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Products Development, LLC
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Milan, IL 61264

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REVISIONS PAGE

Rev	Description	Page(s)	Date	Approved By
IR	Initial Release	ALL	09/30/19	*(signature)*
A	Updated: • Appendix C wiring diagram updated to include function strapping wires • Connector pin number and labels updated • LED Fixture part numbers and detail added • Software configuration updated for v2.0 software • Testing procedures updated to include v2.0 software changes	C2-C17 20-28 A1-A3 37-69 69-76	07/09/20	*(signature)*
B	Added special notes for Ethernet configurations and simultaneous inputs	—	09/02/20	*(signature)*
C	Updated: • PRIZM LED fixture color temperature descriptions • Software configuration updated for v3.0 software • SVS system updated and all affected data and example wiring diagrams • PRIZM backup wiring example wiring	ALL	12/14/21	*(signature)*
D	Updated: • Example wiring diagram updated to correct PRIZM connector J7 power and ground pinout.	C8	02/03/22	*(signature)*
E	Updated: • Software configuration updated for v4.0 software. • Updated Lighting Part Number Configuration. • Configuration Worksheet updated for v4.0 software • Example wiring diagram updated to show correct pins for channel power • Added Frequently Asked Questions	§7 §A §B §C §D	05/07/24	*(signature)*

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1 GENERAL INFORMATION

1.1 Abbreviations and Terminology

SVS (EWS) – Smart Vision System / Electronic Window Shade

RGBW – Red, Green, Blue, White

LED – Light Emitting Diode

PED – Personal Electronic Device

PRIZM – RGBW Cabin Lighting System

Prizm Aircraft Products – Elliott Aviation Technical Products Development, LLC

1.2 Introduction

The instructions in this manual along with the PRIZM and EWS reference drawings provide the necessary information to properly install and operate the following Prizm Aircraft Products units:

- PRIZM LRUs
- SVS (EWS) LRUs
- EWS Window Panes
- PRIZM LED Light Assemblies
- PRIZM LED Cup Holders

This manual provides electrical and mechanical installation data and characteristics, testing/trouble shooting data, continued airworthiness data, and flight supplement data.

1.3 Contact Information

Please submit comments, suggestions, errors, or other concerns about this manual to our technical publications department at service@PrizmAircraftLighting.com.

For technical questions please contact service@PrizmAircraftLighting.com.

2 DESCRIPTION AND OPERATION

2.1 Description

The information contained with this system installation manual describes the technical aspects, features, functions, and components of the PRIZM and SVS (EWS) systems.

The information, drawings, and wiring diagrams contained in the manual are intended as a reference for engineering planning only. The drawings and wiring diagrams contained herein do not represent any specific STC or Form 337 aircraft installation. It is the responsibility of the installer to create specific aircraft installation drawings. This manual and the drawings and wiring diagrams may not be used as a substitute for an STC or Form 337 drawing package.

2.2 General

The PRIZM system is a full color array cabin lighting system that can be controlled by your aircraft's existing lighting switching and may also be controlled by Wi-Fi using a PED. It is capable of controlling up to twenty 16ft light assemblies along with fifteen 2ft single-color light assemblies or other LED bulbs.

The Prizm Aircraft Products SVS (EWS) system is an electronic window shade system. The system is capable of controlling up to twenty electronic window shades. Each window shade is controlled via individual shade switches, and they are all controlled via a cockpit mounted override switch. There is also capability of having all control via a VIP switch or, if installed, with the PRIZM system using its app-based control.

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2.3 Product Components

2.3.1 PRIZM LRU

The PRIZM LRU is made up of 4 different dash number units. The table below breaks down the various part numbers.

000-3846-M0795-51	LED only unit capable of outputting 10 16 feet RGBW LED light channels. This unit is also capable of outputting 15 2 feet single color LED or light bulb channels.
000-3846-M0795-52	LED only unit capable of outputting 20 16 feet RGBW LED light channels. This unit is also capable of controlling 15 2 feet single color LED or light bulb channels with power source external to PRIZM LRU.
000-3846-M0795-53	LED and EWS unit capable of outputting 10 16 feet RGBW LED light channels. This unit is also capable of controlling 30 2 feet single color LED or light bulb channels with power source external to PRIZM LRU. Also capable of controlling 20 electronic window shades.
000-3846-M0795-54	LED only unit capable of outputting 20 16 feet RGBW LED light channels. This unit is also capable of controlling 30 2 feet single color LED or light bulb channels with power source external to PRIZM LRU. Also capable of controlling 20 electronic window shades.

2.3.2 SVS (EWS) LRU

- 000-3846-M0687-021 - Stand-alone 20 channel electronic window shade LRU.

2.3.3 SVS (EWS) Window Pane

- Part numbers determined per installation.

2.3.4 RGBW LED Light Strip

- See Appendix A for part number break down.

2.3.5 RGBW LED Cup Holder

- Part numbers determined per installation.

2.3.6 Back-up Battery

- RG-121-1 Concord Battery. Only used in EWS installations.

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2.4 Connector Information

The following table outlines the mating connectors for PRIZM and EWS installations.

Part Number	Manufacturer	Description
EA-0795-100	Prizm Aircraft Products	PRIZM (-51 & -53) LRUs Connector Kit
EA-0795-101	Prizm Aircraft Products	PRIZM (-52 & -54) LRUs Connector Kit
EA-0795-102	Prizm Aircraft Products	LED Cup Holder Connector Kit
EA-0795-103	Prizm Aircraft Products	Single Lead LED Fixture Connector Kit
EA-0795-104	Prizm Aircraft Products	Dual Lead LED Fixture Connector Kit
EA-0795-105	Prizm Aircraft Products	Wi-Fi Antenna Kit
EA-0687-100	Prizm Aircraft Products	EWS LRU Connector Installation Kit
EA-0687-101	Prizm Aircraft Products	EWS Single Window Shade Connector
MS27467T15B5P	Mil-Spec	Backup Battery Connector (EWS Only)

Install kit breakdowns are shown in the tables below:

EA-0795-100			
QTY	Part Number	Manufacturer	Description
1	DBA13W3SA197F0	ITT Cannon	Power Connector (10+3)
5	DM130343-4	ITT Cannon	Power Sockets
25	205090-1	ITT Cannon	Sockets
1	9693020172	Harting	Power Connector (15+2)
2	164X11969X	Conec	44 Pin High Density Connector
75	M39029/57-354	Conec	High Density Sockets
4	5748676-3	TE Connectivity	EMI/RF Backshell

EA-0795-101			
QTY	Part Number	Manufacturer	Description
2	DBA13W3SA197F0	ITT Cannon	Power Connector (10+3)
10	DM130343-4	ITT Cannon	Power Sockets
50	205090-1	ITT Cannon	Sockets
2	9693020172	Harting	Power Connector (15+2)
4	164X11969X	Conec	44 Pin High Density Connector
150	M39029/57-354	Conec	High Density Sockets
8	5748676-3	TE Connectivity	EMI/RF Backshell

EA-0795-102			
QTY	Part Number	Manufacturer	Description
1	03-06-1062	Molex	6 Pin Molex Receptacle
5	02-06-5100	Molex	Molex Sockets

EA-0795-103			
QTY	Part Number	Manufacturer	Description
1	03-06-1062	Molex	6 Pin Molex Receptacle
5	02-06-5100	Molex	Molex Sockets

EA-0795-104			
QTY	Part Number	Manufacturer	Description
1	03-06-1062	Molex	6 Pin Molex Receptacle
5	02-06-5100	Molex	Molex Sockets
1	03-06-2061	Molex	6 Pin Molex Plug
5	03-06-6100	Molex	Molex Pins

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EA-0795-105			
QTY	Part Number	Manufacturer	Description
1	P12344	GoGo	Wi-Fi Antenna
1	523-123195RP	Amphenol	RP-SMA Connector (RG-142)
1	122373	Amphenol	TNC Connector (RG-142)
5	03-06-6100	Molex	Molex Pins

EA-0687-100			
QTY	Part Number	Manufacturer	Description
2	180-062-273L000	Norcomp	62 Pin High Density Connector
2	5748676-4	TE Connectivity	EMI/RFI Backshell
112	M39029/57-354	Conec	High Density Sockets
24	03-06-1023	Molex	Molex Receptacle
48	02-06-5100	Molex	Molex Socket

EA-0687-101			
QTY	Part Number	Manufacturer	Description
1	180-062-273L000	Norcomp	Molex Receptacle
2	02-06-5100	Molex	Molex Socket

3 REGULATORY COMPLIANCE

3.1 Software

The PRIZM and SVS (EWS) systems software was developed in accordance with RTCA/DO-178B to criticality level E.

3.2 Environmental

The PRIZM and SVS (EWS) systems meet DO-160G, environmental categories available upon request.

3.3 Airworthiness

The PRIZM and EWS systems are produced under Elliott Aviation Technical Product Development, LLC's PMA approved quality system. Consult your local FSDO regarding approval of the PRIZM and EWS systems. This manual contains Instructions for Continued Airworthiness and a sample Flight Manual Supplement to aid in obtaining FAA Approval.

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4 INSTALLATION

This section contains considerations and recommendations for installation of the PRIZM and SVS (EWS) systems. Installation must be made by qualified personnel in conformance with applicable government regulations.

4.1 Unpacking, Inspection, and Storage

Carefully unpack the system and note any damage to shipping containers or equipment. Visually inspect each component for evidence of damage. Immediately report any evidence of damage to the carrier making the delivery.

Ensure all ESD covers remain on the units during inspection and storage. The PRIZM and SVS (EWS) systems are sensitive to electrostatic discharge (ESD).

While in storage, the PRIZM and SVS (EWS) systems should be stored in an area that doesn't fall below -67° F or rise above 185° F.

4.2 Wiring

Typical interconnect diagrams (Appendix C) and connector pin listings (Section 0) are provided to assist in the preparation of the interconnect wiring cables. Harness protection devices must be installed, as shown in the provided interconnect diagrams, in order to maintain compliance with environmental categories. Harness diodes and capacitors must be installed, as shown in provided interconnect diagrams, in order to maintain emergency window functionality. Wiring shown as twisted shielded must be installed as shown in order to maintain compliance with environmental categories.

Description	Part Number (or equivalent)
Single Wire	M22759/16-XX-9 (XX = Wire Gauge)
Shielded 1 Wire	M27500-XXTG1T14 (XX = Wire Gauge)
Shielded 2 Wires	M27500-XXTG2T14 (XX = Wire Gauge)
Shielded 3 Wires	M27500-XXTG3T14 (XX = Wire Gauge)
Shielded 4 Wires	M27500-XXTG4T14 (XX = Wire Gauge)

4.3 Mounting

The PRIZM LRU must be mounted inside the temperature controlled pressurized section of the aircraft and may be mounted in any orientation. It must also have 1" of space on each side to allow for airflow.

The SVS (EWS) LRU must be mounted inside the temperature controlled pressurized section of the aircraft and may be mounted in any orientation. There are no airflow requirements for this LRU.

The rigid LED light fixture is mounted using p/n L-TASK-12-CLIP. These clips shall be mounted using a #6 screw to hard structure every 10" of light fixture length with a maximum of 3.5" inward from each end. Sections shorter than 16.5" require a minimum of 2 clips evenly spaced with a maximum distance of 3.25" from each end. To verify the adequate number of clips use the following formula. (Round up to the nearest whole number.)

$$\text{number of clips} \geq \frac{\text{LED fixture length}}{9.12}$$

The flexible LED light fixtures are installed using 3M Velcro part number SJ3519FR and SJ3518FR or equivalent. This shall be installed on the entire length of the light fixture.

LED cup holders are friction fit into the existing cup holder locations.

Electronic window shade panes are installed using existing window dust pane mounting methods.

The backup battery must be mounted in the temperature controlled pressurized section of the aircraft and must be mounted in the upright position.

The impact switch must be mounted in the temperature controlled pressurized section of the aircraft and must be mounted at a 45° angle with the arrows on the unit in the direction of flight.

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The PRIZM Wi-Fi antenna is to be installed in the cabin headliner facing the cabin or in a suitable location that allows adequate Wi-Fi coverage using 3M Velcro part number SJ3519FR and SJ3518FR or equivalent.

LRU Part Number	Weight
000-3846-M0795-51	2.67 lbs.
000-3846-M0795-52	3.50 lbs.
000-3846-M0795-53	3.52 lbs.
000-3846-M0795-54	4.25 lbs.
000-3846-M0687-021	1.92 lbs.
Light strip no channel	0.02 lbs. per ft. and 0.02 lbs. per lead
Light strip flexible	0.05 lbs. per ft. and 0.02 lbs. per lead
Light strip rigid	0.09 lbs. per ft. and 0.02 lbs. per lead
Cup holder	Varies per installation
Window pane	Varies per installation
RG-121-1	6.4 lbs.
3LO-453	0.56 lbs.

4.3.1 Mechanical Requirements

Dimensions and mounting hole locations are shown in the following figures.
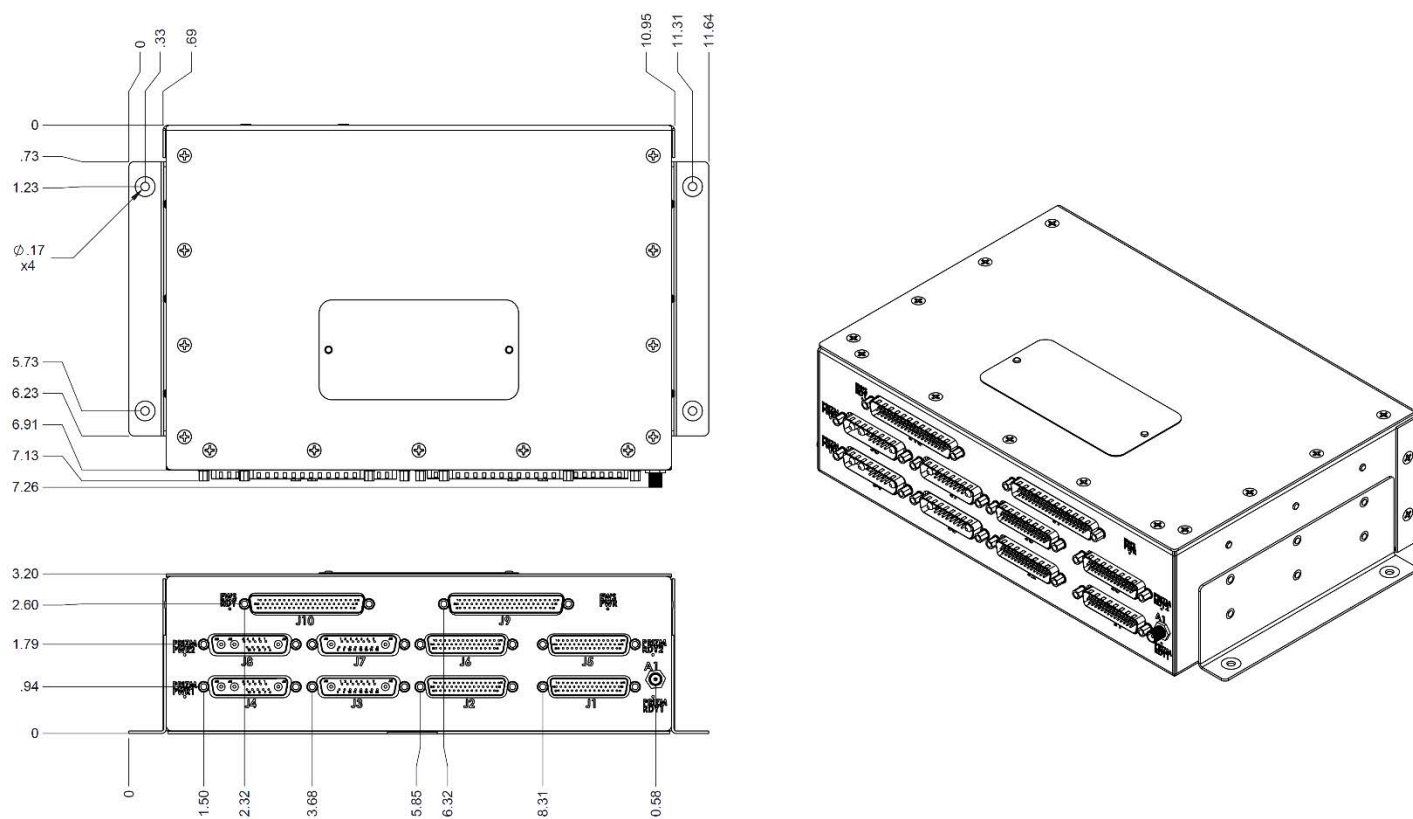
Figure 4-1 – PRIZM -54 Dimensions and Mounting Dimensions

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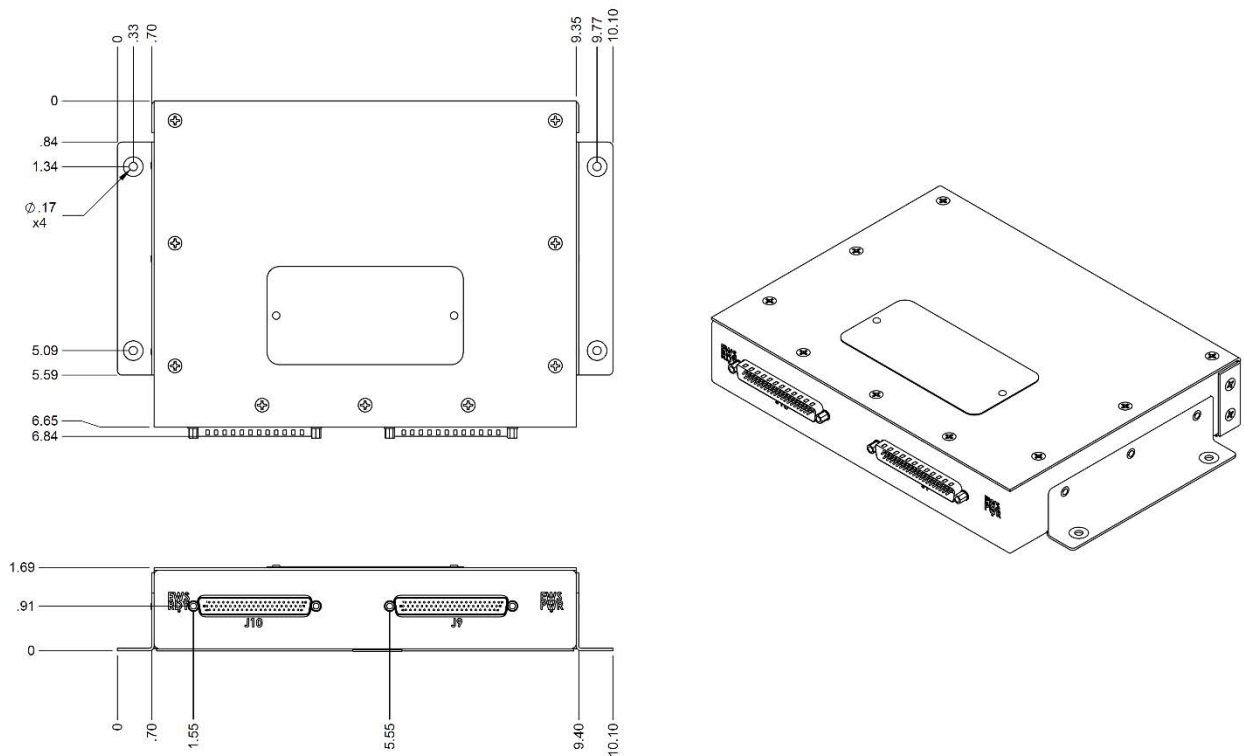PRIZM and Smart Vision Shades (EWS) System Installation Manual

Figure 4-2: SVS (EWS) Dimensions and Mounting Dimensions

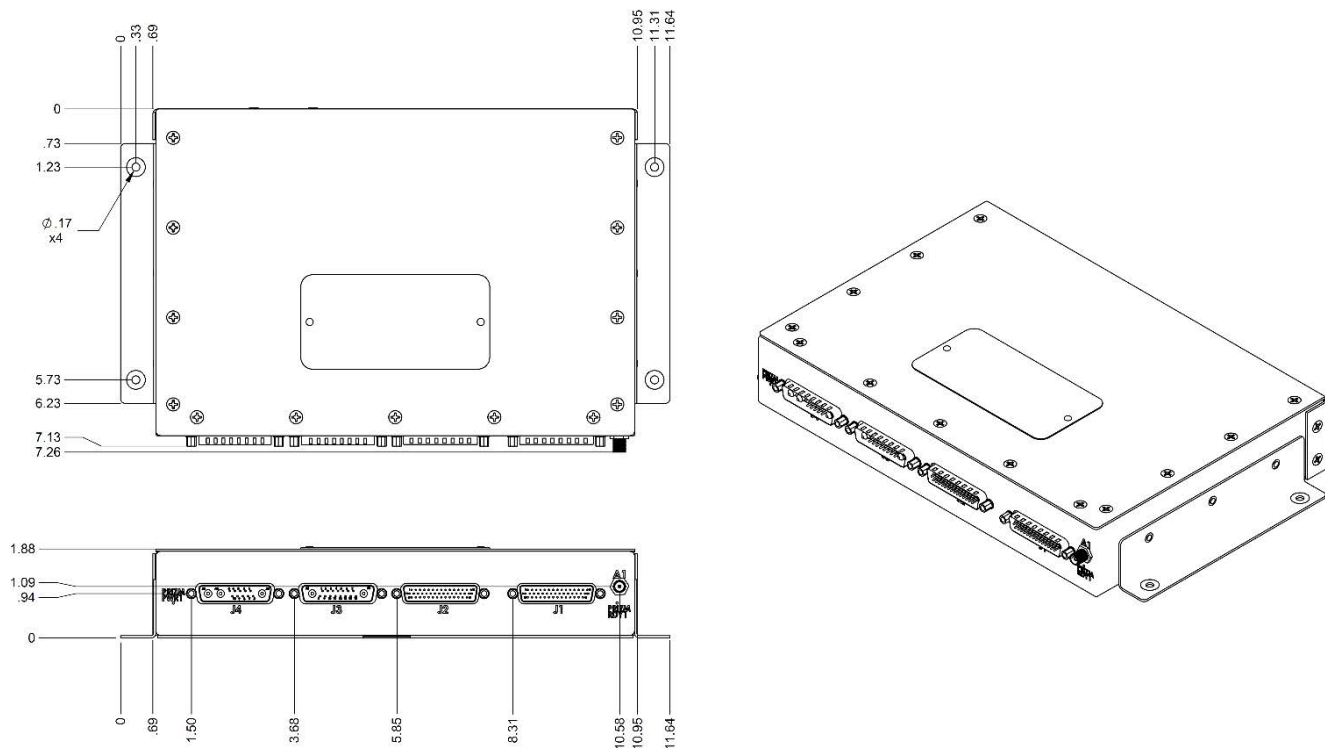**Figure 4-3: PRIZM -51 Dimensions and Mounting Dimensions**

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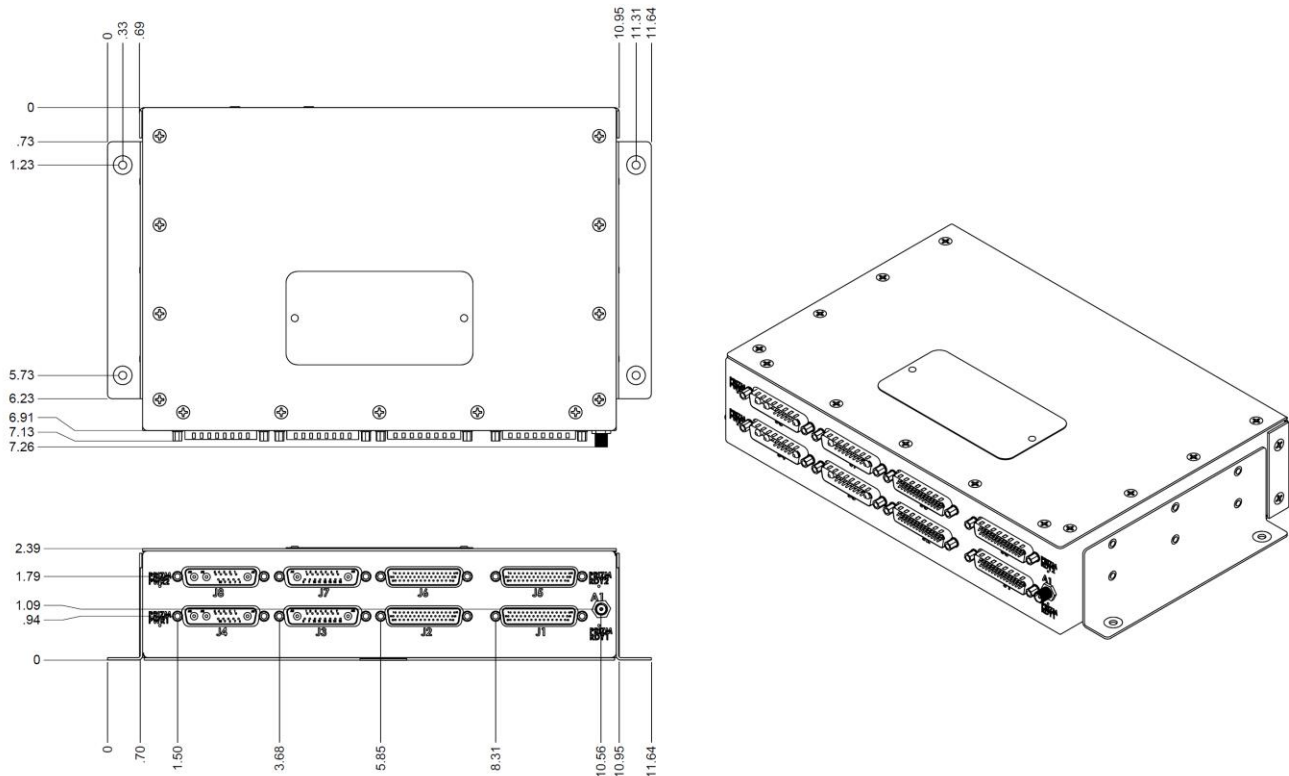
Figure 4-4: PRIZM -52 Dimensions and Mounting Dimensions
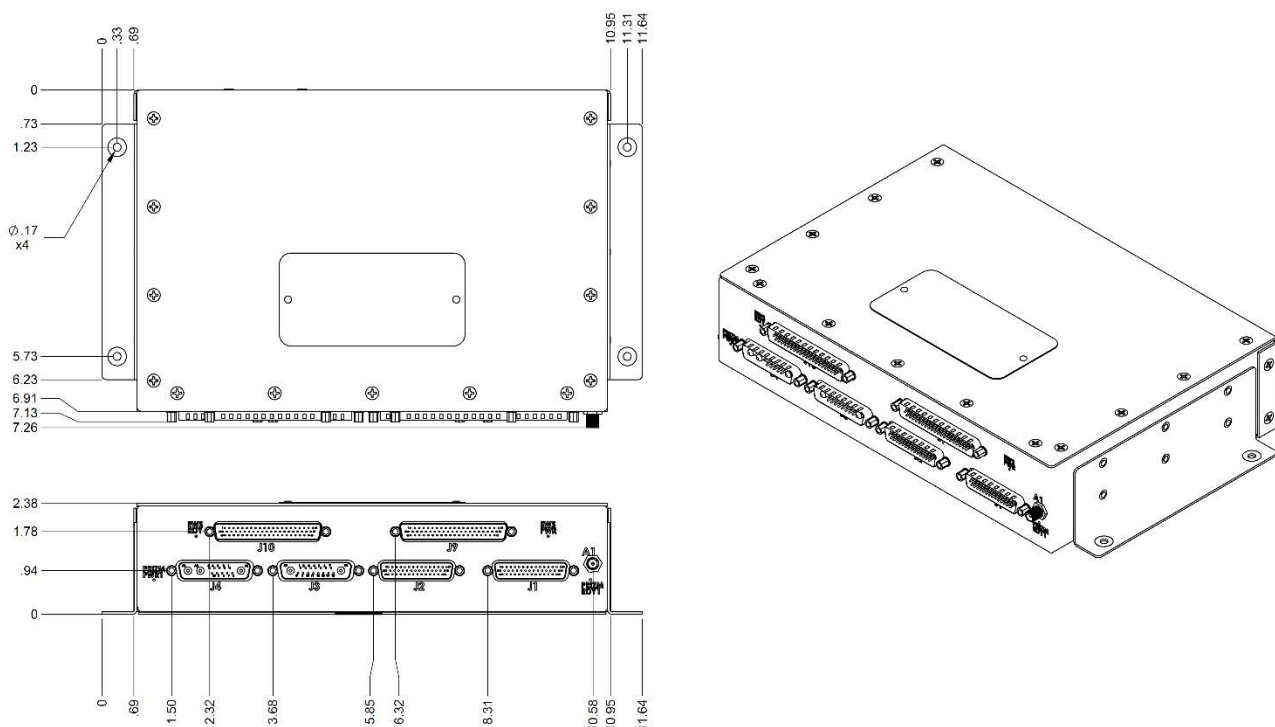
Figure 4-5: PRIZM -53 Dimensions and Mounting Dimensions

