

## 24V DC Power Supply - 96W











- Direct burial and outdoor rated electronic power supply to be installed in our Q-VAULT-5 enclosure
   Versatile Class 2 LED driver with DALI DT6 dimmable options
- The Pulse Width Modulation (PWM) output provides smooth flicker-free dimming
- 24VDC constant voltage output and is available in 96W
- Programmable with QTL NFC App for reading and writing DALI addresses and adjusting output voltage. Also programmable with DALI-2 controller
- Fully potted driver(s) for moisture resistance
- Suitable for dry, damp, and wet locations Suitable for use with submersible luminaire

1	2	3	4	5	6	7
PRODUCT	WATTAGE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CONTROL	CHANNEL	OPTIONS
Q-SET+QZ	96W	UNV	24V	DALI-DT6		

Sample Part Number: Q-SET+QZ-96W-UNV-24V-DALI-DT6-1CH-N/A



5	CONTROL	6	•	CHANNEL	7	OPTIONS
	DALI-DT6		1CH	1Channel		N/A PS Pool and Spa

### **COMPATIBLE LEDS**

TIO W// UTC

SW24/1.5-4.0	- √
SW24/5.0, SW-HE, SW-HE+	<b>√</b>
SD-SW24/1.0-4.0	<b>√</b>
SD-SW24/6.0	✓
SW-IA	
SW-XT	J

DW-HE Tunable Applications	
DW-HE Warm Dim Applications	
WD	<b>√</b>
sc	<b>√</b>
RGB	
RGBW. RGBW-HE	

If using a DW LED, wattage must be doubled

TILLIO			
Q-SHEETS SW			
Q-SHEETS DW Tunable Applications			
Q-SHEETS DW Warm Dim Applications			
Q-SHEETS RGB			
Q-SHEETS RGBW			

If using a DW LED, wattage must be doubled

#### MICRO 5

MICRO 5 SW	<b>√</b>				
MICRO 5 DW Tunable Applications					
MICRO 5 DW Warm Dim Applications					
MICRO 5 RGB					

If using a DW LED, wattage must be doubled

#### **PRODUCT INFORMATION**

- Constant voltage output
- DALI-2-DT6 Control
- NFC App for addressing & voltage adjustment
- Adjustable output voltage Range: 24V-26V
- DALI dimming down to 0.2%
- Suitable for dry, damp and wet locations
- Suitable for indoor & outdoor use
- Not for installation to conduit extending directly to an underwater pool light forming shell. In line Pool and Spa rated junction box required.
- Suitable for use with submersible luminaries
- Primary voltage universal (100-277V)
- Wide operating temperature range: -40°F to +122°F
- UL, cUL listed
- Type HL rated

- · Compliant to FCC Part 15B
- 5 year warranty
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 Luminaires
  - ANSI/ UL Standard 2108 Low Voltage Lighting System
- · Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95
  - CSA Standard C22.2 No. 250.7-07 Extra-Low Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 Low Voltage Landscape Lighting Systems
- · Hydromassage (Pool and Spa)
  - CSA Class 3425-46 and class 3425-96
  - ANSI/UL Standard 379 Power Units for Fountain, Swimming Pool, and Spa Luminaires



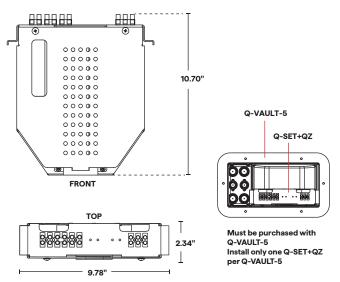
### 24V DC Power Supply - 96W

#### **VOLTAGE DROP CHART**

This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved Wiring from power supply to light fixture must be two conductor cable

	Load			Dista	nce from	PS for 5%	6 Voltage	Drop		
VDC	VDC Wattage (W)	10 AWG	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
	15	913	574	361	227	143	90	57	36	22
	30	457	287	181	114	71	45	28	18	11
24	60	228	144	90	57	36	23	14	9	6
	80	171	108	68	43	27	17	11	7	4
	96	143	90	56	36	22	14	9	6	4

# 1 PRODUCT - DIMENSIONS



# **2** TECHNICAL INFORMATION

Size	Primary Voltage	Secondary Voltage	Secondary Current	
96W	100-277V	24VDC	4A	

If any of the primary or secondary wiring is done outside of conduit, please consult factory for proper connectors and wire to maintain IP68 rating and warranty.

