![Elation Professional logo]

ProTron LED
USER MANUAL

Version 2.0 24-004-3533-00

Elation Professional · Los Angeles, Ca 90058 · www.elationlighting.com

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PREFACE

1. About this Manual

The document provides installation and operation instructions for the following products:

- ProTron LED Luminaire

Please read all instructions before installing or using this product. *Retain this manual for future reference*. Additional product information and descriptions may be found on the product specification sheet.

Note: The ProTron LED Luminaire is universal voltage 100 to 240 VAC (auto-ranging).

2. Included Items

Each ProTron LED Luminaire includes the following items:

- ProTron LED Luminaire
- Installation and User's Manual (*this document*)

3. Accessories

ProTron LED Luminaire Power Input Cables (North American Models Only)

Part Number	Description
PC1BE	ProTron LED Luminaire AC Power Input Cable (39 inches / 1 meter), Powercon with Bare End* (*Note, user supplies and installs own AC input connector)
PC1GP	ProTron LED Luminaire AC Power Input Cable (39 inches / 1 meter), Powercon with Stagepin Connector
PC1GTL	ProTron LED Luminaire AC Power Input Cable (39 inches / 1 meter), Powercon with Twistlock Connector
PC1GR	ProTron LED Luminaire AC Power Input Cable (39 inches / 1 meter), Powercon with Edison Connector
PC3BE	ProTron LED Luminaire AC Power Input Cable (9.8 Feet / 3 meter), Powercon with Bare End
PC8BE	ProTron LED Luminaire AC Power Input Cable (26 Feet / 8 meter), Powercon with Bare End
PC8GR	ProTron LED Luminaire AC Power Input Cable (26 Feet / 8 meter), Powercon with Edison Connector

ProTron LED Luminaire Accessories

Part Number	Description
MC	Mega Claw, Black, Anodized
SC	Molded Yoke C-Clamp
HC	Light Weight Half Coupler
82003	Safety Cable

ProTron LED LUMINAIRE OVERVIEW

1. ProTron LED Luminaire Components

Major Luminaire Components

Yoke Assembly

High Intensity LED Array

AC Input

DMX512 / RDM Input

AC Output

DMX512 / RDM Output

Truss Hook / Clamp* Attachment Point

Luminaire Head Assembly

Yoke(Tilt) Position Locking handle

Safety cable anchor point
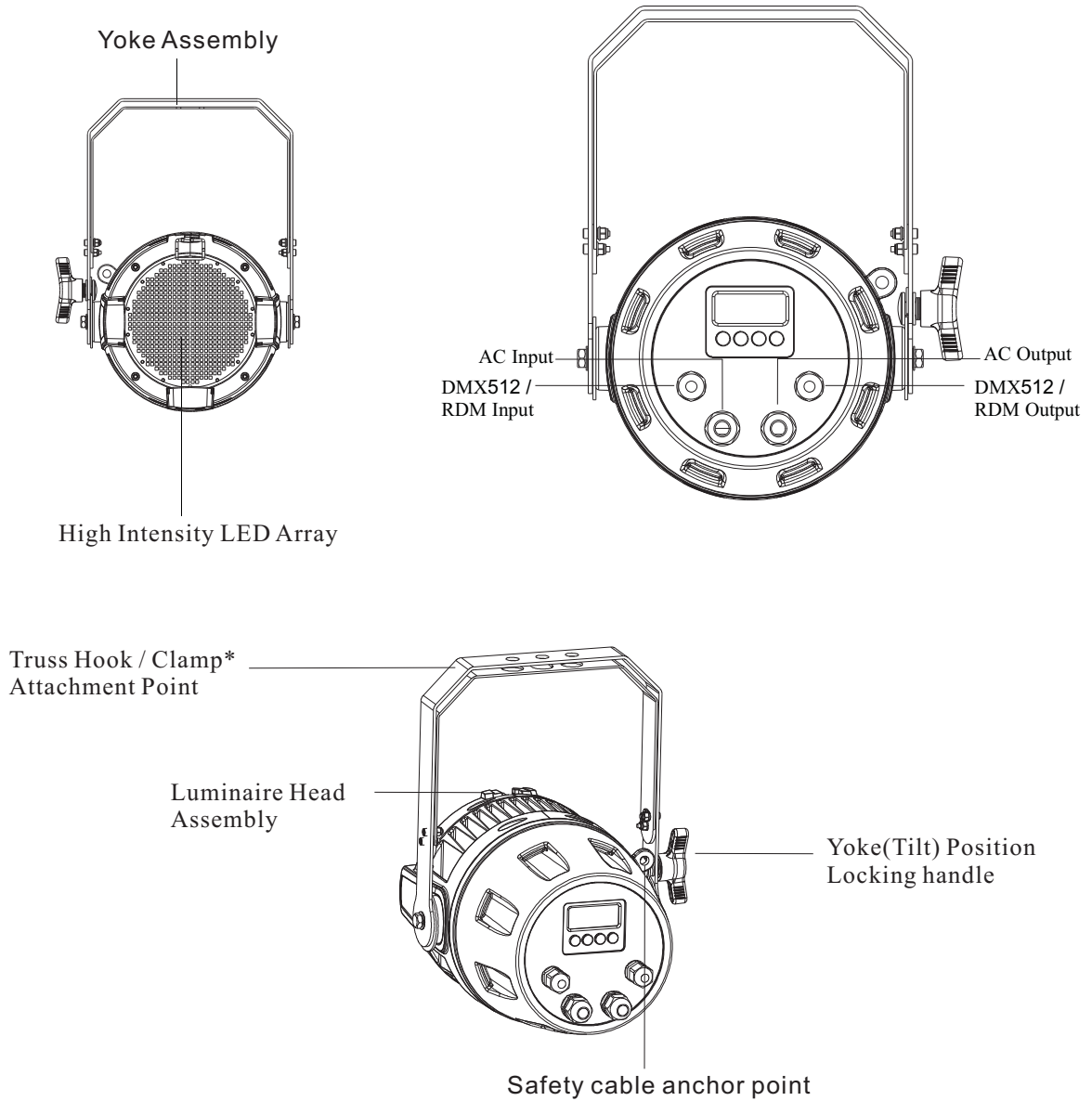
Figure 1: ProTron LED Luminaire Components

LCD Display / Menu System

EXIT Button

CHECK MARK(OK) Button

LEFT Arrow Button

RIGHT Arrow Button

ESC   <   >   OK

Figure 2: **LCD Display & Menu System**

Note: **For Menu operation and programming details, refer to** "LCD Display and Menu System" on page 9.

INSTALLATION AND SET UP

1. Power Requirements

The ProTron LED Luminaire operates on AC input voltages from 100 to 240 VAC.

WARNING! This unit does not contain an ON/OFF switch. Always disconnect power input cable to completely remove power from unit when not in use.

Note: The ProTron LED Luminaires has to be cooled down for 20min after it continuously works for 30 minutes. Keep working continuously will do great harm to the luminaire.

Or there will be an power reduction function added, when the power output is at 100% continuously for 30 min, the power output will be deduced to 50% gradually; when the power output is lower than 100%, the power output will also be deduced to 50% gradually, but will take more than 30 min to finish the deduction.

AC Power Operation

When connected to an AC source, the unit operates on 100 to 240 volts AC (+/- 10%, auto-ranging). The luminaire contains an auto-ranging power supply. Each luminaire can draw up to 150 Watts.

