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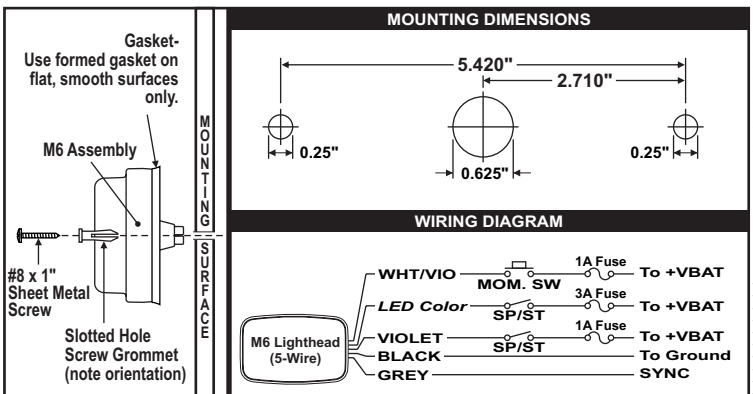
Safety First: This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information 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.**
- **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

1. 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.
2. Place the gasket into position on the rear of the M6 assembly. Insert the slotted hole screw grommet through the mounting holes on the M6/Gasket assembly so that it is flush with the lens surface.
3. Feed the M6 wires through the wire access hole in the mounting surface. Press the M6/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 lighthead assembly is drawn firmly against the mounting surface. A torque value of 12 in-lb. (max.) is typically required to achieve this. DO NOT OVER TIGHTEN!!
4. Using appropriately sized wires (minimum 18 AWG), extend the M6 wires to their designated connections. Refer to the diagram below for wiring and fusing information.

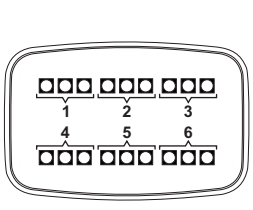


LED Color Wire - Flash Mode ***(Wire will be the color of the LED in the light)***
Apply +VBAT to the *LED Color* wire to activate the lighthead in "flash mode". In flash mode, you may change the flash pattern using Scan-Lock™.

WHITE/VIO - Scan-Lock™ Pattern Selection: This feature allows the user to select from several available flash patterns. The lighthead must be switched on for Scan-Lock to work.
NOTE: High and Low power patterns are chosen separately. Scan-Lock™+ by Whelen can be used for easier pattern selection.

TO CYCLE THROUGH ALL PATTERNS: With power applied to the RED wire, 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 lighthead will reset to it's default pattern.

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



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

M6 Sequencing & Phasing: The M6 lighthead has 6 sets of 3 LEDs. These sets cycle through the 5 sequences shown.

VIOLET - Low Power Mode: Applying +VBAT to the VIO wire while Flash Mode is active sets the lighthead to Low Power Mode. Low Power Mode flash pattern can be set to a different flash pattern than Flash Mode using Scan Lock. By default, Low Power Mode flash pattern is #188 DVI Single Flash 75 Lo Intensity All On.