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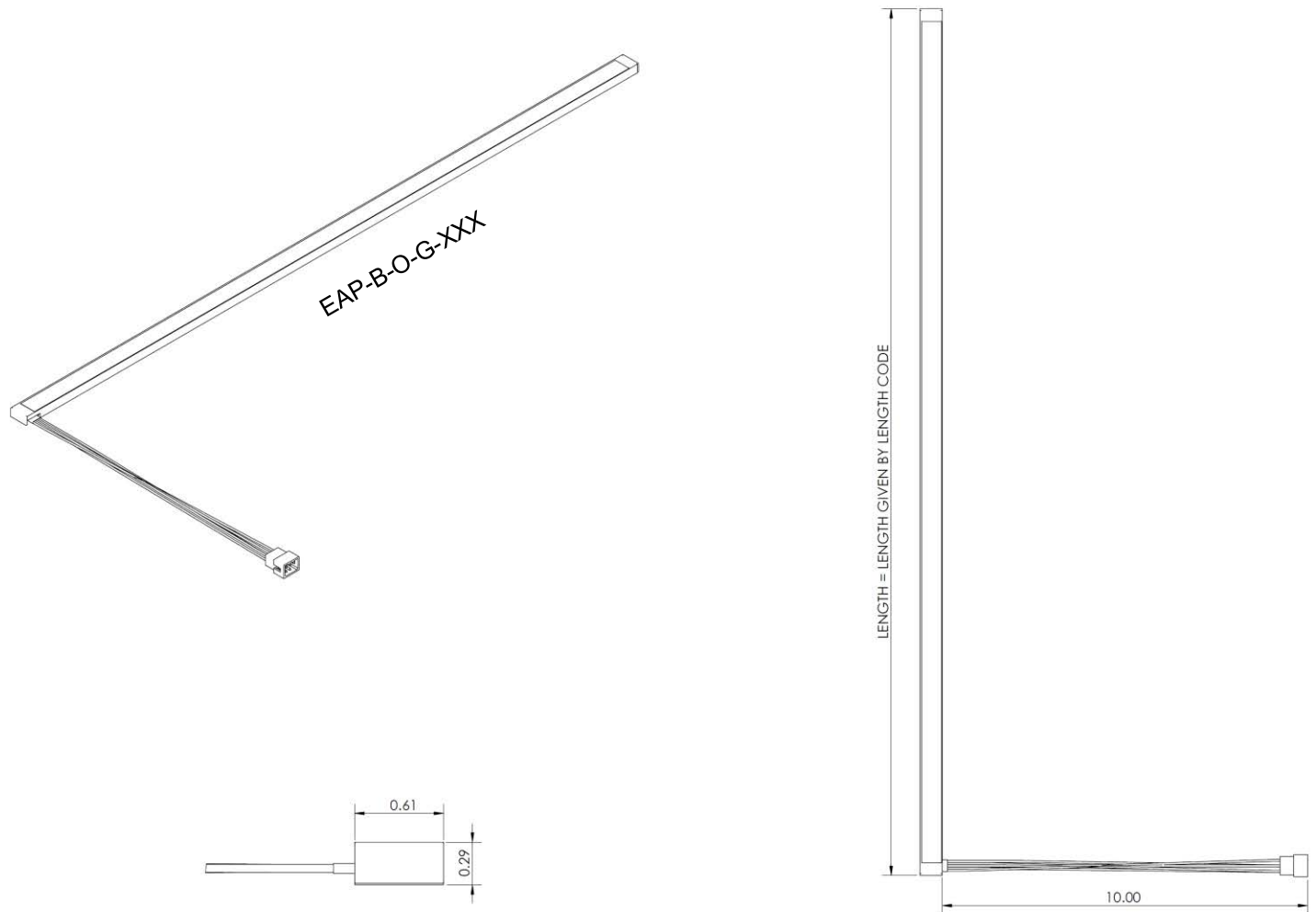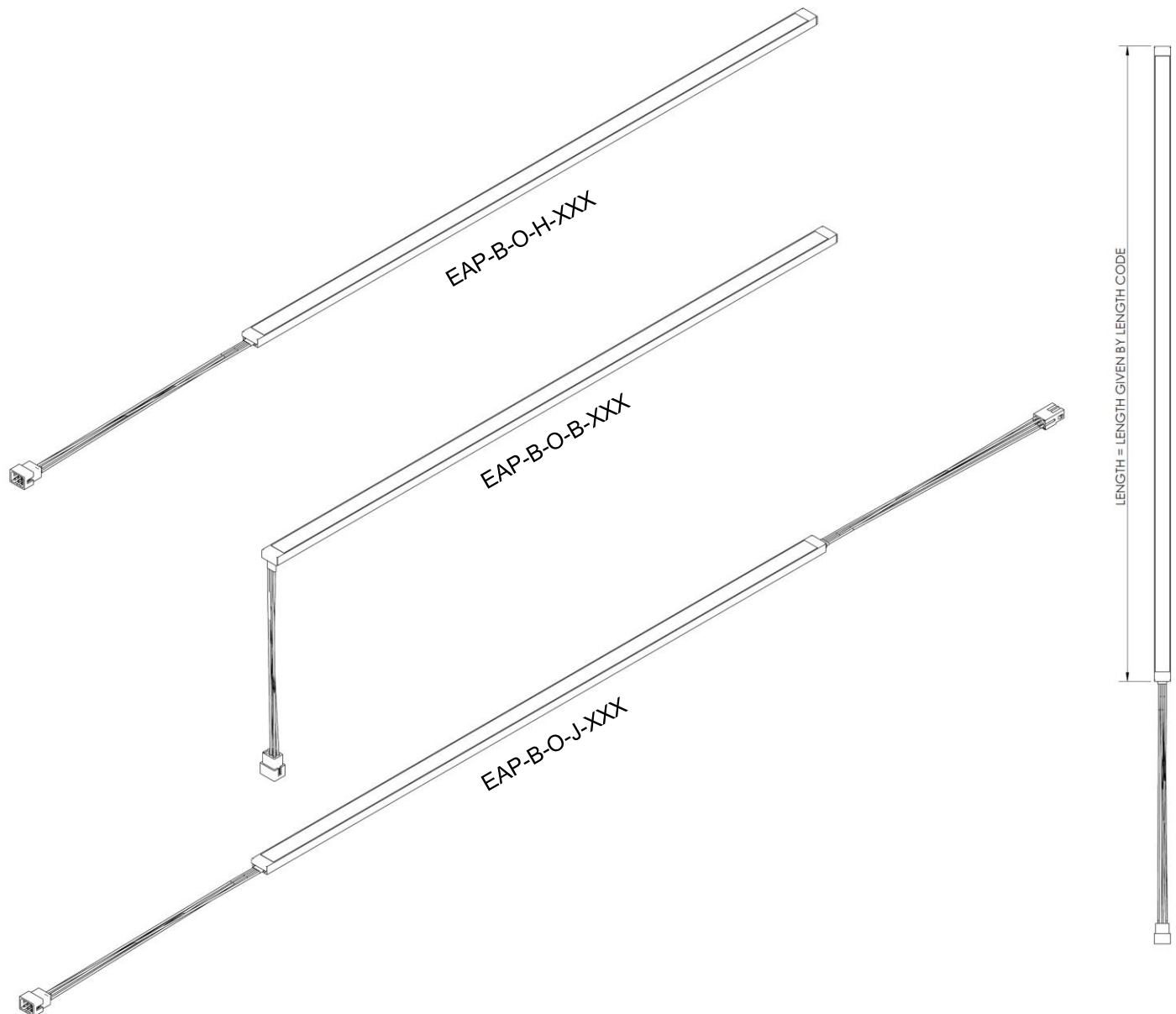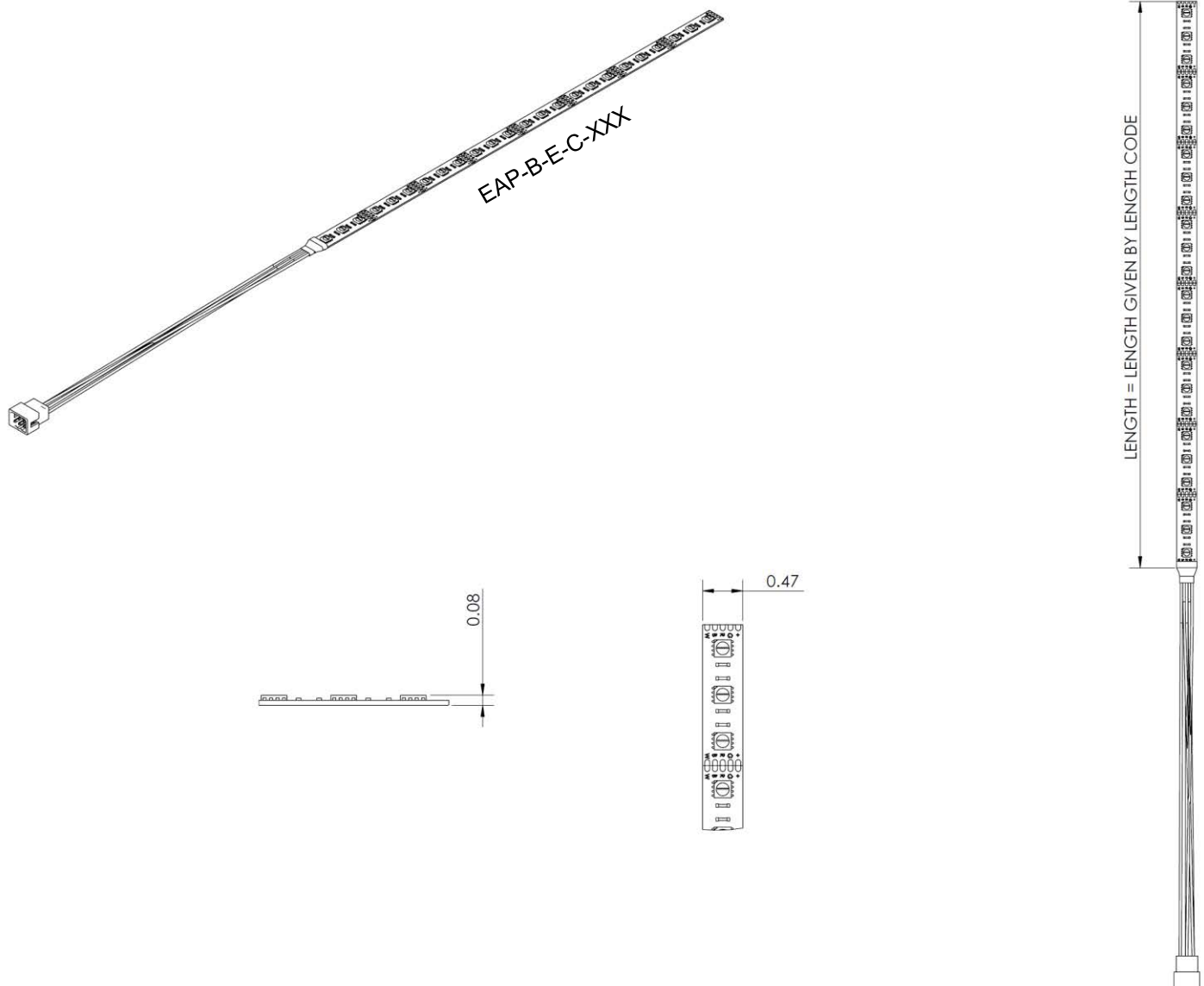

Figure 4-6: PRIZM Rigid LED Channel Example: EAP-B-O-G-XXX

(NOTE: not all connector lead exit variations shown. Consult Appendix A for a complete list of connector lead termination types and combinations)

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Figure 4-7: PRIZM Rigid LED Channel Examples

(NOTE: not all connector lead exit variations shown. Consult Appendix A for a complete list of connector lead termination types and combinations)

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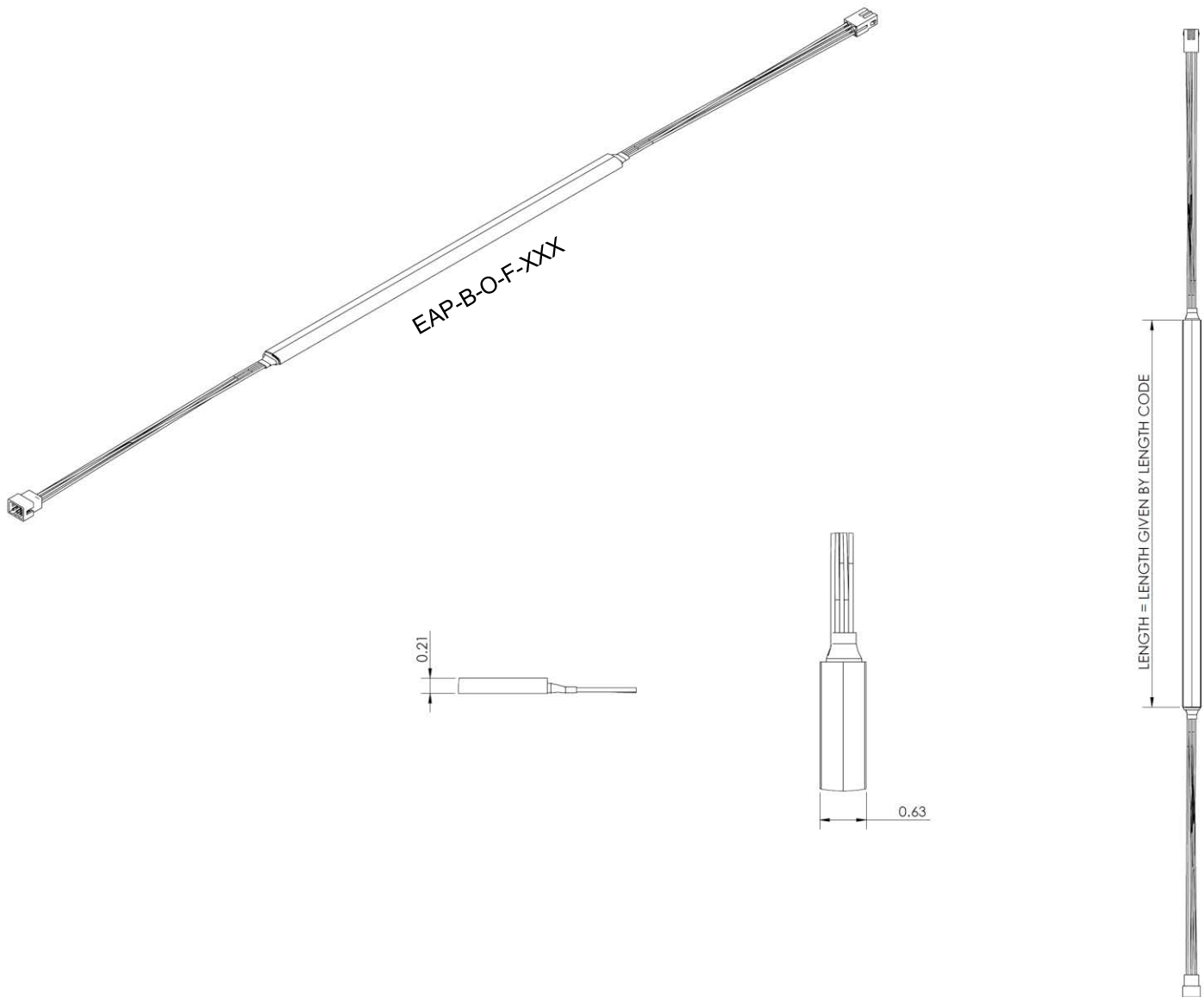Dated 05/07/2024
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Figure 4-8: PRIZM No Channel LED Channel Example: EAP-B-E-C-XXX

(NOTE: not all connector lead exit variations shown. Consult Appendix A for a complete list of connector lead termination types and combinations)

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Figure 4-9: PRIZM Flexible LED Channel Example: EAP-B-O-F-XXX

(NOTE: not all connector lead exit variations shown. Consult Appendix A for a complete list of connector lead termination types and combinations)

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Prizm
AIRCRAFT PRODUCTS

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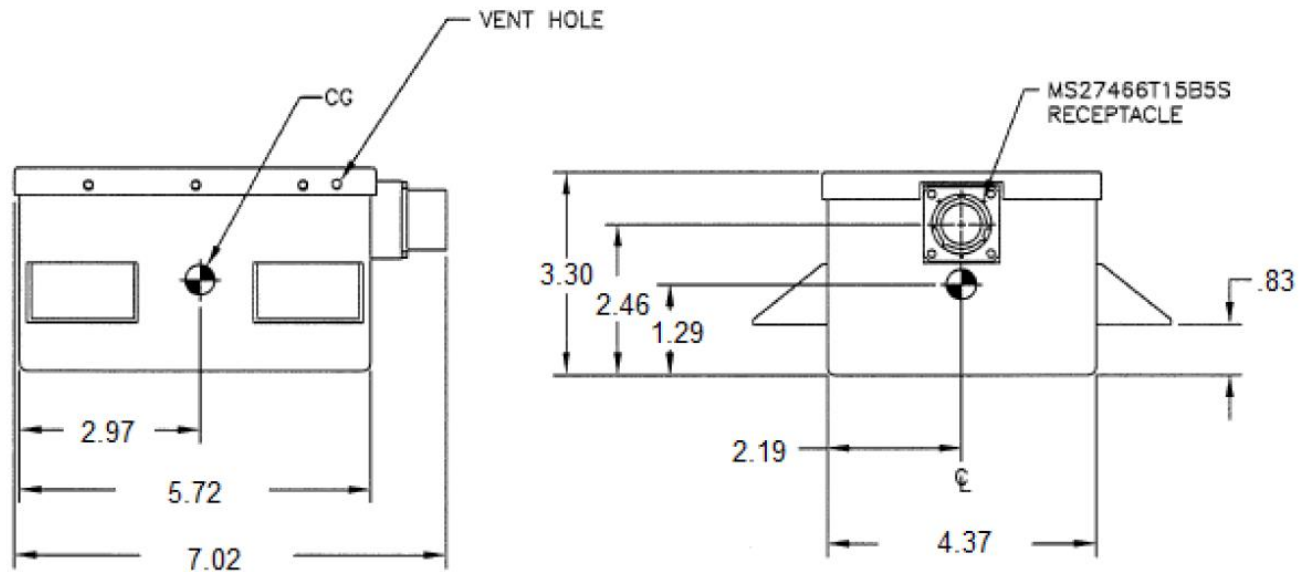
Figure 4-10: RG-121-1 Dimensions
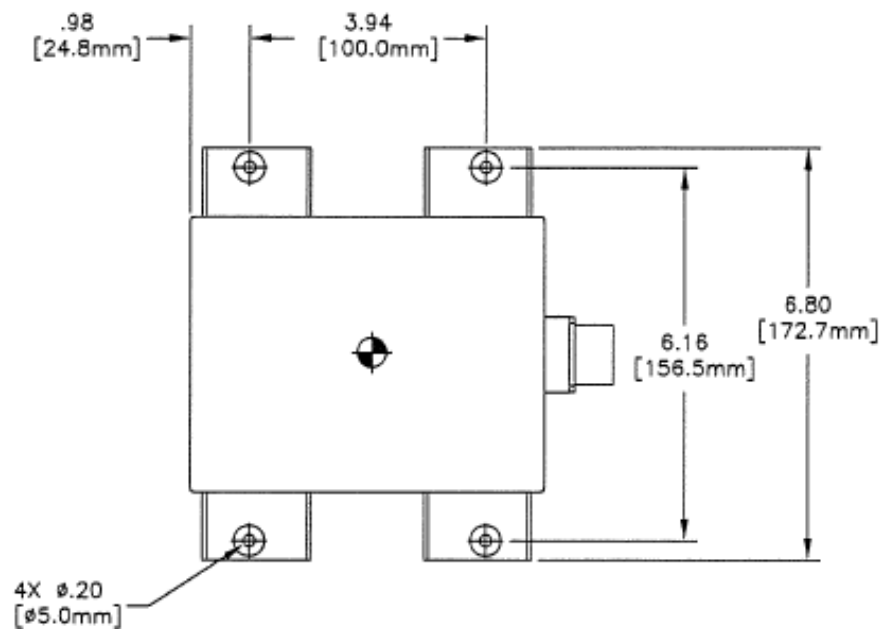
Figure 4-11: RG-121-1 Mounting Dimensions

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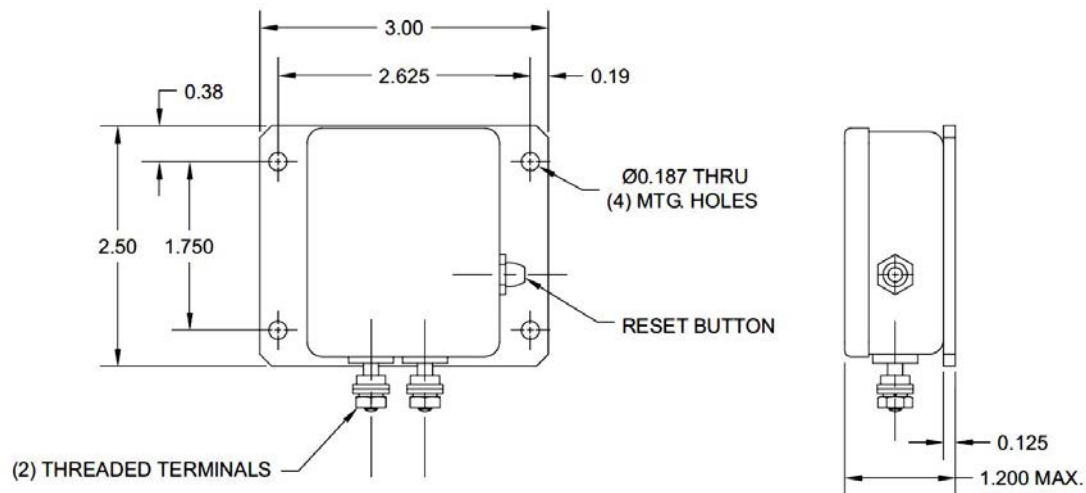
Figure 4-12: 3LO-453 Dimensions

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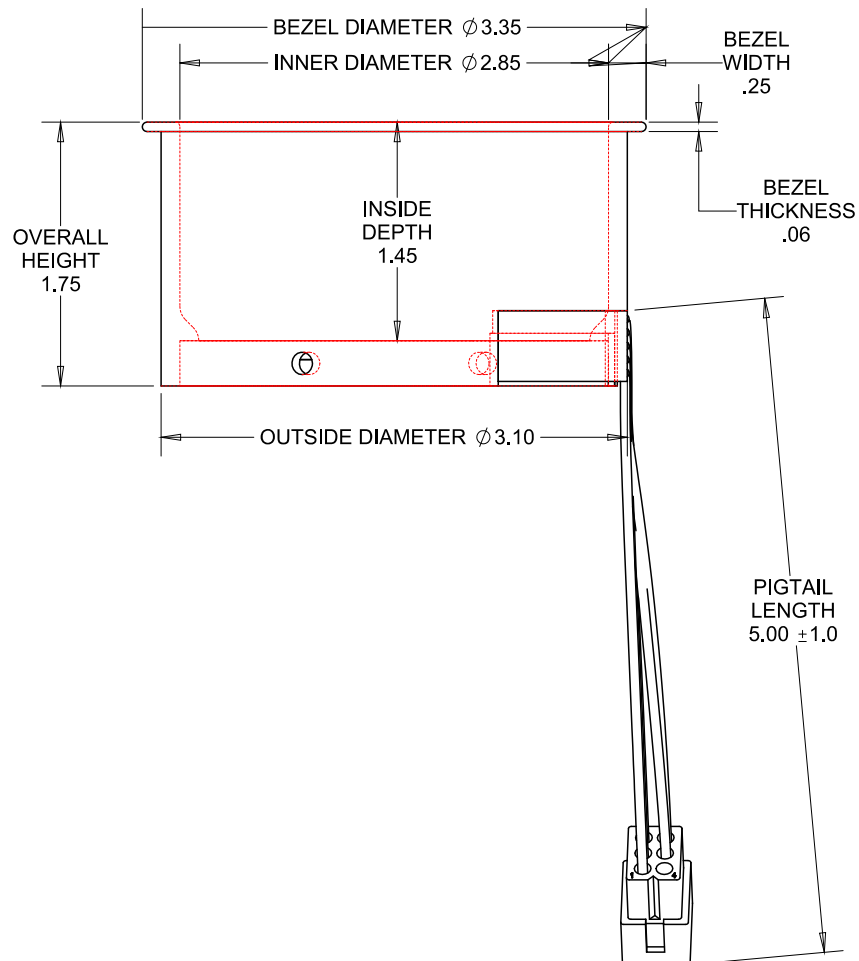
Figure 4-14: PRIZM Example Cup Holder Dimensions 000-3846-M0795-042

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4.3.2 Electrical Requirements

Item	Power Requirements	
	Minimum	Maximum
000-3846-M0795-51	0.8 A*	18 A
000-3846-M0795-52	1.6 A*	36 A
000-3846-M0795-53	1.15 A*†	19 A
000-3846-M0795-54	1.95 A*†	37.7 A
000-3846-M0687-021	0.35 A†	1.0 A
RG-121-1	Initial in rush charge is 5 A, and 0.33 A after 10 minutes of recharge.	