WARNING! Maximum amount of units that may be daisy-chained is (A) 10 units 100 ~ 120VAC (15 Amps) or (B) 20 units 230 ~ 240VAC (15 Amps).
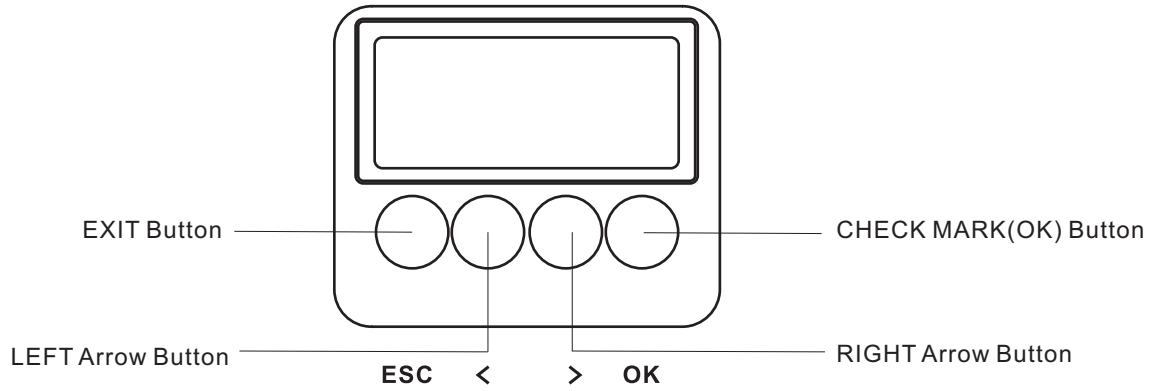
Table 1: **ProTron LED Luminaire Voltage (VAC) vs. Current***

Voltage (AC)	Total Current (A)	Voltage (AC)	Total Current (A)
100	1.50	180	0.83
110	1.36	190	0.79
120	1.25	200	0.75
130	1.15	210	0.70
140	1.07	220	0.68
150	1.00	230	0.65
160	0.94	240	0.63
170	0.88		

Note: For wiring of AC input connector, refer to "Connecting ProTron LED Luminaires to AC Power" on page 6.

2. Connecting Power

Units can be powered in one of two ways:

● Direct connection to an AC power source using an AC input cable. For wiring of AC input connector, refer to "Connecting ProTron LED Luminaires to AC Power" on page 6.

● Connection from the AC output of another ProTron LED Luminaire. When using this method, it is very important not to connect any other type of equipment device.

WARNING! Only connect other ProTron LED Luminaires to the AC Output (Thru) connector of an ProTron LED Luminaire.

Connecting ProTron LED Luminaires to AC Power

Table 2 on page 7 describes how to connect power to your ProTron LED Luminaire. Field wiring of the ProTron LED Luminaire is straight forward. A total of 3 wires/conductors is supplied from the unit. The following wiring scheme is used:

Table 2: ProTron LED Luminaire (IP65 Rated Models) AC Input Connections

POWER
INPUT (10A max.) **THRU**
1= Live
2= Neutral
3= Earth

POWER INPUT:
100-240V~,
50/60Hz.

Back of Unit

AC Input — — AC Output
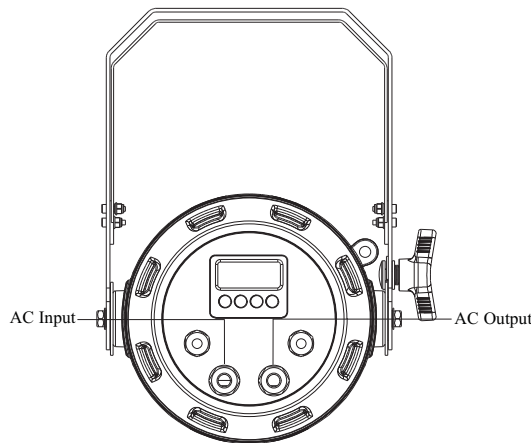
Figure 3: **ProTron LED Luminaire AC Input & Output Connections**

CAUTION: In the event the AC input cable of this luminaire is damaged, it must be replaced, by the user, with an approved cable through an Authorized Dealer or Service Center.

3.   Connecting to the DMX512 Network

Basic DMX512 installation consists of connecting multiple ProTron LED Luminaires together (up to 32 luminaires) in "daisy‑chain" fashion. A cable runs from the control console (or DMX512 control source) to the DMX connector on the first ProTron LED Luminaire. Another cable runs from the other DMX connector on the first unit to a DMX connector on the next ProTron LED Luminaire (or DMX512 device to be controlled).

DMX512 / — — DMX512 /
RDM Input RDM Output
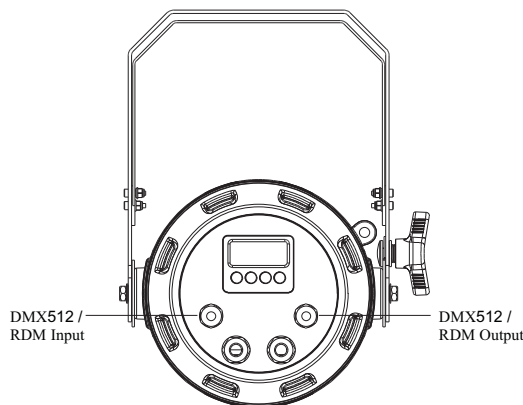
Figure 4: **ProTron LED Luminaire DMX512 Input / Output Connections**

Note: For more information on DMX512 networking and systems, refer to"Additional Resources for DMX512" on page 1. For ProTron LED Luminaire DMX Mapping, refer to "DMX CONTROL" on page 13.

DMX512
(*from console or control device*)

DMX512 (*out from first to second luminaire*)

DMX512 (*out to the next luminaire or DMX512 controlled device*)

DMX-512A(RDM)INPUT   **DMX-512A(RDM)THRU**

1=Ground; 2=Data-
3=Data+

1=Ground; 2=Data-
3=Data+
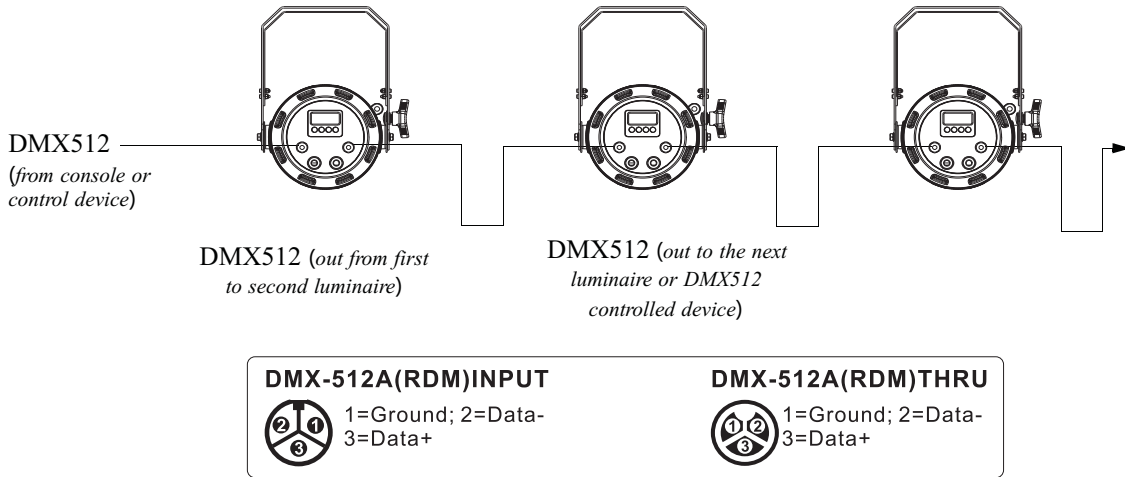
Figure 5: **ProTron LED Luminaire ⁃ DMX512 Connections**

4. Mounting Luminaire

Floor Mounting

The ProTron LED Luminaires are designed to sit directly on its yoke assembly in a floor installation application. When used in this type of application, loosen the locking handle securing the innerportion of the yoke assembly and out (as shown in Figure 6). Be sure to leave enough soace around the luminaire to allow proper, uninterrupted airflow for cooling.

