LED SERVICING GUIDE

SignVue LED II

SERIES LUMINAIRE

AcuityBrands Lighting

Table of Contents

IMPORTANCE OF SAFETY

The information presented in this LED Service Guide is generic in nature. It can be applied to and used in troubleshooting SignVue LED II Series Luminaires. This servicing guide contains information, illustrations on the following topics:

- Safety practices and equipment used when servicing LED lighting systems
- Construction and operating features affecting servicing.

WARNING / CAUTION

IMPORTANT SAFETY INSTRUCTIONS

- TO REDUCE THE RISK OF DEATH, PERSONSAL OR PROPERTY DAMAGE FROM FIRE, ELECTRICAL SHOCK, FALLING PARTS, CUTS/ABRASIONS, AND OTHER HAZARDS PLEASE READ ALL WARNINGS AND INSTRUCTIONS
- TO AVOID THE RISK OF FIRE OR ELECTRICAL SHOCK, FIXTURE MUST BE INSTALLED IN COMPLIANCE WITH ALL APPLICABLE NATIONAL AND LOCAL ELECTRICAL / BUILDING CODES FOR CODE INTERPRETATION, CONSULT LOCAL CODE AUTHORITY
- BEFORE INSTALLING, SERVICING OR PERFORMING ROUTINE MAINTENANCE UPON THIS EQUIPMENT, FOLLOW THESE GENERAL PRECAUTIONS
- SERVICING OF THIS EQUIPMENT SHOULD BE PERFORMED BY A QUALIFIED LICENSED ELECTRICAN AND MECHANICAL TECHNICIAN
- MAINTENANCE OF THE LUMINAIRE SHOULD BE PERFORMED BY PERSON(S) FAMILIER WITH THE SIGNVUE LUMINAIRE CONSTRUCTION, OPERATION AND ANY HAZARDS INVOLVED
- DISCONNECT OR TURN POWER OFF BEFORE SERVICING
- VERIFY THAT THE SUPPLY VOLTAGE IS CORRECT BY COMPARING IT WITH THE LUMINAIRE LABEL INFORMATION
- MAKE SURE THAT ALL ELECTRICAL AND GROUNDED CONNECTIONS ARE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ANY APPLICABLE LOCAL CODE REQUIRMENTS
- ALL WIRING CONNECTION SHOULD BE CAPPED WITH UL APPROVED RECOGNIZED WIRING CONNECTORS.
- WEAR GLOVES, SAFETY GLASSES, HARD HATS ANS SAFETY SHOES AT ALL TIMES WHEN SERVICING OR PERFORMAING MAINTENANCE

THESE INSTRUCTIONS DO NOT PURPORT TO COVER ALL DETAILS OR VARIATIONS IN EQUIPMENT NOR TO PROVIDE EVERY POSSIBLE CONTINGENCY TO MEET IN CONNECTION WITH INSTALLATION, OPERATION, OR MAINTENANCE. SHOULD ADDITIONAL INFORMATION BE DESIRED OR SHOULD PARTICULAR PROBLEMS ARISE WHICH ARE NOT COVER SUFFICIENTLY FOR THE PURCHASER'S OWENERS PURPOSES, THIS ISSUE SHOULD BE REFERRED TO ACUITY BRANDS LIGHTING TECHNICAL SUPPORT / FIELD SERVICE TEAM

FOR TECHNICAL OR FIELD SERVICE CONTACT:

PHONE: 1-740-349-4182 OR EMAIL fieldservice@acuitybrands.com

TROUBLESHOOOTING PROCEDURES

If the luminaire is not performing per the product specification, review the following steps to determine root cause of failure. The following steps are recommondations for trouble shooting common failure modes

NON-FUNCTIONING LUMINAIRE

Insure power has been turned off or disconnected from the luminaire before completing steps #1 through # 4 of the visual inspections

1. Visual inspection of the internal components for evidence of any failed components due to an electrical power surge event. Replace any components identified or contact your customer care representative to request a luminaire replacement.

2. Complete a visual Inspection of the internal wirings to confirm there are no pinched or loose wire leads. Repair or replace wire leads identified or contact your customer care representative to request a luminaire replacement.

3. Complete a visual inspection of all internal wiring connectors to insure the leads have nested correctly inside of each connector. Complete a pull test on each of the leads seperately to insure they do not pull out of the connectors. If one of the leads does pull out of the connector, repair it by re-inserting into the connector and lock in place, if the lead does not stay seated, replace the connector identified or contact your customer care representative to request a luminaire replacement.

4. **Fusing (Optional)** - Remove fusing from holder and validate that the fuse is in good condition. By using a multi-meter. Check continuity on the fuses to make sure they are not blown. Replace fusing if damaged.

NOTE: For the remainder of the troubleshooting process you will need to re-intergize the luminaire

- **Terminal Block -** Validate that there is AC voltage at the termial block after luminaire has been re-entergized. Reference (Figure #1, A)

- **SPD** - (Acuity Brands **S**urge **P**rotection **D**evice 120-277v) Vailadate that there is AC voltage on the output side of the SPD. Disconnect the input side (Line/Com Leads) of the driver from the rest of the circuit by disconnecting the leads from the connector. Place the voltage probe test leads into the connector and measure the output AC voltage of the SPD device. If no voltage can be confirmed, replace the surge protection device and re-test. Reference (Figure #2,A,B)

- **LED Driver –** Confirm there is voltage on the output side of the LED driver. Disconnect the input leads at the connector from the light engine and the output leads of the LED driver. Place the voltage probe test leads into the connector. With the luminaire energized, measure the output DC voltage of the driver. If no voltage is present, replace the LED driver. Reference (Figure #3,A)

TROUBLESHOOOTING
PROCEDURES

- **Low Light Level Output** - Check for correct polarity between the LED driver output (Red & Blue Leads) and the LED light engine input, (Red & Blue Leads). Confirm polarity by checking the wiring between the driver and LED light engine with the wiring diagram supplied on the driver. Reversal of these leads will result in an outage and or low-level output of the light engine. if the symptom is still present you will need to contact your customer care representative to request a luminaire replacement. Reference (Figure #1,A)

- **Light Engine** – (Non-Functional) – If all of the previously internal components noted above have been identified as functional and the luminaire still does not function you will need to check the lead connections at the LED board to insure leads are secured correctly to the light engine board. if the symptom is still present you will need to contact your customer care representative to request a luminaire replacement. Reference (Figure #5)

  Note: Due to the nature of the LED light engine design and the special equipment required for assembly and testing, components related to the light engine assembly cannot be removed or repaired in the field.

