AirportLightingCompany
An ISO 9001:2015 Certified Company

OWNER'S MANUAL

TP312I-Lux
LEDV3 LED Strip

AirportLightingCompany
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TP312 I-Lux
LEDV3 LED Strip

ETL Certified to:
Transport Canada TP 312, 5th Edition

Manufactured by:
Airport Lighting Company
108 Fairgrounds Drive
Manlius, New York 13104
(315) 682-6460

Email: info@airportlightingcompany.com
Website: www.airportlightingcompany.com

DATA SHEET

AirportLightingCompany
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TP312 I-Lux LEDV3 LED Strip

Compliances (Current Editions)

Compliant with Transport Canada TP 312, 5th Edition

Intertek

Key Features

- IP68 LED Strip
- Aluminum cabinet
- Acrylic panels
- Stainless steel hardware
- Class
- The average LED life is 100,000 hours high intensity / 180,000 hours under typical operating conditions
- Platform for cabinet machined from solid, heavy-gauge aluminum construction – rather than aluminum cabinet
- Seamless panels display messages without distortion made of acrylic

General Catalog Numbers

CA-I□□J□.□SF□

Sign Size
2 = 600mm panel, 1200mm Overall Height
4 =1200mm Panel Height

Sign Style
2 = Style 2 (3 step 4.8A - 6.6A)
3 = Style 3 (5 step 2.8A - 6.6A)
5 = Style 5 (1 step 5.5A)
S = Solar

Light Option
J = LEDV3

Length *(meters)*
0.8 to 3.8
Size 4 – 1.0 only
(see chart on next page)

Sign Faces
SF = Single Face
DF = Double Face (Size 4 only)

Options
1 = On/Off Switch (with cover)
P = View Port
S = LED Lamp Out Indicator
A = Alternate Leg Spacing*
L = Power Cord Through Leg
E = Custom Length Frangible*
T = 300mm Character Height

Sign Size & Legend Height

Sign Size	2 600mm
Legend Height	400mm (Standard) or 300 mm

Specifications

Cat. #	Sign Length	Visible Panel	Xfmr	VA	PF	Legs	Leg Centers	Edge to power leg
CA-I23J3.8SF	3800	3735	500	113	0.91	8	482	211
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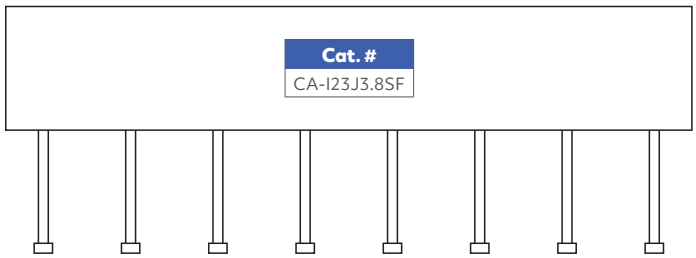