Yoke(Tilt) Position
Locking handle

Inner Portion (Stand)
of Yoke Assembly

Yoke Assembly
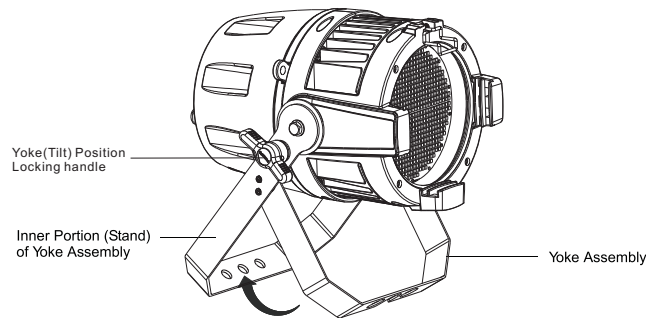
Figure 6: Floor Mounting

Truss / Hanging Applications

The ProTron LED is provided with the ability to hang via truss hooks, clamps, etc. (sold separately).

Truss Hook or Clamp
(*sold separately*)

Safety Cable Anchor Point

SAFETY CABLE: *Is sold separately and recommended for all hanging installation and may be required by national and local codes. Use enclosure handles for safety cable anchor point for this fixture.*
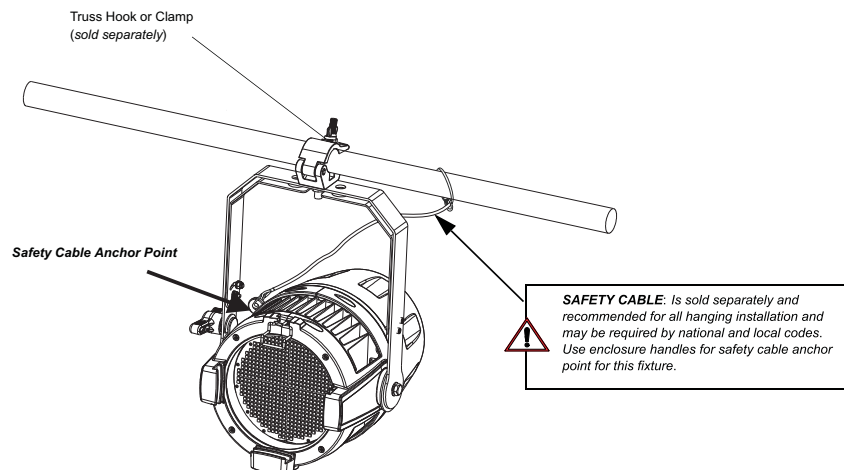
OPERATION AND PROGRAMMING

1. LCD Display and Menu System

The ProTron LED Luminaire's LCD Display and Menu System provides local control for accessing the following fixture's settings:

● Presets (Standard and User Defined)
● Fixture Settings
● Effects(Chases - preloaded and user defined)
● Current Fixture Operational Status
● Setting the DMX512 Address

Note: If there are multiple luminaires in a system, changes would need to be made at each LCD Menu as desired.

Upon power up, the LCD will display the main screen showing menu of ProTron LED. User can use " < " and " > " to select then enter the desired function menu.
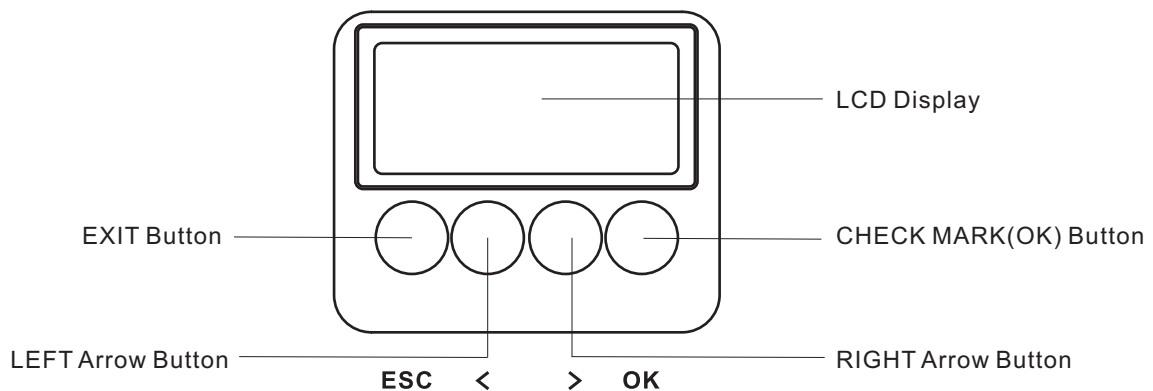
Figure 7: **LCD Display and Menu System**

2. LCD Display and Menu System Operation

The LCD Display Menu system consists of several categories. Upon power up, the LCD will display the main menu automatically. There are totally 4 menus available including Preset, Chase, Settings and Status. When the desired menu item is reached, press OK button to display the menu options and to navigate and configure the menu options as required.

To navigate and access menu settings/selections:

Step 1. Make sure unit is powered and turned on.
Step 2. Press the desired button to access menu categories.
Step 3. Use " < " and " > " arrow buttons to navigate through the various options and settings.

Step 4. Make changes as desired.
Press OK button to accept changes.

3. Edit a Preset

To edit and save a preset:

Step 1. Press CHECK MARK(OK)button to access Preset Select.

Step 2. Use LEFT and RIGHT arrow buttons to scroll through all presets and select Preset x(0 thru 31).

Step 3. Press CHECK MARK(OK)button to select the desired menu among **Intensity, Strobe Rate, Duration** and **Effects, Zone1, Zone2, Zone3 and Zone4.**

Step 4. Once at desired preset, use LEFT and RIGHT arrow buttons to adjust parameter value as desired. Once all values are adjusted as desired, press CHECK MARK(OK)button.

Step 5. Save preset menu option will appear. Use LEFT and RIGHT arrow buttons to select preset number.

Step 6. If saving preset, press CHECK MARK(OK) button. Confirm choice.

Step 7. Preset is now saved.

..Preset Edit
1. Intensity

ESC < > OK
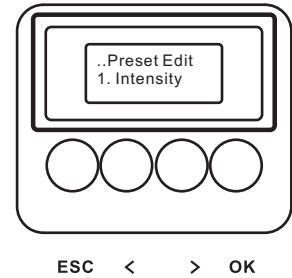
Chase

Step 1. Press CHECK MARK(OK)button to access Chase.

Step 2. Use LEFT and RIGHT arrow buttons to scroll through all menus, including **Chase Select, Master Intensity, Strobe Rate, Strobe Duration and Edit Userchase**.

Step 3. Press CHECK MARK(OK)button to select the desired menu.

Step 4. Once at desired menu, use LEFT and RIGHT arrow buttons to adjust parameter value as desired. Once all values are adjusted as desired, press CHECK MARK(OK)button.

..Chase
1. Chase Select

ESC < > OK
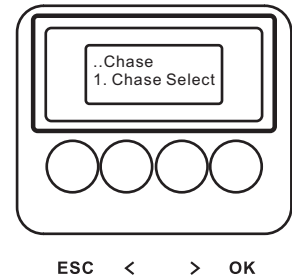
Settings

Step 1. Press CHECK MARK(OK)button to access Settings.

Step 2. Use LEFT and RIGHT arrow buttons to scroll through all menus.

Step 3. Press CHECK MARK(OK)button to select the desired menu among **General, Factory Default, DMX and Display.**

Step 4. Once at desired menu, use LEFT and RIGHT arrow buttons to adjust parameter value as desired. Once all values are adjusted as desired, press CHECK MARK(OK)button.

Settings
1. General

ESC < > OK
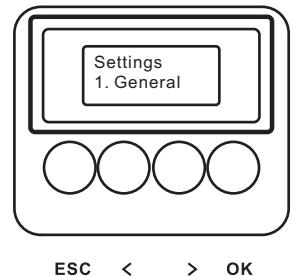
Status

To check the fixture operational status:

Step 1. Press CHECK MARK(OK)button to access Status.