(*) Add 0.11 A per ft of lighting fixture and 0.04 A per lighted cup holder (p/n 000-3846-M0795-042)

(†) Add 0.012 A per ft2 of installed window pane area

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4.3.3 Pin-Outs and Descriptions

4.3.3.1 PRIZM J1
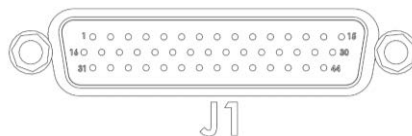
PRIZM J1 Pin Function List		
Pin	Pin Name	I/O
1	ETHERNET RX +	OUT
2	ETHERNET RX -	OUT
3	ETHERNET TX +	OUT
4	ETHERNET TX -	OUT
5	BOOT LIGHTING STRAP[1]	OUT
6	BOOT LIGHTING STRAP[1]	IN
7	INPUT ID #1 SWITCH	IN
8	INPUT ID #2 SWITCH	IN
9	INPUT ID #3 SWITCH	IN
10	INPUT ID #4 SWITCH	IN
11	INPUT ID #5 SWITCH	IN
12	INPUT ID #6 SWITCH	IN
13	INPUT ID #7 SWITCH	IN
14	INPUT ID #8 SWITCH	IN
15	INPUT ID #9 SWITCH	IN
16	RESERVED	-
17	RESERVED	-
18	RESERVED	-
19	RESERVED	-
20	RESERVED	-
21	RESERVED	-
22	RESERVED	-

PRIZM J1 Pin Function List		
Pin	Pin Name	I/O
23	INPUT ID #10 SWITCH	IN
24	INPUT ID #11 SWITCH	IN
25	INPUT ID #12 SWITCH	IN
26	INPUT ID #13 SWITCH	IN
27	INPUT ID #14 SWITCH	IN
28	INPUT ID #15 SWITCH	IN
29	INPUT ID #16 SWITCH	IN
30	INPUT ID #17 SWITCH	IN
31	EXTERNAL CHASSIS GND	-
32	EXTERNAL CHASSIS GND	-
33	NETWORK RESET PIN[2]	OUT
34	RESERVED	-
35	RESERVED	-
36	Wi-Fi ON/OFF	IN
37	RESERVED	-
38	RESERVED	-
39	INPUT ID #18 SWITCH	IN
40	INPUT ID #19 SWITCH	IN
41	INPUT ID #20 SWITCH	IN
42	INPUT ID #21 SWITCH	IN
43	INPUT ID #22 SWITCH	IN
44	INPUT ID #23 SWITCH	IN

[1] Pins 5 and 6 are only allowed to be pinned to each other.

[2] Only for network reconfiguration. Remove strap from ground for normal use.

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4.3.3.2 PRIZM J2
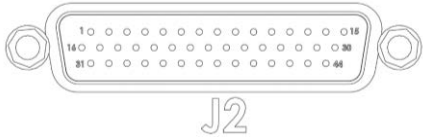
PRIZM J2 Pin Function List		
Pin	**Pin Name**	**I/O**
1	CHANNEL #5 BLUE	IN
2	CHANNEL #6 BLUE	IN
3	CHANNEL #5 GREEN	IN
4	CHANNEL #6 GREEN	IN
5	CHANNEL #5 RED	IN
6	CHANNEL #6 RED	IN
7	CHANNEL #5 WHITE	IN
8	CHANNEL #6 WHITE	IN
9	CHANNEL #4 BLUE	IN
10	CHANNEL #4 GREEN	IN
11	CHANNEL #3 GREEN	IN
12	CHANNEL #3 WHITE	IN
13	CHANNEL #3 RED	IN
14	CHANNEL #2 GREEN	IN
15	CHANNEL #2 BLUE	IN
16	CHANNEL #10 GREEN	IN
17	CHANNEL #10 RED	IN
18	CHANNEL #10 WHITE	IN
19	CHANNEL #9 RED	IN
20	CHANNEL #8 GREEN	IN
21	CHANNEL #8 RED	IN
22	CHANNEL #8 WHITE	IN

PRIZM J2 Pin Function List		
Pin	**Pin Name**	**I/O**
23	CHANNEL #7 RED	IN
24	CHANNEL #7 WHITE	IN
25	CHANNEL #4 WHITE	IN
26	CHANNEL #4 RED	IN
27	CHANNEL #3 BLUE	IN
28	CHANNEL #2 RED	IN
29	CHANNEL #2 WHITE	IN
30	CHANNEL #1 BLUE	IN
31	CHANNEL #10 BLUE	IN
32	CHANNEL #9 GREEN	IN
33	CHANNEL #9 BLUE	IN
34	CHANNEL #9 WHITE	IN
35	CHANNEL #8 BLUE	IN
36	CHANNEL #7 GREEN	IN
37	CHANNEL #7 BLUE	IN
38	GND	-
39	GND	-
40	GND	-
41	GND	-
42	CHANNEL #1 WHITE	IN
43	CHANNEL #1 RED	IN
44	CHANNEL #1 GREEN	IN

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4.3.3.3 **PRIZM J3**
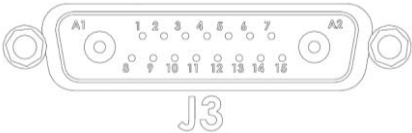
PRIZM J3 Pin Function List		
Pin	**Pin Name**	**I/O**
1	DISCRETE OUTPUT #1 RETURN	IN
2	DISCRETE OUTPUT #2 RETURN	IN
3	DISCRETE OUTPUT #3 RETURN	IN
4	DISCRETE OUTPUT #4 RETURN	IN
5	DISCRETE OUTPUT #5 RETURN	IN
6	DISCRETE OUTPUT #6 RETURN	IN
7	DISCRETE OUTPUT #7 RETURN	IN
8	DISCRETE OUTPUT #8 RETURN	IN
9	DISCRETE OUTPUT #9 RETURN	IN
10	DISCRETE OUTPUT #10 RETURN	IN
11	DISCRETE OUTPUT #11 RETURN	IN
12	DISCRETE OUTPUT #12 RETURN	IN
13	DISCRETE OUTPUT #13 RETURN	IN
14	DISCRETE OUTPUT #14 RETURN	IN
15	DISCRETE OUTPUT #15 RETURN	IN
A1	GND	-
A2	AIRCRAFT POWER +28VDC	IN

4.3.3.4 **PRIZM J4**
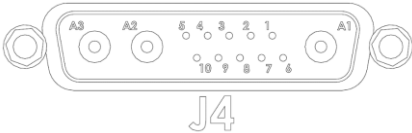
PRIZM J4 Pin Function List		
Pin	**Pin Name**	**I/O**
1	CHANNEL #1 POWER (12VDC)	OUT
2	CHANNEL #2 POWER (12VDC)	OUT
3	CHANNEL #3 POWER (12VDC)	OUT
4	CHANNEL #4 POWER (12VDC)	OUT
5	CHANNEL #5 POWER (12VDC)	OUT
6	CHANNEL #6 POWER (12VDC)	OUT
7	CHANNEL #7 POWER (12VDC)	OUT
8	CHANNEL #8 POWER (12VDC)	OUT
9	CHANNEL #9 POWER (12VDC)	OUT
10	CHANNEL #10 POWER (12VDC)	OUT
A1	GND	-
A2	AIRCRAFT POWER +28VDC	IN
A3	AIRCRAFT POWER +28VDC	IN

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4.3.3.5 PRIZM J5
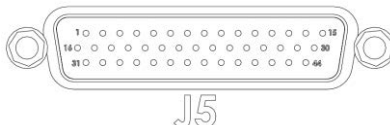
PRIZM J5 Pin Function List		
Pin	Pin Name	I/O
1	RESERVED	-
2	RESERVED	-
3	RESERVED	-
4	RESERVED	-
5	BOOT LIGHTING STRAP[3]	OUT
6	BOOT LIGHTING STRAP[*]	IN
7	RESERVED	-
8	RESERVED	-
9	RESERVED	-
10	READING LIGHT #29 SWITCH	IN
11	READING LIGHT #27 SWITCH	IN
12	READING LIGHT #25 SWITCH	IN
13	READING LIGHT #23 SWITCH	IN
14	READING LIGHT #21 SWITCH	IN
15	READING LIGHT #19 SWITCH	IN
16	RESERVED	-
17	RESERVED	-
18	RESERVED	-
19	RESERVED	-
20	RESERVED	-
21	RESERVED	-
22	RESERVED	-

PRIZM J5 Pin Function List		
Pin	Pin Name	I/O
23	RESERVED	-
24	RESERVED	-
25	READING LIGHT #30 SWITCH	IN
26	READING LIGHT #28 SWITCH	IN
27	READING LIGHT #26 SWITCH	IN
28	READING LIGHT #24 SWITCH	IN
29	READING LIGHT #22 SWITCH	IN
30	READING LIGHT #20 SWITCH	IN
31	EXTERNAL CHASSIS GND	-
32	EXTERNAL CHASSIS GND	-
33	RESERVED	-
34	RESERVED	-
35	RESERVED	-
36	RESERVED	-
37	RESERVED	-
38	RESERVED	-
39	RESERVED	-
40	RESERVED	-
41	RESERVED	-
42	READING LIGHT #17 SWITCH	IN
43	READING LIGHT #18 SWITCH	IN
44	READING LIGHT #16 SWITCH	IN

---

[3] Pins 5 and 6 are only allowed to be pinned to each
other.

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4.3.3.6 **PRIZM J6**
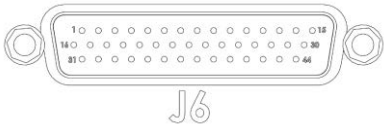
PRIZM J6 Pin Function List			PRIZM J6 Pin Function List		
Pin	**Pin Name**	**I/O**	**Pin**	**Pin Name**	**I/O**
1	CHANNEL #15 BLUE	IN	23	CHANNEL #17 RED	IN
2	CHANNEL #16 BLUE	IN	24	CHANNEL #17 WHITE	IN
3	CHANNEL #15 GREEN	IN	25	CHANNEL #14 WHITE	IN
4	CHANNEL #16 GREEN	IN	26	CHANNEL #14 RED	IN
5	CHANNEL #15 RED	IN	27	CHANNEL #13 BLUE	IN
6	CHANNEL #16 RED	IN	28	CHANNEL #12 RED	IN
7	CHANNEL #15 WHITE	IN	29	CHANNEL #12 WHITE	IN
8	CHANNEL #16 WHITE	IN	30	CHANNEL #11 BLUE	IN
9	CHANNEL #14 BLUE	IN	31	CHANNEL #20 BLUE	IN
10	CHANNEL #14 GREEN	IN	32	CHANNEL #19 GREEN	IN
11	CHANNEL #13 GREEN	IN	33	CHANNEL #19 BLUE	IN
12	CHANNEL #13 WHITE	IN	34	CHANNEL #19 WHITE	IN
13	CHANNEL #13 RED	IN	35	CHANNEL #18 BLUE	IN
14	CHANNEL #12 GREEN	IN	36	CHANNEL #17 GREEN	IN
15	CHANNEL #12 BLUE	IN	37	CHANNEL #17 BLUE	IN
16	CHANNEL #20 GREEN	IN	38	GND	-
17	CHANNEL #20 RED	IN	39	GND	-
18	CHANNEL #20 WHITE	IN	40	GND	-
19	CHANNEL #19 RED	IN	41	GND	-
20	CHANNEL #18 GREEN	IN	42	CHANNEL #11 WHITE	IN
21	CHANNEL #18 RED	IN	43	CHANNEL #11 RED	IN
22	CHANNEL #18 WHITE	IN	44	CHANNEL #11 GREEN	IN

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4.3.3.7 **PRIZM J7**

PRIZM J7 Pin Function List		
Pin	**Pin Name**	**I/O**
1	READING LIGHT #16 RETURN	IN
2	READING LIGHT #17 RETURN	IN
3	READING LIGHT #18 RETURN	IN
4	READING LIGHT #19 RETURN	IN
5	READING LIGHT #20 RETURN	IN
6	READING LIGHT #21 RETURN	IN
7	READING LIGHT #22 RETURN	IN
8	READING LIGHT #23 RETURN	IN
9	READING LIGHT #24 RETURN	IN
10	READING LIGHT #25 RETURN	IN
11	READING LIGHT #26 RETURN	IN
12	READING LIGHT #27 RETURN	IN
13	READING LIGHT #28 RETURN	IN
14	READING LIGHT #29 RETURN	IN
15	READING LIGHT #30 RETURN	IN
A1	GND	-
A2	AIRCRAFT POWER +28VDC	IN

4.3.3.8 **PRIZM J8**
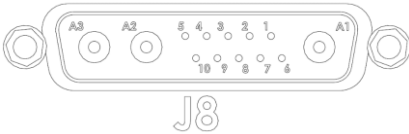
PRIZM J8 Pin Function List		
Pin	**Pin Name**	**I/O**
1	CHANNEL #11 POWER (12VDC)	OUT
2	CHANNEL #12 POWER (12VDC)	OUT
3	CHANNEL #13 POWER (12VDC)	OUT
4	CHANNEL #14 POWER (12VDC)	OUT
5	CHANNEL #15 POWER (12VDC)	OUT
6	CHANNEL #16 POWER (12VDC)	OUT
7	CHANNEL #17 POWER (12VDC)	OUT
8	CHANNEL #18 POWER (12VDC)	OUT
9	CHANNEL #19 POWER (12VDC)	OUT
10	CHANNEL #20 POWER (12VDC)	OUT
A1	GND	-
A2	AIRCRAFT POWER +28VDC	IN
A3	AIRCRAFT POWER +28VDC	IN

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4.3.3.9 **PRIZM/EWS J9**

NOTE: All Emergency Exit Windows must be interfaced into EWS Channels 1-6. If no window is located in the Emergency Exit a window adjacent to the Emergency Exit shall be wired into EWS Channels 1-6.
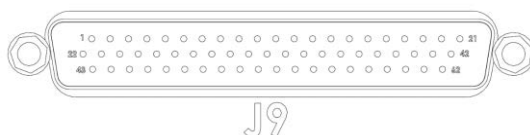
PRIZM J9 Pin Function List			PRIZM J9 Pin Function List		
Pin	**Pin Name**	**I/O**	**Pin**	**Pin Name**	**I/O**
1	EWS #4 (LOW)	OUT	32	EWS #14 (HIGH)	OUT
2	EWS #5 (LOW)	OUT	33	EWS #15 (HIGH)	OUT
3	EWS #6 (LOW)	OUT	34	EWS #16 (HIGH)	OUT
4	EWS #7 (LOW)	OUT	35	EWS #17 (HIGH)	OUT
5	EWS #8 (LOW)	OUT	36	EWS #18 (HIGH)	OUT
6	EWS #9 (LOW)	OUT	37	EWS #19 (HIGH)	OUT
7	EWS #10 (LOW)	OUT	38	EWS #20 (HIGH)	OUT
8	EWS #11 (LOW)	OUT	39	RESERVED	-
9	EWS #12 (LOW)	OUT	40	RESERVED	-
10	EWS #13 (LOW)	OUT	41	GND	-
11	EWS #14 (LOW)	OUT	42	RESERVED	-
12	EWS #15 (LOW)	OUT	43	EWS #3 (LOW)	OUT
13	EWS #16 (LOW)	OUT	44	EWS #3 (HIGH)	OUT
14	EWS #17 (LOW)	OUT	45	EWS #2 (LOW)	OUT
15	EWS #18 (LOW)	OUT	46	EWS #2 (HIGH)	OUT
16	EWS #19 (LOW)	OUT	47	EWS #1 (LOW)	OUT
17	EWS #20 (LOW)	OUT	48	EWS #1 (HIGH)	OUT
18	RESERVED	-	49	RESERVED	-
19	RESERVED	-	50	RESERVED	-
20	RESERVED	-	51	RELAY "NC" CONTACT	IN/OUT
21	AIRCRAFT POWER +28VDC	-	52	RELAY "NO" CONTACT	IN/OUT
22	EWS #4 (HIGH)	OUT	53	RELAY WIPER CONTACT	IN/OUT
23	EWS #5 (HIGH)	OUT	54	RELAY POWER IN +28VDC	-
24	EWS #6 (HIGH)	OUT	55	RESERVED	-
25	EWS #7 (HIGH)	OUT	56	RELAY GND	-
26	EWS #8 (HIGH)	OUT	57	RELAY "NC" CONTACT	IN/OUT
27	EWS #9 (HIGH)	OUT	58	RELAY "NO" CONTACT	IN/OUT
28	EWS #10 (HIGH)	OUT	59	RELAY WIPER CONTACT	IN/OUT
29	EWS #11 (HIGH)	OUT	60	BATTERY POWER IN	-
30	EWS #12 (HIGH)	OUT	61	GND	-
31	EWS #13 (HIGH)	OUT	62	AIRCRAFT POWER +28VDC	-

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4.3.3.10 **PRIZM/EWS J10**
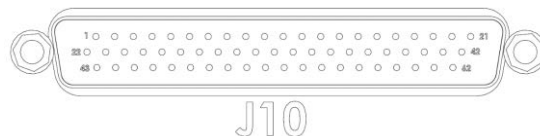
PRIZM J10 Pin Function List		
Pin	Pin Name	I/O
1	EWS CHANNEL #1 CLEAR	IN
2	EWS CHANNEL #1 OPAQUE	IN
3	EWS CHANNEL #2 CLEAR	IN
4	EWS CHANNEL #2 OPAQUE	IN
5	EWS CHANNEL #3 CLEAR	IN
6	EWS CHANNEL #3 OPAQUE	IN
7	EWS CHANNEL #4 CLEAR	IN
8	EWS CHANNEL #4 OPAQUE	IN
9	EWS CHANNEL #5 OPAQUE	IN
10	EWS CHANNEL #5 CLEAR	IN
11	EWS CHANNEL #6 OPAQUE	IN
12	EWS CHANNEL #6 CLEAR	IN
13	EWS CHANNEL #7 OPAQUE	IN
14	EWS CHANNEL #7 CLEAR	IN
15	EWS CHANNEL #8 OPAQUE	IN
16	EWS CHANNEL #8 CLEAR	IN
17	EWS CHANNEL #9 CLEAR	IN
18	EWS CHANNEL #9 OPAQUE	IN
19	EWS CHANNEL #10 CLEAR	IN
20	EWS CHANNEL #10 OPAQUE	IN
21	EWS CHANNEL #11 CLEAR	IN
22	RESERVED	-
23	RESERVED	-
24	EWS CHANNEL #20 OPAQUE	IN
25	EWS CHANNEL #20 CLEAR	IN
26	EWS CHANNEL #19 OPAQUE	IN
27	EWS CHANNEL #19 CLEAR	IN
28	EWS CHANNEL #18 OPAQUE	IN
29	EWS CHANNEL #18 CLEAR	IN
30	EWS CHANNEL #17 OPAQUE	IN
31	EWS CHANNEL #17 CLEAR	IN
32	EWS CHANNEL #13 OPAQUE	IN

PRIZM J10 Pin Function List		
Pin	Pin Name	I/O
33	EWS CHANNEL #13 CLEAR	IN
34	EWS CHANNEL #14 OPAQUE	IN
35	EWS CHANNEL #14 CLEAR	IN
36	EWS CHANNEL #15 OPAQUE	IN
37	EWS CHANNEL #15 CLEAR	IN
38	EWS CHANNEL #16 OPAQUE	IN
39	EWS CHANNEL #16 CLEAR	IN
40	EWS CHANNEL #11 OPAQUE	IN
41	EWS CHANNEL #12 CLEAR	IN
42	EWS CHANNEL #12 OPAQUE	IN
43	RESERVED	-
44	RESERVED	-
45	RESERVED	-
46	RESERVED	-
47	RESERVED	-
48	RESERVED	-
49	EWS ALL WINDOWS CLEAR	IN
50	EWS ALL WINDOW OPAQUE	IN
51	EWS COCKPIT OVERRIDE	IN
52	RESERVED	-
53	RESERVED	-
54	RESERVED	-
55	RESERVED	-
56	RESERVED	-
57	EXTERNAL CHASSIS GND	-
58	SWITCH INVERT STRAP OUT	-
59	SWITCH INVERT STRAP IN	-
60	RESERVED	-
61	RESERVED	-
62	EMERGENCY DETECT (ACTIVE LOW)	IN

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4.3.3.11 **RG-121-1 Backup Battery J1**

RG121-1 J1 Pin Function List		
Pin	**Pin Name**	**I/O**
A	RESERVED	-
B	RESERVED	-
C	BATTERY POS	OUT
D	BATTERY POS	OUT
E	BATTERY NEGATIVE	IN

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5   SAMPLE FLIGHT MANUAL SUPPLEMENT

5.1   PRIZM with EWS System

Prepare an Airplane Flight Manual Supplement using the following example guide

NOTE: Comments in angle brackets <> and *italics* are explanatory only and should not appear in final supplement.

<Name of Applicant>

<Address of Applicant>

<Document Number>

FAA Approved
Airplane Flight Manual Supplement
For
PRIZM LED Lighting with SVS Electronic Window Shades (EWS)
In
<Aircraft Model>

Registration: _____

Serial Number _____

The information in this supplement is FAA approved material and must be attached to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM) when the airplane has been modified by installation of the PRIZM LED Lighting with SVS Electronic Window Shades (EWS) System in accordance with FAA form 337 dated _____.

The information contained herein supplements the information of the basic Airplane Flight Manual. For Limitations, Procedures and Performance information not contained in this Supplement, consult the basic Airplane Flight Manual

FAA APPROVED:_____DATE:_____
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1. **General:**

    PRIZM

    The PRIZM System is considered a non-essential, non-required cabin system. The PRIZM System provides cabin convenience and ambiance lighting control for up to 20 multi-color LED lighting channels.

    The PRIZM LRU provides regulated power, intensity, and color control to each of the LED output channels, up to 20 channels, and provides a power ground for up to 30 existing accent / reading lights. Primary control of the PRIZM system is via existing aircraft switches / buttons located within the cabin.

    The PRIZM electronic controller includes software to facilitate communication with a PED(s).

    Wireless communication with the PRIZM controller may be accomplished using an integrated wireless access point or, in aircraft that have other wireless access, the PRIZM system may be accessed via the existing wireless network allowing the passenger to utilize a single SSID for all onboard wireless functions. Wireless control of the PRIZM system is considered secondary control. A PRIZM Wi-Fi ON/OFF switch is installed in the flight deck if no existing Wi-Fi system is installed. The PRIZM Wi-Fi access point may not be used for any other wireless application

    The PRIZM System may also contain the Prizm Aircraft Products SVS EWS controller. See EWS section for EWS description.

    SVS Electronic Window Shades (EWS)

    The SVS EWS System is considered a non-essential, non-required cabin system. The SVS EWS System controls ALL twenty four (20) window shades installed. Six channels are dedicated to managing emergency exit windows. This allows for automatic clearing of the emergency exit windows in the event of a landing mishap that results in a loss of power to the aircraft. The electronic window shades are transparent when powered ON and opaque when no power is applied (OFF). The dedicated emergency exit window channels are alternatively powered by a dedicated backup battery to ensure window transparency during loss of power operations, thereby allowing viewing outside of the aircraft. All windows will be powered CLEAR at normal aircraft shut-down for a period of 10 minutes. This application is through a back-up battery installation as part of the SVS EWS system.

    Control of the SVS EWS System is primarily accomplished using wired switches for stepping through incremental degrees of opacity. A "SVS Override" switch is installed in the flight deck to allow the flight crew to over-ride the individual settings and force all the shades to the clear condition. An "optional" Cabin / Galley" Over-Ride switch may also be installed. When the SVS EWS is installed in conjunction with the PRIZM system opacity can be controlled wirelessly through PED. The standalone SVS EWS configuration (000-3846-M0687-021) does not contain Wi-Fi capability.

    NOTE: When SVS (EWS) is installed with PRIZM, there is a circuit breaker is installed in the Pilots circuit breaker panel, labeled EWS EMERG, this circuit breaker is for protection of the SVS (EWS) sense wire to the emergency bus. There are no required pilot actions with this circuit breaker other than note if the breaker is extended (popped) and require a maintenance action to troubleshoot the open circuit breaker.

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2. **Limitations:**

This installation does not constitute airworthiness approval for portable electronic devices or activation of a Wi-Fi system. An operational approval may be required.

PRIZM AS Wi-Fi ACCESS POINT

A. The PRIZM Wireless services are not to be utilized on the flight deck.

B. This PRIZM Wi-Fi Access Point is intended to provide Wireless access to the PRIZM system by users in the airplane's passenger cabin only. Any other use of the PRIZM Wi-Fi access point is subject to additional approval.

C. The Wi-Fi System must be deactivated during Taxi, Take-off, Approach, Landing, Abnormal, and Emergency procedures.

PRIZM CONNECTED TO A 3rd PARTY Wi-Fi ROUTER

A. The Wireless LAN services are not to be utilized on the flight deck.

B. This system is intended to provide Wireless LAN services (internet connection and email) to the airplane's passenger cabin only. Any other use of this equipment will require reexamination to determine if the compliance demonstration and/or the certification basis are still valid.

C. The Wi-Fi System must be deactivated during Taxi, Take-off, Approach, Landing, Abnormal, and Emergency procedures. .

3. **Emergency:**

A. **Depressurization**

During rapid cabin depressurization, after all other aircraft depressurization emergency procedures have been accomplished the Wi-Fi System shall be de-activated. The flight crew or cabin crew shall:

- Disengage the Wi-Fi System via the existing cockpit switch.

- Direct the passengers to terminate wireless activity on their PEDs.

B. **Interference**

If interference to existing airplane equipment is detected or suspected the flight crew or cabin crew shall:

- Disengage the Wi-Fi System via the existing cockpit switch.

- Direct the passengers to terminate wireless activity on their PEDs.

Note: If PRIZM System is equipped with Electronic Window Shades, an additional "SVS Override" switch will be installed in the Co-Pilot Instrument Panel lower RH side.

If SVS Electronic Window Shades are not responding, or for any other reason, the flight crew or cabin shall:

- Disengage the SVS EWS System via the existing cockpit "SVS Override" switch by moving the switch to "OVRD".

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4. **Abnormal:**

No change to basic AFM.

5. **Normal:**
   A. Restricted use of the Cabin Wi-Fi System

   During Taxi, takeoff, approach, and landing the Pilot will disengage the Wi-Fi system.

   - Disengage the Wi-Fi System via the existing cockpit switch

   - Direct the passengers to terminate wireless activity on their PEDs.

   If, for any reason, the flight crew requires the windows to be clear, the flight crew or cabin crew shall:

   - Disengage the SVS EWS System via the existing "SVS Cockpit Override" switch by moving the switch to the "OVRD" Position.

6. **Performance:**

No change to basic AFM.

7. **Weight and Balance / Equipment List:**

See basic Airplane Flight Manual for current Weight and Balance

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5.2   SVS (EWS) System

Prepare an Airplane Flight Manual Supplement using the following example guide

NOTE: Comments in angle brackets <> and *italics* are explanatory only and shouldn't appear in final supplement.

<Name of Applicant>

<Address of Applicant>

<Document Number>

FAA Approved
Aircraft Flight Manual Supplement
For
Prizm Aircraft Products SVS Electronic Window Shades (EWS)
In
<Aircraft Model>

Registration: _____

Serial Number _____

The information in this supplement is FAA approved material and must be attached to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM) when the airplane has been modified by installation of the Prizm Aircraft Products SVS Electronic Window Shades (EWS) System in accordance with FAA form 337 dated _____ .

The information contained herein supplements the information of the basic Airplane Flight Manual. For Limitations, Procedures and Performance information not contained in this Supplement, consult the basic Airplane Flight Manual

FAA APPROVED:_____DATE:_____

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1. **General:**

   SVS Electronic Window Shades (EWS)

   The SVS EWS System is considered a non-essential, non-required cabin system. The SVS EWS System controls ALL twenty four (20) window shades installed. Six channels are dedicated to managing emergency exit windows. This allows for automatic clearing of the emergency exit windows in the event of a landing mishap that results in a loss of power to the aircraft. The electronic window shades are transparent when powered ON and opaque when no power is applied (OFF). The dedicated emergency exit window channels are alternatively powered by a dedicated backup battery to ensure window transparency during loss of power operations, thereby allowing viewing outside of the aircraft. All windows will be powered CLEAR at normal aircraft shut-down for a period of 10 minutes. This application is through a back-up battery installation as part of the SVS EWS system.

