

STANDARD INFORMATION

Standard Number: UL 8750

Standard Name: Light Emitting Diode (LED) Equipment for Use in Lighting Products

Standard Edition and Issue Date: 2nd Edition Dated September 15, 2015

Date of Revision: February 5, 2018

Date of Previous Revision of Standard: December 18, 2017

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **November 13, 2020**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes: Added requirements for conduit-connected enclosures. Specific details of new/revised requirements are found in table below.

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Client Action:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements do not apply to your product (s).

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are underlined and deletions are shown lined out below.</i>
		<i>New section added;</i>
6.3A		Metal Enclosures intended for conduit connection
		<i>Some clauses have been relocated from Section 7.4.2.1 to 6.3A. Only modifications to clauses are shown below.</i>
6.3A.7		The area adjacent to an opening where branch circuit supply connections are to be made in the field and which has components located within 152 mm (6 in) of the opening shall be enclosed within a wiring compartment having a volume of at least 98 cm ³ (6 in ³) <u>or as required by 6.3A.10, whichever is larger.</u>
6.3A.10		The minimum volume of an integral field-wiring compartment for branch circuit connections shall be determined using Table 6.5. All conductors entering or leaving the compartment shall be included in the calculation; uninsulated grounding or bonding conductors integral to the unit are not to be included. Field wiring shall assume size 12 AWG (3.31 mm ²) conductors unless the ampacity of the unit requires larger conductors. <u>A terminal block/push-in terminal that accepts small gauge wires (e.g., 18 AWG) requires use of wires [up to 152 mm (6 in)] to transition to branch circuit wiring (e.g., 12 AWG). These wires shall be included in the volume calculations.</u>
		<i>New clause added;</i>
6.3A.11		An enclosure intended for pulling conductors shall be tested for rigidity as described in 8.19.
		<i>New clause added;</i>
6.3A.12		An enclosure that is assembled using snap-in or tab-mounted parts without use of fastening methods such as screws, rivets, or welds shall be tested in accordance with 8.20.
		<i>New section added;</i>
7.2A		Grounding and bonding – metal enclosures intended for conduit connection
7.2A.1		General
7.2A.1.1		Enclosures intended for conduit connection shall be bonded to ground and shall comply with the bond impedance test of 8.21.
7.2A.2		Provision for grounding



CLAUSE	VERDICT	COMMENT
7.2A.2.1		The grounding means shall be in the same location as the power supply connection means and shall be a pigtail lead grounding conductor, a pressure terminal connector, a wire binding screw, or the equivalent.
7.2A.2.2		A grounding terminal shall not be located on a removable part, unless the removal of the part does not interrupt the bonding continuity.
7.2A.2.3		A grounding conductor shall not be smaller than the gauge of wire used for the luminaire supply conductors and in no case less than 18 AWG (0.82 mm ²).
7.2A.2.4		<p>A screw provided for grounding shall:</p> <ul style="list-style-type: none"> a) Not be used for any other purpose, b) Be limited to conductors of size 10 AWG (5.26 mm²) or smaller, c) Comply with Table 7.0, d) Have a cupped washer or similar provision, or the area around the screw shall be provided with two raised areas in accordance with Figure 7.1.1, e) Have a green-colored head, or the area directly adjacent to the screw shall be marked in accordance with 7.4.2.3.3, f) Be a machine or thread-forming screw, and g) Be capable of withstanding 1.6 N·m (14 lb-in) of tightening torque. Compliance is determined by the ground-screw assembly strength test in 8.22.