Step 2. Use LEFT and RIGHT arrow buttons to scroll through all menus.

Step 3. Press CHECK MARK(OK)button to select the desired menu among **LED Current Level, Temperature,** and **Other Information.**

Step 4. Once at desired menu, use LEFT and RIGHT arrow buttons to check the related fixture information.

Status
1. LED Level

ESC < > OK

Note: For more information about Preset, Settings and Status, please refer to "ProTron LED Luminaire Menu Tree" on page 11.

4. **ProTron** LED Luminaire Menu Tree

MAIN MENU				
Settings	General	Power-up	Preset X(1 thru 32)	
			Chase(1 thru 18)	
			Last Set	
		Mode	Master	
			Slave	
		Dimming Curve	linear	
			Square	
			S-Curve	
			PL-Curve	
	Factory Default	Protected	No	
			Preset & Chase	
		Load Factory	No	
			Yes	
	DMX	DMX Enable	Enable	
			Disable	
		Address	1 to 512	
		Map	Single Channel	
			Three Channel	
			Four Channel	
			16-Bit Control	
			Zone Mapping	
			Custom Mode	M_Intensity_H → Addr:001-512 (Default:1)
				M_Intensity_L → Addr:001-512 (Default:2)
				Strobe Duration → Addr:001-512 (Default:3)
				Strobe Rate → Addr:001-512 (Default:4)
				Effects → Addr:001-512 (Default:5)
				Control Channel → Addr:001-512 (Default:6)
				Z-1 Intensity → Addr:001-512 (Default:7)
				Z-1 Duration → Addr:001-512 (Default:8)
				Z-1 Strobe Rate → Addr:001-512 (Default:9)
				Z-2 Intensity → Addr:001-512 (Default:10)
				Z-2 Duration → Addr:001-512 (Default:11)
				Z-2 Strobe Rate → Addr:001-512 (Default:12)
				Z-3 Intensity → Addr:001-512 (Default:13)
				Z-3 Duration → Addr:001-512 (Default:14)
				Z-3 Strobe Rate → Addr:001-512 (Default:15)
				Z-4 Intensity → Addr:001-512 (Default:16)
				Z-4 Duration → Addr:001-512 (Default:17)
				Z-4 Strobe Rate → Addr:001-512 (Default:18)
		When no DMX	Off	
			Hold	
			Power Up	
			Last Action	
	Display	Off Time	On/30S/1Min/5Min/10Min	
Preset	Preset X(0 thru 31)	Master Intensity	0-100%	
		Strobe Rate	0.5-30hz	
		Strobe Duration	0-650ms	
		Effects	Effect list	
		Zone1	On/Off	
		Zone2	On/Off	
		Zone3	On/Off	
		Zone4	On/Off	
Chase	Chase	Built-in Chase	1 thru 10	
		User Chase	Select Chase x(1 thru 8)	
			Edit Chase x(1 thru 8) → Edit Step x (1 thru 100) / New Step / Delete Step → Intensity 0-100%, Zone1 On/Off, Zone2 On/Off, Zone3 On/Off, Zone4 On/Off
	Master Intensity	0-100%		
	Strobe Rate	0.5-30hz		
	Strobe Duration	0-650ms		
Status	LED Current Level	Intensity	0-100%	
		Zone1	On/Off	
		Zone2	On/Off	
		Zone3	On/Off	
		Zone4	On/Off	
	Temperature	Temperature	xx Celsius degree	
		Min_Value	xx Celsius degree	
		Max_Value	xx Celsius degree	
	Other Information	RDM UID	0X000000000000	
		Firmware Version	Rev 0.00	
		Connect DMX ?	Yes / No	

Figure 8: **ProTron LED Luminaire Menu Tree**

5. Dimming Curve Selection

Through the menu, you are able to select one of four dimming curves:

- Linear Curve
- PL_Curve
- S_Curve
- Square Curve

*PL Curve follows the dimming curve of Philips Selecon PL series LED luminaries.
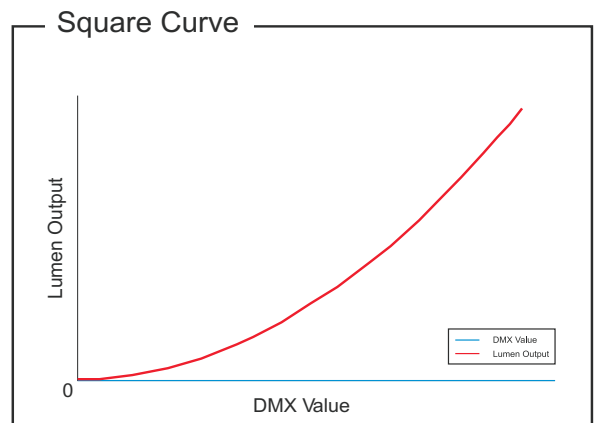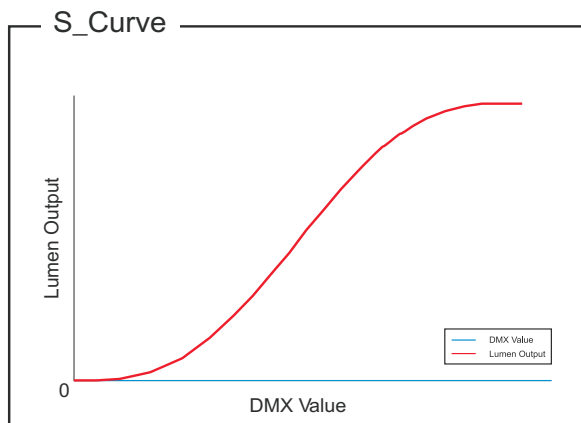
Figure 9: ProTron LED Luminaire Dimmer Curves

6. Master / Slave Operational Mode

The Master / Slave Operational Mode allows one ProTron LED Luminaire to act as the "Master" unit and all other connected units are controlled by this unit. When a unit is set to "Slave" mode, it will only listen to and follow any commands sent from a "Master" unit. Only one "Master" unit is allowed in this type of operation.

To setup a master / slave network:

Step 1. Set the first device in the DMX512 chain to Master Mode through the unit's menu system.

Step 2. Set all other connected units to Slave Mode.

Step 3. The master unit can be controlled via DMX512, RDM or through standalone operation (self-contained network utilizing on-board effects). The slave units will mimic the master unit's operation in all cases.

Note: For ProTron LED Luminaire DMX Mapping, refer to "DMX CONTROL" on page 14.
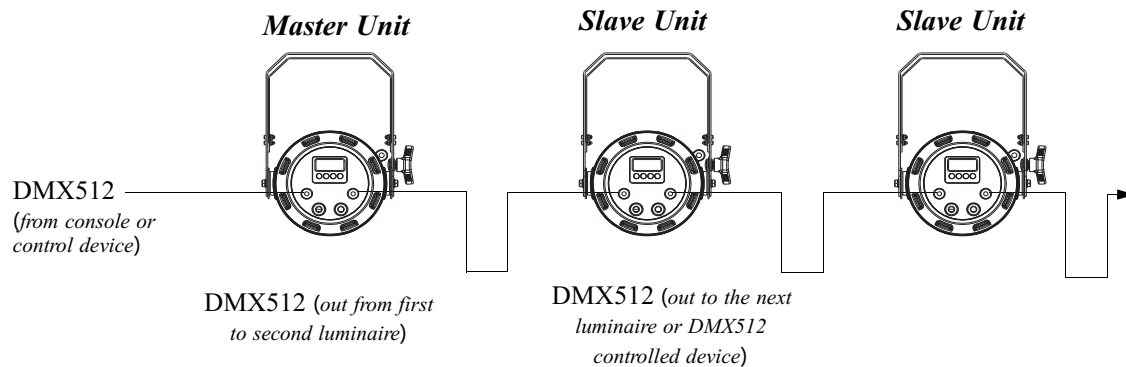
Figure 10: ProTron LED Luminaire - Master / Slave Configuration

DMX CONTROL

This section contains information for operating the luminaire using DMX control in Single Channel, Three Channel, Four Channel, 16-bit Control and Zone Mapping modes. For Menu options and detailed information, see "LCD Display and Menu System" on page 9.

