available flash patterns. Lighthouse must be switched on for Scan-Lock to work.  
**TO CYCLE THROUGH ALL PATTERNS:** Apply +VBAT to the WHT/VIO wire for less than 1 second and release. To cycle backward through patterns apply +VBAT to WHT/VIO wire for over 1 second and release.  
**TO SET A PATTERN AS DEFAULT:** Allow pattern to run over 5 seconds to make it the default pattern.  
**TO RESET TO THE FACTORY DEFAULT PATTERN:** Turn off power. While applying +VBAT to the WHT/VIO wire, turn power on. The lighthouse will reset to its default pattern.

**GREY - SYNC:** TO SYNC 2 lighthoods, configure both lighthoods to display the same Phase 1 (Simultaneous) pattern. Turn power off and connect the GREY wire from each lighthouse together. Activate the lighthoods and their patterns will be synchronized. To configure 2 lighthoods to alternate their patterns, advance either lighthouse to Phase 2 (Alternating) of the current pattern.

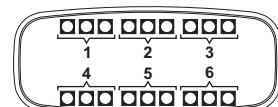
**VIOLET - Low Power:**  
 The type of switch used depends on how the operator wishes the Low Power feature to function:  
**Latching Mode:** By applying +VBAT to the VIO wire for less than 1 sec., the lighthouse is "latched" into low power. The unit must be turned off and then back on to restore normal operation (momentary switch).  
**Level Mode:** Applying +VBAT to the VIO wire for more than 1 sec. holds the lighthouse in low power mode until voltage is removed (toggle switch). **Note: There are 5 levels of low power intensity.**