   Control of the SVS EWS System is primarily accomplished using wired switches for stepping through incremental degrees of opacity. A "SVS Over-Ride" switch is installed in the flight deck to allow the flight crew to over-ride the individual settings and force all the shades to the clear condition. An "optional" Cabin / Galley" Over-Ride switch may also be installed. When the SVS EWS is installed in conjunction with the PRIZM system opacity can be controlled wirelessly through PED. The standalone SVS EWS configuration (000-3846-M0687-020) does not contain Wi-Fi capability.

   NOTE: A circuit breaker is installed in the Pilots circuit breaker panel, labeled EWS EMERG, this circuit breaker is for protection of the SVS (EWS) sense wire to the emergency bus. There are no required pilot actions with this circuit breaker other than note if the breaker is extended (popped) and require a maintenance action to troubleshoot the open circuit breaker.

2. **Limitations:**

   No Change to the Basic Aircraft Flight Manual

3. **Emergency:**

   No Change to the Basic Aircraft Flight

4. **Abnormal:**

   If, for any reason, the flight crew requires the windows to be clear, the flight crew or cabin crew shall:

   - Disengage the SVS EWS System via the existing cockpit "SVS EWS Cockpit Over-Ride" switch.

5. **Normal:**
   If, for any reason, the flight crew requires the windows to be clear, the flight crew or cabin crew shall:

   - Disengage the SVS EWS System via the existing "SVS Cockpit Override" switch by moving the switch to the "OVRD" Position.

6. **Performance:**

   No change to basic AFM.

7. **Weight and Balance / Equipment List:**

   See basic Airplane Flight Manual for current Weight and Balance

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6 CONTINUED AIRWORTHINESS

6.1 PRIZM

No scheduled maintenance is required to ensure continued airworthiness. Removal of components is on condition of failure.

6.2 SVS (EWS)

The SVS (EWS) system uses an emergency battery supply that needs to me maintained according to the Concorde maintenance manual for RG series emergency battery (CMM 24-30-67) document number 5-0167 dated July 21, 2015 or greater. All other equipment has no scheduled maintenance requirements to ensure continued airworthiness. Removal of components is on condition of failure.

7 CONFIGURATION PROCEDURES

7.1 INTRODUCTION

7.1.1 Read and understand these instructions prior to initiating system configuration.

7.1.2 Required Equipment:

- Notebook or tablet
  - Minimum XGA (1024x768) resolution display
  - Web browser[4]
  - Wireless network connectivity or Ethernet port connectivity support (dependent on system installation)

7.1.3 Terminology

This document references the terminology below with regard to this system.

argument ....An additional piece of information sent to a *function* as part of the input.

channel ....The smallest software lighting item. *Channels* can be combined to form *locations*.

flex-io ....*Flexible-IO* is system of *functions* that allows for custom combinations of existing *functions* in order to accomplish behavior that would normally not be possible using the rest of the *Admin System Setup* configuration settings.

function ....A dedicated software element that generates output based on given input.

group ....A *group* is a collection of *locations*. The system supports configuration of four dedicated *groups*.

location...................A *location* is a collection of up to four *channels*. The number of *locations* supported matches the number of channels on a given controller. *Locations* can be combined to form *groups*.

mood.......................A factory-preset lighting profile. (Example: *Movie Mood* turns off all light channels and turns those channels identified as *cup holders* and *floor lighting* to 50% brightness.)

pseudo-groups.......A way of identifying *locations* for use by different software *functions*. These identifications include "*VIP*", "*Cup Holders*", and "*Floor Lighting*".

SSID........................The broadcast name of wireless network.

---

[4] Chrome, Safari, or Edge are recommended. Internet Explorer is not supported.

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7.1.5 System Organization

Each *PRIZM* PCB is capable of operating up to ten individual lighting *channels*. Therefore, all systems will have either ten or twenty *channels* available for configuration. The software allows a hierarchical organization of these *channels* to be created.

The smallest collection of *channels* is called a *location*. The system allows for as many *locations* to be configured as there are *channels* on a given controller. *Channels* cannot be assigned to more than one *location*.

Individual *locations* can be combined into *groups*. The system allows for up to four dedicated *groups*. *Locations* cannot be assigned to more than one *group*.
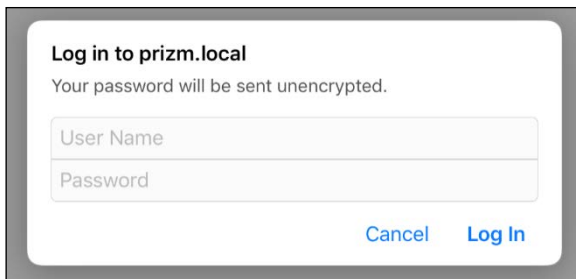
Additionally, there are several *pseudo-groups*. These *pseudo-groups* act as a way of further identifying various *locations* for use by different software *functions*. *Pseudo-groups* define whether lights are to be identified as "*VIP*", "*Cup Holders*", or "*Floor Lighting*".

7.2 PRELIMINARY OPERATIONS

To access the *PRIZM LED Lighting Admin System Setup* utility, connect to the network on which the system is connected. This can be either the wireless network generated by the system (SSID: `LED Lighting`) or another network to which the system is connected by Ethernet.

If connecting via the integrated wireless network, navigate to **http://192.168.42.1/admin** once connected to the network. Alternatively, **http://prizm.local/admin** also works on most devices. Due to the number of items to be displayed at a given time, a device with an XGA display (1024x768) is highly recommended.

When prompted for authentication, enter `PRIZM` as the username and `Lighting` as the password. A typical authentication screen is shown in Figure 7-1.
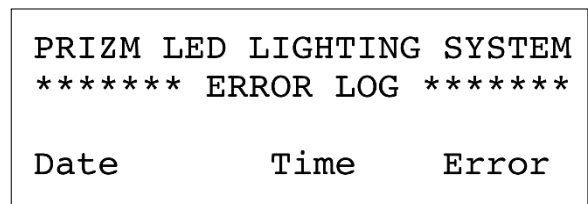
Figure 7-1 – Authentication Screen

```
PRIZM LED LIGHTING SYSTEM
******* ERROR LOG *******

Date        Time      Error
```

Figure 7-2 – Displayed Error Log Format

7.3 EFFECTIVITY

These configuration instructions apply to version 4.0 of the *Elliott Aviation PRIZM LED Lighting System* Software (p/n 000-3846-S0795-400).

7.4 PRIZM LED LIGHTING ADMIN SYSTEM SETUP

Once authenticated, the *PRIZM* LED *Lighting Admin System Setup* utility will display as shown in Figure 7-9. Instructions are given throughout the utility to assist in the configuration process.

There are six buttons located in the top right side of the screen.

- *"Load Example Configuration"* – Clicking or tapping this button will load a settings profile that demonstrates a possible system configuration. In order to retain these settings, click or tap the *Save ALL Settings* button.
- *"Load Empty Configuration"* – Clicking or tapping this button will clear all system settings, giving you a clean slate with which to work. No settings are saved until you click or tap the *Save ALL Settings* button.

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- *"Undo Configuration Changes"* – Clicking or tapping this button will clear any settings changes since opening the utility. The *Undo Configuration Changes* button does not apply to changes made outside the current browser window.
- *"Backup Configuration"* – Clicking or tapping this button will open a prompt (see **Figure 7-3** below) to download a file consisting of all currently saved system settings.
- *"Restore Configuration"* – Clicking or tapping this button will open a prompt (see **Figure 7-4** below) to upload a previously downloaded configuration backup in order to recover previously used system settings.
- *"Save ALL Settings and Reboot"* – clicking or tapping this button causes all settings to be saved. Once clicked, the system will immediately apply the configuration changes and restart. This process takes approximately ten seconds to complete.
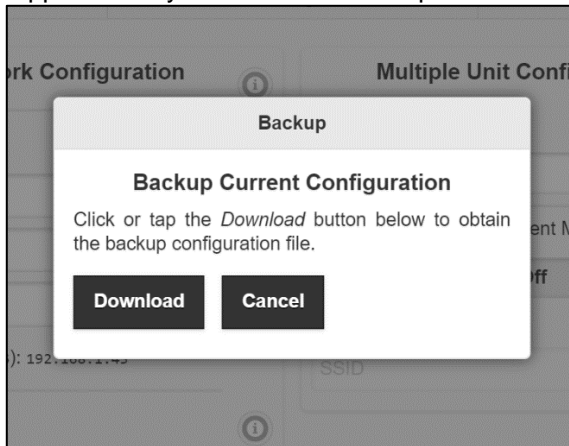
Figure 7-3 – Backup Dialog
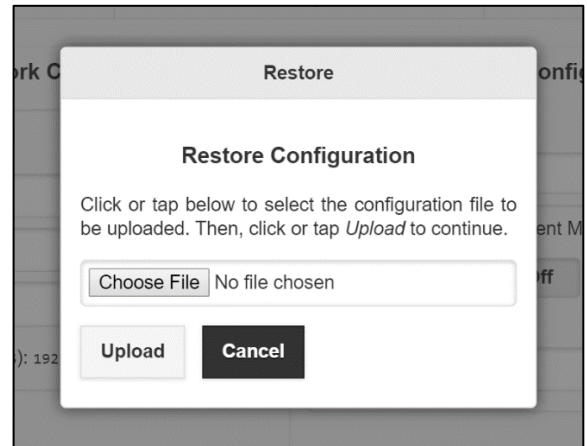
Figure 7-4 – Restore Dialog

Tooltips provide guidance and information about features throughout the utility. By default, these tooltips will automatically appear. If you find this to be distracting or that it makes it difficult to configure the system on the device being used, turning off the *"Enable Automatic Tooltips"* switch located at the top of the utility will prevent them from appearing. If, while enabled, additional information is desired for a particular feature, clicking the circular info buttons (as shown in **Figure 7-5**) will cause the tooltip for that specific feature to appear. The tooltip will remain visible until the X in the upper right-hand corner is used to close it (as shown in **Figure 7-6**).

Figure 7-5 – Circular Info Button

Figure 7-6 – Tooltip Close Button

The center section of the utility is where all settings and configuration items will be displayed. There is a navigation bar across the top of this section. Clicking any of the items in the navigation bar will change what is displayed below them. The navigation bar items are: *System Settings*, *Input Settings*, *Output Settings*, *App Settings*, and *Advanced Settings*. Each of these will be covered in the subsections to follow.

Below the center section of the utility previously described are two buttons labeled *"Open Log Viewer"* and *"Open Flex-IO Script Editor"*. Clicking either will open a new window. After clicking *"Open Log Viewer"*, a text-only document showing internal error messages will be displayed that starts with the text shown in **Figure 7-2** on page 38. These messages serve to assist technical support with troubleshooting in the event that it should become necessary. The *Flex-IO Script Editor* requires additional authentication. These scripts are not intended to be accessed by end-user or installation technicians.

In the footer of this *Admin System Setup* utility, additional helpful information is displayed which includes the system up time, the CPU core temperature, and primary network IP addresses.

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7.4.1   System Settings

The main System Settings interface consists of several key sections, each dedicated to different aspects of system configuration and control:

- **Features[5]:** Displays the system's current and unlockable features.
- **Configuration Identification[6]:** Allows you to specify an identification number for the system, which could be based on a project number, serial number, or tail number.
- **PWM Limitation:** Offers control over the maximum duty cycle of the LED lighting's pulse-width modulation signal, affecting brightness levels.
- **SVS EWS Control[7]:** Enables or disables integration with the Smart Vision System Electronic Window Shades, if applicable.
- **Network Configuration:** Provides settings for the system's wired and wireless network interfaces, including IP addresses, gateways, and subnet masks.
- **Multiple Unit Configuration**: For systems with more than one controller, this section allows you to configure communication settings among units.
- **Bright/Dim Behavior:** Customizes how the system responds to Bright and Dim button inputs, including behavior for incrementing brightness levels and wraparound actions.

Features[5]

The System Settings screen lists three features that can be unlocked to enhance your system's capabilities:

- **Prizm+ Enhanced Ethernet Control:** This feature enables advanced integration with cabin management systems, eliminating the need for physical connections.
- **NVIS-Compatible Mode:** Activates a mode that ensures compatibility with many night vision imaging systems, optimizing the system for use in low-light conditions.
- **SVS EWS Control:** Grants the ability to manage the Smart Vision electronic window shades system directly through the PRIZM interface.

Each feature's current status is indicated next to its name: an unlocked feature is marked with a green checkmark, while a locked feature shows a red lock symbol. To unlock additional features, click the "Unlock Additional Features" button. This action generates a Request Code, which you should provide to Prizm technical support. Once you receive a new unlock code for the feature you wish to activate, enter this code into the "Unlock Code" field and submit it by clicking or tapping the "Submit Unlock Code" button.

Please note that feature unlock status is not included in configuration backup file. The request and unlock codes are also unique to each controller; therefore, a different unlock code will be needed for each controller used in a system.

---

[5] The Features subsection is only present in software version 4.0 and higher.
[6] The Configuration Identification subsection is only present in software version 3.0 and higher.
[7] The SVS EWS Control subsection is only present in software version 2.0 and 3.0. It has been relocated as an unlockable feature in the new Features menu in software version 4.0.

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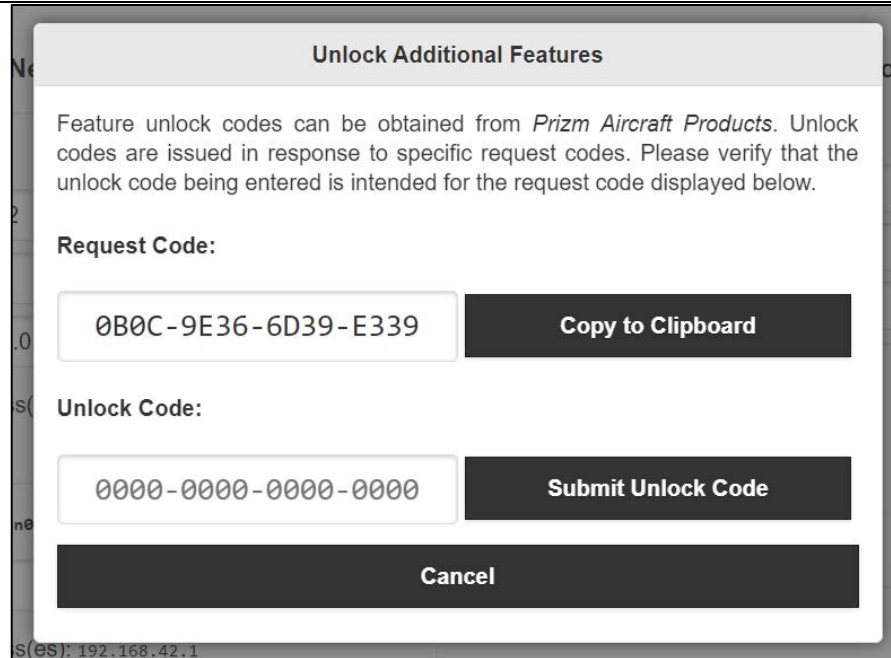
Figure 7-7 – Unlock Additional Features (v4.0)

Configuration Identification[6]

The number specified in this text box is for reference only and can be used to identify a specific system configuration based on a project number, a serial number, or a tail number. Choosing the type of number results in the identification number being labeled correctly anywhere it is used.

PWM Limitation

The duty-cycle of the pulse-width-modulated signal supplied to the LED lighting can be limited by changing the value shown in the text box or by moving the slider. All brightness settings will scale in accordance with the maximum value set here.

Please note that adjusting the maximum PWM duty cycle will directly affect the overall current requirements of the system.

SVS EWS Control[7]

Enable this switch if the system includes an optional *Elliott Aviation SVS Electronic Window Shades* control board. When set to *On*, the app will display the appropriate options to control the *SVS EWS System*.

Network Configuration

Each PRIZM system is equipped with both a wired and wireless network interface. If a manual configuration is required for the wired interface, an IP address, gateway, and subnet mask can be specified here. The default wired IP address is 172.20.10.42. If a gateway is specified, but no subnet is entered, a default value of 255.255.255.0 will be used to define the network.

The default IP address for the wireless interface is 192.168.42.1. If required, an alternate fixed wireless IP address can be specified. This is required if configuring multiple units as a single system.

The currently active IP addresses assigned to each interface are also shown below each respective subsection.

Multiple Unit Configuration

Multiple PRIZM controllers can communicate with one another creating a seamless cabin lighting experience. Communication between controllers must take place over either a wired Ethernet or

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wireless network. All controllers must be assigned a unique static IP address. This can be done in the *Network Configuration* subsection previously discussed. The IP addresses for the other controllers in the system should be listed under this section. Clicking the plus button will add an entry field and clicking a minus button (when more than one field is visible) will remove an entry field.

If creating a multiple unit configuration over a wired connection, please keep in mind that each unit will, by default, seek to utilize the default IP address. As a result, it is recommended that *all* units in the system use an IP address other than the default.

If creating a multiple unit configuration over a wireless connection, one of the controllers should continue to function as a wireless access point and the other should be configured to enable *Wireless Client Mode*. In this mode, the controller will automatically seek to connect to the specified network on startup. By default, the PRIZM system uses the SSID of `LED Lighting`. Any wireless network can be used, as long as it is an open, unencrypted network. *Please note that it is not recommended to combine wired and wireless network configurations.*

In the event that Wireless Client Mode has been enabled with an invalid or inaccurate SSID and the system is no longer accessible, the utility can be accessed either by connecting via an Ethernet connection or by grounding pin 33 on the J1 connector prior to applying power to the unit. If pin 33 is grounded during startup, then Wireless Client Mode will be disabled during that power on session only and the controller will begin generating its own wireless network. Keep in mind that in order to gain access to the network, pin 36 on the J1 connector cannot be grounded and no other PRIZM controllers should be powered on that are also generating a wireless network.

Bright/Dim Configuration

The *Bright/Dim Configuration* settings apply only to the Bright and Dim physical button inputs. The *Increments* slider is used to define the number of button presses needed to go from the completely off to completely on state (or vice versa).

The *Bright-to-Off* and *Dim-to-On* options control the *Wraparound Behavior*. This means, that if the lights are fully on and the *Bright* button is pressed, then the lights will turn off (*Bright-to-Off*). The opposite behavior is enabled by the *Dim-to-On* option.

Additionally, the *Bright-to-On* and *Dim-to-Off* options are used to determine if the lights can be turned on from the off state by using the BRIGHT button and if the lights can be turned completely off with the DIM button. Additionally, a dynamic diagram is present in the software interface that will update as changes are made to these settings in order to better visualize the behavior that should be expected.

The *Default On Brightness* setting gives the ability to change the default brightness of the lights when turned on from an off state. For most installations, this will remain set to 1.0 (which is 100% brightness); however it can be decreased by 10% increments to better suit installation scenarios where it may be required.
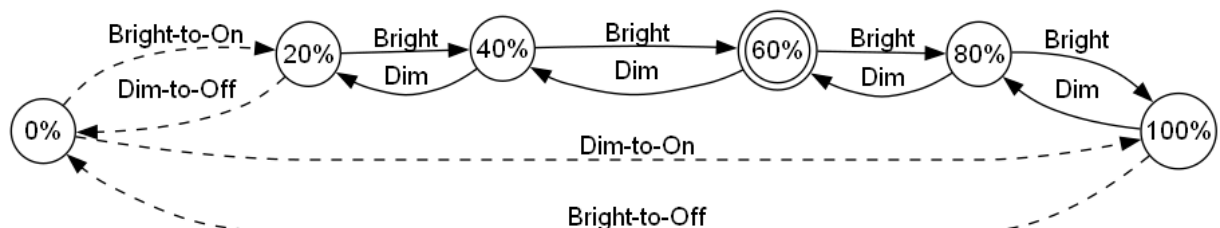
Figure 7-8 – Bright/Dim Configuration Diagram *(showing five increments)*

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Figure 7-9 – *System Settings*

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7.4.2 Input Settings

The *PRIZM LED Lighting System* has 23 configurable inputs. These inputs can be configured using the settings in the *Input Settings* section of the utility. *Input Settings* is divided into two parts: *Switch Behavior* and *Linked Inputs.*

7.4.2.1 Switch Behavior

The *Switch Behavior* subtab shown in **Figure 7-10**.

Identification

Each input is identified with a large numeral indicating its *Input ID*. In addition to this, the *Pin* number is shown in parentheses for the J1 connector on the outside of the *PRIZM* controller. (These settings do not affect the reading light inputs for the J5 connection, if one is present.)

Switch Behavior

Set the *Switch Behavior* options to match the type of switch that is being connected to the system: momentary ground or latching. Momentary switches can be defined as either momentary (standard) switches or as momentary (held) switches. Momentary (held) switches allow the user to hold in the button, and this will cause the function call to repeat. (This type is reserved for use with the *Bright* and *Dim* functions.) The momentary (standard) switch type only sends a single function call. Latching switches are bound by their logic level.

Function

Set the *Function* assignment to the behavior to be linked to the input.

Arguments

Arguments are specific to the *Function* selected. Tooltips are available for each *Function* that explain what arguments are required or are optional. If invalid arguments are provided, the input will be ignored.

A complete list of functions and arguments starts on the next page.

Invert Logic

If inconsistent behavior is present, the switch logic can be reversed with the Invert Logic toggle switch.

Startup Event

In addition to the 23 inputs, a function can also be triggered one time upon startup completion. The *Function* and *Argument* settings are the same as described above.

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Bright Function

Function Description: The "Bright" function increases the intensity of RGBW channel light output. It is designed to give you control over the brightness of different locations within your lighting system.

Arguments:

1. **Location (Required)**: This argument specifies the location where the light intensity will be increased. Options include:
   - "all": Affects all light locations.
   - "vip", "cupholders", "floor": Specific predefined locations.
   - "location(ID)", "group(ID)": Targets a specific option or group, where "ID" is a numerical identifier.
2. **Steps (Optional)**: This argument defines the number of brightness increments between fully off (0%) and fully on (100%). If this argument is not provided, the system defaults to the value set in the System Settings tab.

Implementation Steps:

1. Select the "Bright" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Choose the desired location for brightness adjustment.
3. Optionally, specify the number of steps for gradual brightness control.
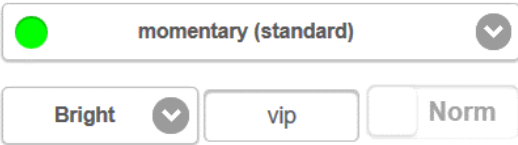
Example Usage:

- To brighten all cabin lights in increments of 10%, use:

- To increase brightness in the VIP area with default settings, use:

Tips for Engineers and Technicians:

- Engineers: Ensure correct identification of location IDs for precise control.
- Technicians: Verify real-time response in each location during installation to ensure proper function execution.

Note: The Bright and Dim functions are the only two functions than can also utilize the "momentary (held)" switch type. When the switch type is set as "momentary (held)", the function will be called repeatedly after a delay when the user continues holding down the input switch.

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Dim Function

Function Description: The "Dim" function is used to reduce the intensity of the RGBW channel light output. This function allows for a subtler lighting ambiance and is suitable for creating a more relaxed environment.

Arguments:
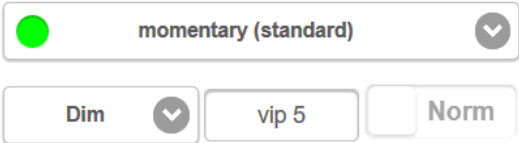
1. **Location (Required)**: This argument specifies the location where the light intensity will be decreased. Options include:
   - "all": Affects all light locations.
   - "vip", "cupholders", "floor": Specific predefined locations.
   - "location(ID)", "group(ID)": Targets a specific option or group, where "ID" is a numerical identifier.
2. **Steps (Optional)**: This argument defines the number of brightness increments between fully off (0%) and fully on (100%). If this argument is not provided, the system defaults to the value set in the System Settings tab.
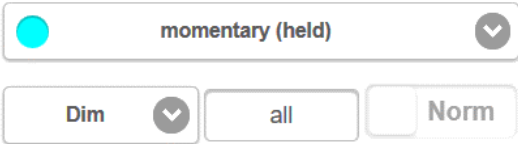
Implementation Steps:

1. Select the "Dim" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Select the target location for the dimming effect by entering the applicable location argument.
3. Optionally, specify the number of steps for gradual brightness control.

Example Usage:

- To dim cabin lights in the VIP area by 20% in 5 steps, use:

- For a general dimming effect throughout the cabin with default settings, use:

Tips for Engineers and Technicians:

- Engineers: Ensure correct identification of location IDs for precise control.
- Technicians: Test the dimming effect in each location to confirm the desired intensity levels are achieved.

Note: The Bright and Dim functions are the only two functions than can also utilize the "momentary (held)" switch type. When the switch type is set as "momentary (held)", the function will be called repeatedly after a delay when the user continues holding down the input switch.

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Toggle Function

Function Description: The "Toggle" function is versatile, used for turning on/off RGBW channels, discrete outputs, and enabling/disabling the system-wide input lockout.

Applications and Arguments:

1. **RGBW Channels**
   - *First Argument (Required)*: Specifies which lights to turn on (e.g., "all", "vip", "floor").
   - *Second Argument (Optional)*: Determines which lights to turn off. If not provided, it's assumed to be the same as the first argument.
2. **Discrete Outputs**
   - *Two Required* Arguments:
     First: The fixed keyword "discrete".
     Second: The ID of the discrete output to be controlled.
3. **System-wide Input Lockout**
   - One Required Argument: The keyword "lockout". This can be used alone or combined with other functionalities.
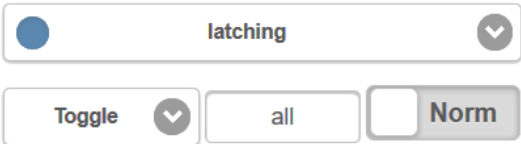
Implementation Steps:

1. Select the "Toggle" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Select the appropriate arguments based on the desired functionality.

Example Usage:

- To toggle all cabin lights on and off, use:
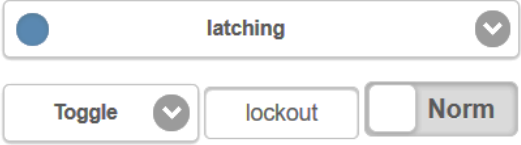
●	latching	⌄

Toggle ⌄	all	Norm

- For controlling a discrete output with ID 5, use:

●	momentary (standard)	⌄

Toggle ⌄	discrete 5	Norm

- To activate the input lockout, use:

●	latching	⌄

Toggle ⌄	lockout	Norm

Tips for Engineers and Technicians:

- Engineers: Understand the different scenarios for the Toggle function to ensure correct configuration.
- Technicians: Verify each toggle action for intended behavior in each specific use case.

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Discrete Off Function

Function Description: The "Discrete Off" function is designed to specifically turn off certain components or sections of your lighting system, allowing for precise control.

Arguments:

- **One Required Argument**: This should be the ID of the discrete element you wish to turn off.

Implementation Steps:

1. Select the "Discrete Off" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Enter the ID of the discrete element you want to deactivate.

Example Usage:

- To turn off a discrete element with ID 3, use:

Tips for Engineers and Technicians:

- Engineers: Ensure the correct identification of discrete elements for accurate control.
- Technicians: Confirm the deactivation of the specified elements after implementation.