To maintain Class 2 wiring compliance, do not exceed 60 watts at 12VDC or 96 watts at 24VDC per fixture feed. Failure to do so will void fixture warranty and create a fire hazard.

# 6 CHANNEL

Channel	Wattage	Primary Voltage	Secondary Voltage	Secondary Current	Compatible Light Engine
CH1	96W	100-277V	24VDC	1X4A	SW, SW-HE, SW-HE+, SC, WD

#### **HOUSING**

- Dimensions: 10.70"L x 9.78"W x 2.34"D
- Q-VAULT-5 enclosure can fit up to one Q-SET+QZ-DALI-DT6
- Q-VAULT-5 is IP68 rated
- Housing for direct burial fixtures shall be IP68 Rated, with all sealing materials supplied by the manufacturer
- Housing for direct burial fixtures shall be rated for burial in soil, gravel and concrete

#### **PERFORMANCE**

- Power supply shall be rated for outdoor and direct burial use in Q-VAULT-5 IP68 Listed direct burial enclosure
- Fully rated to operate low voltage load at listed wattage (No Derating Required)
- · Limit voltage regulation to 5% or less of rated output voltage
- Universal input range of 120-277 Vrms
- Terminal blocks shall be made of tin plated copper with a voltage rating of 300V and a current rating of 40A
- · Live tested by manufacturer to ensure proper operation
- Rated for:
  - CSA Class 3425-15 and Class 3425-95 Landscape Lighting System Components
  - CSA Class 3426-04 and Class 3426-94 Low Voltage Lighting Systems
  - CSA Class 3425-46 and class 3425-96 Hydromassage

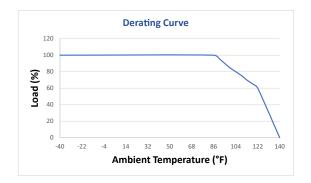


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### **SPECIFICATIONS**

Input						
Input Voltage (Vrms) 100-277V						
Input Current, max (Arms)	1	.25A @ 100V				
Inrush Current, max* (Apk)		51.2A@277V				
Input Frequency (Hz)		50/60				
Input Power (W)	V) 118					
Output	ı					
Output Voltage, nom (V)		24				
Output Current (A)	4					
Output Power (Wmax)		96				
Environmental	Min	Nom	Max			
THD (%)	-	-	15			
PF (%)	) 0.95					
Working Temp (°F)	-	-	122			

<sup>\*-200</sup>us event

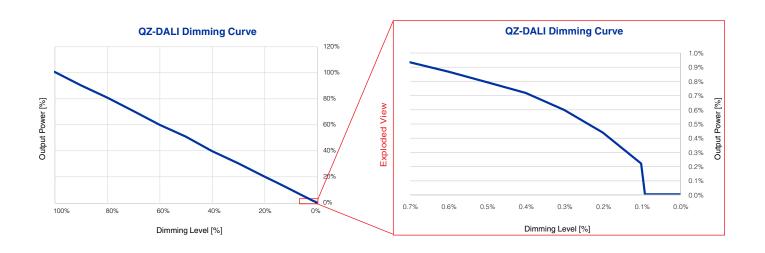


### **PROTECTIONS**

- Short Circuit Protection (SCP)
- · Over Loading Protection (OLP)
- Over Temperature Protecton (OTP)
- I/P-O/P:1.88KVAC
- I/P-O/P:100MΩ/500VDC/77°F/70%RH

### **COMPLIANCE**

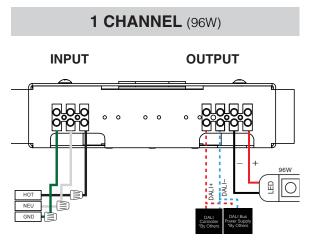
- EMI Spec
  - FCC 47 CFR Part 15 Subpart B
- CSA Certified
- UL-2108
- UL-8750
- UL-379
- CSA C22.2 No 250.7-07
- CSA C22.2 No 250.0-08



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### **WIRING DIAGRAM**

#### **DALI-DT6 Control: 1CH**



- Default DALI address for the driver is #1 and default output voltage is 24V.
- Wiring from power supply to light fixture must be single conductor cable

### **COMPATIBLE DIRECT BURIAL PRODUCTS**













- 3426-94 Luminaires Landscape Lighting Systems Certified to UL 1838 Standard.
- 3425-95 Luminaires Low Voltage Lighting Systems Certified to UL 2108 Standard.
- 3425-96 Luminaires Component Hydromassage Certified to UL 379 Pool & Spa Standard.