**IMPORTANT WARNING!**

**CAUTION! DO NOT LOOK DIRECTLY AT THESE LEDS WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!**

#	Pattern	Seq	Phase							
1	SignalAlert™	Solid	PH.1	56	LongBurst™ 75	T/B	PH.2	111	ModuFlash™	Solid
2	SignalAlert™	Solid	PH.2	57	LongBurst™ 75	I/O	PH.1	112	ModuFlash™	L/R
3	SignalAlert™	L/R	PH.1	58	LongBurst™ 75	I/O	PH.2	113	ModuFlash™	T/B
4	SignalAlert™	L/R	PH.2	59	LongBurst™ 75	Diag	PH.1	114	ModuFlash™	I/O
5	SignalAlert™	T/B	PH.1	60	LongBurst™ 75	Diag	PH.2	115	ModuFlash™	Diag
6	SignalAlert™	T/B	PH.2	61	PingPong™ 75	Solid	PH.1	116	DoubleFlash 120	Solid
7	SignalAlert™	I/O	PH.1	62	PingPong™ 75	Solid	PH.2	117	DoubleFlash 120	L/R
8	SignalAlert™	I/O	PH.2	63	PingPong™ 75	L/R	PH.1	118	DoubleFlash 120	T/B
9	SignalAlert™	Diag	PH.1	64	PingPong™ 75	L/R	PH.2	119	DoubleFlash 120	I/O
10	SignalAlert™	Diag	PH.2	65	PingPong™ 75	T/B	PH.1	120	DoubleFlash 120	Diag
11	CometFlash@75	Solid	PH.1	66	PingPong™ 75	T/B	PH.2	121	PingPong™ 120	Solid
12	CometFlash@75	Solid	PH.2	67	PingPong™ 75	I/O	PH.1	122	PingPong™ 120	L/R
13	CometFlash@75	L/R	PH.1	68	PingPong™ 75	I/O	PH.2	123	PingPong™ 120	T/B
14	CometFlash@75	L/R	PH.2	69	PingPong™ 75	Diag	PH.1	124	PingPong™ 120	I/O
15	CometFlash@75	T/B	PH.1	70	PingPong™ 75	Diag	PH.2	125	PingPong™ 120	Diag
16	CometFlash@75	T/B	PH.2	71	SingleFlash 60	Solid	PH.1	126	TripleFlash™ 75	Solid
17	CometFlash@75	I/O	PH.1	72	SingleFlash 60	L/R	PH.1	127	TripleFlash™ 75	L/R
18	CometFlash@75	I/O	PH.2	73	SingleFlash 60	T/B	PH.1	128	TripleFlash™ 75	T/B
19	CometFlash@75	Diag	PH.1	74	SingleFlash 60	I/O	PH.1	129	TripleFlash™ 75	I/O
20	CometFlash@75	Diag	PH.2	75	SingleFlash 60	Diag	PH.1	130	TripleFlash™ 75	Diag
21	DoubleFlash 75	Solid	PH.1	76	SingleFlash 90	Solid	PH.1	131	TripleFlash™ 120	Solid
22	DoubleFlash 75	Solid	PH.2	77	SingleFlash 90	L/R	PH.1	132	TripleFlash™ 120	L/R
23	DoubleFlash 75	L/R	PH.1	78	SingleFlash 90	T/B	PH.1	133	TripleFlash™ 120	T/B
24	DoubleFlash 75	L/R	PH.2	79	SingleFlash 90	I/O	PH.1	134	TripleFlash™ 120	I/O
25	DoubleFlash 75	T/B	PH.1	80	SingleFlash 90	Diag	PH.1	135	TripleFlash™ 120	Diag
26	DoubleFlash 75	T/B	PH.2	81	SingleFlash 120	Solid	PH.1	136	Action SF 60/120	Solid
27	DoubleFlash 75	I/O	PH.1	82	SingleFlash 120	L/R	PH.1	137	Action SF 60/120	L/R
28	DoubleFlash 75	I/O	PH.2	83	SingleFlash 120	T/B	PH.1	138	Action SF 60/120	T/B
29	DoubleFlash 75	Diag	PH.1	84	SingleFlash 120	I/O	PH.1	139	Action SF 60/120	I/O
30	DoubleFlash 75	Diag	PH.2	85	SingleFlash 120	Diag	PH.1	140	Action SF 60/120	Diag
31	SingleFlash 75	Solid	PH.1	86	SingleFlash 300	Solid	PH.1	141	Action SF 60/TF 120	Solid
32	SingleFlash 75	Solid	PH.2	87	SingleFlash 300	L/R	PH.1	142	Action SF 60/TF 120	L/R
33	SingleFlash 75	L/R	PH.1	88	SingleFlash 300	T/B	PH.1	143	Action SF 60/TF 120	T/B
34	SingleFlash 75	L/R	PH.2	89	SingleFlash 300	I/O	PH.1	144	Action SF 60/TF 120	I/O
35	SingleFlash 75	T/B	PH.1	90	SingleFlash 300	Diag	PH.1	145	Action SF 60/TF 120	Diag
36	SingleFlash 75	T/B	PH.2	91	DoubleFlash 150	Solid	PH.1	146	Cylon SLOW	
37	SingleFlash 75	I/O	PH.1	92	DoubleFlash 150	L/R	PH.1	147	Cylon MEDIUM	
38	SingleFlash 75	I/O	PH.2	93	DoubleFlash 150	T/B	PH.1	148	Cylon FAST	
39	SingleFlash 75	Diag	PH.1	94	DoubleFlash 150	I/O	PH.1	149	Cylon VARIABLE	
40	SingleFlash 75	Diag	PH.2	95	DoubleFlash 150	Diag	PH.1	150	Cylon MEDIUM w/SOLID	
41	ComAlert™ 75	Solid	PH.1	96	ComAlert™ 150	Solid	PH.1	151	PinWheel SLOW	
42	ComAlert™ 75	Solid	PH.2	97	ComAlert™ 150	L/R	PH.1	152	PinWheel MEDIUM	
43	ComAlert™ 75	L/R	PH.1	98	ComAlert™ 150	T/B	PH.1	153	PinWheel FAST	
44	ComAlert™ 75	L/R	PH.2	99	ComAlert™ 150	I/O	PH.1	154	PinWheel VARIABLE	
45	ComAlert™ 75	T/B	PH.1	100	ComAlert™ 150	Diag	PH.1	155	PinWheel MEDIUM w/Solid	
46	ComAlert™ 75	T/B	PH.2	101	ActionFlash™ 50	Solid	PH.1	156	CalScan	
47	ComAlert™ 75	I/O	PH.1	102	ActionFlash™ 50	L/R	PH.1	157	ActionScan™	
48	ComAlert™ 75	I/O	PH.2	103	ActionFlash™ 50	T/B	PH.1	158	SignalAlert™ Steady	
49	ComAlert™ 75	Diag	PH.1	104	ActionFlash™ 50	I/O	PH.1	159	Steady	
50	ComAlert™ 75	Diag	PH.2	105	ActionFlash™ 50	Diag	PH.1			
51	LongBurst™ 75	Solid	PH.1	106	ActionFlash™ 150	Solid	PH.1			
52	LongBurst™ 75	Solid	PH.2	107	ActionFlash™ 150	L/R	PH.1			
53	LongBurst™ 75	L/R	PH.1	108	ActionFlash™ 150	T/B	PH.1			
54	LongBurst™ 75	L/R	PH.2	109	ActionFlash™ 150	I/O	PH.1			
55	LongBurst™ 75	T/B	PH.1	110	ActionFlash™ 150	Diag	PH.1			

**RED - Flash Mode:**  
 Apply +VBAT to the RED wire to activate the lighthouse in "flash mode". In flash mode, you may change the flash pattern using Scan-Lock™.



**Sequencing & Phasing:** The F7 has 6 sets of 3 LEDs which cycle through the 5 sequences shown.

Sequences	Operation of LED sets		
<b>Solid</b>	All On	Alternates with	All Off
<b>Left to Right</b>	1 - 2 - 4	Alternates with	3 - 5 - 6
<b>Top to Bottom</b>	1 - 2 - 3	Alternates with	4 - 5 - 6
<b>In and Out</b>	2 - 5	Alternates with	1 - 3 - 4 - 6
<b>Diagonal</b>	1 - 2 - 6	Alternates with	4 - 5 - 3

## **Warnings to Installers**

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that he can operate the system without taking his eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

## **Warnings to Users**

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.