Note: These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.

1.   Single Channel Mode

Table 3 provides DMX channel mapping of all DMX512 control values when the ProTron LEDLuminaire is in Single Channel mode (as set by the luminaire's menu system).

Table 3: **ProTron LED Luminaire DMX Channel Mapping (Single Channel Mode)**

DMX	Parameter	Range DMX	Range %	Defaults*	Description
1	Strobe Rate	0 - 255	0 - 100%	DMX 0	Please reference the Strobe Rate detail.

2.   Three Channel Mode

Table 4 provides DMX channel mapping of all DMX512 control values when the ProTron LED Luminaire is in Three Channel mode (as set by the luminaire's menu system).

Table 4: **ProTron LED Luminaire DMX Channel Mapping (Three Channel Mode)**

DMX	Parameter	Range DMX	Range %	Defaults*	Description
1	Intensity	0 - 255	0 - 100%	0	8 bit control for Intensity of LED settings.
2	Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration, Range is 0-255 White light mode (when strobe rate is also at 255) Please refer to the Strobe Duration Detail
3	Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast. White light mode (when strobe duration is also at 255) Please refer to the Strobe Rate detail.

3. Four Channel Mode

Table 5 provides DMX channel mapping of all DMX512 control values when the ProTron LED Luminaire is in Four Channel mode (as set by the luminaire's menu system).

Table 5: **ProTron LED Luminaire DMX Channel Mapping (Four Channel Mode)**

DMX	Parameter	Range DMX	Range %	Defaults*	Description
1	Intensity	0 - 255	0 - 100%	0	8 bit control for Intensity of LED settings.
2	Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,Range is 0-255 White light mode (when strobe rate is also at 255) Please refer to the Strobe Duration Detail.
3	Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast. White light mode (when strobe duration is also at 255) Please refer to the Strobe Rate detail.
4	Effects	0 - 255	0 - 100%	DMX 0	Controls strobe operations as follows . . . No Effect = DMX 0 - 5 Ramp Up = DMX 6 - 42 Ramp Down = DMX 43 - 85 Ramp up/down = DMX 86 - 128 Random = DMX 129 - 171 Top row only = DMX 172 - 173 Bottom row only = DMX 174 - 175 Left zone only = DMX 176 - 179 Right zone only = DMX 180 - 182 Checker pattern A = DMX 183 - 184 Checker pattern B = DMX 185 - 186 Random zones = DMX 187 - 214 Circle zone chase clockwise = DMX 215 - 235 Circle zone chase counter-clockwise = DMX 236 - 255

4. 16-Bit Mode

Table 6 provides DMX channel mapping of all DMX512 control values when the ProTron LED Luminaire is in 16-Bit Mode (as set by the luminaire's menu system).

Table 6: ProTron LED Luminaire DMX Channel Mapping (16-Bit Control Mode)

DMX	Parameter	Range DMX	Range %	Defaults*	Description
1	Instensity High	0-65535	0-100%	0	16 bit control for Intensity of LED settings.
2	Instensity Low	0-255	0-100%		
3	Effects	0-255	0-100%	DMX 0	Controls strobe operations as follows . . . No Effect　　　　　　　= DMX 0 - 5 Ramp Up　　　　　　　= DMX 6 - 42 Ramp Down　　　　　　= DMX 43 - 85 Ramp up/down　　　　　= DMX 86 - 128 Random　　　　　　　　= DMX 129 - 171 Top row only　　　　　　= DMX 172 - 173 Bottom row only　　　　= DMX 174 - 175 Left zone only　　　　　= DMX 176 - 179 Right zone only　　　　= DMX 180 - 182 Checker pattern A　　　=　DMX 183 - 184 Checker pattern B　　　=　DMX 185 - 186 Random zones　　　　　=　DMX 187 - 214 Circle zone chase clockwise　=　DMX 215 - 235 Circle zone chase counter-clockwise　=　DMX 236 - 255
4	Control Channel	0-255	0-100%	0	Functions of the E Series products. Set control channel value to desired action, Hold value for at least 5 seconds , then turn to 0. Set control channel value to 0 without any scaling. Default Setting on Console　　　= DMX 0-4 Dimming Curve_linear　　　　= DMX 30 - 34 Dimming Curve_Square　　　= DMX 35- 39 Dimming Curve_S-Curve　　　= DMX 40 - 44 Dimming Curve_PL-Curve　　= DMX 45 - 49 The following is only available for "Zones Mapping" protocol The following is instantly active and does not require the 5 second hold: Combined zone control-(all zones follow zone 1 setting) 　　　　　　= DMX 100 - 104 Reserves(Future use)　　= DMX 105 - 250
5	Strobe Duration	0-255	0-100%	0	Strobe's duration,Range is 0-255 White light mode (when strobe rate is also at 255) Please refer to the Strobe Duration Detail.
6	Strobe Rate	0-255	0-100%	0	Strobe rate slow to fast. White light mode (when strobe duration is also at 255) Please refer to the Strobe Rate detail.

5. Custom Mode

Table 7 provides DMX channel mapping of all DMX512 control values when the ProTron LED Luminaire is in Custom Mode (as set by the luminaire's menu system).

Table 7: ProTron LED Luminaire DMX Channel Mapping (Custom Mode)

DMX Channel	Parameter	Range DMX	Range %	Defaults*	Description
Addr_M Intensity H (Default:1)	Master Intensity Hight	0 - 65535	0 - 100%	0	16 bit control for Intensity of LED settings.
Addr_M Intensity L (Default:2)	Master Intensity Low				
Addr_Strobe Duration (Default:3)	Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.) (Note: when this channel >0, all Zones duration's data is same as this channel's data.)
Addr_Strobe Rate (Default:4)	Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail) (Note: when this channel >5 , all Zones Strobe Rate's data is same as this channel's data.)
Addr_Effects (Default:5)	Effects	0 - 255	0 - 100%	0	Effects.(reference the Effects detail)
Addr_Control Channel (Default:6)	Control Channel	0 - 255	0 - 100%	0	Control Channel(reference the Control Channel detail)
Addr_Z1 Intensity (Default:7)	Zone 1 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
Addr_Z1 Duration (Default:8)	Zone 1 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
Addr_Z1 Strobe Rate (Default:9)	Zone 1 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
Addr_Z2 Intensity (Default:10)	Zone 2 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
Addr_Z2 Duration (Default:11)	Zone 2 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
Addr_Z2 Strobe Rate (Default:12)	Zone 2 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
Addr_Z3 Intensity (Default:13)	Zone 3 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
Addr_Z3 Duration (Default:14)	Zone 3 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
Addr_Z3 Strobe Rate (Default:15)	Zone 3 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
Addr_Z4 Intensity (Default:16)	Zone 4 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
Addr_Z4 Duration (Default:17)	Zone 4 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
Addr_Z4 Strobe Rate (Default:18)	Zone 4 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)

6. Zone Mapping Mode

Table 8 provides DMX channel mapping of all DMX512 control values when the ProTron LED Luminaire is in Zone mapping Mode (as set by the luminaire's menu system).