- $\bullet \ 3426\text{-}04 \ \ \text{Luminaires Landscape Lighting Systems Component (including Hydromassage)}. \\$
- 3425-15 Luminaires Low Voltage Lighting Systems.





- For supply connections use wire rated for at least 90°C
- Suitable for in-ground installation.
- Not for installation to conduit extending directly to an underwater pool light forming shell. In line Pool and Spa rated junction box required.
- Suitable for use with submersible luminaries
- Suitable for direct burial use.
- Warning: risk of fire if installation involves running wiring through a building structure, special wiring methods are needed. Consult National
  and Local Codes.

Q-SET LOW VOLTAGE LUMINAIRE POWER SUPPLY					
MODEL NUMBER	OUTPUT CLASS	MAX LAMP LOAD	PRIMARY VOLTS	LAMP VOLTS	DIMMER RATING
Q-SET+QZ-30 Q-SET+QZ-60 Q-SET+QZ-96 Q-SET+QZ-DW-96 Q-SET+QZ-DMX-96 Q-SFT+QZ-DAI I-96	CLASS 2 CLASS 2 CLASS 2 CLASS 2 CLASS 2 CLASS 2	30W 60W 96W 96W 96W	120V/277 (60Hz) 120V/277 (60Hz) 120V/277 (60Hz) 120V/277 (60Hz) 120V/277 (60Hz) 120V/277 (60Hz)	24VDC 24VDC 24VDC 24VDC 24VDC 24VDC	0-10/ELV/MLV 0-10/ELV/MLV 0-10/ELV/MLV 0-10/ELV/MLV NO NO



### Led Power Supply Direct Burial Installation Instructions

		CSA LISTING							
		OUTDOOR Under 30 Volts = LV Wire Burried 0" to 6"							
\$\\ \alpha \\ \a	Q-SET+QZ-30 Q-SET+QZ-60 Q-SET+QZ-96 Q-SET+QZ-DW-96 Q-SET+QZ-DMX-96 Q-SET+QZ-DALI-96	Outdoor Landscape Lighting - Under 30 Volts  CSA Certified for both the U.S. and Canada to the UL-1838 Standard for Landscape Lighting with in-ground enclosure and component power supply operating at less than 30VDC. This listing allows for the LV Q-WIRE to be installed 0" to 6" underground.  Pool & Spa - Under 30 Volts  CSA Certified for the U.S. to the UL-379 Pool & Spa Power Supply Standard. This listing is intended for power supplies used to power fountain, swimming pool and spa luminaires operating at less than 30V.							
		OUTDOOR 15 to 30 Volts = LV Wire burried 18"							
* *	Q-SET+QZ-30 Q-SET+QZ-60 Q-SET+QZ-96 Q-SET+QZ-DW-96 Q-SET+QZ-DMX-96 Q-SET+QZ-DALI-96	Outdoor Landscape Lighting - 15 to 30 Volts  CSA Certified for both the U.S. and Canada to UL-2108 Standard with a listing of  "Low Voltage Luminaire Power Supply" for lamps operating at 12 or 24 volts where the secondary voltage is between 15 to 30 volts. Please note that the secondary wiring must be installed 18" below grade per the N.E.C.							
		INDOOR LV Lighting under 30 Volts							
Q-SET+QZ-30 Q-SET+QZ-60 Q-SET+QZ-96 Q-SET+QZ-DW-96 Q-SET+QZ-DMX-96 Q-SET+QZ-DMX-96 Q-SET+QZ-DALI-96  Q-SET+QZ-DALI-96  Indoor Open Conductor Systems - Under 30V CSA Certified for both the U.S. and Canada to UL-2108 Standard as a "Low Voltage Luminaire Power Supply" for lamps operating at 12V or 24V allows for live conductor lighting equipment mounted above 7 feet and other types of LV Lighting equipment, per N.E.C. Article 411. When tested in conjunction with open conductor lighting system.									
NOTE:	Refer to the las	t page.							