Discrete On Function

Function Description: The "Discrete On" function is utilized to activate specific components or sections within your lighting system. This allows for targeted control, enabling the precise activation of individual elements.

Arguments:
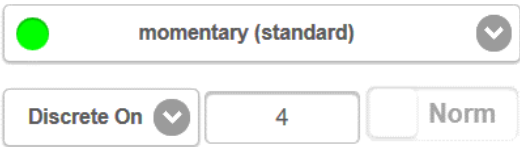
- **One Required Argument**: This is the ID of the discrete element you intend to turn on.

Implementation Steps:

1. Select the "Discrete On" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Input the ID of the discrete element to be activated.

Example Usage:

- To activate a discrete element with ID 4, use:

Tips for Engineers and Technicians:

- Engineers: Verify the IDs of discrete elements to ensure correct activation.
- Technicians: Test the activation of the element to confirm functionality.

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Preset Function

Function Description: The "Preset" function allows cycling through user-configured preset colors. This feature is useful for quickly changing the ambiance of a space with predefined color settings.

Arguments:
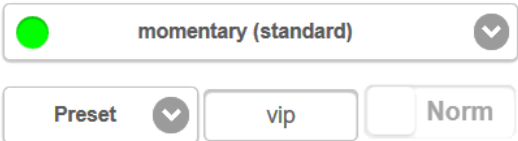
- **Location (Optional)**: Specifies the area where the preset color is to be applied. If no argument is provided, the preset color is applied to group(1).

Implementation Steps:

1. Select the "Preset" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Optionally, specify the location where the preset color should be applied.

Example Usage:

- To apply a preset color to the VIP area, use:

- Without specifying a location, the preset color applies to group(1) by default.

Tips for Engineers and Technicians:

- Engineers: Familiarize with the preset configurations and their designated locations.
- Technicians: Test the preset function in the specified location to ensure the correct color scheme is applied.

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Mood Function

Function Description: The "Mood" function serves two purposes: cycling through mood lighting configurations and triggering a specific mood. This flexibility allows for dynamic control over the lighting atmosphere.

Applications and Arguments:
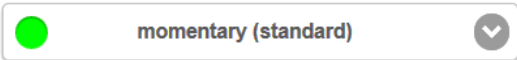
1. **Mood Cycling** (No Arguments Required)
   - Cycles through available mood settings, including both preconfigured and user-created moods.
2. **Set Specific Mood** (Two Arguments Required)
   - First Argument: The keyword "set".
   - Second Argument: The name of the specific mood (e.g., "Aurora", "Relaxation", or a custom mood name).
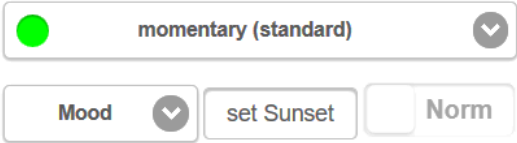
Implementation Steps:

1. For mood cycling, simply select the "Mood" function with no additional arguments from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. To set a specific mood, choose "Mood", then input "set" and the desired mood name.

Example Usage:

- For cycling moods, use:

- To set a 'Sunset' mood, use:

Tips for Engineers and Technicians:

- Engineers: Ensure moods are correctly configured in the system, including any custom moods.
- Technicians: Test both the cycling feature and specific mood settings to confirm correct implementation.

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Flex-IO Function

Function Description: The "Flex-IO" function is designed to trigger custom scripts that offer tailored lighting solutions. This function acts as a bridge to execute these specialized scripts, allowing for a highly customizable lighting experience.

Argument:

- **ID (Required)**: A single-digit number (1-9) identifying the specific Flex-IO script to be run.

Implementation Steps:

1. Select the "Flex-IO" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Enter the ID of the Flex-IO script you wish to execute.

Example Usage:

- To run the Flex-IO script with ID 3, use:

Tips for Engineers and Technicians:

- Engineers: Ensure the Flex-IO scripts are correctly configured and numbered.
- Technicians: Verify the execution of the script and assess its impact on the lighting system.

SVS Opaque Function

Function Description: The "SVS Opaque" function is utilized to return all electronic window shades to their opaque state as part of the installed system. This feature is particularly useful in managing privacy and controlling light penetration through the windows.

Arguments:

- This function does not require any arguments.

Implementation Steps:

1. Select the "SVS Opaque" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.

Example Usage:

- Simply use:

Tips for Engineers and Technicians:

- Verify that all window shades respond correctly to the function and achieve the intended opacity.

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SVS Clear Function

Function Description: The "SVS Clear" function is designed to make all electronic window shades in the installed system reach their most transparent state. This function is key for maximizing natural light or enhancing visibility through the windows.

Arguments:

- No arguments are required for this function.

Implementation Steps:

1. Select the "SVS Clear" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.

Example Usage:

Simply use:

Tips for Engineers and Technicians:

- Ensure that the shades effectively transition to their transparent state for uniform light control across all windows.

Set LED Function

Function Description: The "Set LED" function is designed to adjust the LED lighting at a specific location to a defined intensity. This function provides precise control over the light output of LEDs in various areas.

Arguments:

- **Location (Required)**: Specifies where the LED changes will occur.
- **Value (Required, 0-255)**: Determines the intensity of the LEDs. A value of 0 turns the LEDs off, while 255 results in 100% white output.

Implementation Steps:

1. Select the "Set LED" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Define the location and the desired value for the LED intensity.

Example Usage:

- To set LEDs in the VIP area to half brightness, use:

Tips for Engineers and Technicians:

- Engineers: Map out the specific locations and their corresponding control needs.
- Technicians: Test the LED settings to ensure the correct intensity is achieved.

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Color Pulse Function

Function Description: The "Color Pulse" function creates a brief lighting animation, serving as a visual notification. This is particularly useful for alerting passengers and crew subtly and effectively.

Arguments:

- **Location (Required)**: Specifies where the animation will occur.
- **Color Value (Required)**: Either a hexadecimal color value in the format 0xRRGGBBWW (representing red, green, blue, and white) or the keyword "rainbow" for cycling through all colors.

Implementation Steps:

1. Select the "Color Pulse" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. Define the location and the color value for the animation.

Example Usage:

- To create a blue pulse in the lower accent lighting, use:

- For a rainbow animation in the same area, use:

Tips for Engineers and Technicians:

- Engineers: Coordinate the color pulse with other lighting settings to ensure a harmonious alert system.
- Technicians: Test the animation to confirm it reverts to the original state after completion.

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NVIS Mode[8] Function

Function Description: The "NVIS Mode" function ensures compatibility with Night Vision Imaging Systems (NVIS). When activated, the system exclusively produces green light, crucial for NVIS environments. It automatically adjusts certain lights (e.g., reading lights connected to the J2 connector) to comply with NVIS standards.

Arguments:

- No arguments are needed for this function.

Implementation Steps:

1. Select the "NVIS" function from the dropdown list on the Input Settings, Switch Behavior subtab for the applicable Input ID.
2. The system will adapt the lighting accordingly, based on its current state or the input's latching state.

Example Usage:

- Activate or deactivate NVIS Mode as needed by simply using:

●	latching	⌄

| NVIS ⌄ | argument(s) | Norm |

Tips for Engineers and Technicians:

- Ensure that all relevant lights are compatible with NVIS Mode requirements.
- Verify that the system correctly transitions between NVIS and regular lighting modes.

7.4.2.2 Linked Inputs

The *Linked Inputs* subtab is shown in Figure 7-11.

In situations where an existing cabin management system provides two output connections to determine more than two conditions, two *PRIZM LED Lighting System* inputs can be *linked* in order to respond to input changes correctly. (This is sometimes called a three-state switch.) For software version 2.x and 3.0, up to four pairs of inputs can be *linked*. For software version 4.0, up to eleven pairs of inputs can be *linked*. To *link* inputs, first select the input IDs to link. Then, select the function and enter the corresponding appropriate *arguments* (if any) for each combination of states that are shown. Note that a down arrow icon indicates a grounded or closed connection to the pin while an up arrow icon indicates a floating or open connection.

---

[8] NVIS Mode is only available with software version 3.0 and higher.

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Figure 7-10 – *Input Settings : Switch Behavior*

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Figure 7-11 – *Input Settings : Linked Inputs*

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7.4.3 Output Settings

The Output Settings are divided into three main areas, accessible via a secondary navigation bar: **Location Settings**, **Discrete Settings**, and **Flex-IO Scripts**. Selecting any of these options will update the display accordingly. Note: Modifying **Flex-IO Scripts** should typically only be done by authorized personnel.

Location Settings are illustrated shown in Figure 7-15. You have two buttons here, each opening a different configuration window:

1. **Location Settings Interface** – Opens by clicking the first button. See Figure 7-16 for the interface.
2. **Location Sorting Interface** – Opens via the second button, and is shown in **Figure 7-17**.

7.4.3.1 Option Settings

This interface allows you to visually configure the Prizm LED Lighting System. It features drag-and-drop functionality with two main elements: **Location Cards** and **Channels**. The interface displays the same number of location cards as the number of channels available on the controller. The number of Channels varies by controller type, with single-board controllers showing ten and dual-board controllers showing twenty.
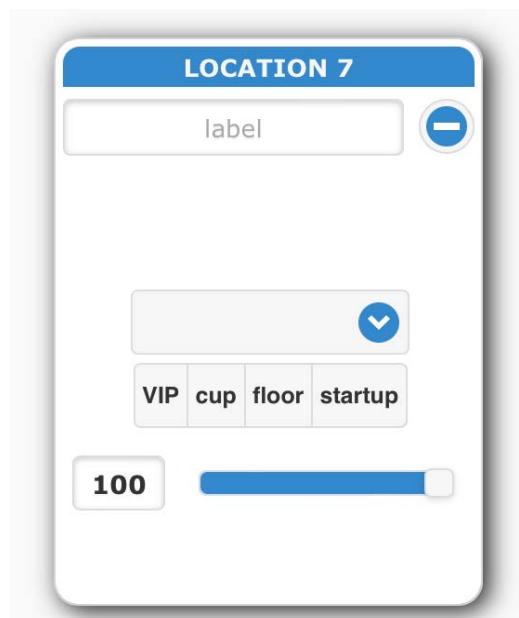
Figure 7-12 – Location Card

Figure 7-13 – Channel

- **Location Cards** can be dragged into six different containers: **Group 1** through **Group 4**, **No Group Assignment**, and **Unused Locations**. Click the "+" button next to a container to quickly move a Location Card to that container.
- **Channels** are assignable to any Location Card or a special **Unused Channels** Card which located below the **Unused Locations** container.

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- Each Location Card allows you to name the Location for easy identification. For nested labels, use a format like `Galley:Work Light`. Any part of the label following a ":" will be nested under the part of the label that precedes it.
- The "-" button next to the label field moves the card to the **Unused Locations** container.
- A dropdown menu for selecting CMS identifiers appears when the Prizm+ Enhanced Ethernet Control feature is enabled, allowing the system to recognize commands from a connected CMS. Selecting the appropriate CMS identifier from this dropdown menu tells the Prizm system how to interpret the commands received from a connected CMS. There are many standard identifiers which will always be visible in the dropdown list; however, if your system utilizes a custom identifier that isn't in the list, make sure that the CMS is powered on and fully initialized. Once the CMS has had an opportunity to send commands to the Prizm system, any non-standard identifiers should appear in the dropdown menu after refreshing the Location Settings interface page.
- Four toggle buttons on each card assign it to a pseudo-group: **VIP**, **Cup**, **Floor**, or **Startup**.
  - **VIP** – Refers to the V.I.P. pseudo-group that is typically used to identify those lights turned on and off at the VIP console.
  - **Cup** – Refers to the "cup holders" pseudo-group that is used to identify cup holder lights.
  - **Floor** – Refers to the "floor" pseudo-group that is used to identify lower accent lighting.
  - **Startup** – Identifies those lights that should be turned on once the system finishes booting. Channels 1-4 (and 11-14 on two-board controllers) can be lit with white-only lighting during the boot process; however, any location not designated as "startup" will be turned off once the boot process is completed (unless that location is controlled by a latching input switch, then the switch state would be used to determine if the location is on or off post-boot).
- The last feature on each card is a PWM limiter, allowing you to set maximum brightness for that location. For example, it is typical that cup holder lighting be limited to 30% brightness, so for that Location Card, the slider would be set to a value of 30.

Top Interface Buttons – There are five buttons at the top of the interface with the following functions:

- **Undo Configuration Changes** - Reverts to the original state upon opening.
- **Load Empty Configuration** - Clears all settings.
- **Load Example Configuration** - Loads a preset configuration for demonstration.
- **Cancel and Return to Admin Setup** - Discards changes and exits.
- **Save Configuration** - Applies changes and exits. A dialog (Figure 7-14) confirms this action.

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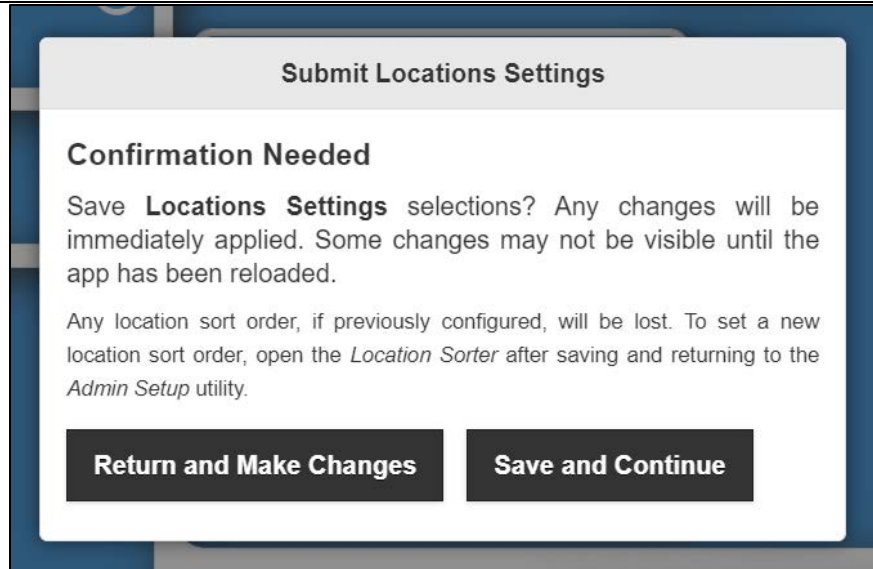

Figure 7-14 – Submit Location Settings Dialog

7.4.3.2 **Location Sorter**

This tool allows you to arrange how items appear in the slide-out menu in the app's main menu. Both individual locations and their containers, if configured, can be repositioned by dragging the block representing the item to the desired location. Remember, sorting is applied system-wide with a single operation; it's recommended to have all controllers configured and online before sorting.

Additional Information:

- When the Save button is used on the Location Settings page, the location sort order will be reset.
- If a location is "split" (a location is showing more than once in the location list), try the following:
    o If the locations are on the same controller, reset the sort order by using the **Save** button in the Locations Setting page.
    o If the locations are on different controllers, reset the sort order by using the **Save** button in the Location Settings page *for each* affected controller.

Priority Numbers: You can manually assign a sort priority (00-99) within location names for initial sorting. These are hidden in the app and reset upon saving in the Location Settings interface.

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Figure 7-15 – *Output Settings : Location Settings*

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Figure 7-16 – *Location Settings when Prizm+ Enhanced Ethernet Control enabled*

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Figure 7-17 – *Location Sorter*

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7.4.3.3 Discrete Settings

The **Discrete Settings** section allows you to configure the discrete output pins of the Prizm LED Lighting System for various functions, beyond just controlling reading lights. This flexibility is detailed in the Discrete Settings screen, as depicted in Figure 7-18.

- **Output Type**: Each discrete output (referred to as Discrete ID) can operate in two modes:
  - **Reading Light**: The standard functionality for controlling reading lights.
  - **External Signal**: Generates signals tied to specific Trigger Events, selectable as either **Momentary** (temporary signal) or **Latching** (maintains its state until changed).
- **Latching Behavior**: For outputs set to Latching, you can define the initial state (logic high or low) when the system powers up.
- **Trigger Events**: Assign a function or input to trigger the discrete output. Options are available in a dropdown menu.

7.4.3.4 Flex-IO Scripts

Flex-IO Scripts offer advanced customization options, enabling unique functionalities not available through standard settings. The interface, shown in Figure 7-19, features nine multiline text boxes for defining additional parameters linked to inputs and triggers.

Note: Modifying Flex-IO Scripts is a specialized service by Prizm Aircraft Products and not intended for general user adjustments.

7.4.4 App Settings

The App Settings, illustrated in Figure 7-20, let you personalize the app's interface.

- **Enable Custom Logo**: Toggle your preloaded custom logo on or off. When off, the default Prizm logo will display.
- **Custom Mood PIN Protection**: To safeguard against unintended creation or deletion of Custom Moods, enable PIN protection. This requires a four-digit PIN for accessing mood modification features. The default PIN is "1234".
- **App Features Visibility**: Choose which features appear in the app's Main Menu. Note:
  - Hiding a feature does not disable its functionality; it only removes it from the Main Menu visibility.
  - Disabling certain features might also hide related options. For example, hiding "All Group Control" will also hide individual group controls, which can't be shown unless "All Group Control" is visible again.

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Figure 7-18 – *Output Settings : Discrete Settings*

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Figure 7-19 – *Output Settings : Flex-IO Scripts*

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Figure 7-20 – *App Settings*

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7.4.5   Advanced Settings

The Advanced Settings tab is divided into several key areas for system configuration and troubleshooting:

- **Troubleshooting Tools**: Offers options for system diagnostics and configuration refresh.
- **Color Temperature Tuning & Color Accuracy**: Adjust these settings for optimal visual output. (Note: The Optimized Color Gamut feature is permanently enabled and not adjustable.)
- **CMS Active Feedback**: Available if integrated with a compatible cabin management system for real-time system feedback.
- **NVIS Mode**: This option appears only if it's been activated via the Feature Unlock menu.

Troubleshooting Tools

- **Refresh Configuration**: Reloads the current system configuration.
- **Trigger Startup Event**: Initiates the startup event configured in the Input Settings.
- **Live Input Monitor**: Opens a page showing real-time input data, helping diagnose connection issues.
- **Prizm+ Monitor**: Provides a view of the latest 1,000 CMS commands and channel assignments.

Figure 7-21 – *Troubleshooting Tools* in Software v4.0

Color Accuracy

This setting allows you to match the color output of your PRIZM lighting fixtures to the color temperature they're designed for, enhancing overall color consistency. Options include temperatures of **2700K**, **4000K**, and **5500K**.

Figure 7-22 – *Color Accuracy* in Software v3.0
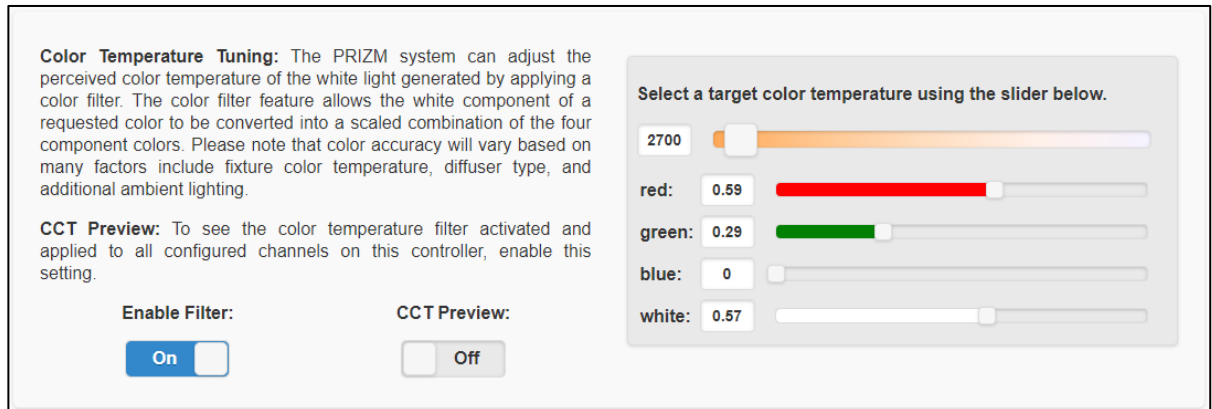
Color Temperature Tuning

The PRIZM LED Lighting system can adjust the perceived color temperature of the white light generated by applying a color filter. The color filter feature allows the white component of a requested

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color to be converted into a scaled combination of the four component colors. Please note that color accuracy will vary based on many factors include fixture color temperature, diffuser type, and additional ambient lighting.

To see the color temperature filter activated and applied to all configured channels on this controller, turn on the *CCT Preview* option. All configured channels will display the white light approximation that most closely resembles the selection of the *target color temperature* slider.
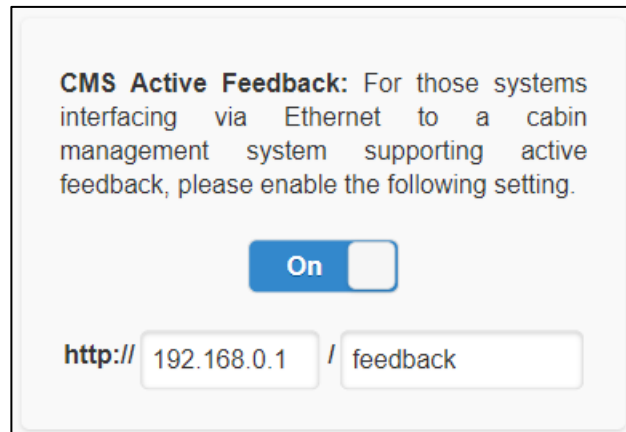
Figure 7-23 – *Color Temperature Tuning*

CMS Active Feedback

For setups with a compatible cabin management system (CMS), enter the CMS controller's IP address and the HTTP endpoint address in the provided text boxes to enable active feedback from the Prizm system to the CMS.

Figure 7-24 – *CMS Active Feedback* in Software v4.0

NVIS Mode

NVIS Mode provides compatibility support for Night Vision Imaging Systems (NVIS). When NVIS Mode is engaged, only green light is produced by the system. (All reading lights connected to the J2 connector are turned off and cannot be turned on until NVIS Mode is disabled. Reading lights connected to the J6 connector, if present, are not affected.) This function both enabled and disables NVIS mode depending on the current system state or latching state of the input (if applicable). This function does not require any arguments.

Due to variations in cabin layout and PRIZM fixture installation locations, illumination levels can vary widely from aircraft to aircraft. Use the *NVIS Maximum Brightness* slider to set the percentage of

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maximum output for your application. Enabling the *NVIS Preview* option will cause all configured output channels to display the green light that will be used by NVIS Mode at its maximum brightness. This feature can be used during initial setup to ensure that NVIS Mode will illuminate at levels compatible with your intended application.
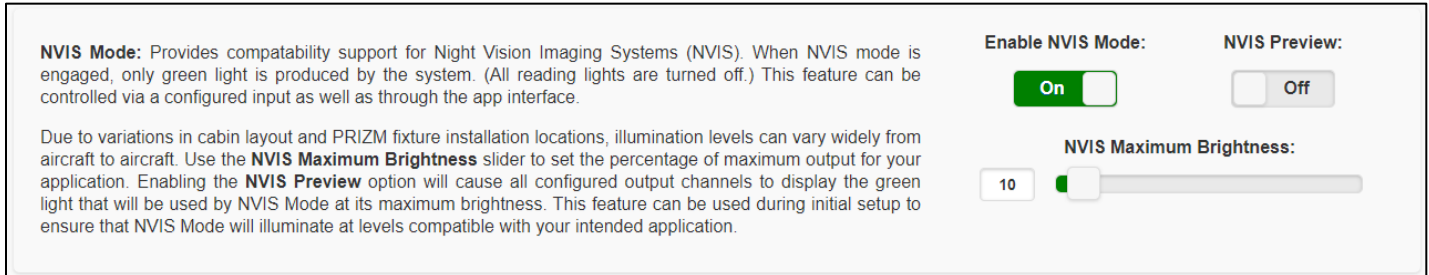
Figure 7-25 – *NVIS Mode* Settings

7.5   CONFIGURATION FINALIZATION

Once all changes have been made, click the *"Save ALL Settings"* button at the top right of the screen.

The system changes are immediately applied and no reboot is required. Processing takes only 2-3 seconds after which a rainbow color pulse is generated to confirm that the settings were successfully applied.

7.5.1   Configuration Registration

In order to provide better support both immediately following installation as well as in the future should the need arise, Prizm Aircraft Products requests that a copy of the system configuration be forwarded to service@PrizmAircraftLighting.com. Please attach a copy of the completed configuration worksheet found in Appendix B. Please also attach a copy of the PRIZM configuration backup file once all configuration settings have been applied and saved. (See page 39 for details regarding how to download the configuration file.) Be sure to include the aircraft make, model, and serial number in the email.

8   TESTING PROCEDURES

8.1   Required Equipment

- A laptop will be used to verify system configuration of the PRIZM LRU (connected via Wi-Fi).
- A PED will be used to conduct specified portions of these test procedures.

8.2   General Notes:

The following figures are provided to assist in identifying specific details or references to conduct the test procedures contained in this document.