Table 8: ProTron LED Luminaire DMX Channel Mapping (Zone Mapping Mode)

DMX	Parameter	Range DMX	Range %	Defaults*	Description
1	Master Intensity Hight	0 - 65535	0 - 100%	0	16 bit control for Intensity of LED settings.
2	Master Intensity Low				
3	Effects	0 - 255	0 - 100%	0	Effects.(refer to the Effects detail)
4	Control Channel	0 - 255	0 - 100%	0	Control Channel(reference the Control Channel detail)
5	Zone 1 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
6	Zone 1 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
7	Zone 1 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
8	Zone 2 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
9	Zone 2 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
10	Zone 2 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
11	Zone 3 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
12	Zone 3 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(reference the Strobe Duration Detail.)
13	Zone 3 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(reference the Strobe Rate detail)
14	Zone 4 Intensity	0 - 255	0 - 100%	0	8 bit control for zone Intensity.
15	Zone 4 Strobe Duration	0 - 255	0 - 100%	0	Strobe's duration,(refer to the Strobe Duration Detail.)
16	Zone 4 Strobe Rate	0 - 255	0 - 100%	0	Strobe rate slow to fast.(refer to the Strobe Rate detail)

7. ProTron LED Luminaire RDM Parameter IDs

The following tables outline and describe all the RDM parameters IDs associated with ProTron LED Luminaires.

Table 9, "ProTron LED Luminaire RDM Product Parameters IDs"

Table 10, "ProTron LED Luminaire RDM UID"

Table 11, "ProTron LED Luminaire RDM Parameters IDs,"on page18

Table 12, "ProTron LED Luminaire RDM Manufacturer Status IDs,"on page19

Table 13，"ProTron LED Luminaire RDM Manufacturer Specific PIDs for Root Device,"on page 20

Table 9: ProTron LED Luminaire RDM Product Parameters IDs

Model ID	Manufacturer	Model Description	Product Category
0x2018	Elation Lighting	ProTron LED	0x0509

Table 10: ProTron LED Luminaire RDM UID

UID					
MSB of ESTA 22H	LSB of ESTA A6H	MSB of Unique Seq.	LSB of Unique Seq.	MSB of Unique Seq.	LSB of Unique Seq.

Table 11: ProTron LED Luminaire RDM Parameters IDs

Get Allowed	Set Allowed	RDM Parameter IDs	Value	Comment	Implemented
		Category - Network Management			
		DISC_UNIQUE_BRANCH	0x0001		∎
		DISC_MUTE	0x0002		∎
		DISC_UN_MUTE	0x0003		∎
∎		PROXIED_DEVICES	0x0010		
∎		PROXIED_DEVICES_COUNT	0x0011		
∎	∎	COMMS_STATUS	0x0015		
		Category - Status Collection			
∎		QUEUED_MESSAGE	0x0020		∎
∎		STATUS_MESSAGES	0x0030		∎
∎		STATUS_ID_DESCRIPTION	0x0031		∎
	∎	CLEAR_STATUS_ID	0x0032		∎
∎	∎	SUB_DEVICE_STATUS_REPORT_THRESHOLD	0x0033		
		Category - RDM Information			
∎		SUPPORTED_PARAMETERS	0x0050	*Support required only if supporting Parameters beyond the minimum required set.*	∎
∎		PARAMETER_DESCRIPTION	0x0051	*Support required for Manufacturer-Specific PIDs exposed in SUPPORTED_ PARAMETERS message.*	∎
		Category - Product Information			
∎		DEVICE_INFO	0x0060		∎
∎		PRODUCT_DETAIL_ID_LIST	0x0070		
∎		DEVICE_MODEL_DESCRIPTION	0x0080		∎
∎		MANUFACTURER_LABEL	0x0081		∎
∎	∎	DEVICE_LABEL	0x0082		∎
∎	∎	FACTORY_DEFAULTS	0x0090		∎
∎		LANGUAGE_CAPABILITIES	0x00A0		
∎	∎	LANGUAGE	0x00B0		
∎		SOFTWARE_VERSION_LABEL	0x00C0		∎
∎		BOOT_SOFTWARE_VERSION_ID	0x00C1		
∎		BOOT_SOFTWARE_VERSION_LABEL	0x00C2		
		Category - DMX512 Setup			
∎	∎	DMX_PERSONALITY	0x00E0		∎
∎		DMX_PERSONALITY_DESCRIPTION	0x00E1		∎
∎	∎	DMX_START_ADDRESS	0x00F0	*Required if device uses a DMX Slot*	∎
∎		SLOT_INFO	0x0120		∎
∎		SLOT_DESCRIPTION	0x0121		∎
∎		DEFAULT_SLOT_VALUE	0x0122		
		Category - Sensors 0x02xx			
∎		SENSOR_DEFINITION	0x0200		∎
∎	∎	SENSOR_VALUE	0x0201		∎

Table 11: **ProTron LED Luminaire RDM Parameters IDs**

Get Allowed	Set Allowed	RDM Parameter IDs	Value	Comment	Implemented
	■	RECORD_SENSORS	0x0202		
Category - Dimmer Settings 0x03xx - FUTURE USE					
Category - Power / Lamp Settings 0x04xx					
■	■	DEVICE_HOURS	0x0400		
■	■	LAMP_HOURS	0x0401		
■	■	LAMP_STRIKES	0x0402		
■	■	LAMP_STATE	0x0403		
■	■	LAMP_ON_MODE	0x0404		
■	■	DEVICE_POWER_CYCLES	0x0405		
Category - Display Settings 0x05xx					
■	■	DISPLAY_INVERT	0x0500		■
■	■	DISPLAY_LEVEL	0x0501		
Category - Configuration 0x06xx					
■	■	PAN_INVERT	0x0600		
■	■	TILT_INVERT	0x0601		
■	■	PAN_TILT_SWAP	0x0602		
■	■	REAL_TIME_CLOCK	0x0603		
Category - Control 0x10xx					
■	■	IDENTIFY_DEVICE	0x1000		■
	■	RESET_DEVICE	0x1001		
■	■	POWER_STATE	0x1010		
■	■	PERFORM_SELFTEST	0x1020		
■		SELF_TEST_DESCRIPTION	0x1021		
	■	CAPTURE_PRESET	0x1030		
■	■	PRESET_PLAYBACK	0x1031		

Table 12: **ProTron LED Luminaire RDM Manufacturer Status IDs**

Manufacturer Specific messages are in the range of 0x8000 - 0xFFDF. Each Manufacturer-specific Status ID shall have a unique meaning, which shall be consistent across all products having a given Manufacturer ID. See Table B-2, ANSI E1.20-2010.				
Status ID Message	**Value**	**Data Value 1**	**Data Value 2**	**Status ID Description**
8100H		00H	00H	ALL OK

Table 13: ProTron LED Luminaire RDM Manufacturer Specific PIDs for Root Device

Get Allowed	Set Allowed	RDM Parameter IDs	Type	Length	Unit	Prefix	Min	Max	Default	Description
Category - Manufacturer Defined PIDs - Range is 0x8000-0xffdf (See ANSI E1.20-2010 Standard, Table A-3)										
■	■	8A00H	U8	1	None	None	0	100	100	DIMMER
■	■	8AB2H	U8	1	None	None	1	18	1	Chase
■	■	8AB1H	U8	1	None	None	0	31	0	Preset
■	■	8A92H	U8	1	None	None	0	255	0	Strobe
■	■	8A94H	U8	1	None	None	0	85	0	Duration
■	■	8A40H	S8	1	DB	None	0	1	0	Link Mode
■	■	8AA1H	S8	1	DB	None	0	3	0	Dimming Curve
■	■	8A0CH	S8	1	DB	None	0	3	0	DMX FAIL MODE
■	■	8AA0H	U8	1	None	None	0	4	0	Backlight Off Time
■	■	8AA2H	U8	1	None	None	0	50	0	Power Up Setup
■	■	8A97H	U8	1	None	None	0	1	0	Fan AUTO/OFF Setup
■	■	8A98H	U8	1	None	None	0	255	0	EFFECT

CLEANING AND CARE

WARNING! All cleaning should be performed with power completely removed from the luminaire. Never remove protective covers when luminaire is powered. Wear appropriate protective eye wear and gloves when cleaning the fixture. All service and maintenance, other than described herein, should be performed by a qualified technician or Authorized Service Center.