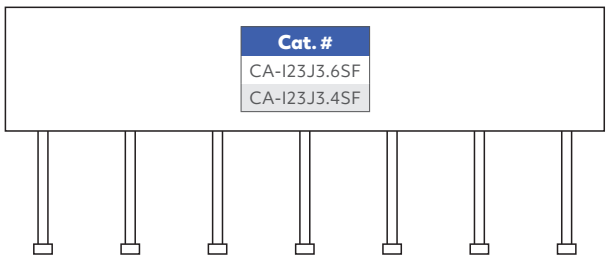

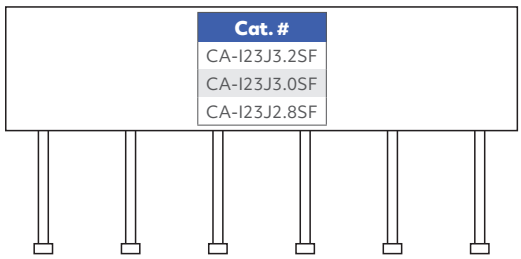

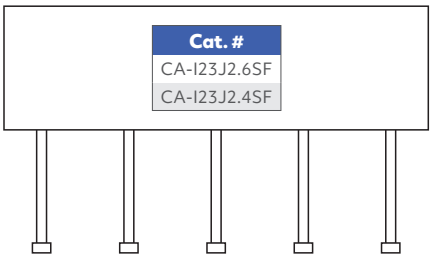

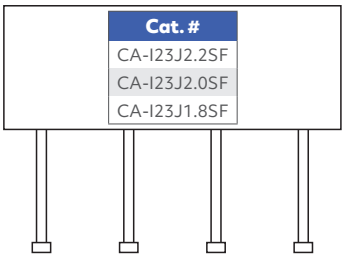

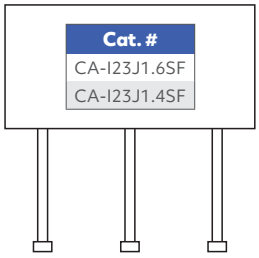

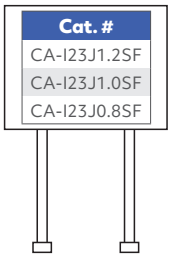

intertek
Total Quality. Assured.

Test Verification of Conformity

Verification Number: 104677408CRT-001TVOC

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. This verification is part of the full test report<s> and should be read in conjunction with it <them>.

Applicant Name & Address:	AGM Airfield Guidance Sign Mfrs Inc 108 Fairgrounds Dr Ste 8 Manlius, NY 13104-2450 USA
Product Description:	Internally Illuminated Mandatory / Informational sign & Runway Distance Marker
Ratings & Principal Characteristics:	Mandatory / Informational; Face-600mm Legend 400mm, 60" White LED light source, operating range 2.8A – 6.6A @ conditions less than RVR2600 (½ SM) Runway Distance Marker; Face-1200mm Legend-1,000mm, 175" White LED light source, operating range 2.8A @ conditions greater than RVR2600 (½ SM) & 3.4A – 6.6A @ conditions less than RVR2600 (½ SM) Internally lighted (night-time only), non-retroreflective
Models/Type References:	CA-I2XJX.XXFXX (Mandatory / Informational) & CA-I4XJX.XXFXX (Runway Distance Remaining)
Specification<s>/Standards:	Transport Canada Aerodrome Standards and Recommended Practices, Land Aerodromes, TP312, 5th Edition, Effective date: September 15, 2015, Updated Jan 15, 2020. Photometry - Sections 5.4.7.13 to 5.4.7.18 Chromaticity – Appendix 5A, Section 2.1.4 (not including daytime externally lighted conditions and luminance factors) Frangibility – Section 5.4.7.24 Lamps Out – Section 5.4.7.19 General – Sections 5.4.7.1 - 5.4.7.11
Verification Issuing Office Name & Address:	Intertek Testing Services NA, Inc. 3933 US Rt 11 Cortland, NY 13045 USA
Test Report Number(s):	104677408CRT-001, LED V2 TP312 Frangibility Report

Additional information in Appendix.

Signature:
Name: Jeremy N. Downs, P.E.
Position: Senior Staff Engineer
Date: 25 August 2021

TABLE OF CONTENTS

AirportLightingCompany
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Have Questions? Contact Us:

GENERAL INQUIRY: (315) 682-6460

EMAIL: info@airportlightingcompany.com

TECHNICAL SUPPORT: (866) 212-1060

EMAIL: support@airportlightingcompany.com

WEBSITE: www.airportlightingcompany.com

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108 Fairgrounds Drive
Manlius, New York 13104

Statement of Warranty

Airport Lighting Company's L858(L) Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation per FAA AC 150/5345-44. Where applicable, per FAA EB67, ALC L-858(L) Airfield Guidance Signs are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years. ALC will correct such by repair or replacement, at its option, provided the signs have been properly handled and stored prior to installation, properly installed and operated after installation, and provided further that the buyer has notified ALC in writing within the warranty period and a reasonable time after notice of such defects. Refer to handling, storage, installation and operational instructions for proper procedural guidance that must be followed to maintain warranty provisions.

This warranty is in effect for the specified term as long as the equipment has not been, in ALC's judgment: altered in such a way as to affect the equipment adversely; subjected to accident, negligence, and/or improper storage; and has been operated and maintained in accordance with accepted FAA guidelines as described in AC 150/5340-26 and ALC's published operational guidelines.