### Q-VAULT 120/277V (50/60HZ) - 24V

#### FOR CONDUIT CONNECTION

WARNING - RISK OF SHOCK. Install power unit 5 feet (1.5 m) or more from the pool or spa and 10 feet (3.05 m) or more from a fountain. Where the power unit is installed within 10 feet (3.05 m) of a pool or spa, connect unit to GFCI protected branch circuit.

#### FOR POWER SUPPLY CORD CONNECTION

WARNING - RISK OF SHOCK. Installed power unit 5 feet (1.5M) or more from the pool, spa, or fountain. Where the power unit is installed (a) indoors within 10 feet (3.05) of a pool, spa, or fountain or (B) outdoors, connect power unit to a receptacle protected by a GFCI.

WARNING - RISK OF FIRE. If installation requires running wire through a building structure, special wiring methods are needed. Contact a qualified electrician.

WARNING - Outdoor Cord-connected unit shall be connected to a GFCI protected hooded flush type cover plate receptacle marked "Wet Location".

WARNING - Do not use extension cords.

The main Secondary Wiring is intended for shallow burial - less than 6 inches (152 mm)

#### For Supply connections use wire rated for at least 90C.

- SUITABLE FOR INDOOR / OUTDOOR USE
- SUITABLE FOR USE WITH SUBMERSIBLE LUMINAIRES OR SUBMERSIBLE PUMPS
- SUITABLE FOR USE WITH LOW VOLTAGE LANDSCAPE LUMINAIRES / FITTINGS

CONTACT YOUR LOCAL DISTRIBUTOR OR QTL FOR Q-WIRE, Q-CLIK OR PROPER ACCESSORY KITS.



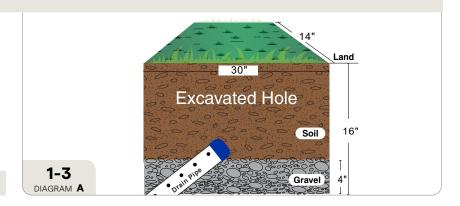
### Led Power Supply Direct Burial Installation Instructions

#### **ROUGH IN WIRING**

- Excavate a 14" x 30" x 16" deep hole for the Q-VAULT direct burial housing.
- Dig trenches for primary & secondary wiring to Q-VAULT housing location.
- Place drain pipe at a 30 degree angle at the lowest slope of land for proper drainage. Fill bottom of pit with a minimum of 4" of gravel.

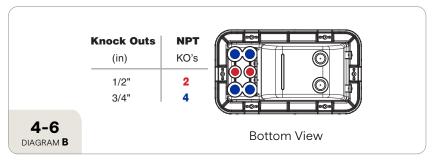
SEE DIAGRAM A

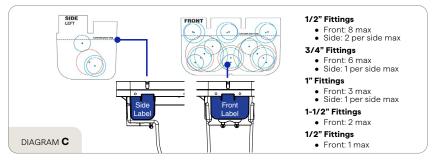
Note: Increase width to 30" x 30" when stabilizing bars are used.



- 4 Bring all primary and secondary wiring into housing.
  - **A:** Entry location is provided at both the bottom and side of the Junction Box located on the Q-VAULT housing.
  - **B:** On the bottom of Junction Box there are: (4) 3/4" NPT and (2) 1/2" NPT KO's. **SEE DIAGRAM B**
  - **C:** Using the Field Drill Guide Labels provided in the installation kit you are able to drill for various fitting sizes. Only knock out openings for conduits being utilized in installation. SEE DIAGRAM C
- After all field wiring has been installed with proper lead lengths, tighten all fittings properly to assure they are water proof. All drilled entries require Q Click wire connectors to insure water tight connection. Use of other connectors voids warranty.
- 6 Coil and store field wiring in Junction Box area.

Note: Label all wiring for future reference.





### FOR COMPLETE WATER TIGHT GUARANTEE

### **PRIMARY WIRING IN (120-277V)**

#### Conduit - Use Installation Kit

- Step 1: Putty
- Step 2: Epoxy
- Step 3: Syringe

Non-conduit - use Q-CLIK NPT.75, Q.750-1E, Q-WIRE 12/2+GND

WARRANTY IS VOID IF THE CORRECT METHOD IS NOT USED.