- **Field Adjustable Output Module** – (Non-Functional) – If all of the previously internal components noted above have been identified as functional and the luminaire still not able to adjust the lumen you will need to check the lead connections at the FAOM to insure leads are secured correctly. If the symptom is still present you will need to replace the module or contact your customer care representative to request a luminaire replacement. Reference (Figure #4)

Figure #1

Component Placement

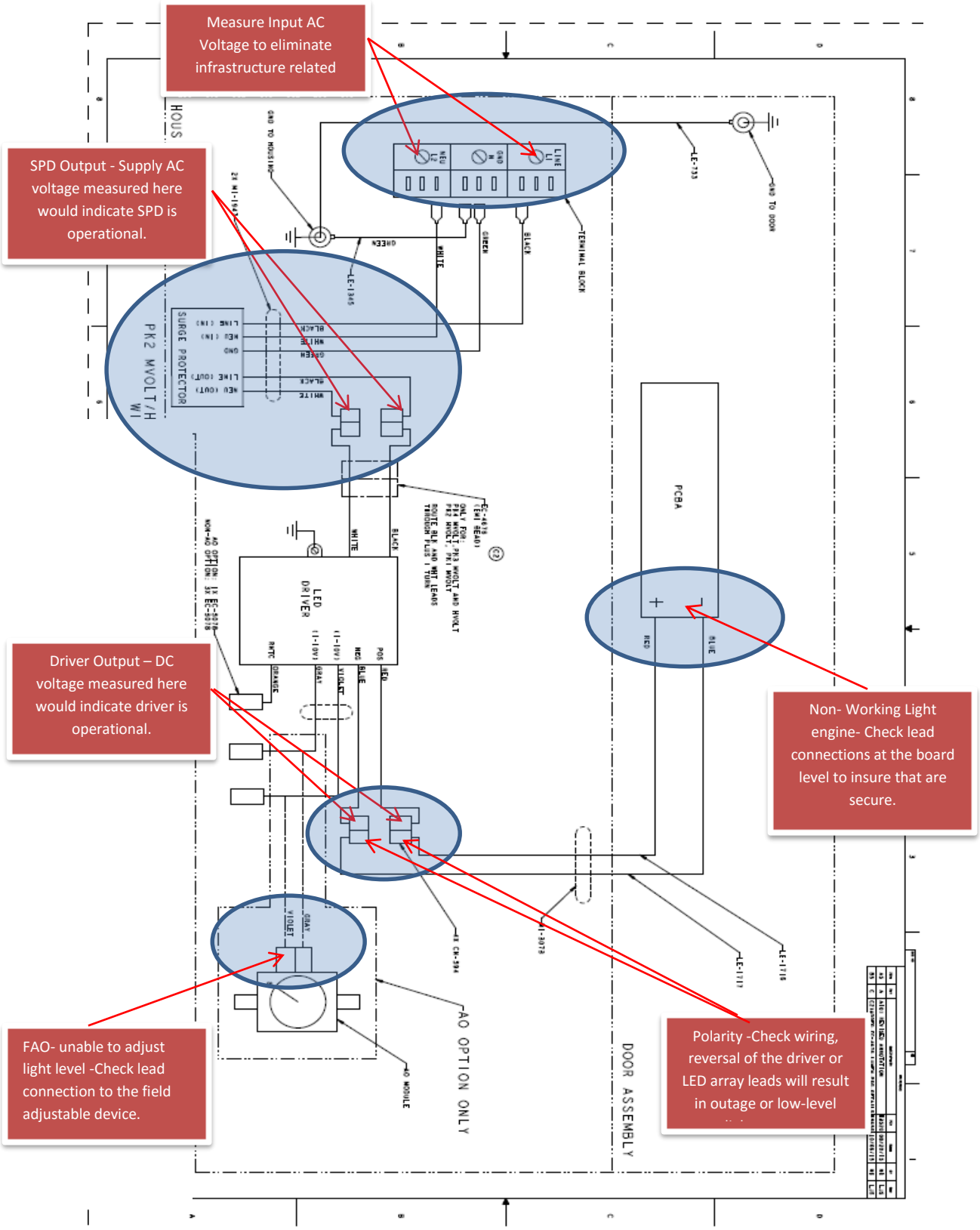
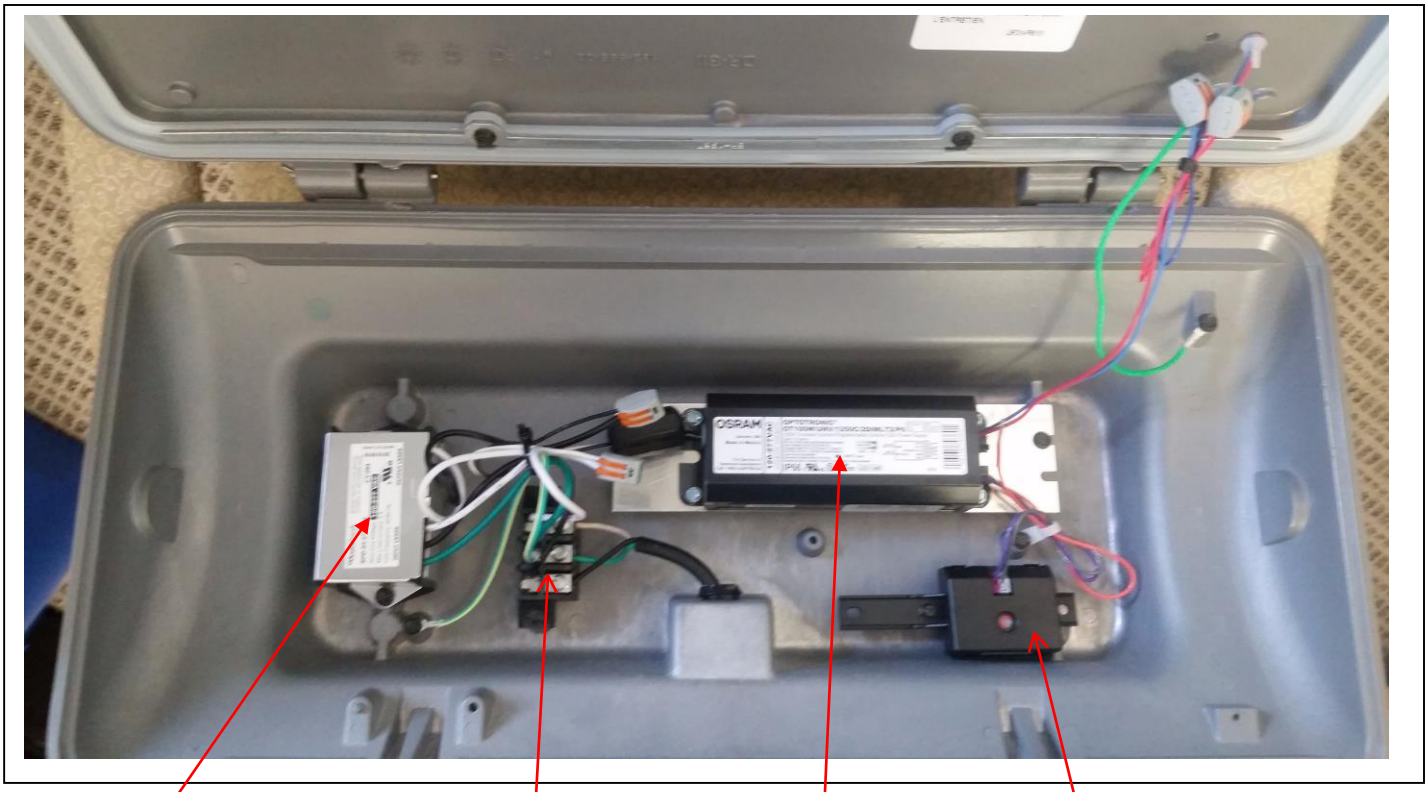


