



Document Title:
Bracket Galvanized Steel for Single or Truss Type Aluminum Street Light Arm

Document Type: **Specification** Engineering Type: **Material Specification** Document No.: **4402.037**

Department: **Street Light Program** Version: **04** Effective Date: **May 20, 2024**

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Related/Referenced Documents

N/A

Version History

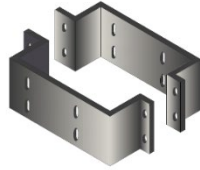
Version	Date	Revision Comments
1	May 24, 2023	Initial Release.
2	September 20, 2023	General format modifications and sections.
3	October 18, 2023	Modified number to Street Light section.
4	May 17, 2024	Modified Sections 9.2, 12 and drawing.



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Single or Truss Type Aluminum Street Light Arm
Document No.: 4402.037
Department: Steet Light Program

Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
002-84846	84846	4	5/17/2024
002-84847	84847	4	5/17/2024



1. Introduction

This is a general specification that bracket galvanized steel for single or truss type aluminum streetlight arm used in the distribution system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general electrical and mechanical characteristics of the equipment/material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this equipment/material to LUMA on previous orders will not have to furnish samples at bid opening. The equipment/material will be received at the LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Literature

Descriptive and technical literature must be supplied by the vendor at time of bidding. This literature may include, but is not limited to details of material, drawings, documented testing, and instructions for use and installation. Failure to submit documents on time will cause bidder disqualification. Evidence of LUMA Energy's approval of the equipment/material shall be supplied by the vendor if requested by LUMA Energy.

4. Markings

- 4.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 4.2. Packaging labels and tags shall be waterproof.

5. Compatible with

- 5.1. See Table 1 for compatible manufacturers and models.
- 5.2. These models are examples of the equipment/material described in this document and do not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event.

6. Packaging

All equipment/material shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily

identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.

7. Number Per Package (Logistics)

One (1) set of (2) two pieces per box or as requested by LUMA.

8. Acceptance criteria

- 8.1. Certified vertical and horizontal load resistance tests.
- 8.2. Latest applicable codes, standards, and other regulations: ANSI/ASTM – PREPA/LUMA.
- 8.3. ASTM A635/A635M – Standard specification for hot-rolled, heavy-thickness, and high-strength low-alloy with improved formability sheet and strip coils.
- 8.4. ASTM A153/A153M or ASTM F2329/F2329M.

9. Description

This specification is for the purpose of the bracket galvanized steel to support the electrical distribution system. The bracket to be used for the installation of single and truss type aluminum arms in square concrete poles when no holes and slots pattern are available for arm installation. The specifications are divided into two parts in the Technical Characteristics and the Special Conditions. The Technical Characteristics will include the material, design, drawings, final approval before manufacture, and failure to meet guarantees. The Special Conditions shall include all dimensions and descriptions.

9.1. Technical Characteristics

a. Material:

1. Standard specification for zinc coating (hot dip) on iron and steel hardware.
2. All hot-dip galvanizing.
3. All welding and holes shall be done before galvanizing.

b. Design

The supplier is responsible of the design. The bidder will have to deliver the final computations and all design parameters considered. If the design was performed by a computer program, the supplier shall submit the runs generated by the program.

c. Drawings

The supplier shall submit any applicable drawing for the bid proposal at PDF format and it shall include the following information:

1. General dimensions of all the bracket components.
2. Weight for each bracket.
3. A bill of materials. (If applicable)

4. Details of all accessories. (If applicable)

d. Final Approval before Manufacture

If requested by LUMA Energy, final design calculations shall be submitted before fabrication commences together with the shop drawing for LUMA approval.

e. Failure to Meet Guarantees

Should any piece of equipment fail to meet the guarantees and the requirements of these specifications within the time covered by the guarantee, it shall be optional to the Engineer to accept the material or reject it and direct the manufacturer to at once proceed to make alterations or furnish such new parts as may be necessary to make it meet the guarantees and requirements. All expenses of furnishing and installing new parts by failure of the material to meet the guarantees and other requirements of the specifications will be manufacturer's responsibility.

9.2. Special Conditions:

a. Dimensions and descriptions

1. The bracket shall consist of two (2) pieces; both with slots for the installation of the luminaires arm, and the other for the opposite side of concrete pole to match in a secure position to the first one.
2. Both pieces are to be attached to each other with four (4) 5/8 X 10 in. double arming bolts.
3. The bracket shall be manufactured of ¼ in. minimum wall thickness.
4. Holes pattern to fix the two pieces: Brackets shall be furnished with two (2) 5/8 in. diameter mounting holes in each side.
5. Holes must be centered in each side flange at the horizontal axis and at two inches vertically measured from the center of each hole to the top and bottom of the plate.
6. The vertical distance between holes per side is 4 in. measured from the center of each hole.
7. Slots pattern for arm installation: both brackets of the set must include four, two (2) inches mounting slots, for a 5/8 in. diameter bolt.
8. The two upper slots shall be located at 2 in. from the top of bracket to the slot center, must have 8 ½ in. horizontal separation measure from the center of each slot, and must be horizontally centered.
9. The two lower slots shall be located at 2 in. from the bottom to the slot center, must have 8 ½ in. horizontal separation measure from the center of each slot, and must be horizontally centered.



10. The vertical distance between upper and lower slots must be 4 in., measured from the center of each slot.
11. The bracket shall support a continuous vibrating load of at least 50 lb. at the luminaire side.
12. The complete lighting standard unit shall withstand winds of 160 miles per hour (257 km per hour) specified by the Luma Distribution System Design Manual.