### **SECONDARY WIRING OUT (12-24V)**

### Low voltage wire (non-conduit)

- Q-CLIK
  - NPT-or knock outs in bottom of Q-VAULT, .5-.75
  - $\bullet$  MST to drill into the side of the housing, .5-1.25
- Q-WIRE low voltage marine grade UFB wire (recommended) 10-14AWG
  - Standard Q-CLIK insert

### Conduit - low voltage, requires Seal Kit (sold separately)

- Step 1: Putty
- Step 2: Epoxy
- Step 3: Syringe



### Led Power Supply Direct Burial Installation Instructions

- 7 Clean debris from the top perimeter and install gasket. SEE DIAGRAM D
- 8 Install door and tighten the 6 door bolts in the number sequence shown. SEE DIAGRAM E

**Note:** Nut driver can be used to get bolts seated before final tightening. Proper door bolt tightening must be done with a ratchet wrench using a 3/8\* socket at a maximum torque of 50 in-lbs.

Attach the provided Support Bars to the Q-VAULT housing using the 6-32 X 5/8 screws. SEE DIAGRAM F

\*OPTIONAL: Concrete Pour Ring Nut & Bolt Installation. SEE DIAGRAM G

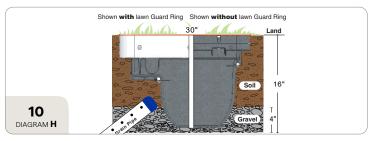
Level housing and fill hole with gravel to 4" of below grade. Add soil to surface. SEE DIAGRAM H

All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

- Gasket

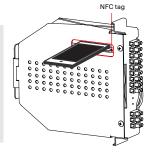
  Gasket
- \*Gasket only fits one way. Gasket easily slides over Q-VAULT posts. If you are having to force the gasket, it is backwards (Gasket must sit on top of Q-VAULT. No portion should be overhanging).





- Remove cover if installed, be sure to store cover and cover gasket in a clean and dry location.
- **12** Move field wiring out of the way.

Stick your phone through the slot, holding it over the driver's NFC tag. Read the factory default settings of the driver. Write the desired address and output voltage. Only applicable to Q-SET+QZ-DMX and Q-SET-QZ-DALI

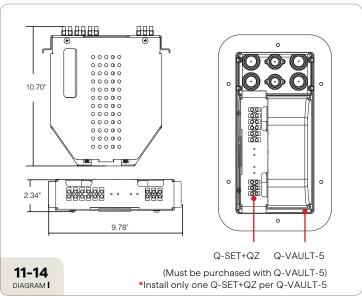


- 13 Place Q-SET+QZ low voltage luminaire power supply cassette into the Q-VAULT housing.
- Landscape Lighting: Landscape Lighting: Bring primary field wiring directly into the Cassette's primary terminal block through open hole.

### Primary Connections:

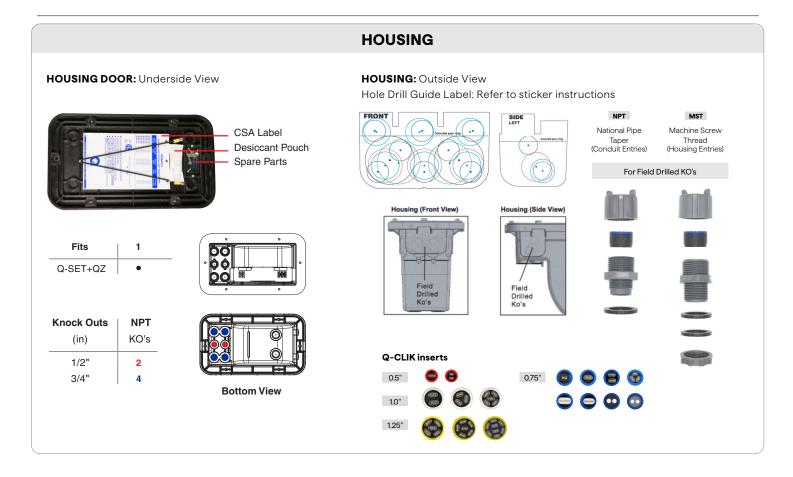
- Ground to ground labeled on terminal block
- Neutral to neutral labeled on terminal block
- Hot to hot labeled on terminal block

SEE DIAGRAM I





Led Power Supply Direct Burial Installation Instructions



#### **INSTALLING Q-SET+QZ**

Determine proper lengths and trim to correct length.