	High Power	SYNC	PH	Low Power	SYNC	PH
1	**SignalAlert 75 All On (Default)**	Yes	1	SignalAlert 75 All On	Yes	1
2	SignalAlert 75 All On	Yes	2	SignalAlert 75 All On	Yes	2
3	SignalAlert 75 Left/Right	Yes	1	SignalAlert 75 Left/Right	Yes	1
4	SignalAlert 75 Right/Left	Yes	2	SignalAlert 75 Right/Left	Yes	2
5	SignalAlert 75 Up/Down	Yes	1	SignalAlert 75 Up/Down	Yes	1
6	SignalAlert 75 Down/Up	Yes	2	SignalAlert 75 Down/Up	Yes	2
7	SignalAlert In/Out	Yes	1	SignalAlert 75 In/Out	Yes	1
8	SignalAlert 75 Out/In	Yes	2	SignalAlert 75 Out/In	Yes	2
9	SignalAlert 75 Diag	Yes	1	SignalAlert 75 Diag	Yes	1
10	SignalAlert 75 Diag	Yes	2	SignalAlert 75 Diag	Yes	2
11	CometFlash 75 All On	Yes	1	CometFlash 75 All On	Yes	1
12	CometFlash 75 All On	Yes	2	CometFlash 75 All On	Yes	2
13	CometFlash 75 Left/Right	Yes	1	CometFlash 75 Left/Right	Yes	1
14	CometFlash 75 Right/Left	Yes	2	CometFlash 75 Right/Left	Yes	2
15	CometFlash 75 Up/Down	Yes	1	CometFlash 75 Up/Down	Yes	1
16	CometFlash 75 Down/Up	Yes	2	CometFlash 75 Down/Up	Yes	2
17	CometFlash 75 In/Out	Yes	1	CometFlash 75 In/Out	Yes	1
18	CometFlash 75 Out/In	Yes	2	CometFlash 75 Out/In	Yes	2
19	CometFlash 75 Diag	Yes	1	CometFlash 75 Diag	Yes	1
20	CometFlash 75 Diag	Yes	2	CometFlash 75 Diag	Yes	2
21	DoubleFlash 75 All On	Yes	1	DoubleFlash 75 All On	Yes	1
22	DoubleFlash 75 All On	Yes	2	DoubleFlash 75 All On	Yes	2
23	DoubleFlash 75 Left/Right	Yes	1	DoubleFlash 75 Left/Right	Yes	1
24	DoubleFlash 75 Right/Left	Yes	2	DoubleFlash 75 Right/Left	Yes	2
25	DoubleFlash 75 Up/Down	Yes	1	DoubleFlash 75 Up/Down	Yes	1
26	DoubleFlash 75 Down/Up	Yes	2	DoubleFlash 75 Down/Up	Yes	2
27	DoubleFlash 75 In/Out	Yes	1	DoubleFlash 75 In/Out	Yes	1
28	DoubleFlash 75 Out/In	Yes	2	DoubleFlash 75 Out/In	Yes	2
29	DoubleFlash 75 Diag	Yes	1	DoubleFlash 75 Diag	Yes	1
30	DoubleFlash 75 Diag	Yes	2	DoubleFlash 75 Diag	Yes	2
31	SingleFlash 75 All On	Yes	1	SingleFlash 75 All On	Yes	1
32	SingleFlash 75 All On	Yes	2	SingleFlash 75 All On	Yes	2
33	SingleFlash 75 Left/Right	Yes	1	SingleFlash 75 Left/Right	Yes	1
34	SingleFlash 75 Right/Left	Yes	2	SingleFlash 75 Right/Left	Yes	2
35	SingleFlash 75 Up/Down	Yes	1	SingleFlash 75 Up/Down	Yes	1
36	SingleFlash 75 Down/Up	Yes	2	SingleFlash 75 Down/Up	Yes	2
37	SingleFlash 75 In/Out	Yes	1	SingleFlash 75 In/Out	Yes	1
38	SingleFlash 75 Out/In	Yes	2	SingleFlash 75 Out/In	Yes	2
39	SingleFlash 75 Diag	Yes	1	SingleFlash 75 Diag	Yes	1
40	SingleFlash 75 Diag	Yes	2	SingleFlash 75 Diag	Yes	2
41	ComAlert 75 All On	Yes	1	ComAlert 75 All On	Yes	1
42	ComAlert 75 All On	Yes	2	ComAlert 75 All On	Yes	2
43	ComAlert 75 Left/Right	Yes	1	ComAlert 75 Left/Right	Yes	1
44	ComAlert 75 Right/Left	Yes	2	ComAlert 75 Right/Left	Yes	2
45	ComAlert 75 Up/Down	Yes	1	ComAlert 75 Up/Down	Yes	1
46	ComAlert 75 Down/Up	Yes	2	ComAlert 75 Down/Up	Yes	2
47	ComAlert 75 In/Out	Yes	1	ComAlert 75 In/Out	Yes	1
48	ComAlert 75 Out/In	Yes	2	ComAlert 75 Out/In	Yes	2
49	ComAlert 75 Diag	Yes	1	ComAlert 75 Diag	Yes	1