Figure #1A

Internal Component Placement

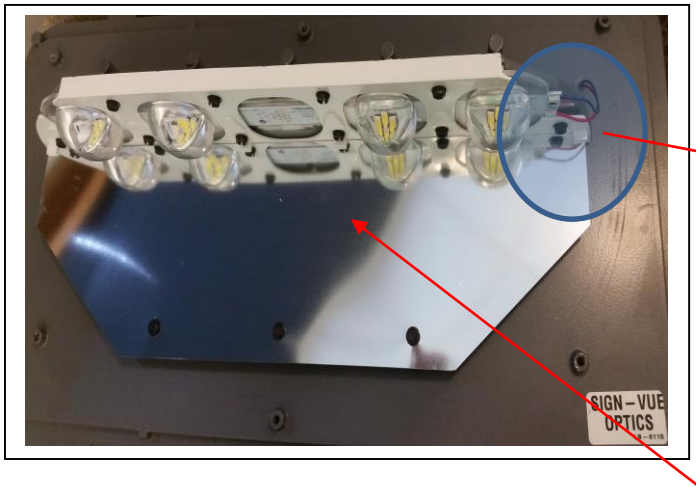


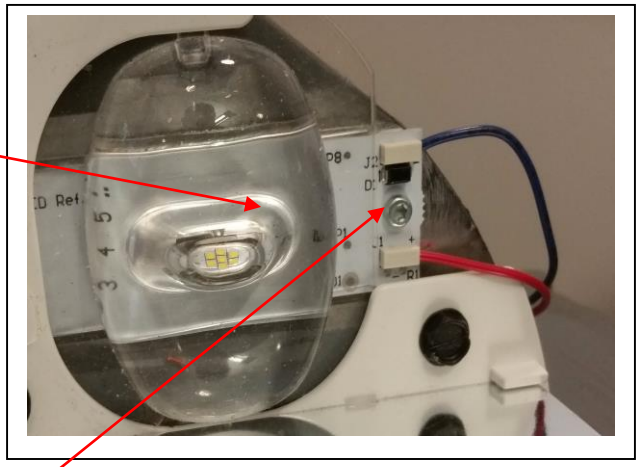
Surge Protection Device with quick disconnect connectors

Input Terminal Block

LED Driver

Field Adjustable Light Level Output Device



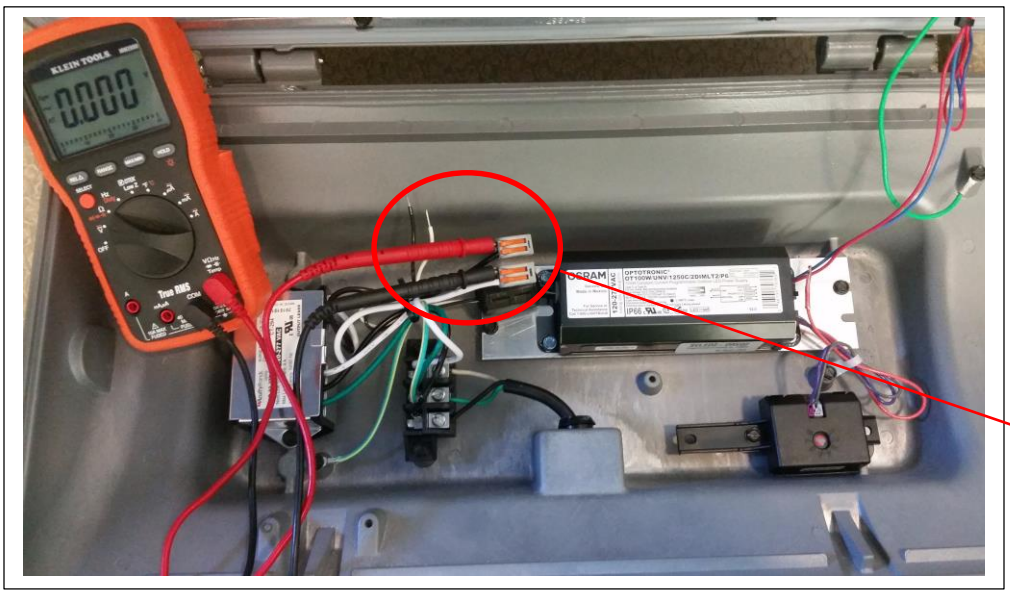


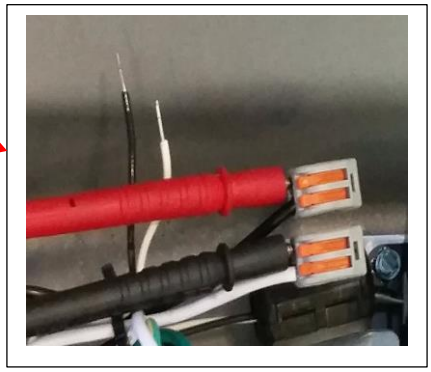
Light Engine / Connections

Figure #2

SPD - (Acuity Brands **S**urge **P**rotection **D**evice)

CT-294 / SURGE SUPPRESSOR </=277V GROUNDED UL SPD-03-277-040)



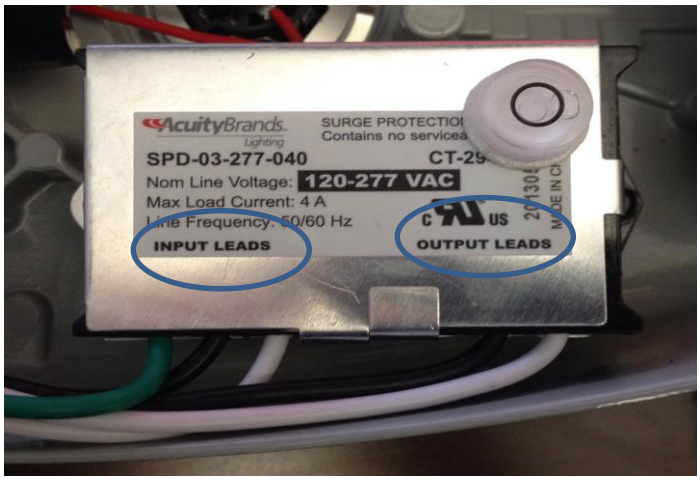


- SERVICING OF THIS EQUIPMENT SHOULD BE PERFORMED BY A QUALIFIED LICENSED ELECTRICAN AND MECHANICAL TECHNICIAN

  - ✓ Need to vailadate that there is AC voltage on the output side of the SPD
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Oper the door to the luminaire by releasing the 2 latches located on the front of the luminaire
  - ✓ Disconnect the input leads of the driver from the wago connectors and from the rest of the circuit
  - ✓ Place the test probe leads in the wago connectors were the input driver leads were removed
  - ✓ Entergize the luminaire and measure the AC voltage to confirm the correct voltage
  - ✓ If no voltage can be confirmed, replace the surge production device and re-test
    Reference (Figure #2, 2A, 2B)