ALC reserves the right to examine signs on which a claim has been made. Equipment must be presented in the same condition as when the defect was discovered. ALC also reserves the right to require the return of equipment to establish any claim.

Disclaimer: Airport Lighting Company's obligation under this warranty is limited to repair or replacement of defective equipment sold by ALC. This does not include any other costs such as the cost of removal, shipping, or installation of the defective part or repaired product, including labor or any consequential damages of any kind. ALC shall not be liable for any indirect or consequential damages.

Under no circumstances will ALC's liability exceed its sales price of the signs claimed to be defective. All transportation costs under this warranty are the responsibility of the buyer. Replacement parts and/or equipment provided under this warranty are covered under the same terms until the expiration of the original warranty period that began upon the first installation of the equipment.

This is ALC's sole and exclusive warranty with respect to the equipment sold to the buyer. There are no express or implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein.

ALC shall not be liable to the buyer of this product or third parties for indirect or consequential damages, or for damages arising from the use of any options or parts other than those designated by ALC as approved products. Damage caused by lightning, flood and other natural or man-made causes are outside the scope of this warranty.

I-Lux Sign Handling

Airport Lighting Company's I-Lux signs are shipped in a corrugated wrapping to protect against abrasion during shipping. The packaged signs are meant to be hand carried (sling straps are effective) or placed on dolly carts. The packaged sign is NOT designed to be handled by forklifts.

Make sure to note any damage that occurred during shipping when receiving the signs and be sure to document it with the carrier. When installing the sign make sure that the correct isolation transformer is connected.

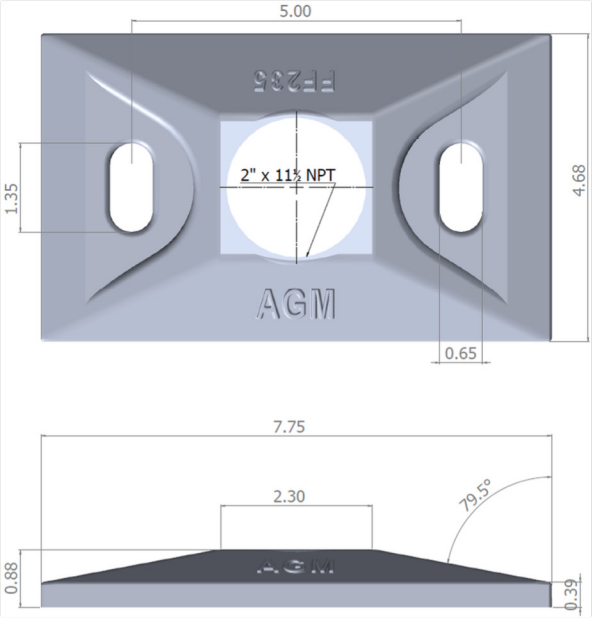
I-Lux Sign Storage

If the signs are to be stored before installation, keep them in the original corrugated wrapping for protection and store them upright in a dry location. If the corrugated wrapping becomes wet, it should be removed and recycled because it can cause damage as a result of aggravated humidity. If the corrugated wrapping is removed, keep the protective plastic on the legend panels until installation. This provides the last layer of protection in the absence of the corrugated wrapping. Damage resulting from improper storage is not covered by warranty.

Installation

Some steps not applicable for installation of signs furnished with external power cords

1. Place sign on the pad with long dimension of the floor flanges perpendicular to the length of the sign.
2. Mark anchor bolt locations.
3. Move the sign out of the way.
4. Drill mounting holes for anchor bolts.
5. Install isolation transformer into the base can.
   - Check technical data sheet to make sure correct wattage is used.
6. Secure cable clamp to transformer secondary lead or secondary extension cord.
7. Reposition the sign on the pad and hold at an angle.
8. Pull power cord out of sign leg and plug it into the transformer secondary lead or extension cord.
9. Rotate the sign to the upright position over the anchor holes being careful to not pinch the power cord.
10. Insert the anchor bolts and loosely clamp the floor flanges to the pad.
11. Loosen the pinch bolts in the slip flanges.
12. Tighten the anchor bolts on the floor flanges.
13. Tighten the pinch bolts in the slip flanges against the couplings.
14. Remove the protective plastic on the panels, being careful not to create foreign object debris (FOD).
15. When work is done on the circuit, verify sign operation between dusk and dawn.