Ground Screw Size

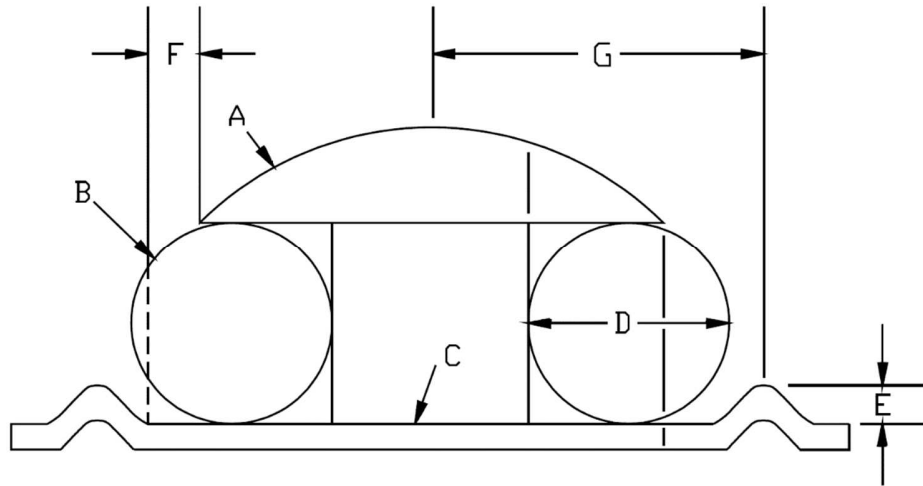
Table 7.0	Screw Size		Wire size (AWG)
	M3.5	(No. 6)	18-24
M4	(No. 8)	18-12	
M5	(No. 10)	18-10	



CLAUSE	VERDICT	COMMENT
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Terminal-conductor relationship

Figure 7.1.1



Legend:

- A- wire binding screw
- B- conductor
- C- terminal plate
- D- maximum conductor diameter, but not less than 2 mm (0.08 in)
- E- minimum height of raised areas = 1 mm (0.04 in)
- F- the horizontal dimension from the edge of the screwhead to the inside edge of the raised area = 0 to 1/4 D
- G- the horizontal dimension from the center of the raise area to the center of the screwhead = minimum 3.2 mm (0.125 in)

7.2A.2.5	A terminal plate intended for use with a wire binding screw shall be of metal and shall provide a minimum of two full threads engagement with the screw.
7.2A.2.6	A pressure- or screw-type terminal block shall be suitable for the conductors involved, and grounding termination shall be marked in accordance with 7.4.2.3.3.
7.2A.3	Bonding
	A bonding means shall consist of one of the following:
7.2A.3.1	<ul style="list-style-type: none"> a) A pigtail lead bonding conductor of at least 18 AWG (0.82 mm²), b) A terminal, c) A welded, soldered, or brazed joint, d) A screw, rivet, or welded stud, e) A pressure terminal connector, f) An assembly of bolt, nut, and lockwasher or starwasher, or other compressive fastener that complies with the bonding circuit impedance test of 8.21, or g) An equivalent conductive path that complies with the bonding circuit impedance test of 8.21.



CLAUSE	VERDICT	COMMENT											
7.2A.3.2		The bonding of a conductive part that is coated with vitreous enamel, paint, or similar coatings can require treatment of the part, such as masking, removal of the coating at points of connection, or the use of fastening means that penetrate the surface coating. If special treatment is required or if grounding continuity is not obvious, acceptability shall be determined by the bonding circuit impedance test of 8.21.											
7.2A.3.3		A part shall be provided with a 18 AWG (0.82 mm ²) or larger stranded bonding conductor.											
7.2A.3.4		A bonding conductor shall be secured by one of the following methods: a) A machine screw and nut, b) A screw that threads into metal, with at least two full threads engaging, c) Rivets, or d) Equivalent means as determined by evaluation.											
7.2A.3.5		The bonding conductor shall not be smaller than the gauge of wire used for the luminaire supply conductors and in no case less than 18 AWG (0.82 mm ²).											
8.19		<i>New section added;</i> Metal enclosure for conduit connection – rigidity											
8.19.1		The enclosure shall be secured on a 12.7-mm (0.5-in) thick wood panel so that it is rigidly affixed to the wood panel. The panel dimensions shall extend beyond the junction box.											
8.19.2		All enclosure covers shall be removed.											
8.19.3		The weight specified in Table 8.7 shall be attached to a conduit fitting that has been installed to the enclosure so the force is applied from inside the enclosure at the point most likely to result in deformation. The weight is attached by a wire or cord so that it does not contact any surface of the enclosure.											
8.19.4		After 2 min, the weight shall be removed and any permanent deformation from the original shall be measured.											
Deformation forces													
Table 8.7		<table border="1"> <thead> <tr> <th rowspan="2">Number of conductors in or out</th> <th colspan="2">Force (lb)</th> </tr> <tr> <th>12 AWG</th> <th>14 AWG</th> </tr> </thead> <tbody> <tr> <td>1 or 2</td> <td>15</td> <td>14</td> </tr> <tr> <td>More than 2</td> <td>30</td> <td>16</td> </tr> </tbody> </table>	Number of conductors in or out	Force (lb)		12 AWG	14 AWG	1 or 2	15	14	More than 2	30	16
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	12 AWG	14 AWG											
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8.19.5		Permanent deformation of the enclosure, its hardware, or its attachment to the luminaire shall not exceed 3.2 mm (0.125 in).											
8.20		<i>New section added;</i> Metal enclosure for conduit connection – snap-in or tab-mounted parts pull test											