Figure #2A

SPD Replacement



- **Replacent of SPD**
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Oper the door to the luminaire by releasing the 2 latches located on the front of the luminaire
  - ✓ Disconnect both input / output leads from the surge production device
  - ✓ Remove the two screws that secure the device
  - ✓ Replace the surge protection device and re-secure by using the two screws previosuly removed
  - ✓ Reconnect the SPD input leads (3) to the terminal block spade terminals were previosly removed.
  - ✓ Reconnect the SPD output leads (2) to the input driver leads using the 2 wago connectors previosly removed
  - ✓ Close the power door to luminaire and resecure the two latches
  - ✓ Engergize the luminaire to confirm correct operation of luminaire

Note: Surge protection replacement devices must be replaced with same type as approved by Acuity Brands Lighting

Part Number: *212E4A
Description: - RKATB SPD MVOLT (CT-294 / SURGE SUPPRESSOR </=277V GROUNDED UL SPD-03-277-040)

Figure #2B

480V

BSP3 Surge Protector
"End-of-Life" Test Procedure

When a BSP3 Surge Protector reaches **"end-of-life"**, current still passes to the fixture. The luminaire continues to operate. This test is the only reliable way to determine whether or not a Surge Protector has reached end-of-life.

Test equipment:

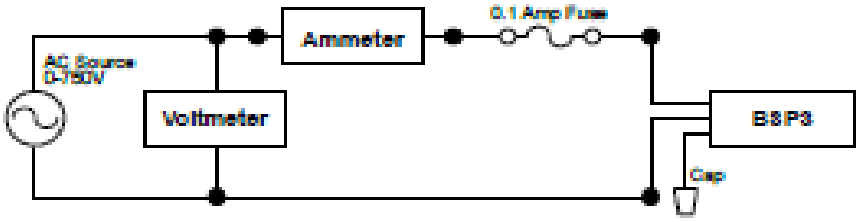
• Ohmmeter	Continuity Test
• Current Meter	0 – 5 Amp
• AC Voltage Supply	0 – 750VAC
• Fuse	0.10 Amp
• Voltmeter	0 – 750VAC

Test For 10kA models

- Connect current meter and 0.1A fuse in series with the surge suppressor being tested.
- Starting at zero volts, ***very*** slowly (10 volts/second) dial up the voltage and monitor the current
- You should see current of > 0.05 amp beginning to flow within voltage ranges show below. (Do not raise the voltage higher than the values listed below.) If there is no current flow when you reach the upper voltage limit, the surge protector has reached end-of-life.
- Once the current starts to rise it will climb very fast; the 0.1A fuse will protect the surge suppressor from damage during test should the voltage go too high.

BSP3-120	150 – 250V
BSP3-208-240	300 – 400V
BSP3-277	350 – 450V
BSP3-347	480 – 600V
BSP3-480	580 – 750V

Repeat Test on all 3 pairs of leads
A. White - Black
B. White - Green
C. Black - Green



Test For 20kA models

Check continuity between all 3 pairs of wires *(Should Be OPEN)*
A. White - Black
B. White - Green
C. Black - Green
Short or 0 ohms indicates end-of-life

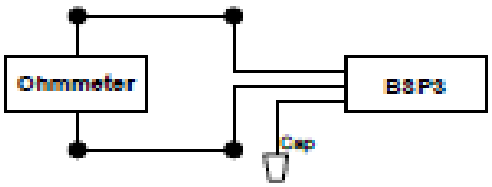
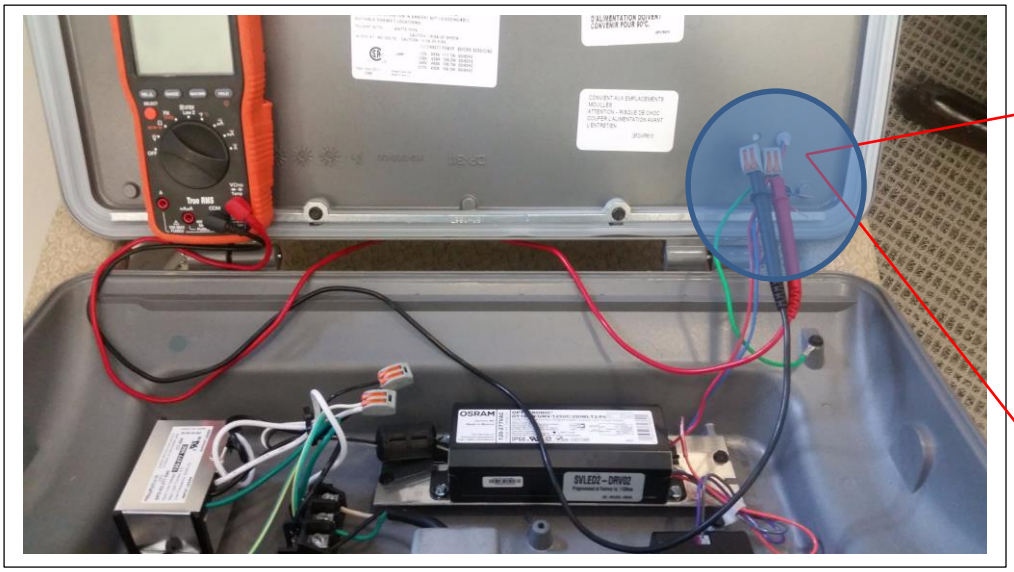
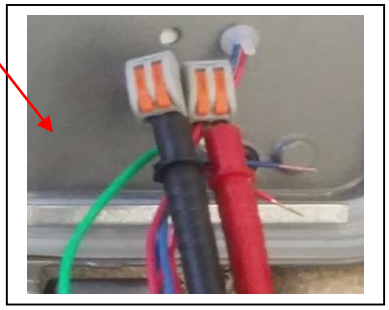