Floor Flange Dimensions

I-Lux Sign Maintenance

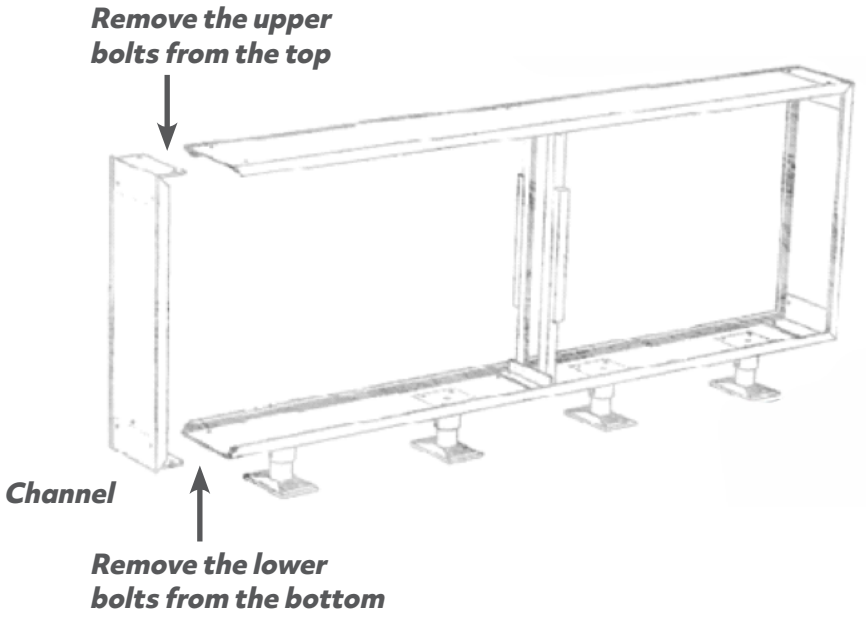
Airport Lighting Company's signs are designed to provide years of trouble-free service. Prior to the performance of any work on the signs, power should be disconnected at the vault. We recommend an annual inspection and cleaning of the sign interior to maintain bright and even light output. Inspection of the signs should also include regular removal of any excess dirt, snow, and avian excrement from the sign exterior to maintain proper visibility of the sign legend.

I-Lux Cabinet Access

a. Remove the bolts from the top and bottom surface of the side opposite the power end.

b. Slide the sign side cabinet extrusion out.

c. Remove a legend panel by sliding it out the open end of the sign.



LEDV3 Strip in Mounting Channel

LEDV3 LED Strip Operation

Airport Lighting Company's LEDV3 strip light engine uses high efficiency LEDs to illuminate the guidance sign. Per FAA Engineering Brief 67 and TP312, if more than the maximum LED failures allowed occur, the whole sign is to turn off. The adaptive monitoring board is calibrated with the new LEDV3 strip, and monitors the current draw for failures.

LEDV3 LED Strip Troubleshooting

If the sign operates but for no more than 10 seconds after power-up, the adaptive monitoring board has sensed a drop in current that correlates with the maximum permitted LED failures and has turned itself off in compliance with specifications. The LEDV3 LED Strip must be replaced.

All Airport Lighting signs have been tested at the factory and set to function within relevant specifications. Installation and operation issues most frequently trace back to an undersized isolation transformer or to damage during shipping. Before commencing repairs, please contact AGM (866.212.1060 or support@agmsigns.com) with the catalog number and serial number from the name plate of the malfunctioning sign to determine warranty coverage. If the LED strip and isolation transformer appear functional, and any operating issues have not been resolved after following the troubleshooting guidelines, please call us; we are pleased to assist you. We keep parts in stock and ship within 24 hours.

BEFORE PERFORMING MAINTENANCE ON AN AIRFIELD GUIDANCE SIGN, VERIFY THE SIGN'S CIRCUIT IS OFF AND LOCKED OUT FROM ACCIDENTAL ENERGIZATION.