1. Special Cleaning and Care Instructions

Being a solid-state fixture, and unlike most fixtures, the ProTron LED Luminaire requires very little routine maintenance by the user. This section covers portions of the luminaire that can be removed for cleaning.

The ProTron LED Luminaire special care when it comes to cleaning front lens assembly. Additional care needs to be taken with the plastic components because they are much easier to scratch or damage than glass.

The following is a list of cleaning materials required to care for your ProTron LED Luminaire:

- Lint free lens tissue
- Lint or powder free gloves
- Reagent grade isopropyl alcohol*
- A mild soap solution.

Note: *Reagent grade isopropyl alcohol is good to use on the ProTron LED Luminaire plastic optics with anti-reflection coatings.

If the lens is still dirty after using isopropyl alcohol, for instance if fingerprints or oil is just redistributed and not cleaned off the optic, then a mild soapand water solution can be used to gently wash the lens. Repeat the cleaning with isopropyl alcohol to eliminate streaks and soap residue.

WARNING! Under no circumstances should ammonia-based cleaners, acetone, or other harsh solvents be used on or near the ProTron LED Luminaire. These types of cleaners or solvents can permanently damage the optics or housings of the fixture.

If you have any questions regarding the use or care of your ProTron LED Luminaire, please contact technical support or your local Authorized Dealer.

2. Front Lens Cleaning

To clean the front lens:

Step 1. Disconnect luminaire from power and allow to cool completely.

Step 2. Apply a small amount of reagent gradeisopropyl alcohol to lint-free lens tissue.

Step 3. Wipe all debris, dirt, fingerprints, etc. from lens.

Step 4. Using a second lint-free lens tissue, wipe off any alcohol residue.

3. Service and Maintenance

For all other service and maintenance issues, please contact your local office or an Authorized Service Center.

WARNING! Disassembly (other than as described herein), alterations, unauthorized service, etc. will void the product warranty. Contact your local office or an Authorized Service Center for technical support and service.

TECHNICAL SPECIFICATIONS

1. ProTron LED Luminaire Operational Specifications

Source:	CW LED Array
Beam Angle:	120 Degrees
Light Output:	> 28,000 lumens
Color Temperature:	6500K
Input Voltage (AC):	100V to 240V (+/- 10%, auto-ranging)(120V, 50/60Hz is for US and Canada Only)
Current (AC):	1.5 Amps (100V) / 0.625 Amps (240V)
Frequency:	50/60Hz
Control Protocols:	DMX512 (1990) / DMX512A (RDM) / On-Board Menu
Ambient Temperature:	-20 to 40 Degrees C (-4 to 104 Degrees F)
Humidity:	5%-95% Non condensing
Cooling:	Forced Air Cooling
Housing:	Die Cast Aluminium with Powder Coating
Compliance:	CE Marked (International models)
IP Rating:	IP65

Note: Common model specifications shown. For specific model specifications, features, and accessories, refer to the product specification sheet for more details.

2. ProTron LED Luminaire Dimensions
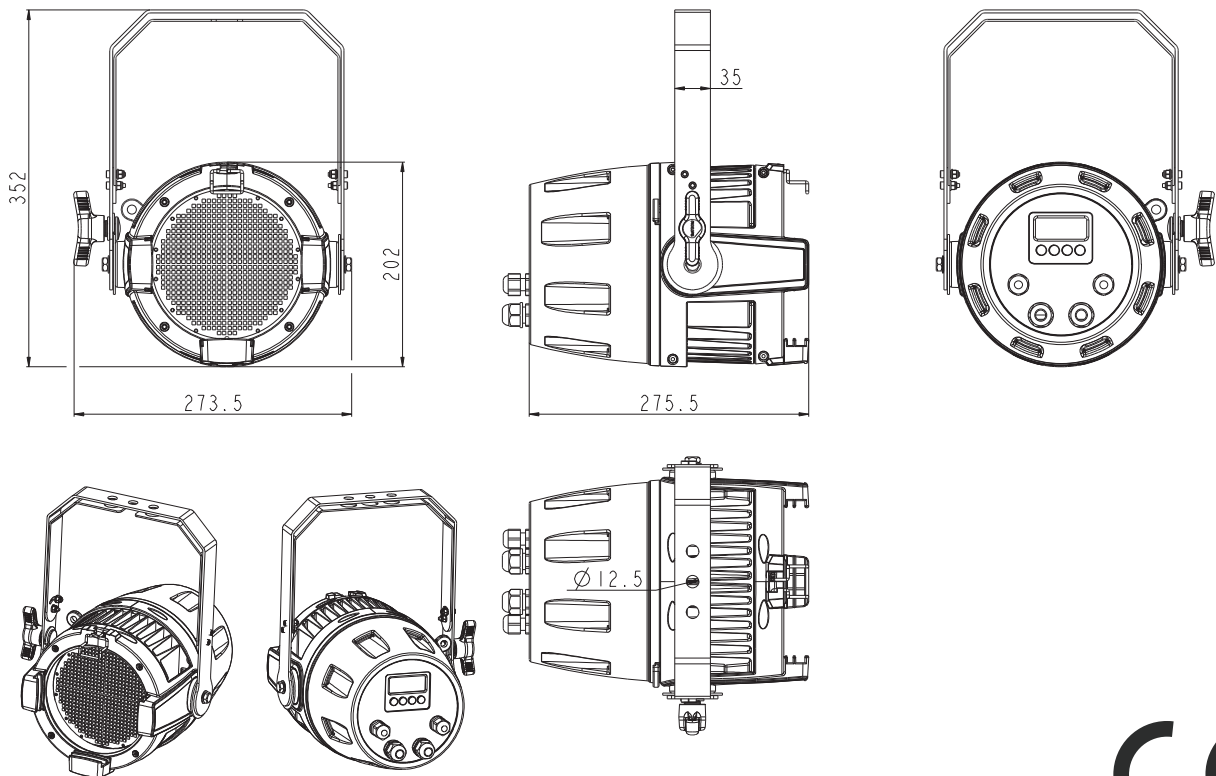
Appendix I

Table 14: ProTron LED Luminaire Strobe Rate Details

DMX Value	Percent (%)	Frequency(Hz)
0	0	DMX 0-5 – No Flash (single flash with value>5 on intensity one time)
1		
2		
3	1	
4		
5	2	
6		0.500
7		0.500
8	3	0.504
9		0.504
10	4	0.508
11		0.508
12		0.512
13	5	0.512
14		0.517
15	6	0.517
16		0.521
17		0.521
18	7	0.526
19		0.526
20	8	0.530
21		0.530
22		0.535
23	9	0.535
24		0.540
25	10	0.540
26		0.544
27		0.544
28	11	0.549
29		0.549
30		0.554
31	12	0.554
32		0.554
33	13	0.559
34		0.559
35		0.565
36	14	0.565
37		0.570
38	15	0.570
39		0.575
40		0.575
41	16	0.581
42		0.581
43	17	0.586
44		0.586

Table 14: ProTron LED Luminaire Strobe Rate Details

45		0.592
46	18	0.592
47		0.598
48	19	0.598
49		0.604
50		0.604
51	20	0.610
52		0.610
53		0.616
54	21	0.616
55		0.622
56	22	0.622
57		0.629
58		0.629
59	23	0.635
60		0.635
61	24	0.635
62		0.642
63		0.642
64	25	0.649
65		0.649
66	26	0.656
67		0.656
68		0.663
69	27	0.663
70		0.670
71	28	0.670
72		0.678
73		0.678
74	29	0.685
75		0.685
76	30	0.693
77		0.693
78		0.701
79	31	0.701
80		0.709
81		0.709
82	32	0.717
83		0.717
84	33	0.726
85		0.726
86		0.735
87	34	0.735
88		0.735
89	35	0.744
90		0.744