Figure #3

LED Driver Validation



Quick Disconnect (Driver Output / light Engine) 2- Wire Connectors



- SERVICING OF THIS EQUIPMENT SHOULD BE PERFORMED BY A QUALIFIED LICENSED ELECTRICAN AND MECHANICAL TECHNICIAN

  - ✓ Need to vailadate that there is DC voltage on the output side of the LED driver
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Oper the door to the luminaire by releasing the 2 latches located on the front of the luminaire
  - ✓ Disconnect the input leads of the light engine from the wago connectors and from the rest of the circuit
  - ✓ Place the test probe leads in the wago connectors were the input light engine leads were removed
  - ✓ Entergize the luminaire and measure the DC voltage to confirm the correct voltage based on driver sppecifications (Driver data is noted on the label of the driver)
  - ✓ If no voltage can be confirmed, replace the LED driver and re-test
    Reference (Figure #3, 3A)

Figure #3A

LED Driver Replacement

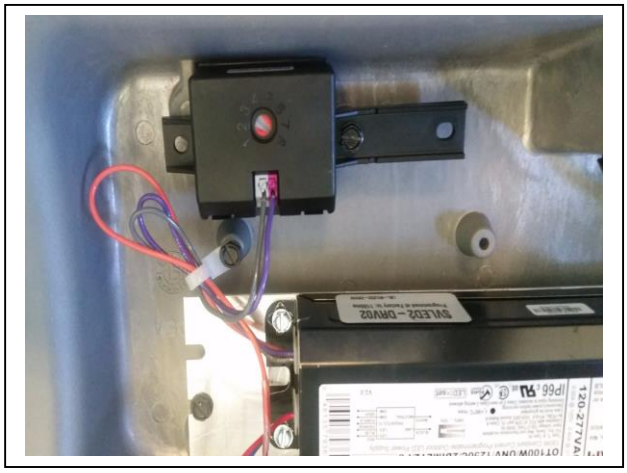
- **Replacent of LED Driver**
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Oper the door to the luminaire by releasing the 2 latches located on the front of the luminaire
  - ✓ Disconnect both driver input / output leads from the wago connectors
  - ✓ Remove the screws that secure the LED driver
  - ✓ Replace the LED driver and secure by using the screws previosuly removed
  - ✓ Reconnect the input leads (2) to the output wago connectors on the SPD that were previosly removed
  - ✓ Reconnect the LED driver output leads (2) to the input light engine wago connectors that were previosly removed
  - ✓ Close the power door to luminaire and re-secure the two latches
  - ✓ Engergize the luminaire to confirm correct operation of luminaire

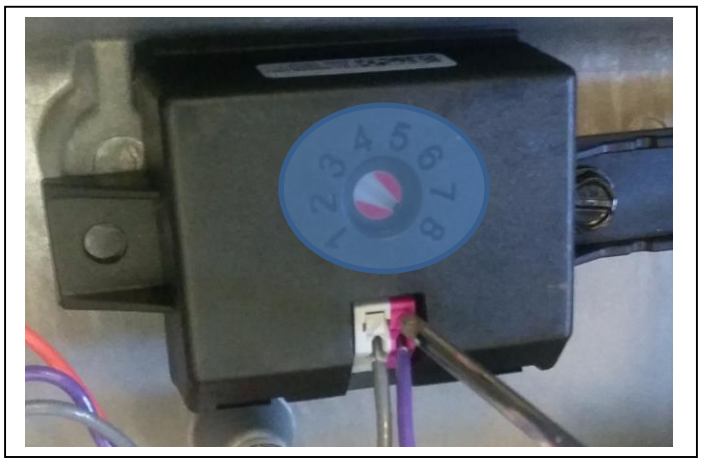
Note: LED drivers must be replaced with same type as provided /approved by Acuity Brands Lighting

Part Number: Part number is identified on the LED driver label
Description: - Driver description is identified on the LED driver label
Note: Provide this information when requesting a LED driver replacement

Figure #4

Field Adjustable Output Module Replacement





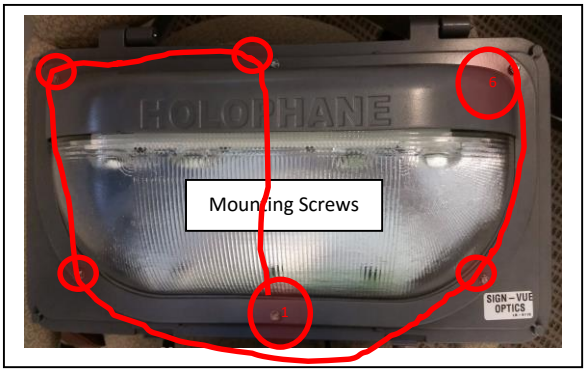
- **Replacent of Field Adjustable Output Device**
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Oper the door to the luminaire by releasing the 2 latches located on the front of the luminaire
  - ✓ Disconnect the purple and gray leads from the module. Use a small screwdriver to push down on the tab to relase each lead
  - ✓ Remove the screws that secure the field adjustable output device module
  - ✓ Replace the field adjustable output module and secure by using the screws previosuly removed
  - ✓ Reconnect the two leads (Purple / gray) leads from the driver to the module that were previosly removed
  - ✓ Reconnect the LED driver dimming leads (2) to the field adjustable output module
  - ✓ Make a quick pull test to insure the leads are secured
  - ✓ Adjust the setting on the device per requirements needed (1 through 8)
  - ✓ Close the power door to luminaire and resecure the two latches
  - ✓ Engergize the luminaire to confirm correct operation of luminaire

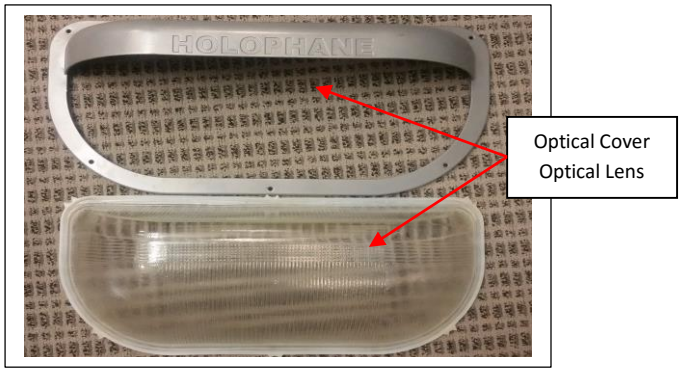
Note: Field Adjustable Output Device must be replaced with same type as provided /approved by Acuity Brands Lighting

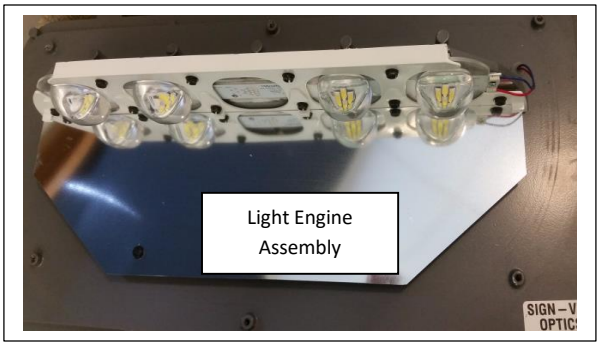
Part Number: 701-00046-001
Description: - Assembly, Field Adjustable Output Module
Note: Provide this information when requesting the field adjustable output device replacement