50	ComAlert 75 Diag	Yes	2	ComAlert 75 Diag	Yes	2
51	LongBurst 75 All On	Yes	1	LongBurst 75 All On	Yes	1
52	LongBurst 75 All On	Yes	2	LongBurst 75 All On	Yes	2
53	LongBurst 75 Left/Right	Yes	1	LongBurst 75 Left/Right	Yes	1
54	LongBurst 75 Right/Left	Yes	2	LongBurst 75 Right/Left	Yes	2
55	LongBurst 75 Up/Down	Yes	1	LongBurst 75 Up/Down	Yes	1
56	LongBurst 75 Down/Up	Yes	2	LongBurst 75 Down/Up	Yes	2
57	LongBurst 75 In/Out	Yes	1	LongBurst 75 In/Out	Yes	1
58	LongBurst 75 Out/In	Yes	2	LongBurst 75 Out/In	Yes	2
59	LongBurst 75 Diag	Yes	1	LongBurst 75 Diag	Yes	1
60	LongBurst 75 Diag	Yes	2	LongBurst 75 Diag	Yes	2
61	PingPong 75 All On	Yes	1	PingPong 75 All On	Yes	1
62	PingPong 75 All On	Yes	2	PingPong 75 All On	Yes	2
63	PingPong 75 Left/Right	Yes	1	PingPong 75 Left/Right	Yes	1
64	PingPong 75 Right/Left	Yes	2	PingPong 75 Right/Left	Yes	2
65	PingPong 75 Up/Down	Yes	1	PingPong 75 Up/Down	Yes	1
66	PingPong 75 Down/Up	Yes	2	PingPong 75 Down/Up	Yes	2
67	PingPong 75 In/Out	Yes	1	PingPong 75 In/Out	Yes	1
68	PingPong 75 Out/In	Yes	2	PingPong 75 Out/In	Yes	2
69	PingPong 75 Diag	Yes	1	PingPong 75 Diag	Yes	1
70	PingPong 75 Diag	Yes	2	PingPong 75 Diag	Yes	2
71	SingleFlash 60 All On			SingleFlash 60 All On		
72	SingleFlash 60 Left/Right			SingleFlash 60 Left/Right		
73	SingleFlash 60 Up/Down			SingleFlash 60 Up/Down		
74	SingleFlash 60 In/Out			SingleFlash 60 In/Out		
75	SingleFlash 60 Diag			SingleFlash 60 Diag		
76	SingleFlash 90 All On			SingleFlash 90 All On		
77	SingleFlash 90 Left/Right			SingleFlash 90 Left/Right		
78	SingleFlash 90 Up/Down			SingleFlash 90 Up/Down		
79	SingleFlash 90 In/Out			SingleFlash 90 In/Out		
80	SingleFlash 90 Diag			SingleFlash 90 Diag		
81	SingleFlash 120 All On			SingleFlash 120 All On		
82	SingleFlash 120 Left/Right			SingleFlash 120 Left/Right		
83	SingleFlash 120 Up/Down			SingleFlash 120 Up/Down		
84	SingleFlash 120 In/Out			SingleFlash 120 In/Out		
85	SingleFlash 120 Diag			SingleFlash 120 Diag		
86	SingleFlash 300 All On			SingleFlash 300 All On		
87	SingleFlash 300 Left/Right			SingleFlash 300 Left/Right		
88	SingleFlash 300 Up/Down			SingleFlash 300 Up/Down		
89	SingleFlash 300 In/Out			SingleFlash 300 In/Out		
90	SingleFlash 300 Diag			SingleFlash 300 Diag		
91	DoubleFlash 150 All On			DoubleFlash 150 All On		
92	DoubleFlash 150 Left/Right			DoubleFlash 150 Left/Right		
93	DoubleFlash 150 Up/Down			DoubleFlash 150 Up/Down		
94	DoubleFlash 150 In/Out			DoubleFlash 150 In/Out		
95	DoubleFlash 150 Diag			DoubleFlash 150 Diag		
96	ComAlert 150 All On			ComAlert 150 All On		
97	ComAlert 150 Left/Right			ComAlert 150 Left/Right		
98	ComAlert 150 Up/Down			ComAlert 150 Up/Down		
99	ComAlert 150 In/Out			ComAlert 150 In/Out		
100	ComAlert 150 Diag			ComAlert 150 Diag		
101	ActionFlash 50 All On			ActionFlash 50 All On		
102	ActionFlash 50 Left/Right			ActionFlash 50 Left/Right		
103	ActionFlash 50 Up/Down			ActionFlash 50 Up/Down		
104	ActionFlash 50 In/Out			ActionFlash 50 In/Out		