Table 14: ProTron LED Luminaire Strobe Rate Details

91		0.753
92	36	0.753
93		0.762
94	37	0.762
95		0.772
96		0.772
97	38	0.782
98		0.782
99	39	0.792
100		0.792
101		0.802
102	40	0.802
103		0.813
104		0.813
105	41	0.824
106		0.824
107	42	0.835
108		0.835
109		0.847
110	43	0.847
111		0.859
112	44	0.859
113		0.871
114		0.871
115	45	0.884
116		0.884
117	46	0.884
118		0.897
119		0.897
120	47	0.910
121		0.910
122	48	0.924
123		0.924
124		0.938
125	49	0.938
126		0.953
127		0.953
128	50	0.968
129		0.968
130	51	0.983
131		0.983
132		1.000
133	52	1.000
134		1.016
135	53	1.016
136		1.033

Table 14: ProTron LED Luminaire Strobe Rate Details

137		1.033
138	54	1.051
139		1.051
140	55	1.070
141		1.070
142		1.089
143	56	1.089
144		1.089
145	57	1.109
146		1.109
147		1.129
148	58	1.129
149		1.150
150	59	1.150
151		1.173
152		1.173
153	60	1.196
154		1.196
155		1.220
156	61	1.220
157		1.244
158	62	1.244
159		1.270
160		1.270
161	63	1.297
162		1.297
163	64	1.326
164		1.326
165		1.355
166	65	1.355
167		1.386
168	66	1.386
169		1.418
170		1.418
171	67	1.452
172		1.452
173	68	1.452
174		1.487
175		1.487
176	69	1.524
177		1.524
178		1.563
179	70	1.563
180		1.605
181	71	1.605
182		1.648

Table 14: ProTron LED Luminaire Strobe Rate Details

183		1.648
184	72	1.694
185		1.694
186	73	1.742
187		1.742
188		1.793
189	74	1.793
190		1.848
191	75	1.848
192		1.905
193		1.905
194	76	1.967
195		1.967
196	77	2.033
197		2.033
198		2.103
199	78	2.103
200		2.103
201	79	2.178
202		2.178
203		2.258
204	80	2.258
205		2.345
206	81	2.345
207		2.439
208		2.439
209	82	2.541
210		2.541
211		2.651
212	83	2.651
213		2.772
214	84	2.772
215		2.904
216		2.904
217	85	3.049
218		3.049
219	86	3.209
220		3.209
221		3.388
222	87	3.388
223		3.587
224	88	3.587
225		3.811
226		3.811
227	89	4.065
228		4.065

Table 14: ProTron LED Luminaire Strobe Rate Details

229		4.065
230	90	4.355
231		4.355
232	91	4.690
233		4.690
234		5.081
235	92	5.081
236		5.543
237	93	5.543
238		6.098
239		6.098
240	94	6.775
241		6.775
242	95	7.622
243		7.622
244		8.711
245	96	8.711
246		10.163
247	97	10.163
248		12.195
249		12.195
250	98	15.244
251		15.244
252	99	20.325
253		20.325
254		30.488
255	100	30.488

Note:White light mode (when strobe duration is also at 255)

Appendix II

Table 15: ProTron LED Luminaire Strobe Duration

DMX Value	Percent (%)	Time(ms)
0	0	0
1		33
2		66
3	1	98
4		131
5	2	164
6		197
7		230
8	3	262
9		295
10	4	328
11		361
12		394
13	5	426
14		459
15	6	492
16		525
17		558
18	7	590
19		623
20	8	656
21		689
22		722
23	9	754
24		787
25	10	820
26		853
27		886
28	11	918
29		951
30		984
31	12	1017
32		1050
33	13	1082
34		1115
35		1148
36	14	1181
37		1214
38	15	1246
39		1279
40		1312
41	16	1345
42		1378
43	17	1410
44		1443

Table 15: ProTron LED Luminaire Strobe Duration

45		1476
46	18	1509
47		1542
48	19	1574
49		1607
50		1640
51	20	1673
52		1706
53		1738
54	21	1771
55		1804
56	22	1837
57		1870
58		1902
59	23	1935
60		1968
61	24	2001
62		2034
63		2066
64	25	2099
65		2132
66	26	2165
67		2198
68		2230
69	27	2263
70		2296
71	28	2329
72		2362
73		2394
74	29	2427
75		2460
76	30	2493
77		2526
78		2558
79	31	2591
80		2624
81		2657
82	32	2690
83		2722
84	33	2755
85		2788
86		2821
87	34	2854
88		2886
89	35	2919
90		2952

Table 15: ProTron LED Luminaire Strobe Duration

91		2985
92	36	3018
93		3050
94	37	3083
95		3116
96		3149
97	38	3182
98		3214
99	39	3247
100		3280
101		3313
102	40	3346
103		3378
104		3411
105	41	3444
106		3477
107	42	3510
108		3542
109		3575
110	43	3608
111		3641
112	44	3674
113		3706
114		3739
115	45	3772
116		3805
117	46	3838
118		3870
119		3903
120	47	3936
121		3969
122	48	4002
123		4034
124		4067
125	49	4100
126		4133
127		4166
128	50	4198
129		4231
130	51	4264
131		4297
132		4330
133	52	4362
134		4395
135	53	4428
136		4461

Table 15: **ProTron LED Luminaire Strobe Duration**

137		4494
138	54	4526
139		4559
140	55	4592
141		4625
142		4658
143	56	4690
144		4723
145	57	4756
146		4789
147		4822
148	58	4854
149		4887
150	59	4920
151		4953
152		4986
153	60	5018
154		5051
155		5084
156	61	5117
157		5150
158	62	5182
159		5215
160		5248
161	63	5281
162		5314
163	64	5346
164		5379
165		5412
166	65	5445
167		5478
168	66	5510
169		5543
170		5576
171	67	5609
172		5642
173	68	5674
174		5707
175		5740
176	69	5773
177		5806
178		5838
179	70	5871
180		5904
181	71	5937
182		5970

Table 15: **ProTron LED Luminaire Strobe Duration**

183		6002
184	72	6035
185		6068
186	73	6101
187		6134
188		6166
189	74	6199
190		6232
191	75	6265
192		6298
193		6330
194	76	6363
195		6396
196	77	6429
197		6462
198		6494
199	78	6527
200		6560
201	79	6593
202		6626
203		6658
204	80	6691
205		6724
206	81	6757
207		6790
208		6822
209	82	6855
210		6888
211		6921
212	83	6954
213		6986
214	84	7019
215		7052
216		7085
217	85	7118
218		7150
219	86	7183
220		7216
221		7249
222	87	7282
223		7314
224	88	7347
225		7380
226		7413
227	89	7446
228		7478

Table 15: ProTron LED Luminaire Strobe Duration

229		7511
230	90	7544
231		7577
232	91	7610
233		7642
234		7675
235	92	7708
236		7741
237	93	7774
238		7806
239		7839
240	94	7872
241		7905
242	95	7938
243		7970
244		8003
245	96	8036
246		8069
247	97	8102
248		8134
249		8167
250	98	8200
251		8233
252	99	8266
253		8298
254		8331
255	100	8364

Note:White light mode (when strobe rate is also at 255)

Appendix III

Table 16: ProTron LED Luminaire Effects Details

DMX	Parameter	Range DMX	Range %	Defaults*	Description
x	Effects	0 - 255	0 - 100%	DMX 0	Controls strobe operations as follows . . .
					No Effect = DMX 0 - 5
					Ramp Up = DMX 6 - 42
					Ramp Down = DMX 43 - 85
					Ramp up/down = DMX 86 - 128
					Random = DMX 129 - 171
					Top row only = DMX 172 - 173
					Bottom row only = DMX 174 - 175
					Left zone only = DMX 176 - 179
					Right zone only = DMX 180 - 182
					Checker pattern A = DMX 183 - 184
					Checker pattern B = DMX 185 - 186
					Random zones = DMX 187 - 214
					Circle zone chase clockwise = DMX 215 - 235
					Circle zone chase counter-clockwise = DMX 236 - 255