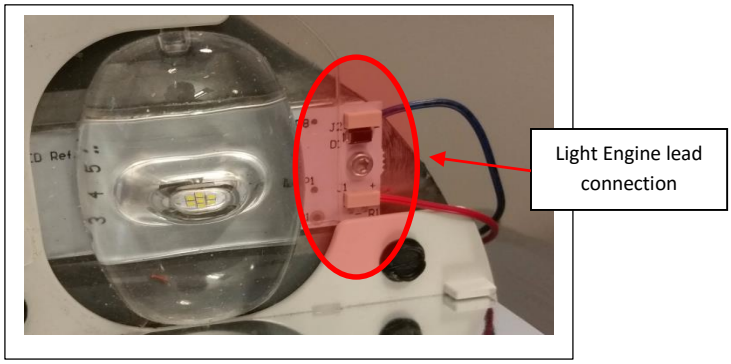
Figure #5

Light Engine Lead Validation









- **Light Engine Lead(s) vaidation**
  - ✓ Disconnnect the input power to the luminaire
  - ✓ Remove the optical cover from the housing assembly by removing the (6) screws
  - ✓ Lift off the optical cover and lens from the housing, set aside
  - ✓ Complete a visual inspection to insure leads (Red / Blue) have been attached to the light engine correctly and the leads are not pinched
  - ✓ Complete a pull test of the leads to insure they have been securly attched to the light engine assembly
  - ✓ Once the valiadation has been completed, repostion the optical lens back over the light engine and housing assembly, insure it is positioned correctly to align with the optical cover
  - ✓ Re-attach the optical cover over the optical lens and position correctly
  - ✓ Secure the optical cover to the housing using the screws removed eariler
  - ✓ All screws must be tighten in the pattern noted above and torqued to 25-35 in LBS.

Note:

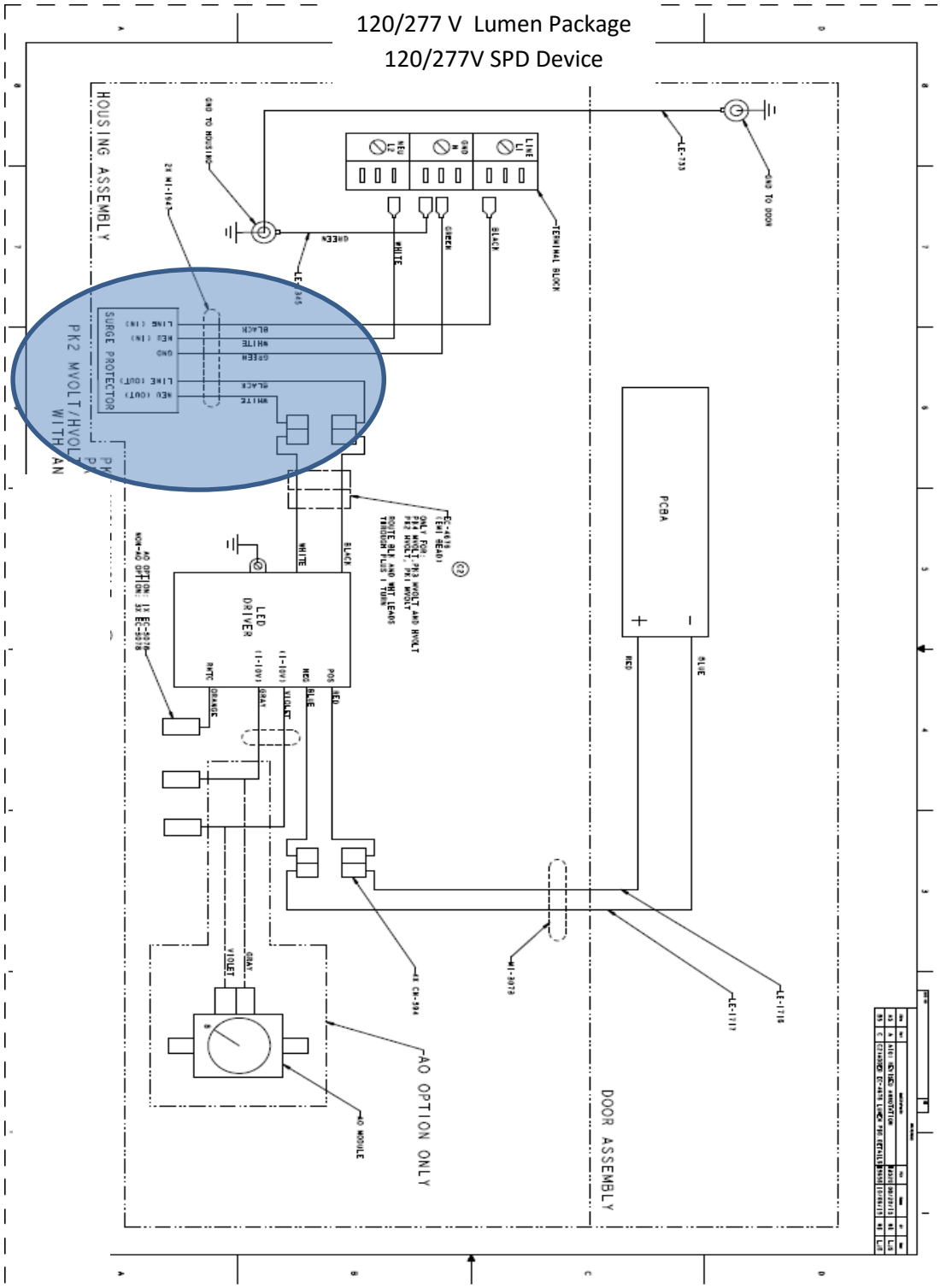
- All testing must be completed in a clean room invarorment as not to contamiante the light engine assembly
- The light engine can not be repaired or replaced in the field, If defective, contact your customer care representative to request a luminaire replacement