CLAUSE	VERDICT	COMMENT
8.20.1		A length of rigid conduit shall be connected to the opening in the enclosure part to be tested. The total length of exposed conduit shall be 305 mm (12 in).
8.20.2		When the enclosure is intended for conduit connection, a 133-N (30-lb) force shall be applied for 1 min at the end of the conduit in a direction perpendicular to the plane of the enclosure part being tested.
8.20.3		A 45-N (10-lb) force shall be applied for 1 min at the end of the conduit in a direction parallel to the plane of the enclosure part being tested and in the direction most likely to dislodge the enclosure part.
8.20.4		Before and after each test, the enclosure shall comply with the bonding circuit impedance test of 8.21.
8.20.5		After each test, the enclosure part shall remain attached to the enclosure, and permanent deformation of the enclosure or its parts shall not exceed 3.2 mm (0.125 in).
8.21		<i>New section added;</i> Metal enclosure for conduit connection – bonding circuit impedance
8.21.1		The test apparatus shall be an ohmmeter or similar indicating instrument capable of measuring 0.10 Ω. The measured resistance between the point of connection of the branch circuit equipment grounding conductor and any non-current carrying metal parts of the enclosure shall not exceed 0.10 Ω.
8.21.2		If the resistance measured in 8.21.1 exceeds 0.10 Ω, the test of 8.21.3 shall be conducted.
8.21.3		The test apparatus shall consist of an indicating instrument and an ac or dc power supply of approximately 12 V providing a current of 30 A through the bonding means being evaluated. The measured voltage between the point of connection of the branch circuit equipment grounding conductor and any non-current carrying metal parts of the enclosure shall comply with 8.21.4.
8.21.4		The test of impedance shall be performed by passing a 30 A current from a part to be grounded to the grounding terminal means for a period of 2 min and measuring the potential drop between them at the end of the period.
8.21.5		When tested in accordance with 8.21.4: a) The resulting voltage drop shall not exceed 4.0 V, b) There shall be no melting of any conductor or metal in the bonding circuit, and c) There shall be no heating or burning that is likely to create a fire hazard.
8.22		<i>New section added</i> Metal enclosure for conduit connection – ground-screw assembly strength



CLAUSE	VERDICT	COMMENT
8.22.1		A 12 AWG (3.31 mm ²) solid-copper, insulated conductor shall be stripped to a length of 2.5 cm (1 in) minimum. The wire shall be wrapped around the screw under the screw head so that it makes a minimum 180-degree turn. The conductor shall be seated to follow any wire guides or dimples provided to align the conductor with the mating surface. The ground screw shall be tightened with a calibrated torque screwdriver to 1.6 N·m (14 lb-in).
		When tested as described in this section, there shall not be:
8.22.2		a) Damage to the head of the ground screw which would prevent the 1.6 N·m (14 lb-in) of tightening torque to be achieved, or b) Stripping of the ground screw assembly.
CUSTOMERS PLEASE NOTE: This Table and column "Verdict" can be used in determining how your current or future production is or will be in compliance with new/revised requirements.		