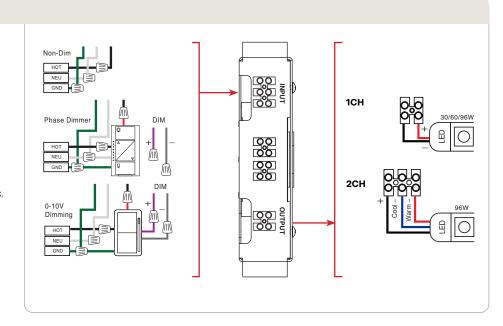
Low Voltage Connections:

#### 1CH: Q-SET+QZ

Connect red wire to +24V on low voltage terminal block. Connect black wire to - on low voltage terminal block.

### 2CH: Q-SET+QZ-DW

Connect black wire to +24V on low voltage terminal block. Connect red wire to Warm on low voltage terminal block. Connect blue wire to Cool on low voltage terminal block.





Led Power Supply Direct Burial Installation Instructions

#### **INSTALLING Q-SET+QZ**

Low Voltage Connections:

#### 1CH: Q-SET+QZ-DMX / Q-SET+QZ-DALI

Connect red wire to +24V on low voltage terminal block. Connect black wire to - on low voltage terminal block.

#### 2CH: Q-SET+QZ-DMX / Q-SET+QZ-DALI

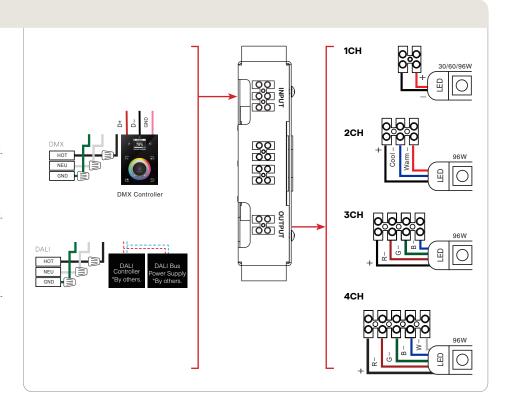
Connect black wire to +24V on low voltage terminal block. Connect red wire to Warm on low voltage terminal block. Connect blue wire to Cool on low voltage terminal block.

#### 3CH: Q-SET+QZ-DMX / Q-SET+QZ-DALI

Connect black wire to +24V on low voltage terminal block. Connect red wire to R on low voltage terminal block. Connect green wire to G on low voltage terminal block. Connect blue wire to B on low voltage terminal block.

#### 4CH: Q-SET+QZ-DMX / Q-SET+QZ-DALI

Connect black wire to +24V on low voltage terminal block. Connect red wire to R on low voltage terminal block. Connect green wire to G on low voltage terminal block. Connect blue wire to B on low voltage terminal block. Connect white wire to W on low voltage terminal block.



#### **SIMPLE AS 1, 2, 3**

- 1 Use putty provided to seal wires in potting well. It is important that the well is liquid tight so that when the re-enterable epoxy is poured, it does not escape out the bottom. Be sure the putty is put into the very bottom of the well to allow ample room for the epoxy. SEE DIAGRAM O
- **2** A: The 3M-8882 re-enterable epoxy takes several hours to set. When set it will form a into a water tight "jello" consistency.
  - **B:** Mix the two part epoxy together per 3M instructions located on the epoxy packaging.
  - **C:** Push all the mixed epoxy together to one end of the bag. Cut the corner of the bag.
- **3** A: Using the syringe pull the mixed epoxy into the syringe by pulling the plunger out slowly.
  - **B:** Slowly dispense the mixed epoxy from the syringe into the utilized potting wells. **SEE DIAGRAM P**

Note: Potting is now complete

#### LAST STEP

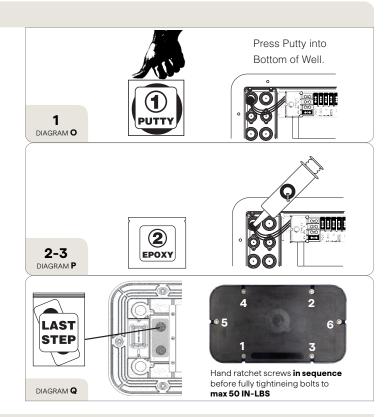
Final Door Installation

### Gasket and door installed only in one direction

- Clean housing area where door gasket will rest
- Reinstall clean door gasket.