SignVue Series Wiring Schematics

Figure #6

120/277 V Lumen Package

120/277V SPD Device

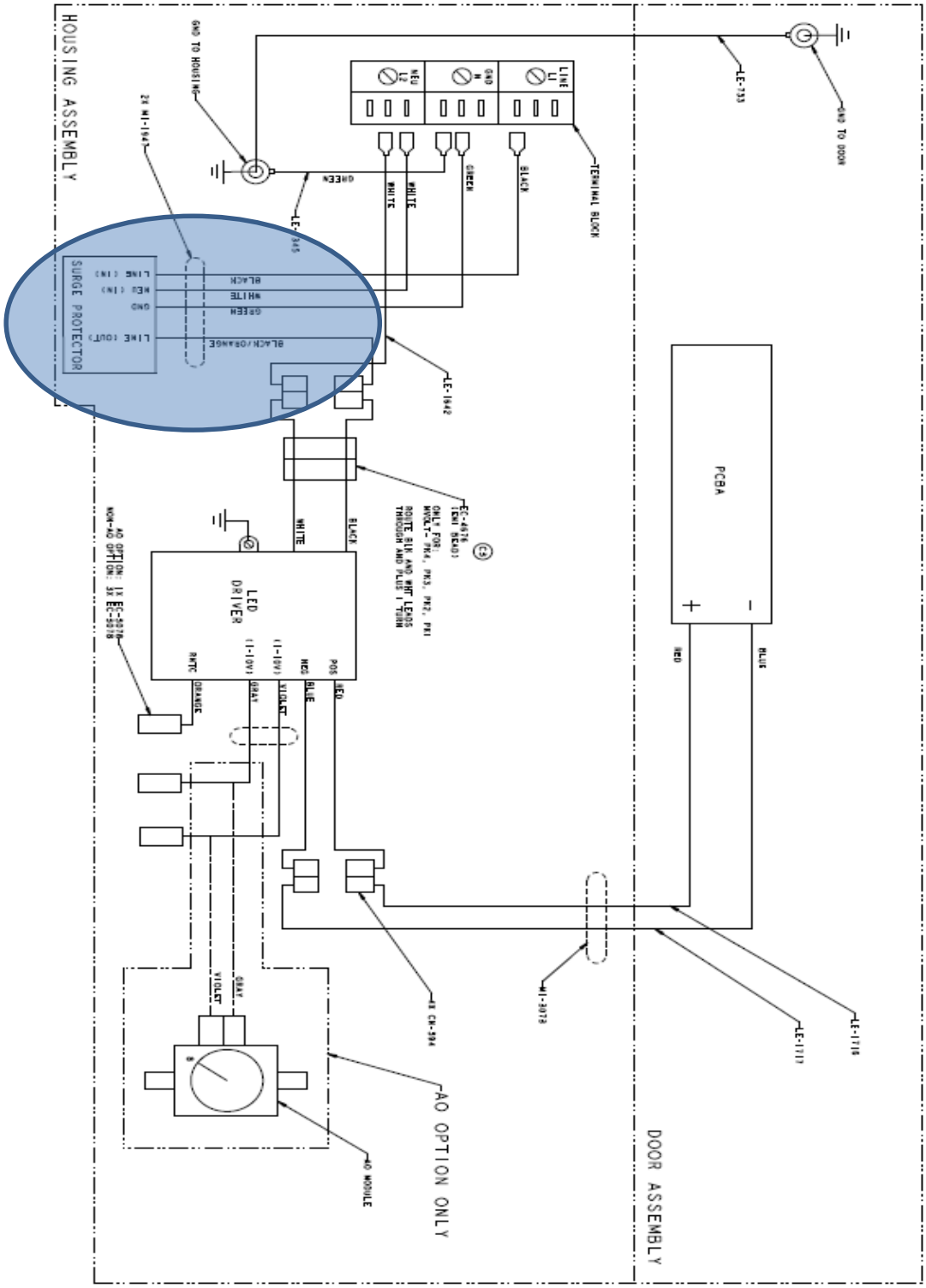


SignVue Series Wiring Schematics

Figure #6

480V Lumen Package

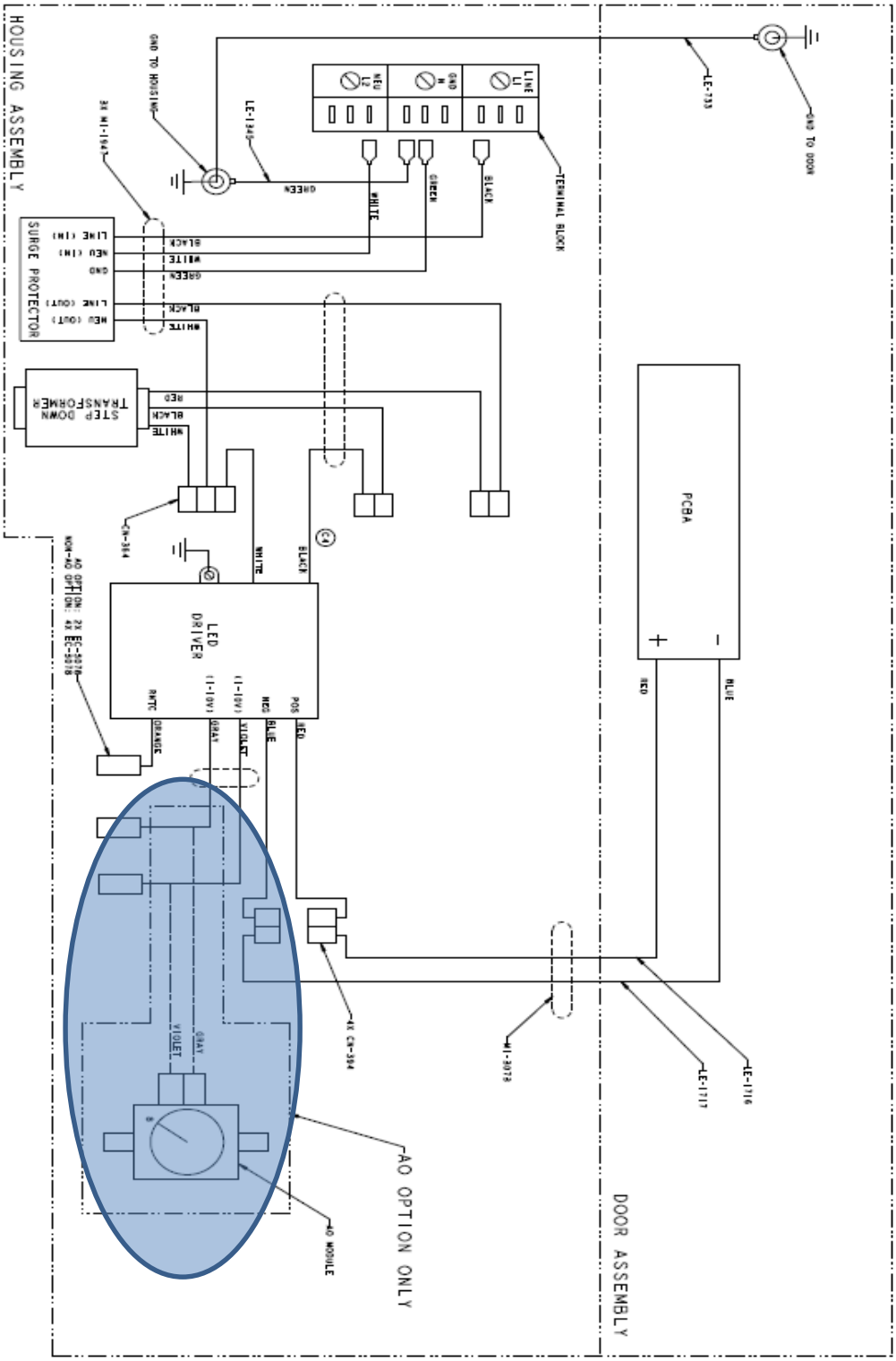
480V SPD Device



SignVue Series Wiring Schematics

Figure #6

Field Adjustable Output



SignVue Series Wiring Schematics

Figure #6

24Volt DC

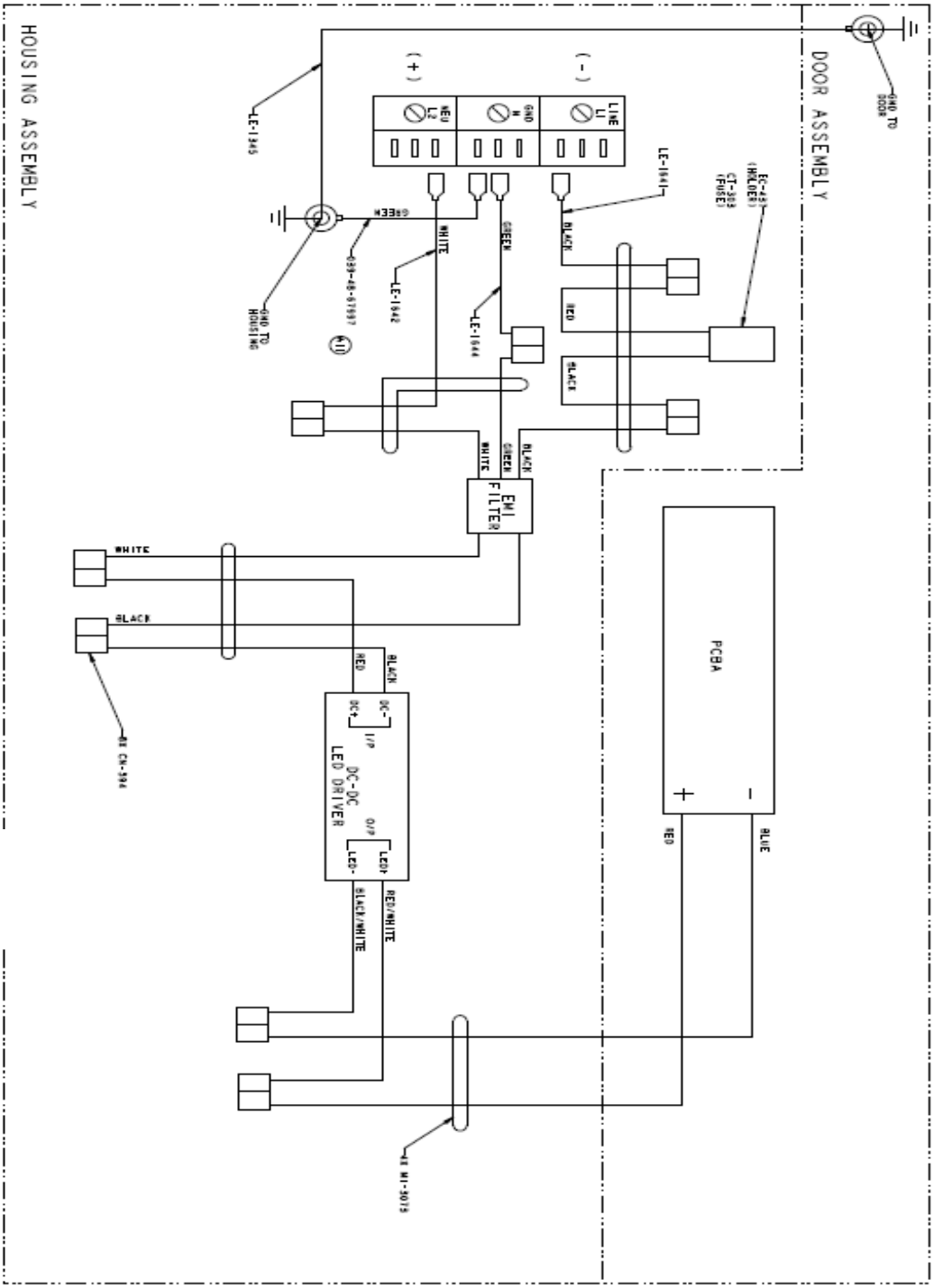


TABLE 5. DRIVER PROGRAMMING DETAILS (MVOLT / HVOLT)							
VOLTAGE OPTION	PERFORMANCE PACKAGE	SUB-ASSEMBLY	ACUITY DRIVER PART #	MFG. PART #	SET VALUE (DRIVE CURRENT)	LABEL IDENTIFICATION	VENDOR
MVOLT	PK4	SVLED2-DRV01	702-00139-004	OT180W/UNV/1250C/2DIMLT2/P6	PRE-PROGRAMMED TO 1250MA	LBL-SVLED2-DRV01	OSRAM
	PK3	SVLED2-DRV02	702-00154-004	OT100W/UNV/1250C/2DIMLT2/P6	PRE-PROGRAMMED TO 1150MA	LBL-SVLED2-DRV02	