This will test the full functionality of a 000-3846-M0795-54 unit this has 2 LED lighting board and 1 EWS board some portions of the test might not be applicable to your installation
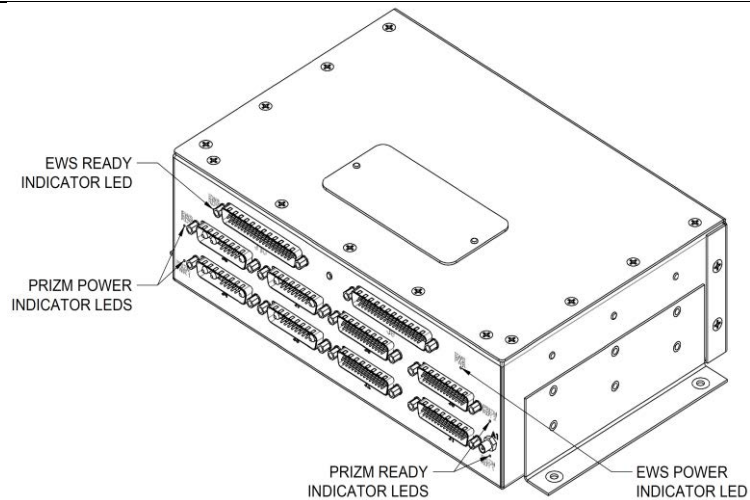
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Figure 8-1- Indicator LED Locations (PRIZM with EWS LRU (-54))
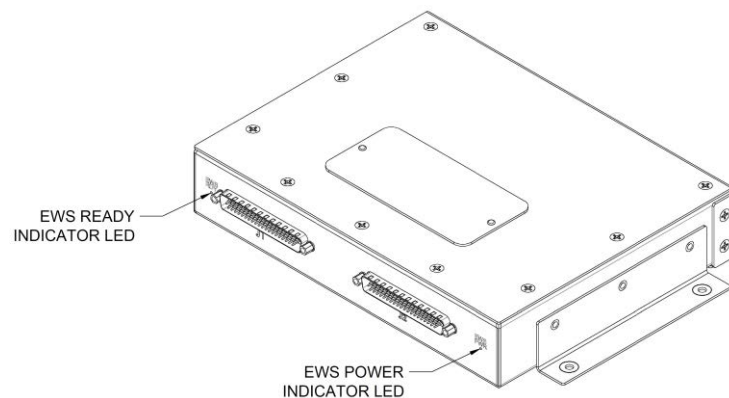
Figure 8-2 – Indicator LED locations (Standalone EWS LRU (-020))

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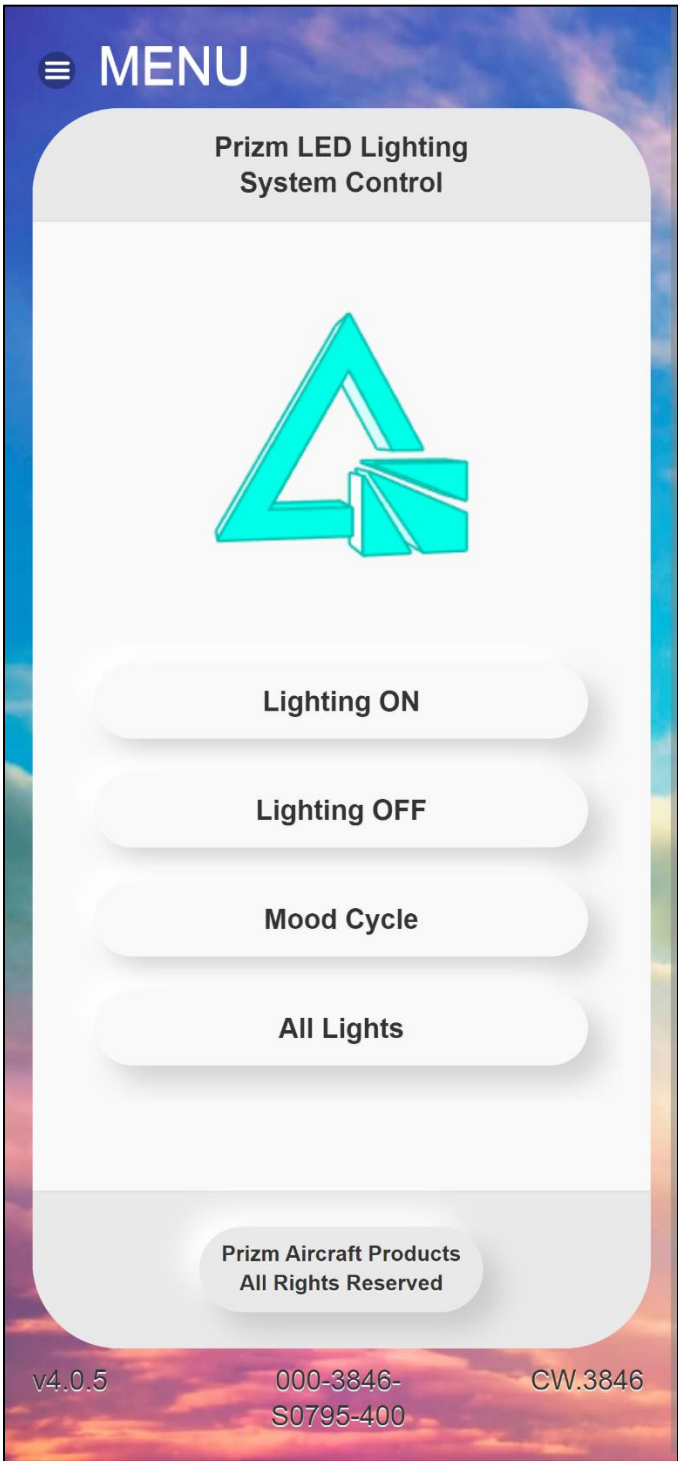
Figure 8-3 – Prizm App Main Menu
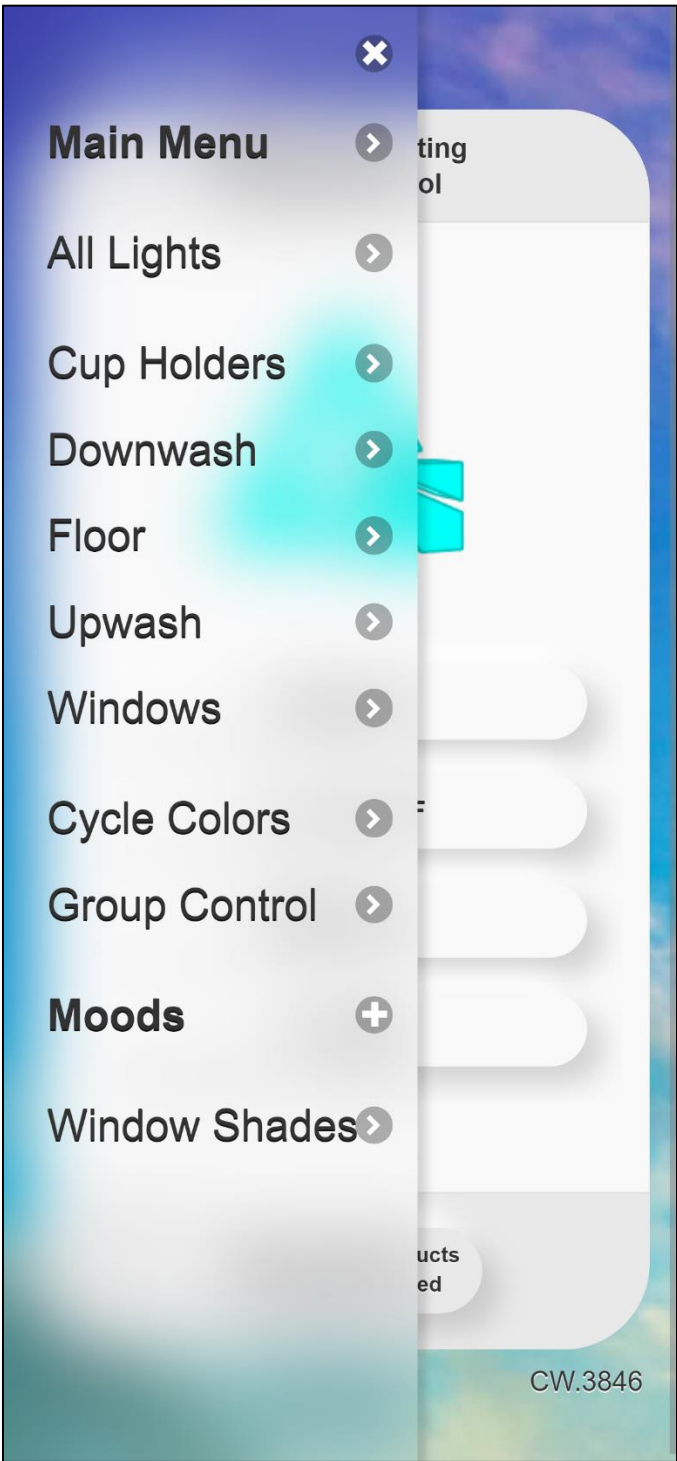
Figure 8-4 - Prizm App Slide-out Menu

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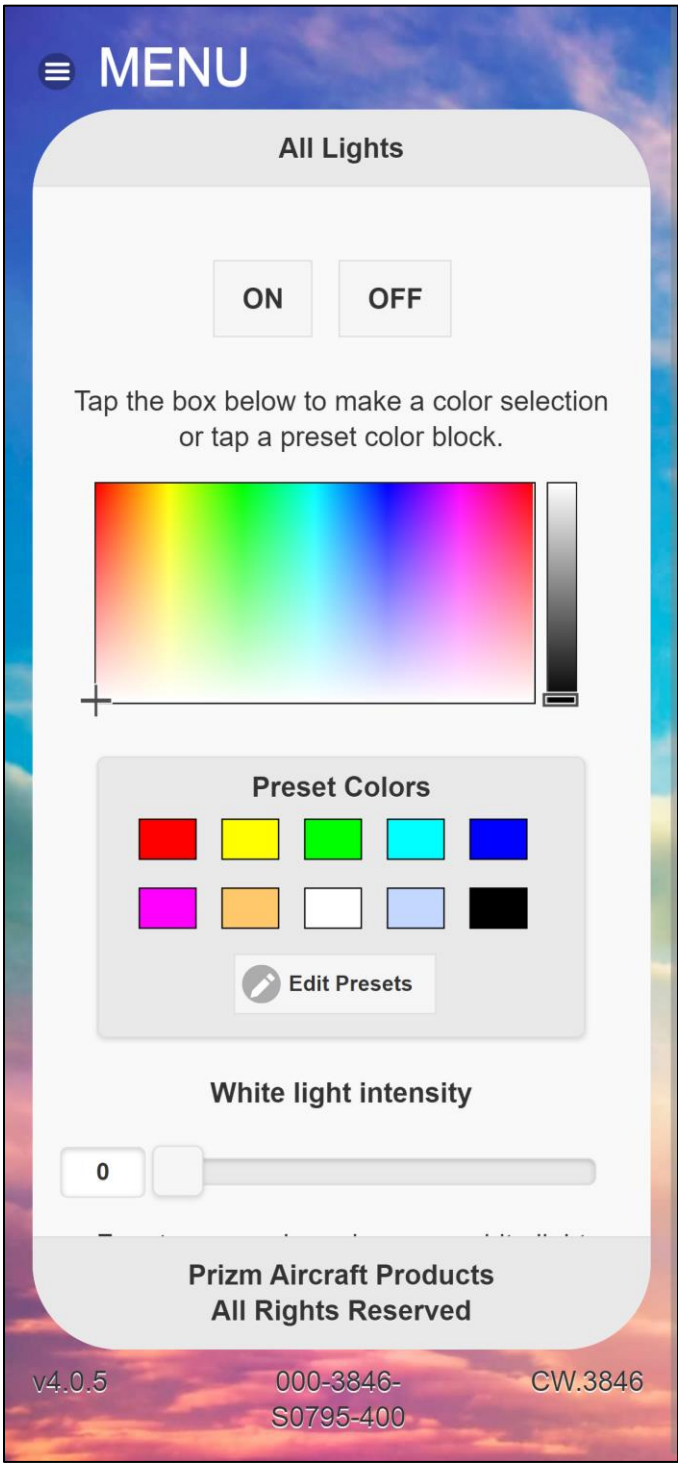
Figure 8-5 – Prizm App All Lights Menu
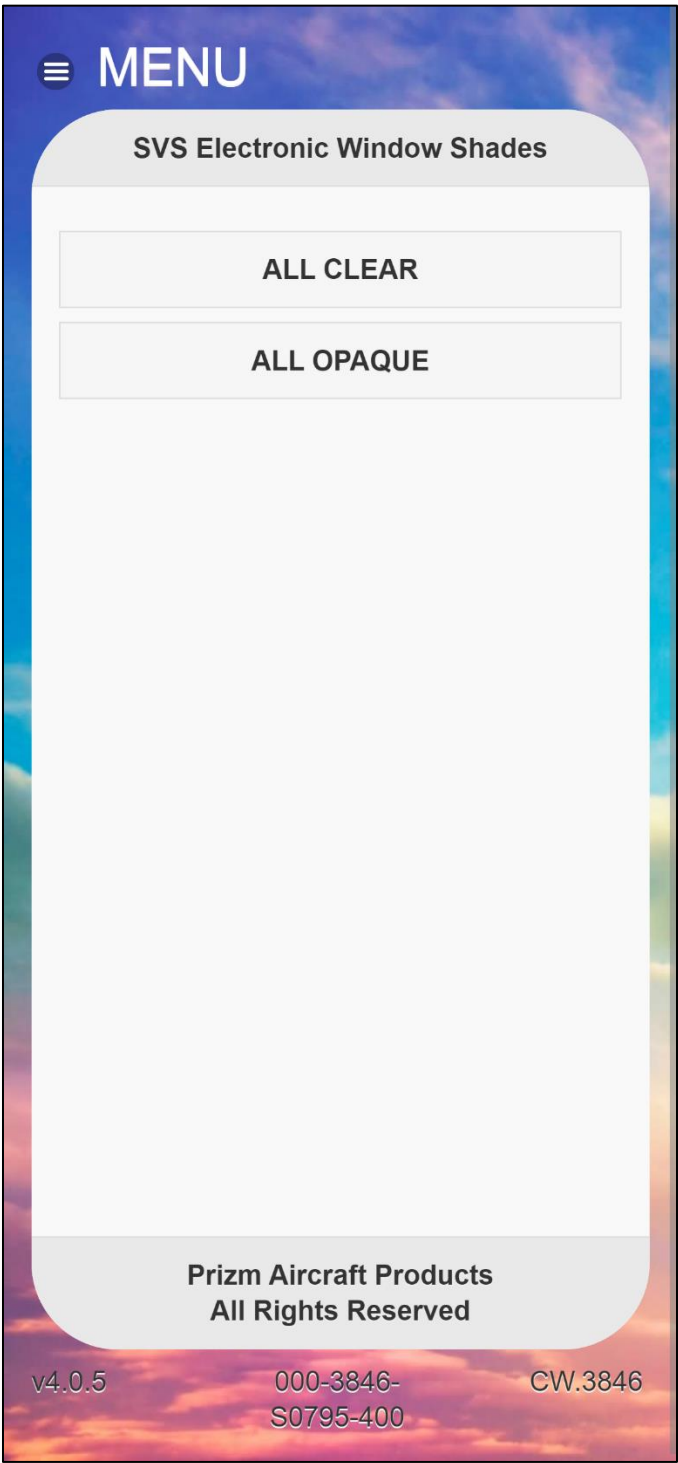
Figure 8-6 – Prizm App EWS Control Menu

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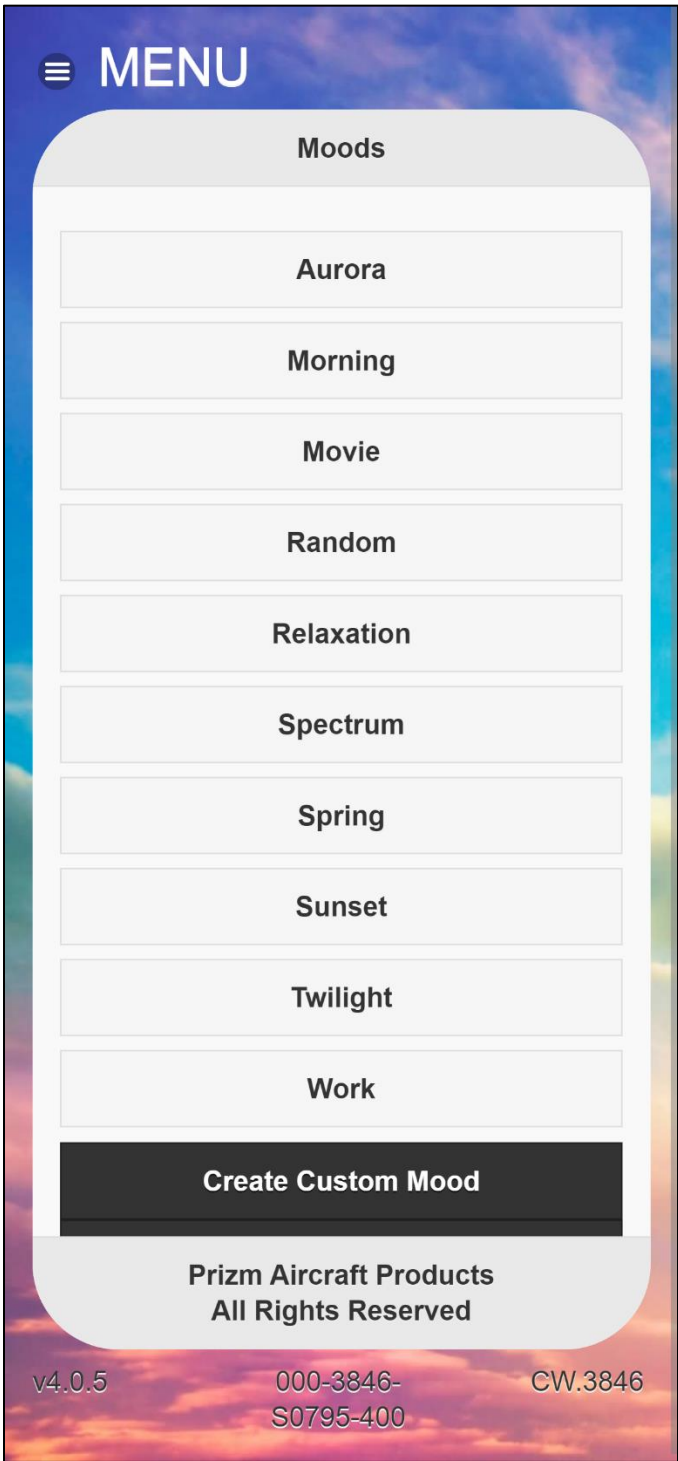
Figure 8-7 – Prizm App Moods Menu

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8.3   PRIZM LRU Setup Notes

The PRIZM LRU aircraft-specific installed options can be witnessed by accessing the system configuration page (password protected). Selecting each tab at the upper section of the main page will allow visibility into the selected options (customer configuration) for the test aircraft.

8.4   SVS (EWS) LRU Setup Notes

The SVS (EWS) LRU Setup is completed during the manufacturing phase of the system build. No further setup actions are required.

8.5   Preparation – Configuration Verification & Normal System Function Checks

8.5.1   Aircraft maybe positioned in hangar or outdoors.

8.5.2   Ensure that the aircraft is properly grounded in accordance with AMM procedures.

8.5.3   Apply power to the aircraft in accordance with Aircraft Power Up procedures.

Note Ground Power may be used for the Operational Functional Checks in this section.

8.5.4   Visibly verify the PRIZM PWR (PRIZM 1 PWR & PRIZM 2 PWR) and EWS PWR lights immediately come on. Visibly verify LED light channels 1-4 and 11-14 power on immediately (white light only). See Figure 8-1- **Indicator LED Locations (PRIZM with EWS LRU (-54))** & Figure 8-2 **– Indicator LED locations (Standalone EWS LRU (-020))**

NOTE: Channels 1-4 and 11-14 LED lights will come on white light only immediately once power is applied.

NOTE: Figure 8-1 *is for PRIZM & EWS only,* Figure 8-2 *is for Standalone EWS LRU only.*

8.5.5   Visibly verify the PRIZM Ready (PRIZM 1 RDY & PRIZM 2 RDY) & EWS Ready Lights are on. Verify LED lighting remains white on channels 1-4 and 11-14.

NOTE: For steps 8.5.4 & 8.5.5, a failure of the indicator light to illuminate does not necessitate a complete failure of the LRU. (i.e. The LED could be damaged, but otherwise the system is fully functional.) Check functionality by verifying PASS/FAIL Criteria in the remaining test sections of this document.

8.5.6   Verify the PRIZM LRU cooling fan engages within 45 seconds after power is applied. Fan operation can be heard as the fan spools up and felt as air is blown from the LRU case.

NOTE: The LRU case fan is installed to assist in heat dissipation. The fan does not engage when power is first applied to the system. Once the SW is fully initialized, the fan will turn on and remain on until power is removed from the system.

8.5.7   Via the provided engineering laptop, gain access to the system via the wireless access point (either the PRIZM access point or existing aircraft Wi-Fi router).

NOTE: When accessing the default IP address of the system in a web browser (PED or Laptop), the main interface screen loads and includes access to the slide-out menu.

8.5.7.1   **Built-in Wi-Fi (WLAN):**

8.5.7.1.1   Join the PED to the PRIZM Wi-Fi network by selecting the SSID "LED Lighting" as the wireless network on the PED's Wi-Fi connection app. Verify the PED's Wi-Fi interface indicates the PED is connected to the SSID shown above.

8.5.7.1.2   Using a PED type in the following address into a web browser http://192.168.42.1

8.5.7.2   **Cabin Router Wi-Fi (Ethernet):**

8.5.7.2.1   Disconnect the PED from the PRIZM Wi-Fi interface and join the wireless network being generated by the existing cabin router. Verify the PED's Wi-Fi

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interface indicates that the PD is connected to the cabin router's SSID. (Refer to cabin router's documentation for SSID information.)

8.5.7.2.2 Enter the web address assigned by the cabin router for the PRIZM into a web browser on the PED. (Refer to cabin router's documentation for assigning a fixed IP address for a client device.)

8.5.8 Access the Elliott Configuration per instructions from Section 7 of this document.

8.5.9 Ensure any changes are saved and close the configuration page and shutdown the laptop.

8.6 PRIZM Lighting Test

8.6.1 Connect the identified PED to the PRIZM System for the remainder of the tests in this section. (Follow instructions in section 8.5.7 NOTE and refer to assigned configuration per Section 7 for specific assignments).

NOTE: The PRIZM & EWS App will appear on the PED, (Figure 8-3).

8.6.2 With the PRIZM System fully booted verify all wired discrete inputs toggle the lights they are intended to illuminate.

8.6.3 Verify bright/dim functions properly (if wired into the PRIZM LRU).

8.6.4 Utilizing the PED with Elliott App displayed, select Menu by touching the Menu icon at the top left corner of the App (Figure 8-4).

8.6.5 Select All Lights, the All Lights page will appear (Figure 8-5), select the On button.

8.6.6 Ensure all applicable LED lighting segments are illuminated (ie. upwash, downwash, cupholder)

8.6.7 Select the Menu button, then select Cycle Colors.

8.6.8 Select the Start button and verify that the color cycle completes a full cycle without appearing to fade off and back on at any point during the cycle.

8.6.9 Normal aircraft power shutdown:

NOTE: The PRIZM LED lighting will turn off with normal power shutdown.

8.7 SVS (EWS) TEST

8.7.1 Apply Power to the aircraft PRIZM/EWS System.

8.7.2 Utilizing the switch assembly at each window station, push the Δ 10 times, verify the window(s) go from opaque to clear in a staged manner (opacity changes with each press of the button)

8.7.3 Push the ▼(opaque) button 10 times, verify the window(s) go from clear to opaque in a staged manner (opacity changes with each press of the button)

8.7.4 Press and hold the Δ button for 5 seconds, verify window(s) go from full opaque to full clear within the 5 seconds.

8.7.5 Utilizing the Cockpit Override Switch, depress the switch, verify all windows are Clear and attempt to change the state of the window film by utilizing the window switch, at each window, and the App selections, verify the windows stay clear. Depress the Cockpit Override switch to restore individual switch control and App control, verify by utilizing both per the steps above.

8.7.6 WI-FI Operations for EWS System

8.7.6.1 Via the provided PED, gain access to the system via the wireless access point (either the PRIZM access point or existing aircraft Wi-Fi router).

NOTE: When accessing the default IP address of the system in a web browser (PED or Laptop), the main interface screen loads and includes access to the slide-out menu.

8.7.6.2 Built-in Wi-Fi (wlan): (Not available in EWS only units)

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8.7.6.2.1 Join the PED to the PRIZM Wi-Fi network by selecting the SSID "LED Lighting" as the wireless network on the PED's Wi-Fi connection app. Verify the PED's Wi-Fi interface indicates the PED is connected to the SSID shown above.

8.7.6.2.2 Using a PED type in the following address into a web browser

`http://192.168.42.1`

8.7.6.3 Cabin Router Wi-Fi (eth): (Not available in EWS only units)

8.7.6.3.1 Disconnect the PED from the PRIZM Wi-Fi interface and join the wireless network being generated by the existing cabin router. Verify the PED's Wi-Fi interface indicates that the PD is connected to the cabin router's SSID. (Refer to cabin router's documentation for SSID information.)

8.7.6.3.2 Enter the web address assigned by the cabin router for the PRIZM into a web browser on the PED. (Refer to cabin router's documentation for assigning a fixed IP address for a client device.)

8.7.6.4 Using either Wi-Fi access, select the Menu Icon (top left corner of the page), (Figure 8-4).

8.7.6.5 Select Windows (bottom of Menu).

8.7.6.6 Utilizing the Opaque & Clear buttons on the Window Page (Figure 8-6), cycle windows from Opaque to clear, verify ALL windows sequence as selected.

8.7.6.7 Position ALL Windows to the opaque state.

8.7.6.8 Remove power from the aircraft.

8.7.6.9 Verify ALL windows transition to clear once power is removed.

8.7.6.10 Verify ALL windows remain clear for 10 minutes.

8.7.6.11 After 10 minute period, verify ALL windows return to the Opaque status.

8.7.6.12 With Aircraft Power on and Battery switch in "Emergency", access EWS Impact Switch.

8.7.6.13 Utilizing a dead blow hammer, apply enough force to trigger the 5G impact switch.

8.7.6.14 Verify the following that windows interfaced to EWS channels 1-6 transition from Opaque to Clear.

NOTE: *All Emergency Exit Windows must be interfaced into EWS Channels 1-6. If no window is located in the Emergency Exit a window adjacent to the Emergency Exit shall be wired into EWS Channels 1-6.*

NOTE: *The Back-Up Battery will run for 10min in this state, once ALL identified windows have been verified to be in the Clear state, reset the impact switch by depressing the "rest button" on the side of the impact switch.*

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9 TROUBLESHOOTING PROCEDURES

The PRIZM and EWS systems are not field-serviceable. If faulty, the PRIZM line replaceable unit (LRU), SVS EWS LRU, LED fixtures, and SVS EWS Window Panes, are required to be returned to Prizm Aircraft Products for repair. For troubleshooting an in-service system, follow the steps in sections 9.1 and 0 below. Contact Prizm Aircraft Products at service@PrizmAircraftLighting.com for support beyond problems covered in sections 9.1 and 0 below.

9.1 PRIZM System Troubleshooting

Number	Problem	Suspected Cause	Solution(s)	Notes
#1	PRIZM lights not responsive to input from manual switches	System is not powered	Verify system breaker is not tripped (disengaged position)	If breaker was not tripped, see #2.
#2	PRIZM lights not responsive to input from manual switches	System is not fully initiated	Wait at least 1 min from when power is applied then verify PRIZM PWR and RDY lights are lit	If ready and power lights are not lit, see #3.
#3	PRIZM lights not responsive to input from manual switches	System failure	Disengage power to the PRIZM system by turning off aircraft cabin power switch, wait at least 10 seconds, and then reengage cabin power switch.	If ready and power lights are still not lit, and manual switches do not change the lights, see #5.
#4	PRIZM Wi-Fi not showing on PED[9]	Wi-Fi toggle switch	Place Wi-Fi switch located in the flight deck into the ON position.	If already in the ON position, reset switch by toggling it to the OFF position for at least 10 seconds. Then, return the switch to the ON position.
#5	PRIZM lights not responsive to input from manual switches and no ready or power lights	PRIZM system has further problems	Contact Prizm Aircraft Products (see section 2.4)	
#6	EWS windows not responsive to input via PRIZM app	EWS system not initiated	Verify EWS system ready and power indicator lights are lit	See section 0.

[9] PRIZM system powered, ready and power lights lit and lights operational via installed or existing manual switches.

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9.2   SVS EWS System Troubleshooting

Number	Problem	Suspected Cause	Solution(s)	Notes
#1	EWS windows not responsive to input from switches	System is not powered	Verify system breaker is not tripped (disengaged position)	
#2	EWS windows not responsive to input from manual switches	System is not fully initiated	Wait at least 1 min from when power is applied and verify EWS PWR and RDY lights are lit	If ready and power lights are not on, see #3
#3	EWS windows not responsive to input from manual switches	System failure	Disengage power to the EWS system, by turning off aircraft cabin power switch, wait at least 10 seconds, and then reengage cabin power switch.	If ready and power lights are still not lit, and manual switches do not change the lights, see #6
#4	EWS windows not responsive to input from manual switches	PRIZM system has further problems	Contact Prizm Aircraft Products (see section 2.4)	
#5	EWS windows not responsive to input from PRIZM app[10]	PRIZM system not initiated	Verify PRIZM system ready and power indicator lights are lit	See section 9.1.
#6	EWS windows all clear, on normal power up, and not responsive to manual input	Cockpit override switch ON	Place cockpit override switch located in the flight deck into the OFF position.	

