Document Title:

# Indoor Fuse Unit End Fittings

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| **Specification** | **Material Specification** | **4350.214** |

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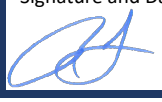
| **Approver**<br>Ricardo Castro Gómez, PE<br>Manager, Distribution Standards & Materials | Signature and Date<br>  <br>Jul 15, 2024 |

## Management Approval (If apply)

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| **Approver**<br>Name<br>Position | Signature and Date<br>N/A |

## Related/Referenced Documents

N/A

## Version History

| Version | Date | Revision Comments |
|---|---|---|
| 1 | Sep. 1, 2022 | Initial Release. Item 010-08150 converted from PREPA to LUMA format. New Item for SME-20. |
| 2 | Jul. 15, 2024 | General format revision. Section 4, 5, and 8 revised. TOC revised. |

## Item Version History

| Warehouse Catalog # | Asset Suite # | Version | Date |
|---|---|---|---|
| 010-08150 | 54490 | 3 | 7/15/2024 |
| 010-83385 | 83385 | 2 | 7/15/2024 |

## 1. Introduction

This specification describes the minimum requirements for the SML-20 and SME-20 fuse unit end fittings 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. If required by LUMA, final drawings shall be submitted by the vendor before the manufacturing and shipping process for approval.

## 4. 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.

## 5. Markings

5.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.

5.2. Packaging labels and tags shall be waterproof.

## 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)

Three (3) units per package or as requested by LUMA Energy.

## 8. Acceptance Criteria

8.1. Test required: certified by external 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: ANSI / NEMA

a. IEEE Standard C37.46: High-Voltage (>1000 V) Expulsion and Current-Limiting Power Class Fuses and Fuse Disconnecting Switches

8.4. If any other standard different from the ones indicated in this document are used, the supplier must provide information showing compatibility with the required ones.

## 9. Description

9.1. Upper and lower fuse end-fitting and muffler for expulsion-style fuse unit of 17 kV, 27 kV, and 38 kV; to be used with non-loadbreak or loadbreak mounting, indoor only.

9.2. Spare part for SML-20 or SME-20 power fuse.

9.3. The indoor end fitting must be composed of high-impact plastic and high-conductive allow.

9.4. The contact end must be silver-plated to ensure positive conductivity between the fuse unit and the live parts of the mounting.

9.5. It must have a spring-loaded plastic mounting handle which will actuate the latch mechanism when it engages into the mounting.

9.6. It must be able to accept a hookstick to install or remove the assembled fuse unit.

9.7. The upper fitting must have a locating pin to assure proper alignment and engagement with the fuse unit.

9.8. The bottom fitting must be threaded, so that a muffler can be attached to limit the noise and contamination to indoor equipment.

9.9. Design

a. **For SML-20 or similar End Fittings**: The end fitting shall be designed in such a way that it will hold the fuse unit in an upright position during normal operations and during any replacement operation.

b. **For SME-20 or similar End Fittings**: The end fittings must be designed in such a way that it will hold the fuse unit to the mounting equipment in an upside-down position during any replacement operation.

9.10. The muffler must be constructed of plated steel containing a copper mesh. This copper mesh acts to absorb and contain the noise and exhaust materials of the fuse during a fault condition.

9.11. The end fitting must be completely interchangeable with other manufacturers' equivalent fuse units and mountings.

9.12. The equipment must include any necessary bolts, washers, and nuts.

9.13. Must be furnished in accordance with ANSI C37.46.

## 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, tests, and drawings.

b. Table of Compliance completed by the bidder with reference (see Appendix 1).

## 12. Table 1: Warehouse and Asset Suite Identification Number

| Warehouse Catalog | Asset Suite | For use with: | Compatible model for End Fitting |
|---|---|---|---|
| 010-08150 | 54490 | SML-20 or similar | S&C, 3097<br>Copper Power Systems, CMU3097 |
| 010-83385 | 83385 | SME-20 or similar | S&C 3093 |

**— 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 (4350.214) | | |
| **2** | Industry Standards | The Proponent complies with the industry standards established in the specification document. (ANSI/ASTM, ANSI/IEEE, IEC) | | |
| **3** | Material | • The contact end must be silver-plated.<br>• It must have a spring-loaded plastic mounting handle. | | |
| **4** | Construction | • The upper fitting must have a locating pin.<br>• The bottom fitting must be threaded, compatible with a muffler. | | |
| **5** | Design | • SML-20: Upright position<br>• SME-20: Upside-down position during any replacement operation. | | |
| **6** | Muffler | The muffler must be constructed of plated steel containing a copper mesh. | | |

**NOTE: This table is only a check list for reference. The compliance shall be with the complete document. Marking a PASS in the table won't be accepted as a compliance without the technical information required to certify it.**

# 4350.214 SML End Fitting (07-15-2024)

Final Audit Report 2024-07-15

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