Using a Ture RMS clamp-on ammeter, verify that the current on one lead of the power cord matches desired current of the airfield circuit. If the reading is not very close to that desired, then there could If the sign operates but for no more than 10 seconds after power-up, the adaptive monitoring board has sensed a drop in current that correlates with the maximum permitted LED failures and has turned itself off in compliance with specifications. The LEDV3 LED Strip must be replaced and the adaptive monitoring board recalibrated.

LEDV3 LED Strip Replacement

1. De-energize power to the sign and open the cabinet per the instructions on page 8.
2. Remove the blank panel.
3. Remove the leads of the LEDV3 LED strip from the adaptive monitoring board.
4. Unbolt the LED channel from the support posts and remove from the sign cabinet.
5. Make note of the end of the extrusion that has the leads.
6. Pull on the leads of the LED strip to begin sliding the strip out of the extrusion.
7. Once some of the strip is exposed, pull on the strip instead of the leads.
8. Remove the LEDV3 LED strip from the extrusion.
9. Install the new LEDV3 LED strip by either sliding it into one end of the extrusion or pressing it down gently but firmly into the extrusion.
10. Bolt the channel back onto the support posts.
11. Install the leads into the adaptive monitoring board.
12. Energize the sign.
13. Press the Calibrate button on the adaptive monitoring board.
14. Replace the blank panel.
15. Bolt the cabinet back together.

If the sign does not operate:

1. Ensure that power to the sign has been turned off, then access the I-Lux cabinet by following the instructions on page 8. Slide the blank panel out enough to access the power supply assembly.

2. Cycle the power to the sign remotely or by using the optional isolating safety switch on the sign.

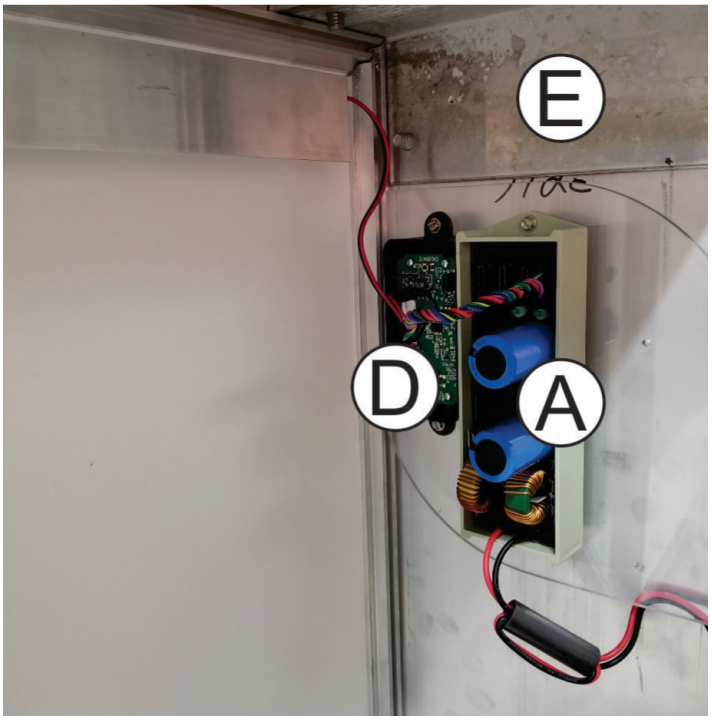
3. Confirm the LVCV2-24 has two lighted green LEDs. If it does, skip to step 4.