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[10] EWS system powered, ready and power lights lit and lights operational via installed or existing manual switches.

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Appendix A
Lighting Part Number Configuration
(3 Pages)

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Prizm LED Fixture Part Number Breakdown

| | EAP | X | Y | T | ZZZ |

Color Temperature

S – Bright White (Cool) 5500K
M – Medium White (Soft) 4000K
W – Warm White (Warm) 2700K

Lens Type

F – Frosted, Direct
M – Milky White, Translucent
O – Opaque, Blended
N – None, 100%

Note: See inset table below for applicable lens type restrictions

Termination & Channel Type

		Lead #1	Lead #2	Channel Type	Lens Types F	M	O	N
A	–	Down	Down	Rigid		X	X	X
B	–	Down	-	Rigid		X	X	X
C	–	Straight	-	No Channel				X
D	–	Straight	Straight	No Channel				X
E	–	Straight	-	Flex	X		X	X
F	–	Straight	Straight	Flex	X		X	X
G	–	RH	-	Rigid		X	X	X
H	–	Straight	-	Rigid		X	X	X
I	–	LH	-	Rigid		X	X	X
J	–	Straight	Straight	Rigid		X	X	X
K	–	RH	RH	Rigid		X	X	X
L	–	RH	LH	Rigid		X	X	X
M	–	LH	RH	Rigid		X	X	X
N	–	Down	Straight	Rigid		X	X	X
O	–	Down	RH	Rigid		X	X	X
P	–	Down	LH	Rigid		X	X	X
Q	–	Straight	RH	Rigid		X	X	X
R	–	Straight	LH	Rigid		X	X	X

Note: All descriptions of termination directions are given from the point of view of an observer holding the LED fixture pointing directly away from them with lens facing up. The direction given for lead #1 (LH, RH, Down, or Straight) is always on the end closest to the observer.

Length Code

(see Table 9-1 below)

Figure 9-1 – Fixture Assembly Part Number Breakdown

EAP-X-N-C-ZZZ
EAP-X-O-H-ZZZ
EAP-X-O-E-ZZZ
EAP-X-N-D-ZZZ
EAP-X-O-J-ZZZ
EAP-X-O-F-ZZZ
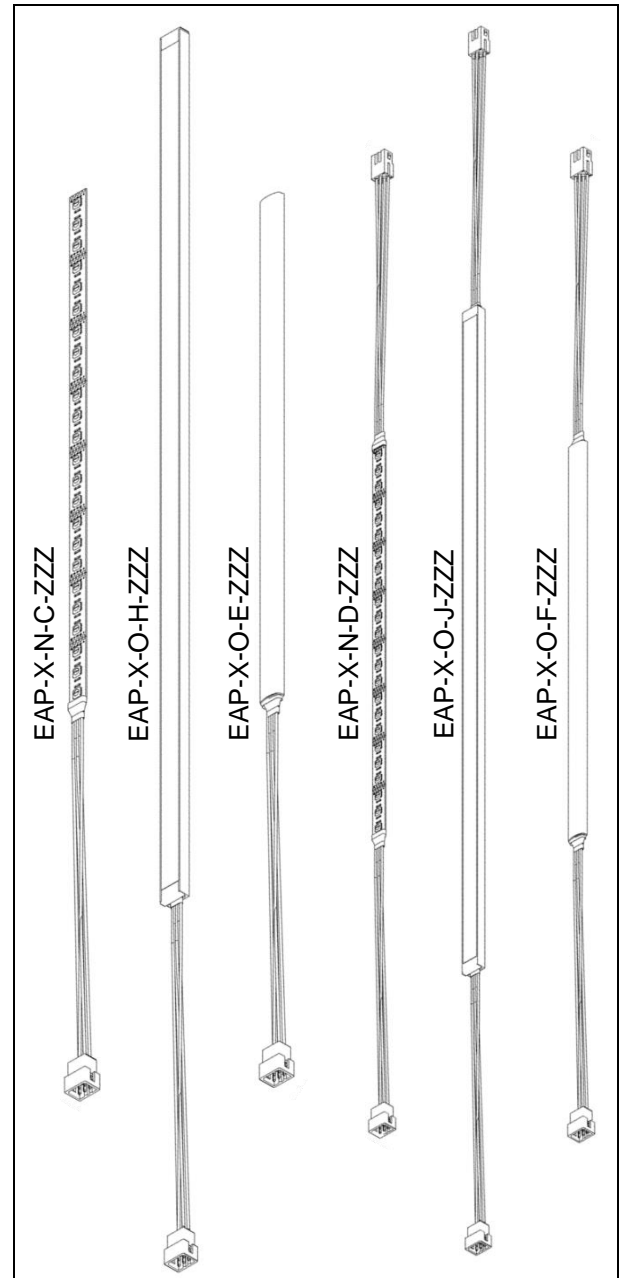
Figure 9-2 – Example Fixture Assemblies

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The length of lighting fixture assemblies can vary due to the termination and channel type used, the following table is provided for your reference. This table provides final fixture length measurements in inches for each length code depending on the specified termination and channel type (A-R). Please allow up to ±0.1 inches tolerance between stated and actual lengths.

Table 9-1 – Prizm LED Fixture Length Codes[11]

ZZZ Code	A,D, F,J,N	B, C,E,H	G,I	K,L,M	O, P,Q,R
1	2.34	2.04	2.24	2.64	2.54
2	3.98	3.68	3.88	4.28	4.18
3	5.62	5.32	5.52	5.92	5.82
4	7.26	6.96	7.16	7.56	7.46
5	8.90	8.60	8.80	9.20	9.10
6	10.54	10.24	10.44	10.84	10.74
7	12.18	11.88	12.08	12.48	12.38
8	13.82	13.52	13.72	14.12	14.02
9	15.46	15.16	15.36	15.76	15.66
10	17.10	16.80	17.00	17.40	17.30
11	18.74	18.44	18.64	19.04	18.94
12	20.38	20.08	20.28	20.68	20.58
13	22.02	21.72	21.92	22.32	22.22
14	23.66	23.36	23.56	23.96	23.86
15	25.30	25.00	25.20	25.60	25.50
16	26.94	26.64	26.84	27.24	27.14
17	28.58	28.28	28.48	28.88	28.78
18	30.22	29.92	30.12	30.52	30.42
19	31.86	31.56	31.76	32.16	32.06
20	33.50	33.20	33.40	33.80	33.70
21	35.14	34.84	35.04	35.44	35.34
22	36.78	36.48	36.68	37.08	36.98
23	38.42	38.12	38.32	38.72	38.62
24	40.06	39.76	39.96	40.36	40.26
25	41.70	41.40	41.60	42.00	41.90
26	43.34	43.04	43.24	43.64	43.54
27	44.98	44.68	44.88	45.28	45.18
28	46.62	46.32	46.52	46.92	46.82
29	48.26	47.96	48.16	48.56	48.46
30	49.90	49.60	49.80	50.20	50.10
31	51.54	51.24	51.44	51.84	51.74
32	53.18	52.88	53.08	53.48	53.38
33	54.82	54.52	54.72	55.12	55.02
34	56.46	56.16	56.36	56.76	56.66
35	58.10	57.80	58.00	58.40	58.30
36	59.74	59.44	59.64	60.04	59.94
37	61.38	61.08	61.28	61.68	61.58
38	63.02	62.72	62.92	63.32	63.22
39	64.66	64.36	64.56	64.96	64.86
40	66.30	66.00	66.20	66.60	66.50

ZZZ Code	A,D, F,J,N	B, C,E,H	G,I	K,L,M	O, P,Q,R
41	67.94	67.64	67.84	68.24	68.14
42	69.58	69.28	69.48	69.88	69.78
43	71.22	70.92	71.12	71.52	71.42
44	72.86	72.56	72.76	73.16	73.06
45	74.50	74.20	74.40	74.80	74.70
46	76.14	75.84	76.04	76.44	76.34
47	77.78	77.48	77.68	78.08	77.98
48	79.42	79.12	79.32	79.72	79.62
49	81.06	80.76	80.96	81.36	81.26
50	82.70	82.40	82.60	83.00	82.90
51	84.34	84.04	84.24	84.64	84.54
52	85.98	85.68	85.88	86.28	86.18
53	87.62	87.32	87.52	87.92	87.82
54	89.26	88.96	89.16	89.56	89.46
55	90.90	90.60	90.80	91.20	91.10
56	92.54	92.24	92.44	92.84	92.74
57	94.18	93.88	94.08	94.48	94.38
58	95.82	95.52	95.72	96.12	96.02
59	97.46	97.16	97.36	97.76	97.66
60	99.10	98.80	99.00	99.40	99.30
61	100.74	100.44	100.64	101.04	100.94
62	102.38	102.08	102.28	102.68	102.58
63	104.02	103.72	103.92	104.32	104.22
64	105.66	105.36	105.56	105.96	105.86
65	107.30	107.00	107.20	107.60	107.50
66	108.94	108.64	108.84	109.24	109.14
67	110.58	110.28	110.48	110.88	110.78
68	112.22	111.92	112.12	112.52	112.42
69	113.86	113.56	113.76	114.16	114.06
70	115.50	115.20	115.40	115.80	115.70
71	117.14	116.84	117.04	117.44	117.34
72	118.78	118.48	118.68	119.08	118.98
73	120.42	120.12	120.32	120.72	120.62
74	122.06	121.76	121.96	122.36	122.26
75	123.70	123.40	123.60	124.00	123.90
76	125.34	125.04	125.24	125.64	125.54
77	126.98	126.68	126.88	127.28	127.18
78	128.62	128.32	128.52	128.92	128.82
79	130.26	129.96	130.16	130.56	130.46
80	131.90	131.60	131.80	132.20	132.10

ZZZ Code	A,D, F,J,N	B, C,E,H	G,I	K,L,M	O, P,Q,R
81	133.54	133.24	133.44	133.84	133.74
82	135.18	134.88	135.08	135.48	135.38
83	136.82	136.52	136.72	137.12	137.02
84	138.46	138.16	138.36	138.76	138.66
85	140.10	139.80	140.00	140.40	140.30
86	141.74	141.44	141.64	142.04	141.94
87	143.38	143.08	143.28	143.68	143.58
88	145.02	144.72	144.92	145.32	145.22
89	146.66	146.36	146.56	146.96	146.86
90	148.30	148.00	148.20	148.60	148.50
91	149.94	149.64	149.84	150.24	150.14
92	151.58	151.28	151.48	151.88	151.78
93	153.22	152.92	153.12	153.52	153.42
94	154.86	154.56	154.76	155.16	155.06
95	156.50	156.20	156.40	156.80	156.70
96	158.14	157.84	158.04	158.44	158.34
97	159.78	159.48	159.68	160.08	159.98
98	161.42	161.12	161.32	161.72	161.62
99	163.06	162.76	162.96	163.36	163.26
100	164.70	164.40	164.60	165.00	164.90
101	166.34	166.04	166.24	166.64	166.54
102	167.98	167.68	167.88	168.28	168.18
103	169.62	169.32	169.52	169.92	169.82
104	171.26	170.96	171.16	171.56	171.46
105	172.90	172.60	172.80	173.20	173.10
106	174.54	174.24	174.44	174.84	174.74
107	176.18	175.88	176.08	176.48	176.38
108	177.82	177.52	177.72	178.12	178.02
109	179.46	179.16	179.36	179.76	179.66
110	181.10	180.80	181.00	181.40	181.30
111	182.74	182.44	182.64	183.04	182.94
112	184.38	184.08	184.28	184.68	184.58
113	186.02	185.72	185.92	186.32	186.22
114	187.66	187.36	187.56	187.96	187.86
115	189.30	189.00	189.20	189.60	189.50
116	190.94	190.64	190.84	191.24	191.14

[11] All lengths are given in inches.

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Appendix B
PRIZM Software Configuration Worksheets
(8 Pages)

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PRIZM Software v4.0 Configuration Worksheet

This worksheet is your roadmap for setting up each PRIZM LED Lighting System controller in your installation. For systems with multiple controllers, prepare a separate worksheet for each one. Consult the manual for detailed guidance on any section.

Step 1 – General System Settings

Aircraft Details: Write down the aircraft's make, model, and serial number.

Configuration ID: Choose and note down the identifier for this setup: Project Number, Serial Number, or Tail Number.

Aircraft Make/Model/Serial	Cessna Citation 750 - 0172			
Configuration Identification	Project Number	Serial Number	Tail Number	750-0172

PWM Limitation – Select the maximum output limit for the LED's brightness (ranging from 10% to 100%).

PWM Limitation	☐ 10% ☐ 20% ☐ 30% ☐ 40% ☐ 50%
	☐ 60% ☐ 70% ☒ 80% ☐ 90% ☐ 100%

Network Config – Set up basic network details here. These settings activate after restarting the system.

Network Config	Wired IP Address	172.20.10.42
	Wired Gateway	172.20.10.1
	Wired Subnet	255.255.255.0
	Wireless IP	192.168.42.1

Multi-Unit Config – List the static IP addresses of other controllers in your system. Include wireless connection details if applicable.

Multi-Unit Config	IP Address(es)		
	Wireless Client Mode	☐ On	☐ Off
	SSID		

Bright/Dim Config – Define how the BRIGHT or DIM inputs affect lighting, including increment steps and default brightness. Specify behaviors for Bright-to-Off and Dim-to-On scenarios.

Bright/Dim Config	Increments	☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☒ 10	
	Default On Brightness		
	Bright-to-Off Wraparound Behavior	☐ On	☐ Off
	Bright-to-On Behavior	☐ On	☐ Off
	Dim-to-Off Behavior	☒ On	☐ Off
	Dim-to-On Wraparound Behavior	☐ On	☐ Off

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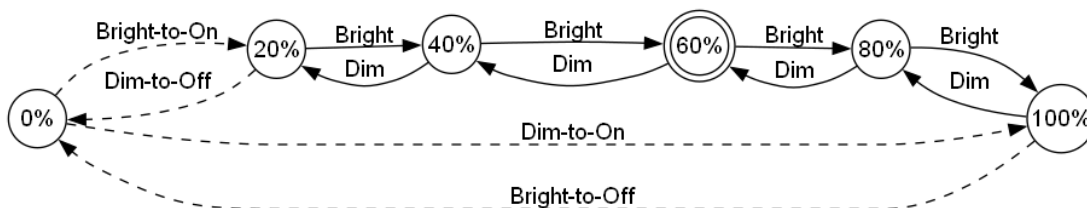
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Step 2 – Build a List of Outputs

To effectively configure the Prizm LED Lighting System for each designated area within your setup, fill out the table on page B4 following these structured steps:

1. **Identify Lighting Locations**: Begin by listing all areas within the system that will require illumination. Assign relevant channels to each specified location, consolidating control where feasible. For instance, if the control system (CMS) designates separate channels for left-hand (LH) and right-hand (RH) wash lighting but individual control isn't necessary, combine these channels under a single Option ID to simplify management.
2. **Define Labels for Locations**: Assign intuitive, user-friendly labels to each location for easy identification in the app interface. You can arrange these labels hierarchically to reflect the structure within the app, using a colon `:` to denote sublevels without spaces between them. For example, labeling as `Forward Cabin:Upwash` and `Forward Cabin:Downwash` groups these two under the broader `Forward Cabin` category in the app, providing an organized, nested display.
3. **Pseudo-Groups Assignment**: Optionally, assign each location to one or more predefined pseudo-groups (VIP, cup holder, floor, or startup lighting) by marking the respective label. This step is not mandatory but helps in grouping locations with common characteristics or control needs. If your configuration requires grouping beyond these predefined categories, specify a group number (1-4) in the provided Group box for custom organization.
4. **Adjust PWM Brightness Limits**: For each location, you have the option to limit the maximum brightness level as a percentage (ranging from 10% to 100%). This setting enables you to cap the brightness at a specific threshold, ensuring that even at full intensity, the light output does not exceed the defined limit. By default, the maximum is set to 100%, but adjusting this setting allows for customized brightness control tailored to each location's requirements.

Step 3 – Build a List of Inputs

To configure your system accurately, complete page B5 by following these steps for to list and define all input mechanisms:

1. **List All Inputs:** Start by listing every input device or mechanism that the system will use. This includes buttons, switches, sensors, etc.
2. **Description for Reference:** Next to each listed input, provide a brief description. Note that these descriptions are for your personal reference or for those configuring the system with you and will not be input into the configuration software.
3. **Identify Switch Type:** For each input, indicate the type of switch it represents by marking one of the following:
   - **Latching (L):** A switch that maintains its state after being activated until it's pressed again.
   - **Momentary (M):** A switch that is only active while being pressed.
   - **Held Momentary (HM):** A momentary switch that requires being held for a duration to activate a function.
   If you're using a latching switch, note that you can invert its behavior. This inverts the expected input from the switch; for example, a ground signal could be treated as off instead of on, and vice versa.
4. **Function and Argument Assignment:** For each input, specify the function it triggers and any arguments that function requires. Functions dictate what the input does within the system, and arguments adjust or specify the behavior of that function. You'll find a detailed list of available functions and their required arguments on the next page of the manual.

At the bottom of page B5, you'll find a comprehensive list of functions along with the expected number of arguments for each. Additionally, this section provides page references for more detailed information on each function within the document. It also specifies which types of input switch types each function is compatible with, including latching (L), momentary (M), and held momentary (HM).

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Location ID	Label VIP	Cup	Floor	Startup	Channel(s) Group	PWM
1	Down wash All				2,4,6,8	
	VIP	Cup	Floor	Startup		
2	Up wash All				1,3,5,7	
	VIP	Cup	Floor	Startup		
3	Lav up wash				3,5	
	VIP	Cup	Floor	Startup		
4	Lav down wash				4,8	
	VIP	Cup	Floor	Startup		
5						
	VIP	Cup	Floor	Startup		
6						
	VIP	Cup	Floor	Startup		
7						
	VIP	Cup	Floor	Startup		
8						
	VIP	Cup	Floor	Startup		
9						
	VIP	Cup	Floor	Startup		
10						
	VIP	Cup	Floor	Startup		

Location ID	Label VIP	Cup	Floor	Startup	Channel(s) Group	PWM
11						
	VIP	Cup	Floor	Startup		
12						
	VIP	Cup	Floor	Startup		
13						
	VIP	Cup	Floor	Startup		
14						
	VIP	Cup	Floor	Startup		
15						
	VIP	Cup	Floor	Startup		
16						
	VIP	Cup	Floor	Startup		
17						
	VIP	Cup	Floor	Startup		
18						
	VIP	Cup	Floor	Startup		
19						
	VIP	Cup	Floor	Startup		
20						
	VIP	Cup	Floor	Startup		

Important Notes: Channels cannot be assigned to more than one Location ID. Location IDs cannot be assigned to more than one Group.

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Input ID	J1 Pin	Description Function	Argument(s)	Switch Type Invert
Startup Event		All ON		■
1	7	Upper ON/OFF		L [M] HM
		Discrete ON	1	
2	8	Lower ON/OFF		L [M] HM
		Discrete ON	1	
3	9	Lav ON/OFF		L [M] HM
		Discrete ON	1	
4	10			L M HM
5	11			L M HM
6	12			L M HM
7	13			L M HM
8	14			L M HM
9	15			L M HM
10	23			L M HM
11	24			L M HM

Input ID	J1 Pin	Description Function	Argument(s)	Switch Type Invert
12	25	Cabin Upper 80%		L [M] HM
		80%	1	Ch. 1,7
13	26	Cabin Upper 60%		L [M] HM
		60%	1	Ch. 1,7
14	27	Cabin Upper 40%		L [M] HM
		40%	1	Ch. 1,7
15	28	Cabin Upper 20%		L [M] HM
		20%	1	Ch. 1,7
16	29	Cabin Lower 80%		L [M] HM
		80%	1	Ch. 8,2
17	30	Cabin Lower 60%		L [M] HM
		60%	1	Ch. 8,2
18	39	Cabin 40%		L [M] HM
		40%	1	Ch. 8,2
19	40	Cabin 20%		L [M] HM
		20%	1	Ch. 8,2
20	41	Lav bright 80%		L [M] HM
		80%	1	Ch. 3,6
21	42	Lav Dim 60%		L [M] HM
		60%	1	Ch. 3,6
22	43	Lav Dim 40%		L [M] HM
		40%	1	Ch. 3,6
23	44	Lav Dim 20%		L [M] HM
		20%	1	Ch. 3,6

Function List

Function	Args	Page	L	M	HM
Bright	1-2	45	X	X	X
Dim	1-2	46	X	X	X
Toggle	1-2	47	X	X	
Discrete Off	1	48	X	X	
Discrete On	1	48	X	X	

Function	Args	Page	L	M	HM
Preset	0-1	49	X	X	
Mood	0, 2	50	X	X	
Flex-IO	1	51	X	X	
SVS Opaque	0	51	X	X	
SVS Clear	0	52	X	X	

Function	Args	Page	L	M	HM
Set LED	2	52	X	X	
Color Pulse	2	53	X	X	
NVIS Mode	0	54	X	X	

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When your lighting system needs to adjust based on the combined status of two different latching input pins, this setup is managed through a feature called Linked Inputs. In this configuration, the system treats the inputs as latching switches. When the state of one input changes, the system checks the state of its linked input to decide the correct lighting output. For instance, if both pins are grounded, the lights may brighten to 100%. If only one pin is grounded, brightness might reduce to 50%, and if neither is grounded, the lights could turn off.

To set this up, note the Input IDs you've listed earlier as #1 and #2 for each pair of linked inputs. After marking these IDs down, ensure you indicate on the previous list that these inputs are now linked and will not be used independently. This process helps clarify that these inputs will work in tandem according to the rules you've defined. Inputting this setup into the system will follow the structure outlined above.

Linked Input Pair #1

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #4

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #7

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #2

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #5

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #8

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #3

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #6

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

Linked Input Pair #9

#1:	#2:	Function	Arguments
GND	GND		
FLOAT	GND		
FLOAT	FLOAT		
GND	FLOAT		

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Step 4 – Discrete Settings

Each of the 15 discrete outputs on your system can be set to operate in one of four modes:

- Reading Light: Functions just like a traditional reading light.
- Momentary: Sends a brief pulse signal when activated.
- Standard Latching: Maintains its state (on or off) based on the last trigger it received.
- Inverse Latching: Opposes the standard latching state; it's off when the trigger is on and vice versa.

For modes beyond the basic Reading Light setting, you'll need to define a specific condition that activates the output. Possible conditions include:

- Activating lights when they're all currently off.
- A change in the status of a designated output channel, an option within the system, or a group.
- A change in the status of a designated pseudo-group, like the cup holders, floor lights, or VIP area lights.
- Activation through a specific system input.

Discrete ID	Output Type	Trigger Event
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Please note that only discretes 1-15 are user configurable. In a two-board system, discretes 16-30 default to standard reading light functionality.

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Step 5 – App Settings

The Prizm LED Lighting Admin System Setup utility's App Settings tab lets you customize the app's appearance and manage the visibility of its features:

Custom Logo: You can display a custom logo prominently on the main menu. Custom logos need to be uploaded by Prizm Aircraft Products, so if you plan to use one, contact Prizm Aircraft Products support for assistance.

Custom Logo	☐ On	☒ Off

Custom Mood PIN: To prevent unauthorized creation or deletion of custom moods within the app, you can activate a PIN protection feature. Only users with the four-digit PIN you set here will be able to manage custom moods.

Custom Mood PIN	☒ On	☐ Off
PIN	0172	

App Features: You have the option to hide certain features from the app's main menu. Hiding a feature does not disable it; it just removes it from direct access within the app. If you wish to hide a feature, mark it accordingly from the list provided.

All Lights Control	All Locations	Location 1	Location 2 *Type text here*
Location 3	Location 4	Location 5	Location 6
Location 7	Location 8	Location 9	Location 10
Location 11	Location 12	Location 13	Location 14
Location 15	Location 16	Location 17	Location 18
Location 19	Location 20	Cycle Colors	All Moods
Aurora Mood	Morning Mood	Movie Mood	Random Mood
Relaxation Mood	Spectrum Mood	Spring Mood	Sunset Mood
Twilight Mood	Work Mood	All Group Control	Group 1 Control
Group 2 Control	Group 3 Control	Group 4 Control	[Window Shade Control]
			NVIS Mode

Keep in mind:

- Features without assigned channels or groups will be automatically hidden.
- The "Movie Mood" will be hidden if no options are designated for cup holders or floor lighting.
- The "Window Shade Control" feature will be hidden if the "SVS EWS Control" option is disabled in the System Settings.

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Step 6 – Advanced Settings

Advanced Settings offer additional customization for system behavior and color output:

Installed Color Temperature: Accurate color rendering requires specifying the color temperature of the installed PRIZM LED fixtures. Choose from 2700K, 4000K, or 5500K.

Installed Color Temperature	2700K	**4000K**	5500K

Color Temperature Tuning: This system can fine-tune the white light's perceived color temperature using a color filter. This affects how white light is blended from the four base colors. Color accuracy may vary due to several factors, such as fixture color temperature, the type of diffuser, and surrounding light conditions. Select if this feature is enabled and specify your target color temperature (options range from 2400K to 7000K in 100K increments).

Enable Filter	☐ On	☒ Off
Target Color Temperature		

NVIS Mode: For compatibility with Night Vision Imaging Systems (NVIS), this mode ensures the system only emits green light. All reading lights will be disabled in NVIS mode. This can be managed via an input or through the app interface. Given the potential for variation in cabin layout and fixture placement, adjust the NVIS Maximum Brightness to suit your application. Activating the NVIS Preview displays the green light at maximum brightness, aiding in setup. Record your selected maximum brightness level.

Enable NVIS Mode	☒ On	☐ Off
NVIS Maximum Brightness	60%	

CMS Active Feedback: This feature allows the PRIZM system to communicate with a compatible Cabin Management System (CMS) by sending real-time feedback on the lighting system's state. Toggle this feature ON if you wish to enable CMS Active Feedback. When enabled, you must specify the endpoint address where the feedback should be sent. This address combines the CMS controller's IP address with the designated HTTP path to form the complete endpoint URL.

Enable Feedback	☐ On	☒ Off
Endpoint Address		

Step 7 – Request and Unlock Codes

Record the request codes for this controller here.

Request Code

Record any Feature unlock codes below. A code can unlock one or more features.

Feature	Unlock Code
Prizm+ Enhanced Ethernet Control	Yes
NVIS Mode	Yes
SVS EWS Control	N/A

Both request codes and unlock codes are sixteen characters in length and displayed as four groups of four characters separated by dashes.

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Appendix C
Sample PRIZM/EWS Wiring Diagram
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NOTES:

1. NOT USED

2. ▷ BACKUP CHANNELS USED WITH BACKUP PRIZM LRU ARE WHITE ONLY

3. ▷ ONLY USED WITH BACKUP PRIZM LRU. DISREGARD IF NOT INSTALLING BACKUP PRIZM LRU

4. ▷ EACH RELAY CAN SUPPORT UP TO FOUR (4) BACKUP LED LIGHTING CHANNELS

5. ▷ EACH RELAY CAN SUPPORT AS MANY INPUTS AS POLES ON THE RELAY. USE AS MANY MOMENTARY/LATCHING CHANNELS WITH RELAY AS NEEDED TO CONTROL NECESSARY BACKUP LIGHTING. ADD RELAYS AS NECESSARY.