#### Before Door is Installed

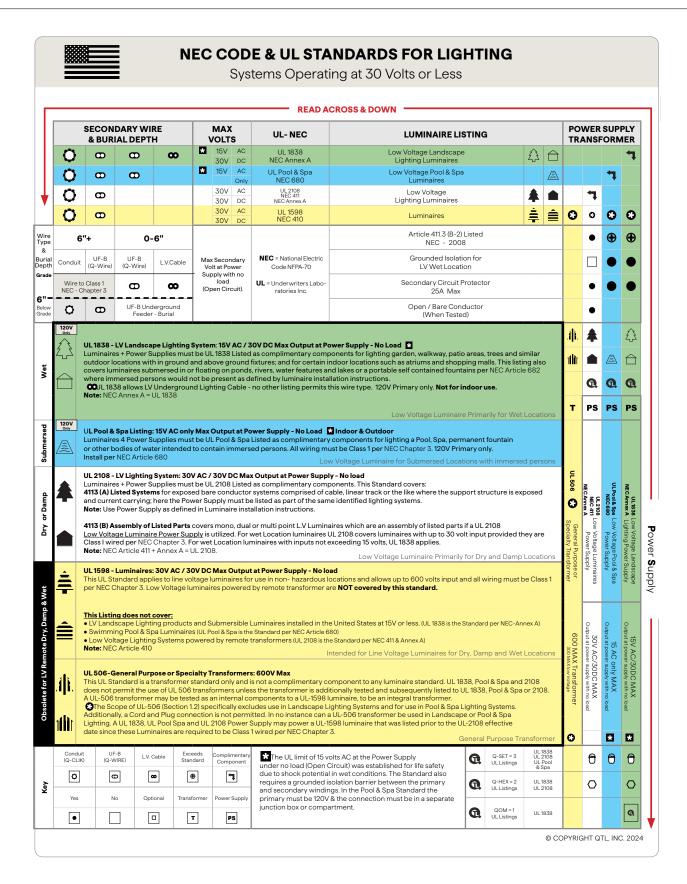
Put velcro desiccant bag in place. Attach the two velcro loop coins on the desiccant bag to the two velcro hook coins on the underside of the housing door. SEE DIAGRAM Q



Note: Install door and tighten the 6 door bolts NOT TO EXCEED 50 IN-LBS. Door bolt tightening must be done with a ratchet wrench using a 3/8" socket.

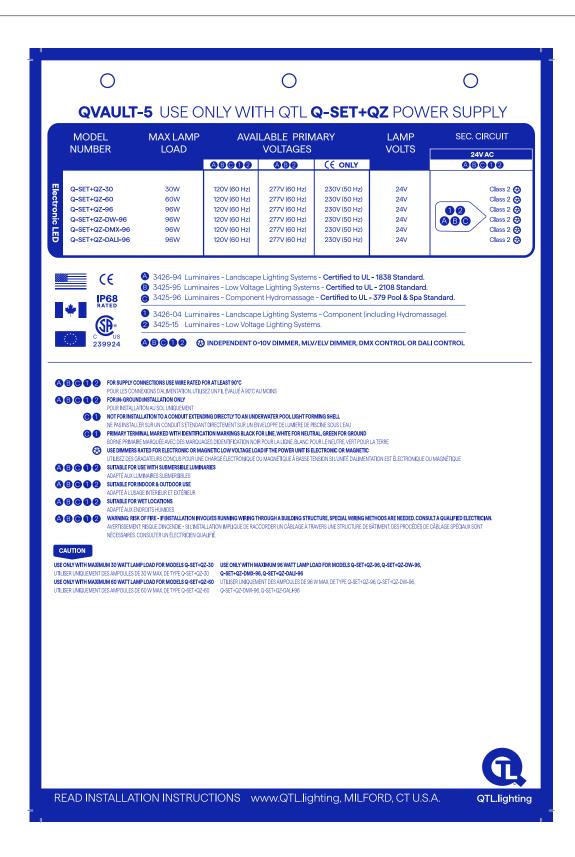


Led Power Supply Direct Burial Installation Instructions





### Led Power Supply Direct Burial Installation Instructions





# **MATERIAL RECYCLING**

Q-SET-QZ

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.