	High Power	SYNC	PH	Low Power	SYNC	PH
105	ActionFlash 50 Diag			ActionFlash 50 Diag		
106	ActionFlash 150 All On			ActionFlash 150 All On		
107	ActionFlash 150 Left/Right			ActionFlash 150 Left/Right		
108	ActionFlash 150 Up/Down			ActionFlash 150 Up/Down		
109	ActionFlash 150 In/Out			ActionFlash 150 In/Out		
110	ActionFlash 150 Diag			ActionFlash 150 Diag		
111	ModuFlash All On			ModuFlash All On		
112	ModuFlash Left/Right			ModuFlash Left/Right		
113	ModuFlash Up/Down			ModuFlash Up/Down		
114	ModuFlash In/Out			ModuFlash In/Out		
115	ModuFlash Diag			ModuFlash Diag		
116	DoubleFlash 120 All On			DoubleFlash 120 All On		
117	DoubleFlash 120 Left/Right			DoubleFlash 120 Left/Right		
118	DoubleFlash 120 Up/Down			DoubleFlash 120 Up/Down		
119	DoubleFlash 120 In/Out			DoubleFlash 120 In/Out		
120	DoubleFlash 120 Diag			DoubleFlash 120 Diag		
121	PingPong 120 All On			PingPong 120 All On		
122	PingPong 120 Left/Right			PingPong 120 Left/Right		
123	PingPong 120 Up/Down			PingPong 120 Up/Down		
124	PingPong 120 In/Out			PingPong 120 In/Out		
125	PingPong 120 Diag			PingPong 120 Diag		
126	TripleFlash 75 All On	Yes	1	TripleFlash 75 All On	Yes	1
127	TripleFlash 75 Left/Right	Yes	1	TripleFlash 75 Left/Right	Yes	1
128	TripleFlash 75 Up/Down	Yes	1	TripleFlash 75 Up/Down	Yes	1
129	TripleFlash 75 In/Out	Yes	1	TripleFlash 75 In/Out	Yes	1
130	TripleFlash 75 Diag	Yes	1	TripleFlash 75 Diag	Yes	1
131	TripleFlash 120 All On			TripleFlash 120 All On		
132	TripleFlash 120 Left/Right			TripleFlash 120 Left/Right		
133	TripleFlash 120 Up/Down			TripleFlash 120 Up/Down		
134	TripleFlash 120 In/Out			TripleFlash 120 In/Out		
135	TripleFlash 120 Diag			TripleFlash 120 Diag		
136	Action 60 All On			Action 60 All On		
137	Action 60 Left/Right			Action 60 Left/Right		
138	Action 60 Up/Down			Action 60 Up/Down		
139	Action 60 In/Out			Action 60 In/Out		
140	Action 60 Diag			Action 60 Diag		
141	Action 120 All On			Action 120 All On		
142	Action 120 Left/Right			Action 120 Left/Right		
143	Action 120 Up/Down			Action 120 Up/Down		
144	Action 120 In/Out			Action 120 In/Out		
145	Action 120 Diag			Action 120 Diag		
146	Cylon Slow			Cylon Slow		
147	Cylon Medium			Cylon Medium		
148	Cylon Fast			Cylon Fast		
149	Cylon Variable			Cylon Variable		
150	Cylon Medium w/Flash			Cylon Medium w/Flash		