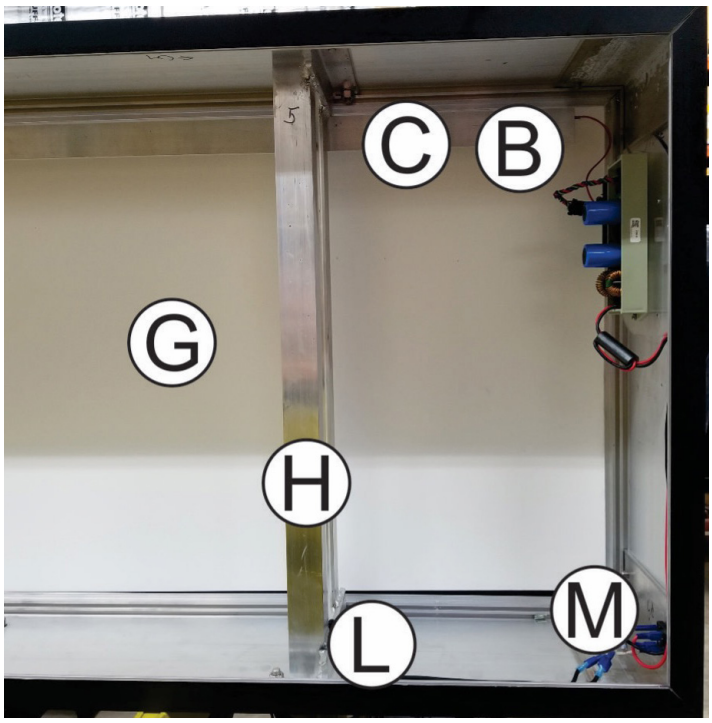
    a. If it does not, use a True RMS clamp-on ammeter to verify that the current on one lead of the power cord matches desired current of the airfield circuit. If the reading is not very close to that desired, then there could be a problem with the isolation transformer or regulator providing power to the sign. If the CCR current is confirmed as accurate, lock out the circuit and verify the condition of the isolation transformer for the sign.

    b. Once correct input current is established, and if the LVCV2-24 does not have two lighted green LEDs, de-energize the sign and ensure the bridge rectifier is functioning properly by taking a DC voltage reading across the red and black wires exiting the bridge rectifier. With the circuit off and locked out, note the position of where the wires connect on the terminals and then remove them from the connecting posts of the bridge rectifier. The corners with red and black wires are the DC output of the bridge rectifier. The positive red (+) wire is always connected to the terminal that is 90° different in orientation than the others and is located on the small diagonal corner of the bridge rectifier.

    c. Using an RMS multi-meter, set the operation for diode testing and place the black negative lead on the positive terminal of the bridge rectifier, and the red positive lead on the negative terminal of the bridge rectifier in the corner opposite the positive terminal. If the meter reads close to 0.90VDC to 1.00VDC the bridge rectifier is good, and the LVCV2-24 needs to be replaced. If it reads approximately 0.40VDC to 0.60VDC the bridge rectifier is bad and needs to be replaced.

4. If the LVCV2-24 has two lighted green LEDS, confirm the Adaptive Monitoring Board has a flashing green LED. If not, replace it.



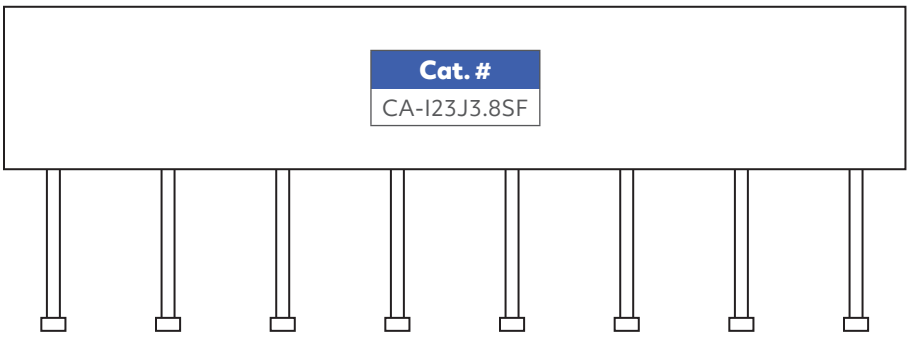


	Part #	Description
A	C7-LVCV2-24	Low Voltage Control V2, 24 VDC
B	I7-LEDV3X.XM	LEDV3 LED Strip
C	I7-LSCX.XM	LED Mounting Channel
D	C7-ADAP	Adaptive Monitoring Board
E	I6-CBT	Corner Bracket
F	I8-2LPX.X	Legend Panel *Not pictured*
G	I8-2BPX.X	Blank Panel
H	I6-2SP	Support Post

