

Subject 3730

February 17, 2017

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Photovoltaic Junction Boxes, UL 3730, are being proposed:

1. Expansion of UL 3730 to Include Junction Boxes up to 1500 V dc or Less

STP BALLOTS AND ALL COMMENTS DUE: March 20, 2017

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~.

1. Expansion of UL 3730 to Include Junction Boxes up to 1500 V dc or Less

RATIONALE

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As a result of recently approved changes to UL 1703, the Standard for Flat-plate Photovoltaic Modules and Panels, UL is also proposing to expand the scope of UL 3730.

A need exists to be able to rate PV modules with maximum system voltages up to 1500 Vdc.

The current maximum of 1000 Vdc limits the ability of industry to efficiently deliver power from PV modules. Raising the maximum system voltage rating limit to 1500 Vdc allows the industry to increase power production while maintaining existing current levels, leading to more efficient use of wiring and balance of system components such as combiner boxes, fuses, and inverters.

The components used in the manufacturing of PV modules and the devices used to install PV modules in the field are suitable for system voltages of at least 1500 Vdc. This proposal expands UL 3730 to address the creepage and clearances needed to provide suitable isolation of live circuits at 1500 Vdc or less.

PROPOSAL

4.2 Nonmetallic enclosures and polymeric materials

Table 4.1
Determination of comparative tracking index performance level category (PLC)

Voltage	Creepage distance	IPT 1 hr rating required	CTI PLC of 2 or better required
0 – 30	Any	No	No
> 30 – 600	< 12.7 mm	No	Yes
> 30 – 600	≥ 12.7 mm	No	No
> 600 – 1000	< 16.0 mm	Yes	No
> 600 – 1000	≥ 16.0 mm	No	No
<u>> 1000 – 1500</u>	<u>< 24.0 mm</u>	<u>Yes</u>	<u>No</u>
<u>> 1000 – 1500</u>	<u>≥ 24.0 mm</u>	<u>No</u>	<u>No</u>
Note - Voltage is determined as follows: Between live parts: the maximum potential difference during normal use Between live parts and dead metal parts that may be grounded in service: maximum system voltage Between live parts and any surface exposed to contact: maximum system voltages ~~35~~ —36; and Section			

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