



UL 62790

STANDARD FOR SAFETY

Junction Boxes for Photovoltaic
Modules – Safety Requirements and
Tests

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UL Standard for Safety for Junction Boxes for Photovoltaic Modules – Safety Requirements and Tests, UL 62790

First Edition, Dated May 26, 2023

Summary of Topics

First Edition of the UL IEC-Based Standard for Junction Boxes for Photovoltaic Modules – Safety Requirements and Tests, ANSI/UL 62790, dated May 26, 2023. UL 62790 is an adoption of IEC 62790 (Edition 2.0, issued July 2020). Please note that the National Difference document incorporates all of the U.S. national differences for UL 62790.

The new requirements are substantially in accordance with Proposal(s) on this subject dated August 26, 2022 and April 14, 2023.

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UL 62790

**Standard for Junction Boxes for Photovoltaic Modules – Safety
Requirements and Tests**

First Edition

May 26, 2023

This ANSI/UL Standard for Safety consists of the First Edition.

The most recent designation of ANSI/UL 62790 as an American National Standard (ANSI) occurred on May 26, 2023. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in ULSE's Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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PREFACE

This UL Standard is based on IEC Publication 62790: Edition 2.0, Junction Boxes for Photovoltaic Modules – Safety Requirements and Tests. IEC publication 62790 is copyrighted by the IEC.

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Note – Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

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NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication 62790, Standard for Junction boxes for photovoltaic modules – Safety requirements and tests, copyright 2020, are indicated by notations (differences) and are presented in bold text.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

JUNCTION BOXES FOR PHOTOVOLTAIC MODULES – Safety requirements and tests

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 62790 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Modifications in normative references and terms and definitions;
- b) Improvement of declaration of categories for junction boxes in 4.1;
- c) Clarification for ambient temperature in 4.1;
- d) Addition of requirement to provide information concerning RTE/RTI or TI in 4.2;