		SVLED2-DRV06	702-00154-001	OT100W/UNV/1250C/2DIMLT2/P6	1150MA	LBL-SVLED2-DRV02	
	PK2	SVLED2-DRV02	702-00154-004	OT100W/UNV/1250C/2DIMLT2/P6	PRE-PROGRAMMED TO 1150MA	LBL-SVLED2-DRV02	
		SVLED2-DRV06	702-00154-001	OT100W/UNV/1250C/2DIMLT2/P6	1150MA	LBL-SVLED2-DRV02	
	PK1	SVLED2-DRV03	702-00189-001	OT50W/UNV/1250C/2DIMLT2/P6	1050MA	LBL-SVLED2-DRV03	
HVOLT	PK4	SVLED2-DRV04	702-00159-004	OT180W/347-480V/1250C/2DIMLT2/P6	1250MA	LBL-SVLED2-DRV04	
	PK3	SVLED2-DRV05	702-00224-001	OT100W/347-480V/1250C/2DIMLT2/P6	1150MA	LBL-SVLED2-DRV05	
	PK2	SVLED2-DRV05	702-00224-001	OT100W/347-480V/1250C/2DIMLT2/P6	1150MA	LBL-SVLED2-DRV05	
	PK1	SVLED2-DRV03	702-00189-001	OT50W/UNV/1250C/2DIMLT2/P6	1050MA	LBL-SVLED2-DRV03	

Acuity Brands Lighting
3285 Columbus Road SW
Granville, Ohio 43023

Phone: 1-740-349-4182,
Email: fieldservice@acuitybrands.com