10. Inspection

The acceptance of any equipment/material shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such equipment/material were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

- a. Technical information
- b. Table of Compliance completed by the bidder with reference. (See Appendix 1)

12. Table 1: Warehouse and Asset Suite Identification Information

Item	Warehouse Number	Asset Suite	Dimension (X) (in.)	Pole height (ft.)	Compatible Manufacturer
1	002-84846	84846	13	45 and 50	PowerLine Hardware
2	002-84847	84847	17	55, 60, and 65	PowerLine Hardware

— End of Specification —



Appendix



Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P/F)	Comments
1	Specification	The Proponent complies with the corresponding specification document. (4402.037)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ASTM A635/A635M, ASTM A153/A153M or ASTM F2329/F2329M)		
3	Certifications	Certified vertical and horizontal load resistance tests.		
4	Dimensions and Descriptions	The bracket shall consist of two (2) pieces.		
		Both pieces are to be attached to each other with four (4) 5/8 X 10 in. double arming bolts.		
		The bracket shall be manufactured of ¼ in. minimum wall thickness.		
		Holes pattern to fix the two pieces: Brackets shall be furnished with two (2) 5/8 in. diameter mounting holes in each side.		
		Holes must be centered in each side flange at the horizontal axis and at two inches vertically measured from the center of each hole to the top and bottom of the plate.		
		The vertical distance between holes per side is 4 in. measured from the center of each hole.		
		Slots pattern for arm installation: both bracket of the set must include four, two (2) inches mounting slots, for a 5/8 in. diameter bolt.		
		The two upper slots shall be located at 2 in. from the top of bracket to the slot center, must have 8 ½ in. horizontal separation measure from de center of each slot, and must be horizontally centered.		
		The vertical distance between upper and lower slots must be 4 in., measured from the center of each slot.		
5	Bracket Dimensions	002-84846: 13 in. – Poles Height: 45 and 50 ft.		
		002-84847: 17 in. – Poles Height: 55, 60 and 65 ft.		
6	Material	Standard specification for zinc coating (hot dip) on iron and steel hardware.		
		All hot-dip galvanizing.		
		All welding and holes shall be done before galvanizing		



DISTRIBUTION ENGINEERING

STREETLIGHT STANDARD

TITLE:

BRACKET, GALVANIZED STEEL, FOR SINGLE OR TRUSS TYPE
ALUMINUM STREETLIGHT ARM

VERSION 2

DOCUMENT NO. 4402.037

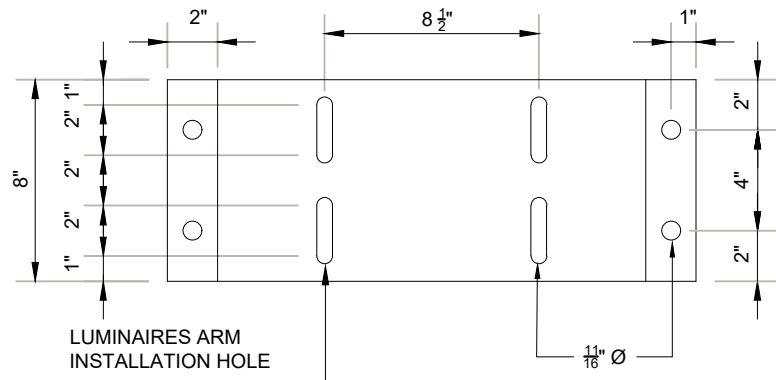
DATE MAY 17, 2024

SUBMITTED ROSALIA ALVERIO GONZALEZ

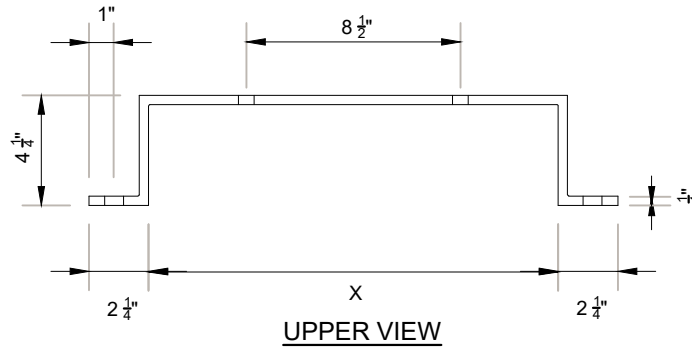
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APPROVED RICARDO CASTRO LIC. 12135

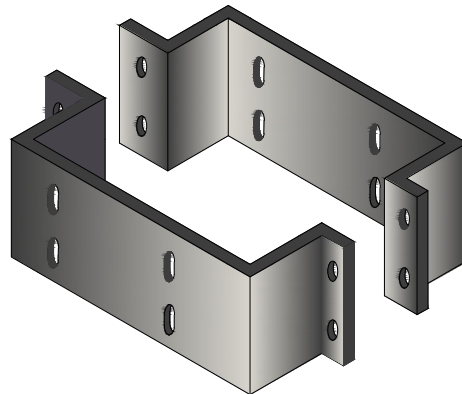
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FRONT AND BACK VIEW
BRACKET PART



UPPER VIEW



NOTES:

1. DIMENSION "X" IS 13 INCHES FOR 45 AND 50 FEET POLES, AND 17 INCHES FOR 55, 60, AND 65 FEET POLES.
2. CONFIRM BRACKET COMPATIBILITY WITH POLE MANUFACTURER.
3. THE LUMINAIRES ARM INSTALLATION HOLES PATTERN SHALL BE VERIFY WITH THE ARM MANUFACTURER.
4. THIS BRACKET IS FOR USE WHEN NO HOLE PATTERN IS AVAILABLE IN SQUARE CONCRETE POLES. ALUMINUM ARMS WILL BE USE WITH BRACKET SO AS NOT TO DRILL THE POLE (CONSTRUCTION STANDARD STL-11A, 11B AND 11A-1).












Binder1

Final Audit Report

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