6. ▷ SIZE THE POWER RELAY APPROPRIATELY TO HANDLE THE MAXIMUM CURRENT OF THE PRIZM LRU MAIN CONTROLLER

7. ▷ ALL GROUNDS TO GO TO THE NEAREST GROUND POINT ON THE AIRCRAFT UNLESS OTHERWISE SPECIFIED. TERMINATE POWER RETURN GROUNDS WITH OTHER FACTORY INSTALLED POWER RETURN GROUNDS. VERIFY ALL THE GROUNDS FOR POWER AND MOMENTARY/LATCHING SWITCHES ARE LESS THAN 1 OHM RESISTANCE TO AIRCRAFT CHASSIS

8. ▷ SHIELDED 4 WIRE , FOR ETHERNET OUT ONLY,TO BE: BOM# 4 OR AS AN ALTERNATE PART: BOM #5

9. ▷ DC POWER TO ACCENT LED LIGHT IS SUPPLIED PER MANUFACTURER SPECS.

10. ▷ COAX CABLE LOSS TO BE LESS THAN 5dB @ 2.5GHz.

11. ▷ USE RING TERMINALS TO SECURE GROUND STRAPPING WIRES TO NEAREST AIRCRAFT STRUCTURE. ALL GROUND STRAPPING WIRES TO BE AS SHORT AS POSSIBLE WIRED TO RING TERMINALS.

12. ▷ USE RING TERMINALS TO SECURE SHIELDS AND CHASSIS GND TO BACKSHELL. ALL SHIELD AND CHASSIS WIRES TO BE AS SHORT AS POSSIBLE AND SHIELD WIRES CAN BE SPLICED TOGETHER (DAISY CHAINED EXAMPLE SHOWN BETWEEN CHANNEL #1 AND #2 ON PG#3) AND THEN WIRED INTO RING TERMINAL.

13. NOT USED

14. FOLLOW AIRCRAFT OEM BONDING PROCEDURES.

15. ▷ FOR EWS ONLY SYSTEM WIRING INSTALLATION REFERENCE PAGES 9 - 15 .

16. ▷ USE STRAPPING WIRE TO INVERT MOMENTARY WINDOW SHADE BUTTONS FOR NORMAL BUTTON OPERATION DO NOT USE STRAPPING WIRE.

17. ▷ ENSURE APPLICATION OF CHAFE PROTECTION ON POWER WIRE BETWEEN BATTERY CONNECTOR "J1" AND IN-LINE FUSE.

18. ▷ WIRE LENGTH AS SHORT AS POSSIBLE

19. ▷ NETWORK RESET SWITCH IS TO FACILITATE MAINTENANCE. PIN 33 CAN BE GROUNDED DIRECTLY TO ENABLE THE NETWORK RESET. BUT MUST BE DISCONNECTED FROM GROUND FOR NORMAL OPERATION.

20. ▷ BOOT LIGHTING STRAPPING WIRE ENABLES WHITE ONLY ON CHANNELS #1 THROUGH #4 IMMEDIATELY UPON POWER APPLICATION UNTIL PRIZM BOOT UP, ~30-45SEC.

21. ▷ BOOT LIGHTING STRAPPING WIRE ENABLES WHITE ONLY ON CHANNELS #11 THROUGH #14 IMMEDIATELY UPON POWER APPLICATION UNTIL PRIZM BOOT UP, ~30-45SEC.

LEGEND:

Symbol	Description
——	SINGLE WIRE M22759/16-XX-9 or M22759/34-XX-9 (XX = WIRE GAUGE)
—◯—	SINGLE SHIELDED WIRE M27500-XXTG1T14 (XX = WIRE GAUGE)
	2-WIRE SHIELDED M27500XXTG2T14 (XX = WIRE GAUGE)
	3-WIRE SHIELDED M27500XXTG3T14 (X = WIRE GAUGE)
	4 WIRE TO BE M27500-XXTG4T14 (XX = WIRE GAUGE)
—◯—	COAX
•	WIRE SPLICE
◁—	DIODE
⊥	SPLICE TO EXISTING SHIELDS
	CIRCUIT BREAKER
(XX)	PARTS LIST PARTS BUBBLE
◎	RING TERMINAL

WIRE CODE: 451 -100 A 22 N (EXAMPLE ONLY)
XXX -XXX X XX N

SYSTEM
REFERENCE DESIGNATOR
SEGMENT
WIRE GAUGE
GROUND

NEW WIRE ————————————

EXISTING — —— —— —— —— ——

PARALLEL CONNECTION ————————— P.C.—

(REW) = REMOVE EXISTING WIRE

DRAWING DESCRIPTION	PAGE NUMBER
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ITEM NO.	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
			PARTS LIST	
1	1	PRIZM LRU CONNECTOR KIT (-52 & -54 LRUs)	ELLIOTT TECHNOLOGIES	EA-795-101
2	1	PRIZM LRU CONNECTOR KIT (-51 & -53 LRUs)	ELLIOTT TECHNOLOGIES	EA-795-100
3	1	EWS LRU KIT	ELLIOTT TECHNOLOGIES	EA-687-100
4	AR	ETHERNET CABLE	ECS	922404
5	AR	ETHERNET CABLE	TENSOLITE CORP	NF24Q100
6	1	ANTENNA KIT	ELLIOTT TECHNOLOGIES	EA-795-105
7	AR	SINGLE TERMINATION LED FIXTURE KIT	ELLIOTT TECHNOLOGIES	EA-795-103
8	3	TOGGLE SWITCH	TE CONN	MTL106D
9	1	CONN CABLE CLAMP	AMP	M85049/49-2-14W
10	-	LED CUP HOLDER	ELLIOTT TECHNOLOGIES	000-3846-M0795-42
11	1	IMPACT SWITCH	INERTIA SWITCH	3LO-453
12	1	EMERGENCY BATTERY	CONCORDE	RG-121-1
13	1	EMERG. BATT. CIRCULAR CONNECTOR PLUG	AMP	MS27467T15B5P
14	2	DIODE	VISHAY	GI750-E3/ 54
15	AR	COAX CABLE	NA	M17/60-RG-142
16	24	EWS WINDOW SHADE ASSEMBLY	ELLIOTT TECHNOLOGIES	EAW-XX
17	20	LED FIXTURE	ELLIOTT TECHNOLOGIES	EAP-X-Y-T-ZZZ
18	2	FUSE	BUSS	AGC-X (X=AMPERAGE)
19	2	FUSE HOLDER	LITTELFUSE	01550120ZXU
20	AR	DOUBLE TERMINATION LED FIXTURE KIT	ELLIOTT TECHNOLOGIES	EA-795-104

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PRIZM CONTROL LRU
000-3846-M0795-54

INPUT ID #1 SWITCH	7	J1 (22) ... MOMENTARY/ LATCHING SWITCH
		12 TYPICAL
INPUT ID #2 SWITCH	8	SAME AS INPUT ID #1 SWITCH
INPUT ID #3 SWITCH	9	SAME AS INPUT ID #1 SWITCH
INPUT ID #4 SWITCH	10	SAME AS INPUT ID #1 SWITCH
INPUT ID #5 SWITCH	11	SAME AS INPUT ID #1 SWITCH
INPUT ID #6 SWITCH	12	SAME AS INPUT ID #1 SWITCH
INPUT ID #7 SWITCH	13	SAME AS INPUT ID #1 SWITCH
INPUT ID #8 SWITCH	14	SAME AS INPUT ID #1 SWITCH
INPUT ID #9 SWITCH	15	SAME AS INPUT ID #1 SWITCH
INPUT ID #10 SWITCH	23	SAME AS INPUT ID #1 SWITCH
INPUT ID #11 SWITCH	24	SAME AS INPUT ID #1 SWITCH
INPUT ID #12 SWITCH	25	SAME AS INPUT ID #1 SWITCH
INPUT ID #13 SWITCH	26	SAME AS INPUT ID #1 SWITCH
INPUT ID #14 SWITCH	27	SAME AS INPUT ID #1 SWITCH
INPUT ID #15 SWITCH	28	SAME AS INPUT ID #1 SWITCH
INPUT ID #16 SWITCH	29	SAME AS INPUT ID #1 SWITCH
INPUT ID #17 SWITCH	30	SAME AS INPUT ID #1 SWITCH
INPUT ID #18 SWITCH	39	SAME AS INPUT ID #1 SWITCH
INPUT ID #19 SWITCH	40	SAME AS INPUT ID #1 SWITCH
INPUT ID #20 SWITCH	41	SAME AS INPUT ID #1 SWITCH
INPUT ID #21 SWITCH	42	SAME AS INPUT ID #1 SWITCH
INPUT ID #22 SWITCH	43	SAME AS INPUT ID #1 SWITCH
INPUT ID #23 SWITCH	44	SAME AS INPUT ID #1 SWITCH

(PG 5)

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PRIZM CONTROL LRU 000-3846-M0795-54	J5	
READING LIGHT SWITCH #16	44	(22) MOMENTARY/ LATCHING SWITCH
READING LIGHT SWITCH #17	42	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #18	43	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #19	15	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #20	30	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #21	14	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #22	29	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #23	13	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #24	28	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #25	12	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #26	27	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #27	11	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #28	26	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #29	10	SAME AS READING LIGHT SWITCH #16
READING LIGHT SWITCH #30	25	SAME AS READING LIGHT SWITCH #16

TYPICAL

(PG 7)

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J10

MOM. CLR #13	32	(22)	
MOM. OPQ #13	33	(22)	

CLEAR
OPAQUE
MOMENTARY GND SWITCH

| MOM. CLR #14 | 34 | (22) | SAME AS MOM. CLR/OPQ #13 |
| MOM. OPQ #14 | 35 | (22) | |

| MOM. CLR #15 | 36 | (22) | SAME AS MOM. CLR/OPQ #13 |
| MOM. OPQ #15 | 37 | (22) | |

| MOM. CLR #16 | 38 | (22) | SAME AS MOM. CLR/OPQ #13 |
| MOM. OPQ #16 | 39 | (22) | |

| MOM. CLR #17 | 30 | (22) | SAME AS MOM. CLR/OPQ #13 |
| MOM. OPQ #17 | 31 | (22) | |

| MOM. CLR #18 | 28 | (22) | SAME AS MOM. CLR/OPQ #13 |
| MOM. OPQ #18 | 29 | (22) | |

(PG 9,11,12,14)

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BACKUP PRIZM LRU EXAMPLE WIRING ONLY. DO NOT USE IF <u>NOT</u> INSTALLING BACKUP PRIZM LRU

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Appendix D
PRIZM Frequently Asked Questions
(8 Pages)

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Prizm Frequently Asked Questions

Welcome to the Prizm Lighting Control System FAQ section. Here, you'll find answers to common questions about installation, configuration, technical specifications, and more to ensure a seamless experience with your Prizm system. Whether you're setting up for the first time, integrating Prizm with existing systems, or troubleshooting, this guide is designed to provide you with quick and easy solutions. Dive in to enhance your understanding and get the most out of your Prizm Lighting Control System.

1. Installation and Configuration Planning

Topics include initial setup, configuring controllers, and integrating with existing systems like cabin Wi-Fi or other controllers.

How do I go about planning for a new Prizm system installation?

Usually, the configuration planning process begins when the Prizm wiring diagram is generated. It's best to do this early so that you can be certain that there are no system requirements with which you might need our help. We can look over your wiring diagram and configuration worksheet at this stage to verify that everything should work the way you expect. Once all of that is resolved, the physical installation can proceed as normal. Once installed and powered on, the installer uses the completed worksheet to configure the system. This is as simple as making the options in the setup utility match what is on the worksheet and tapping or clicking "Save". At that point, the system can be functionally tested. Any issues that are found at this point are usually easily handled via standard troubleshooting and tech support processes.

Can you provide mechanical drawings for how lights have been installed on my aircraft before?

Each Prizm installation is the product of our very creative and talented dealers. As such, our dealers create and maintain their own installation drawings. Please reference the system installation manual for recommended installation methods and to obtain general cross section dimensions for our lighting fixtures.

If we intend to utilize the app for controlling the system, what would be the most optimal approach to do so?

If an existing cabin Wi-Fi solution is installed on the aircraft, the Prizm controller would simply need to be wired into that system and configured to work with its network profile.

If no Wi-Fi solution is installed on the aircraft, then the Prizm controller's built-in wireless adapter can be used for that purpose in much the same way as it was used during the configuration process. However, this would require purchasing a Wi-Fi activation STC to enable the Wi-Fi, installing a cockpit Wi-Fi defeat switch, and installing a cabin Wi-Fi antenna. The wiring harness would then need to be revised so that the Wi-Fi defeat switch and antenna are connected to the Prizm controller.

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We will be using two controllers that will not be wired together. There is no cabin Wi-Fi router, and we will be using the Prizm's integrated wireless adapter to control the lighting system. Are we going to need one or two antenna kits?

Yes, you will need two antennas. Only one will be used as an access point, and the other will function in "wireless client mode" and as a client like any phone or tablet would to the other controller.

Don't forget that even if you will be using Wi-Fi for controlling only the lights, you will still need to have a wireless activation STC as well as a Wi-Fi defeat switch installed in the cockpit for the controllers.

2. Technical Specifications

Detailed information about the hardware, such as flexibility of lighting fixtures, wire bend radius, LED pigtail lengths, and diffusion angles.

What is the maximum length of lighting that can be used with a Prizm controller?

The maximum combined length of lighting fixtures/assemblies for any one RGBW channel is sixteen feet (16'). Therefore the 000-3846-M0795-51 (10-channel Prizm controller) can support a total of 160 feet of RGBW lighting, and the 000-3846-M0795-52 (20-channel Prizm controller) can support a total of 320 feet of RGBW lighting

What is the minimum bend radius for the wires at the lead exits?

There is no specific bend radius. The only limiting factor would be the heat shrink tubing covering the wires. That said, ordering the correct lead exit direction type would either eliminate or significantly reduce issues relating to bend radius.

What is the length of the LED pigtails?

The standard pigtail length on the lighting fixtures is 10 inches and 5 inches on cup holders.

What are the diffusion angles for each of the lens types?

The LEDs that we use have a beam angle specification of 120 degrees.

We have locations where we would like to install lighting that are curved. Do the Prizm lighting fixtures have any degree of flexibility?

We do have flexible light strips, but they are only flexible toward or away from the direction of illumination (pictured below). We do not have a product that would allow flexing sideways. For that, we recommend using multiple segments.

3. Software and Input Handling

Questions related to software limitations, linked inputs, and software updates to support additional input pairs.

I have lighting locations with a "tri state switch" meaning that depending on the states of two pins, the lights are either in a bright (100% output) state, a dim (50% output) state, or an off (0% output state). Can Prizm handle this type of configuration?

Yes, in the Prizm system, we call these "Linked Input Pairs". The current software version supports up to four configurable pairs per controller, but this limitation is going away with the next release. If you need more than four pairs, then we can always add a Flex-IO to work around it. (I've attached a screenshot from the installation manual that shows the Linked Inputs configuration page.)

For the Linked Inputs, is the 4 pair limit a hardware or software limitation?

The limit of only four linked input pairs is based on the software. If you need more than four, then a Flex-IO script can be written that will get you there. Fortunately, the next software version won't have any limits on the number of input pairs.

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4. Network and Connectivity

Guidance on accessing the configuration utility, configuring multiple units, and troubleshooting connectivity issues.

I already have a controller that has never been configured, and I need to load an existing configuration file to it. How to do I go about this?

The easiest way to initially configure a controller is to attach an antenna to the Prizm controller. Then, unplug the J1 connector before powering the system on. The Prizm box will generate its own Wi-Fi network (called LED Lighting) which you can then connect to. Navigate to http://192.168.42.1/admin while on the network and login using the username PRIZM and the password Lighting. Then, to make things very simple for you this time around, I've attached a configuration file that you can simply upload to the controller using the "Restore Configuration" button. Once you've done that, you can power down, remove the antenna, and reattach the J1 connector. Now, when you power the system back on, everything should be good to go. Let me know if you have any questions.

How to do I configure more than one controller in a multi-controller system if I already have configuration files for each controller?

The setup process will happen like this:

- Disconnect the J1 connector on the first box.
- Connect the antenna to the first box.
- Power on only the first box. The second box should remain off.
- Once it boots, it will generate a wireless network called "LED Lighting".
- Connect to the LED Lighting network and access the admin setup utility at 192.168.42.1/admin
- Load the appropriate configuration file for the box by using the "restore configuration" button.
- Power down the controller.
- Remove the antenna. (They are not airworthy.)
- Reconnect the J1 connector.
- The next time this box is booted, it should be accessible over the cabin Wi-Fi at the IP address shown in the configuration document.
- Repeat these steps for the second controller.

Under the Network Configuration Wired section which is the router address and which is the controller address? Which one does the subnet belong to?

The first field is for the static IP address being assigned to the controller, the second is for the IP address of the gateway (i.e. the router address), and the third is for the subnet mask. As a side note, when the fields are blank, placeholder labels are shown in each text box.

I was not able to access the Prizm system via its configured IP address when connected to the cabin Wi-Fi router. What do I do?

Please check the following

- Is the power indicator illuminated on Prizm controller #1?
- Is the ready indicator illuminated on Prizm controller #1?
- Is the "LED Lighting" SSID visible as a wireless network to which a device can be connected? (It shouldn't be.)
  Has the J1 connector been securely reseated on the controller after having been removed for configuration over the built-in wireless?
- Do other physical inputs in the cabin that are connected to either Prizm controller function? (This should still be true even if the app is inaccessible.)
- If all of the above are true with the exception of the "LED Lighting" SSID being visible, then you'll need to verify that we are using the correct network settings for the cabin Wi-fi. (You may need to contact the cabin Wi-Fi router manufacturer for help with that if you're unsure.) If you discover that the IP address, gateway, and/or subnet mask specified in the utility are incorrect, then you will need correct those settings in the configuration utility. This will require removing the J1 connectors and attaching an antenna directly to the controller(s).

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I used Prizm's integrated wireless adapter to initially configure my system. The Prizm controller is also connected to an existing cabin Wi-Fi router. I cannot access the Prizm configuration utility through the cabin Wi-Fi router at 192.168.42.1/admin address, but I can access it if I go back to using Prizm's integrated wireless adapter.

The 192.168.42.1 address should only be used when connecting to the Prizm's built-in wireless adapter—that's when you're using the LED Lighting SSID. When you're using the cabin Wi-Fi router, you're going to use the static IP address that you've configured in the utility. By default, this address 172.20.10.42, but it can be changed to any address you wish as long as it's compatible with your cabin Wi-Fi router.

I am configuring a multiple-unity system. Do I need to set the up the each controller with the IP addresses of all the other units, or do I only need to worry about the primary controller that will be used for accessing the web app?

Yes, it's a good idea to set up the multi-unit configuration for each controller pointing to the other controllers in the system. Not only does this provide some redundancy, it makes it so that regardless of which of the controller's IP addresses you enter, you'll get the same menu options.

5. Lighting Controls and Customization

Instructions for changing light colors, configuring discrete outputs for lighting control, and setting up specific lighting moods or presets.

The existing CMS has existing presets for cabin brightness (e.g. "Day Boarding" with wash lights at 100%, "Night Boarding" with wash lights at 50%, etc.) Will an additional input be needed for every location controlled be each of these presets?

Typically, you would use a single Prizm input for each of the presets per controller that is connected to the locations you'll be controlling.

Can a Prizm input be configured to set the lights at a specific location to 50% intensity white light?

Yes, you would use the "Set LED" function. In this situation, using 128 as the second argument would get you roughly 50% output.

What are the hexadecimal code for white, red, orange, yellow, green, blue, and purple light?

Color	Hex code
White	0xFF
Red	0xFF000000
Orange	0xFF550000
Yellow	0xFFFF0000
Green	0xFF0000
Blue	0xFF00
Purple	0x80008000

6. Hardware Compatibility and Integration

Information on integrating Prizm with different control systems (e.g., Gogo Avance), using discrete inputs, and compatibility with specific types of switches or controllers.

Do power and ground wires have to be shielded?

It is recommended that power and ground connections be shielded.

Must discrete inputs be shielded as well?

It is highly recommended that all signal lines coming into the controller be shielded. This is of particular importance for longer wire runs.

(Venue) Could the lighting On/Off control be accomplished with an EC discrete output rather than a relay?

As long as Collins can configure the EC discrete output to be a hard ground and not a voltage output, then yes, it can directly connected.

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(Venue) What is the function of the preset index discrete outputs?

The preset index is a Collins specific concept. This input can be used for anything from a mood cycle feature to triggering a specific lighting mood. This is up to you and your customer to determine.

(Venue) What if a lighting change is made using the Prizm app? Is there feedback capability back to Venue for GUI light status?

You can use the discrete outputs on our box as a way of updating the Venue on the current state of the lights (i.e. whether they are on or off). This is helpful if there are annunciated switches that you want to keep in sync. You would then configure the discrete outputs for the Prizm system to respond based on the trigger specified.

I have an annunciated switch that needs to be wired to the control in such a way that it shows the lighting state even when the state of the lights is changed via the web app. Is this possible?

Yes, it is. The state of the output is tracked on the controller which then controls the annunciated state that is shown on the switch. You would simply use the configure one of the discrete outputs to be triggered by the light that the switch is controlling.

Is it possible to have a discrete piped to an LRU to change the color temperature of the lights? For instance, could the lights be changed from warm to cool or vice versa?

Yes you can use a discrete input to set any lighting color at any location. You could choose a warm or cool white for the color and then assign it to a location in the configuration. Keep in mind, this wouldn't allow for tuning the white light temperature—only flipping it to a preset value.

For functionality beyond choosing a specific color temperature at a specific location, a custom Flex-IO script would likely need to be written to accomplish this.

How long does a momentary (pulse) ground signal need to be for it to be detected by the Prizm system?

The absolute minimum amount of time that a momentary (pulsed) ground signal would need to last in order to be reliably and consistently detected by a Prizm controller is 66ms; therefore, 100ms is typically what we would recommend a CMS be configured to output in order to act as a trigger.

How do you configure a Gogo Avance system such that the Prizm lighting controls (web app) can be accessed within the Gogo Vision interface?

Below is a screenshot that shows the Gogo Avance equipment configuration page. (This was taken from an L3, but it's the same with an L5.) Notice in the CMS block that it has a place to list three different "URIs". Those all need to be filled out with the same address for the web app. Then whatever you include under the "Vision Link Display Name" will show up as a link in the Gogo Vision Interface.

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7. Troubleshooting and Maintenance

Solutions for common issues encountered during or after installation, such as accessing the web app, using the network reset switch, and ensuring compatibility with mobile devices.

Is there an App for Prizm for iOS/Android?

No, there is no standalone app for the Prizm system, only the local web app which is accessed using a web browser.

When attempting to access the web app on my Android device, I am being redirected to a different website. Is this a compatibility issue with Android and Prizm?

It's not a compatibility issue. This is where you would need to turn off the cellular data on your android device. This only happens when there isn't an available route to the internet when connected to a wireless network.

When is the Network Reset switch used?

The reset pin is only used for network troubleshooting purposes. It's essentially a "get out of jail free" card. If for some reason the technician configuring the controller somehow enables Wireless Client Mode or enters a completely incompatible network address, then they can use a simple jumper wire to ground to change the network settings back to their default values. It's not something that's used very often, nor does it need to be included in a wiring harness. It's just significantly easier to have it available as an option instead of having to send the controller in for service.
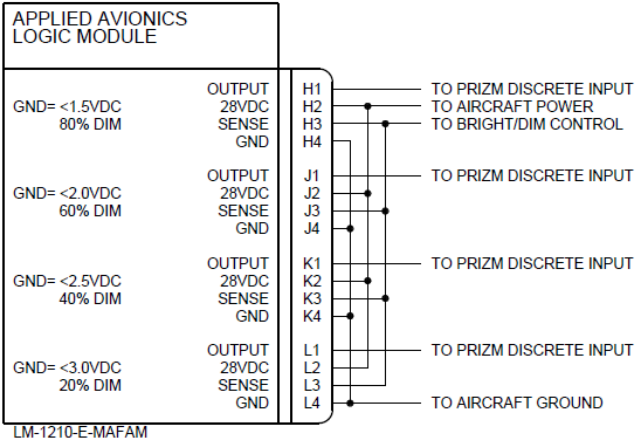
8. Product and Accessory Information

Details about product components, connector kits, and additional accessories needed for installation or functionality enhancement.

I'm upgrading an existing lighting system to Prizm. The existing lighting controls is using a variable voltage output with the control as a slider for BRIGHT/DIM. Does Prizm support this kind of control method?

Prizm does not directly support any kind of analog control methods directly; however, we have worked through many installations with our dealers who have found that by using logic modules, a stepped or tiered brightness control can be configured.

The example schematic below shows how an Applied Avionics LM-1210 Logic Module can be used in a system to accomplish this. In this scenario, each module handles the dimming functionality for one location. There would still be an on/off control from the existing CMS that would supersede the brightness control. If the lights are set to ON, and the voltage on the sense line is more than three volts, then the lights would be on at 100% brightness. As the sense line's voltage decreases, it causes more outputs on the logic module to ground until it reaches a minimum of 20% brightness when they are all grounded. Altogether, this would require five Prizm inputs at each location to implement.

For more information, please contact Prizm support.

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The EA-0795-102 (cup holder connector kit) and the EA-0795-103 (single lead fixture connector kit) are described in the manual as only coming with Molex receptacles and sockets and no plugs or pins. Is this correct? If so, how do we source the Molex plugs and pins?

EA-0795-102 (cup holder connector kit) and EA-0795-103 (single lead fixture connector kit) only come with what is shown. The plugs and pins are already a part of the cup holder and/or single lead fixture to which you'll be connecting. This is why you will see the plugs and pins listed as part of the EA-0795-104 (dual-lead fixture connector kit), because the deal-lead fixtures are going to also have corresponding built-in receptacle and sockets in addition to the standard built-in plug and pins.

What are the dimensions of the rigid lighting assembly mounting clips?
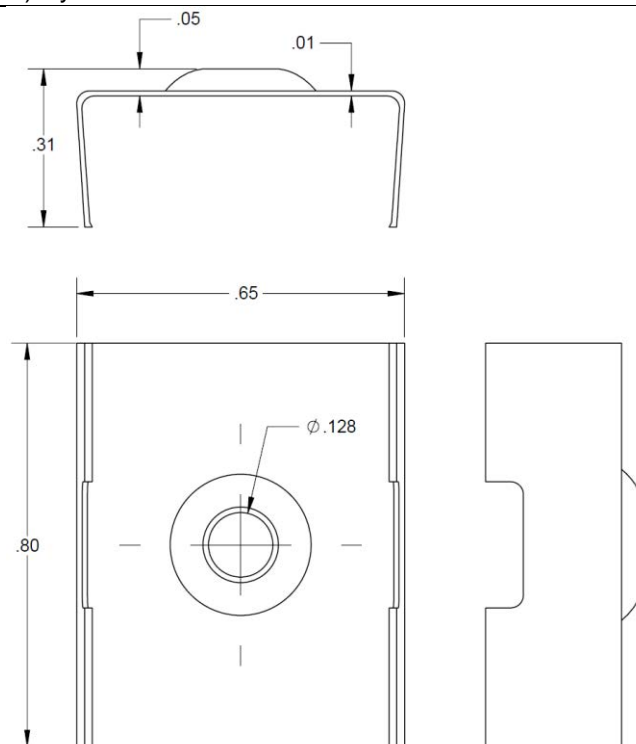
Please see Figure 9-3 for dimensions.

Figure 9-3 – L-TASK-12-CLIP Dimensions