



Document Title:  
**Voltage Regulator CL-7 Retrofit**

Document Type: **Specification**      Engineering Type: **Equipment Specificati**      Document No.: **4350.339**

Department  
**Distribution**

Version:  
**01**

Effective Date:  
**Jun 21, 2024**

**Shared document with: N/A**

*\*Select the Departments impacted by the document*

**For others, specify here**

**Author**

Jose R. Torres Irizarry  
General Engineer, Distribution Standards & Materials

Signature and Date

Jun 20, 2024

**Reviewer**

Miguel J Rios Lopez, PE  
General Engineer, Distribution Standards & Materials

Signature and Date

Jun 20, 2024

**Approver**

Ricardo Castro Gómez, PE  
Manager, Distribution Standards & Materials

Signature and Date

Jun 21, 2024

**Management Approval (If apply)**

**Approver**

Name  
Position

Signature and Date

N/A

**Related/Referenced Documents**

N/A

**Version History**

Version	Date	Revision Comments
1	June 20, 2024	Initial release for Item 032-86216



## Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
032-86216	86216	1	6/20/2024



## 1. Introduction

This is a general specification that covers the minimum requirements for a Voltage Regulator CL-7 retrofit to be 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 (O11) 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. If required by LUMA, final drawings shall be submitted by the vendor before the manufacturing and shipping process for approval.

## 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

For compatible manufacturer and model see Table 1. 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)

Standard Package: One unit per box or as requested by LUMA.

## 8. Acceptance Criteria

- 8.1. Test required: certified by external qualified laboratories.
- 8.2. Product shall be manufactured in accordance with the latest issue below (section 8.3). When conflicts occur between purchaser's specifications and the latest issue below, the purchaser's specification shall prevail.
- 8.3. Latest applicable codes, standards, and other regulations:
  - a. ANSI/IEEE C37.30, C37.32 & C37.34: Required ratings, construction requirements, design test, applications, and suggested practices for all high voltage enclosed indoor and outdoor and non-enclosed indoor and outdoor switches rated above 1 kV.
  - b. ANSI/IEEE C37.37: Loading guide for ac high-voltage air switches (more than 1 kV).
  - c. ANSI/IEEE C37.41: Design tests for high-voltage (>1 kV) fuses and accessories.
  - d. ASTM A153: For hot dip galvanize process.

## 9. Description

- 9.1. This is the require hardware to do a retrofit of the Eaton voltage regulators:
  - 9.1.1. Control Type CL-7 Control Replacement Assembly
  - 9.1.2. Phase Quantity Single-phase
  - 9.1.3. Regulator Manufacturer Eaton/Cooper/McGraw-Edison
  - 9.1.4. Language Spanish
  - 9.1.5. Tap Changer Capacitor Location External
  - 9.1.6. Tap Changer Capacitor ( $\mu$ F) 50
  - 9.1.7. Cable Conductors 12-pin
  - 9.1.8. VR1 Cable 10ft. (3m)
  - 9.1.9. Port 1 Communications Card None
  - 9.1.10. Port 1 Protocol DNP, IEC 60870-5, 2179, MODBUS Serial & MODBUS TCP/IP
  - 9.1.11. Port 2 Communications Card None



- 9.1.12. Port 2 Protocol DNP, IEC 60870-5, 2179, MODBUS Serial & MODBUS TCP/IP
- 9.1.13. Reverse Power Flow Capabilities Included
- 9.1.14. Control Box Material Stainless steel.
- 9.1.15. Control Box Size Standard Box
- 9.1.16. Control Box Rating NEMA 3R.
- 9.1.17. VR Cable Entry Bottom

## 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/materials 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 Number

Item	Warehouse Catalog #	Asset Suite #	Compatible Manufacturer & Model
Eaton CL-7 retrofit	032-86216	86216	Eaton (P/N: 57713000000B100005.)

— 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 (4350.339)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ANSI/ASTM, ANSI/IEEE)		
3	Product Requirements	Control Type CL-7 Control Replacement Assembly		
		Phase Quantity Single-phase		
		Regulator Manufacturer Eaton/Cooper/McGraw-Edison		
		Language Spanish		
		Tap Changer Capacitor Location Externa		
		Tap Changer Capacitor (µF) 50		
		Cable Conductors 12-pin		
		VR1 Cable 10ft. (3m)		
		Port 1 Communications Card None		
		Port 1 Protocol DNP, IEC 60870-5, 2179, MODBUS Serial & MODBUS TCP/IP		
		Port 2 Communications Card None		
		Port 2 Protocol DNP, IEC 60870-5, 2179, MODBUS Serial & MODBUS TCP/IP		
		Reverse Power Flow Capabilities Included		
		Control Box Material Stainless steel		
		Control Box Size Standard Box		
		Control Box Rating NEMA 3R		
		VR Cable Entry Bottom		
		Control Box Grounding #6-250MCM		
Min. Interrupting Current (Fuse): 34 kA Symmetric				
Min. Leakage Distance: 15"				












# 4350.339 Voltage Regulator CL-7 retrofit

Final Audit Report

2024-06-21

Created:	2024-06-20
By:	jose torres (JoseR.Torreslrizarr@Lumapr.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAY9WfQo2f-eNNMqUihzLL6RfqGhRAshe5

## "4350.339 Voltage Regulator CL-7 retrofit" History

-  Document created by jose torres (JoseR.Torreslrizarr@Lumapr.com)  
2024-06-20 - 8:12:32 PM GMT
-  Document emailed to jose torres (JoseR.Torreslrizarr@Lumapr.com) for signature  
2024-06-20 - 8:12:37 PM GMT
-  Email viewed by jose torres (JoseR.Torreslrizarr@Lumapr.com)  
2024-06-20 - 8:13:13 PM GMT
-  Document e-signed by jose torres (JoseR.Torreslrizarr@Lumapr.com)  
Signature Date: 2024-06-20 - 8:13:44 PM GMT - Time Source: server
-  Document emailed to Miguel Rios (miguel.rioslopez@lumapr.com) for signature  
2024-06-20 - 8:13:46 PM GMT
-  Email viewed by Miguel Rios (miguel.rioslopez@lumapr.com)  
2024-06-20 - 8:23:14 PM GMT
-  Document e-signed by Miguel Rios (miguel.rioslopez@lumapr.com)  
Signature Date: 2024-06-20 - 8:24:11 PM GMT - Time Source: server
-  Document emailed to Ricardo Castro (ricardo.castro@lumapr.com) for signature  
2024-06-20 - 8:24:13 PM GMT
-  Email viewed by Ricardo Castro (ricardo.castro@lumapr.com)  
2024-06-21 - 2:20:47 PM GMT
-  Document e-signed by Ricardo Castro (ricardo.castro@lumapr.com)  
Signature Date: 2024-06-21 - 2:21:50 PM GMT - Time Source: server
-  Agreement completed.  
2024-06-21 - 2:21:50 PM GMT