



Document Title:

**Trunnion Clamp for Line Post Insulator, Aluminum Conductor**

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**Material Specification**

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**4350.169**

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**Distribution Standards & Materials**

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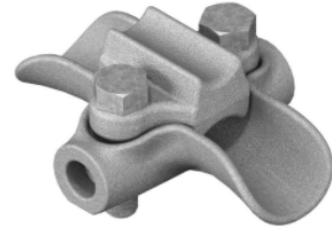
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<b>Approver</b> Ricardo Castro Gómez, PE Manager, Distribution Standards & Materials	Signature 	Date <b>Aug 7, 2023</b>

### Version History

Date	Revision Comments
Jan. 14, 2022	PREPA to LUMA Format (002-11664 & 002-13728), New Item Created (002-82526)
Jun. 08, 2022	General format modifications and Table of Compliance (TOC) added. New Item Created (002-83015)
Jan. 09, 2023	TOC modified and Cover Page added.
Aug. 04, 2023	General format, Table 1, TOC, and document name modifications. Document changed as shared between T&D for Items 002-11664, 002-82526, 002-13728, and 002-83015.

Warehouse Catalog	Item Version	Date
* 002-11664	8	8/4/2023
* 002-82526	3	8/4/2023
* 002-13728	4	8/4/2023
* 002-83015	3	8/4/2023



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### **1. Introduction**

This is a general specification that covers the minimum requirements for top line post insulator clamps to be used in the distribution and transmission 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 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. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. Evidence of PREPA's and/or 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. For compatible manufacturers and models see Table 1.
- 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.



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### **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)**

Standard package: Thirty (30) units per box for each item or as required by LUMA.

### **8. Acceptance Criteria**

- 8.1. Test required: certified by external laboratories.
- 8.2. Latest applicable codes, standards, and other regulations: ANSI/IEEE, ASTM, NEMA, IEC.
  - a. ANSI/ASTM (A153) for hot dip galvanized.
  - b. Aluminum Association (AA) for aluminum alloy 356-T6.

### **9. Description**

- 9.1. This is used for clamping ACSR and AAAC conductors on vertical and horizontal line post insulators.
- 9.2. The clamp shall have the following characteristics:
  - a. Shall be saddle type for post insulators.
  - b. Shall have a stainless-steel spring.
  - c. Body and keeper material: aluminum alloy 356-T6.
  - d. Hardware: hot dip galvanized as per ANSI / ASTM A153.
  - e. See table 1 for clamping range (based on conductor's overall diameter including armor rods), strength, and weight.
  - f. Approximate dimensions (L x W): 5.25" X 3.88" (13.3 X 9.8 cm)
  - g. Approximate weight: 1 lb. (0.45 kg)
  - h. Minimum ultimate Strength: 2,800 Lbs. (12.4 kN)

### **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.



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### 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 Number

Item	Warehouse Catalog #	Asset Suite #	Clamping Range OD Conductor With Armor Rod	Clamping Range OD Conductor W/O Armor Rod	Compatible Manufacturer & Model
1	* 002-11664	55999	#6 - #4 ACSR 30.58 AAAC 0.25" - 0.57" (6.4 - 14.5 mm)	#4 - 4/0 ACSR 48.69 - 246.9 AAAC 0.25" - 0.57" (6.4 - 14.5 mm)	Hubbell (TSC57ARIV) Maclean (ACTS-057-SL1)
2	* 002-82526	82526	#2 - 266.8 ACSR 48.69 - 312.8 AAAC 0.50" - 1.06" (12.7 - 26.9 mm)	2/0 - 636 ACSR 195.7 - 740.8 AAAC 0.50" - 1.06" (12.7 - 26.9 mm)	Hubbell (TSC106ARIV) Maclean (ACTS-118-SL1)
3	* 002-13728	57705	4/0 - 556.5 ACSR 312.8 - 652.4 AAAC 1.0" - 1.5" (25.4 - 38.1 mm)	605 - 1431 ACSR 927.2 AAAC 1.0" - 1.5" (25.4 - 38.1 mm)	Hubbell (TSC150ARIV) Maclean (ACTS-150-SL1)
4	* 002-83015	83015	556 - 795 ACSR 740.8 - 927.2 AAAC 1.5" - 2.0" (38.1 - 50.8 mm)	1510 - 2515 ACSR 1.5" - 2.0" (38.1 - 50.8 mm)	Hubbell (TSC200ARIV) Maclean (ACTS-200-SL1)

\* Items 002-11664, 002-82526, 002-13728, and 002-83015 are also used in the 38kV transmission system.

— End of Specification —



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## **Appendix**



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## Trunnion Clamp for Line Post Insulator, Aluminum Conductor

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### Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.169)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document (ANSI/ASTM, AA).		
3	Material	Hardware: HDG as per ASTM A153.		
		Body & Keeper: Aluminum Alloy 356-T6		
		Spring: Stainless-Steel		
5	Minimum Ultimate Strength	2,800 lbf		
6	Clamping Range	As per Table 1.		
7	Approximate Dimensions and Weight	5.25" X 3.88" and 1 lb.		











# 4350.169 Line Post Insulator Clamp, AI (8-4-23)


Final Audit Report

2023-08-07

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