	High Power	SYNC	PH	Low Power	SYNC	PH
151	Pinwheel Slow			Pinwheel Slow		
152	Pinwheel Medium			Pinwheel Medium		
153	Pinwheel Fast			Pinwheel Fast		
154	Pinwheel Variable			Pinwheel Variable		
155	Pinwheel Medium w/Flash			Pinwheel Medium w/Flash		
156	SigAlert Steady			CalScan		
157	ActionScan			ActionScan		
158	CalScan			SignalAlert Steady		
159	DVI SingleFlash 60 Hi Intensity Diag			DVI SingleFlash 60 Hi Intensity Diag		
160	DVI SingleFlash 60 Hi Intensity In/Out			DVI SingleFlash 60 Lo Intensity Diag		
161	DVI SingleFlash 60 Hi Intensity Up/Down			DVI SingleFlash 60 Hi Intensity In/Out		
162	DVI SingleFlash 60 Hi Intensity Left/Right			DVI SingleFlash 60 Lo Intensity In/Out		
163	DVI SingleFlash 60 Hi Intensity All On			DVI SingleFlash 60 Hi Intensity Up		
164	DVI SingleFlash 75 Hi Intensity Diag	Yes	2	DVI SingleFlash 60 Lo Intensity Up/Down		
165	DVI SingleFlash 75 Hi Intensity Diag	Yes	1	DVI SingleFlash 60 Hi Intensity Left/Right		
166	DVI SingleFlash 75 Hi Intensity Out/In	Yes	2	DVI SingleFlash 60 Lo Intensity Left/Right		
167	DVI SingleFlash 75 Hi Intensity In/Out	Yes	1	DVI SingleFlash 60 Hi Intensity All On		
168	DVI SingleFlash 75 Hi Intensity Down/Up	Yes	2	DVI SingleFlash 60 Lo Intensity All On		
169	DVI SingleFlash 75 Hi Intensity Up/Down	Yes	1	DVI SingleFlash 75 Hi Intensity Diag	Yes	2
170	DVI SingleFlash 75 Hi Intensity Right/Left	Yes	2	DVI SingleFlash 75 Hi Intensity Diag	Yes	1
171	DVI SingleFlash 75 Hi Intensity Left/Right	Yes	1	DVI SingleFlash 75 Lo Intensity Diag	Yes	2
172	DVI SingleFlash 75 Hi Intensity All On	Yes	2	DVI SingleFlash 75 Lo Intensity Diag	Yes	1
173	DVI SingleFlash 75 Hi Intensity All On	Yes	1	DVI SingleFlash 75 Hi Intensity Out/In	Yes	2
174	Steady On			DVI SingleFlash 75 Hi Intensity In/Out	Yes	1

	Low Power NOT subject to L/P intensity reduction	SYNC	PH
175	DVI Single Flash 75 Lo Intensity Out/In	Yes	2
176	DVI Single Flash 75 Lo Intensity In/Out	Yes	1
177	DVI Single Flash 75 Hi Intensity Down/Up	Yes	2
178	DVI Single Flash 75 Hi Intensity Up/Down	Yes	1
179	DVI Single Flash 75 Lo Intensity Down/Up	Yes	2
180	DVI Single Flash 75 Lo Intensity Up/Down	Yes	1
181	DVI Single Flash 75 Hi Intensity Right/Left	Yes	2
182	DVI Single Flash 75 Hi Intensity Left/Right	Yes	1
183	DVI Single Flash 75 Lo Intensity Right/Left	Yes	2
184	DVI Single Flash 75 Lo Intensity Left/Right	Yes	1
185	DVI Single Flash 75 Hi Intensity All On	Yes	2
186	DVI Single Flash 75 Hi Intensity All On	Yes	1
187	Steady On		
188	**DVI Single Flash 75 Lo Intensity All On (Default)**	Yes	1
189	DVI SingleFlash 75 Low Intensity All On	Yes	2

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For warranty information regarding this product, visit www.whelen.com/warranty