	Part #	Description
I	C6-SF6	Slip Flange *Not pictured*
J	CA-I6FC625MM	Flangible Coupling *Not pictured*
K	C6-FF235	Floor Flange *Not pictured*
L	C7-60PC	Power Cord
M	C7-BRG	Bridge Rectifier
O	I9-INP	Name Plate *Not pictured*
	C7-GDTH	Gas Discharge Tube Harness

When ordering: X.X = sign cabinet length (from Cat #)

Dimensions & Electrical Characteristics



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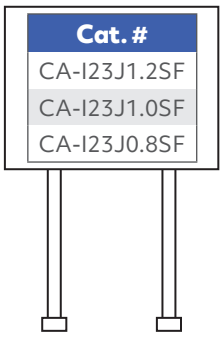

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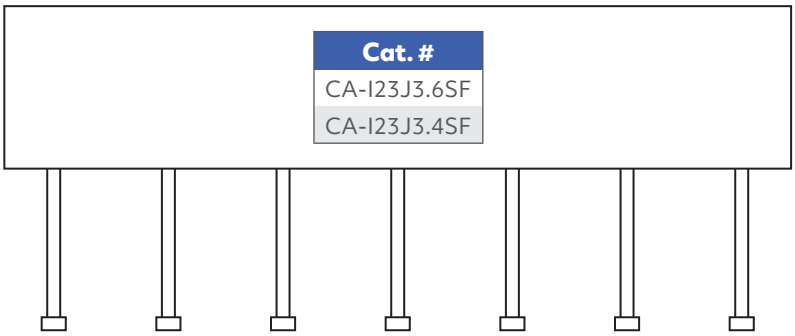
CA-I23J0.8SF



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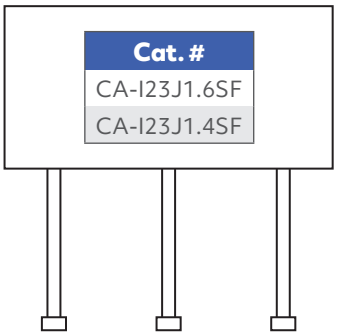

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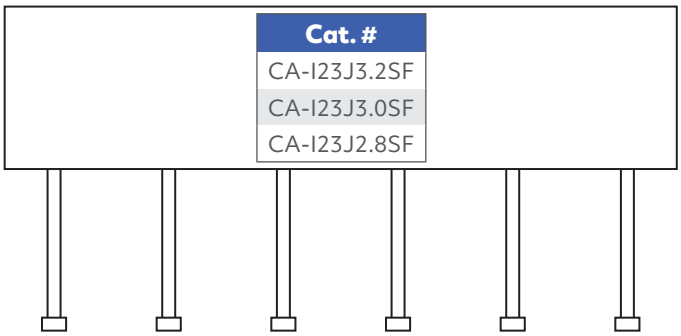

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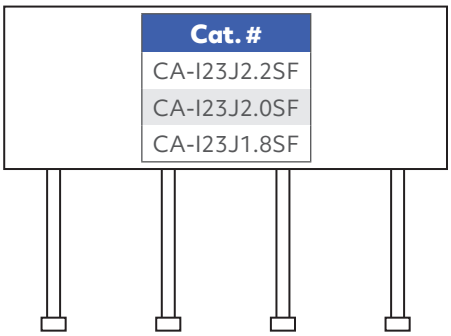

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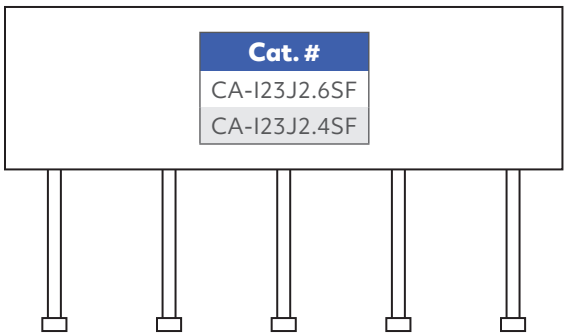
CA-I23J1.8SF



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NOTES