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Flexible Liquid Tight Conduit and Fittings

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Author

Rodolfo A. Flores Ortiz, PE (Lic. 27131)
General Engineer, Distribution Standards & Materials

Signature and Date

Jul 30, 2024

Reviewer

Jose R. Torres Irizarry, EIT (Cert. 14613)
Engineer II, Distribution Standards & Materials

Signature and Date

Jul 30, 2024

Approver

Ricardo Castro Gómez, PE (Lic. 12135)
Manager, Distribution Standards & Materials

Signature and Date

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Management Approval (If apply)

Approver

Name
Position

Signature and Date

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Related/Referenced Documents

N/A

Version History

Version	Date	Revision Comments
1	Feb. 21, 2023	Initial release
2	May 31, 2023	Added items 002-84861 and 002-84862. General revision of specification.
3	Jul. 30, 2024	General format modifications, TOC updated, Section 4 modified, and sections order rearranged.



Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
002-84861	84861	2	7/30/2024
002-84300	84300	3	7/30/2024
002-84862	84862	2	7/30/2024
002-84301	84301	3	7/30/2024



1. Introduction

This is a general specification that covers the minimum requirements for the flexible liquid tight conduit and 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 manufacturers and models, see Table 2. These models are examples of the equipment/materials described in this document and do not represent a preference. LUMA will evaluate equally any models 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)

See Table 2 for standard packaging information, 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:
 - a. UL 1660
- 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. Flexible liquid tight conduit and fittings for use with power, control, and communication cables management.
- 9.2. Conduit Characteristics:
 - a. Shall be LFNC Type-B.
 - b. Inner surface shall be a smooth polyvinyl chloride (PVC) and an integral PVC reinforcing member withing the wall. The thickness and dimensions of the conduit shall be as per UL 1660.
 - c. Color shall be grey.
 - d. Shall be resistant to moisture, oil, and sunlight.
 - e. Shall comply with trade size dimensions shown in Table 1.
 - f. Shall be able to withstand temperature range 0° to 50° C.
- 9.3. Fittings:
 - a. Straight, non-insulated connector.
 - b. Shall be compatible with a 1-inch or 2-inch type-B flexible non-metallic liquid tight conduit, as requested by LUMA.

- c. Material shall be iron.
- d. Connector shall be provided with sealing washer and heavy-duty locknut.
- e. Shall be resistant to wet and corrosive environments.

9.4. Table 1: Conduit Characteristics and Warehouse Information

Warehouse Number	Asset Suite	Item Type	Internal Diameter (Inches)	External Diameter (Inches)	Bend Radius (Inches)
002-84861	84861	1 in. LFNC-B Conduit	1.041 to 1.066	1.29 to 1.315	6.5
002-84300	84300	2 in. LFNC-B Conduit	2.02 to 2.045	2.34 to 2.375	11

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 2: Warehouse and Asset Suite Identification Number

Warehouse Number	Asset Suite	Item Type	Compatible Manufacturer	Compatible Model	Standard Package
002-84861	84861	1 in. LFNC-B Conduit	AFC Cable Systems	6004-30-00	100 feet per coil
002-84300	84300	2 in. LFNC-B Conduit	AFC Cable Systems	6007-24-00	50 feet per coil
002-84862	84862	1 in. straight connector Fitting	RACO	3404	10 units per carton
002-84301	84301	2 in. straight connector Fitting	RACO	3408	5 units per carton

— End of Specification —



Appendices

Appendix 1: Table of Compliance for 2-inch Conduit

Line	Criteria	Description	Pass/Fail (P/F)
1	Specification	The Proponent complies with the corresponding specification document 4350.287.	
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ANSI, ASTM)	
		Tech. info., tests & drawings provided.	
3	Material	<ul style="list-style-type: none"> • Shall be LFNC Type-B. • Inner surface shall be a smooth polyvinyl chloride (PVC) and an integral PVC reinforcing member withing the wall. The thickness and dimensions of the conduit shall be as per UL 1660. • Color grey 	
4	Dimensions	002-84861: <ul style="list-style-type: none"> • Internal diameter: 1.041 to 1.066 in. • External diameter: 1.29 to 1.315 • Bend radius: 6.5 in. 002-84300: <ul style="list-style-type: none"> • Internal diameter: 2.02 to 2.045 in. • External diameter: 2.34 to 2.375 in. • Bend radius: 11 in. 	
5	Resistances	<ul style="list-style-type: none"> • Shall be resistant to moisture, oil, and sunlight. • Shall be able to withstand temperature range 0° to 50° C. 	

NOTE: This table is only a checklist 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.



Appendix 2: Table of Compliance for Conduit Fitting

Line	Criteria	Description	Pass/Fail (P/F)
1	Specification	The Proponent complies with the corresponding specification document 4350.287.	
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ANSI, ASTM)	
3	Construction	Straight, non-insulated connector	
4	Material	<ul style="list-style-type: none">• Iron. Shall be resistant to wet and corrosive environments.	
5	Compatibility	<ul style="list-style-type: none">• Shall be compatible with a 1-inch or 2-inch type-B flexible non-metallic liquid tight conduit, as requested by LUMA.	
6	Accessories	<ul style="list-style-type: none">• Sealing washer and heavy-duty locknut.	











4350.300 Flexible Liquid Tight Conduit and Fittings (07-30-2024)

Final Audit Report

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