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# INTERNATIONAL STANDARD



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**Maximum power point tracking efficiency of grid connected photovoltaic  
inverters**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**MAXIMUM POWER POINT TRACKING EFFICIENCY  
OF GRID CONNECTED PHOTOVOLTAIC INVERTERS**
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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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# MAXIMUM POWER POINT TRACKING EFFICIENCY OF GRID CONNECTED PHOTOVOLTAIC INVERTERS

## 1 Scope

This document provides a procedure for the measurement of the efficiency of the maximum power point tracking (MPPT) of inverters used in grid-connected photovoltaic (PV) systems. Both the static and dynamic MPPT efficiency are considered. Based on the static MPPT efficiency calculated in this document and steady state conversion efficiency determined in IEC 61683 the overall efficiency can be calculated.

The dynamic MPPT efficiency is indicated separately.

NOTE This document addresses PV inverters connected to an AC grid. However, this procedure may also be used for other power conversion devices with MPPT functionality used in PV systems, such as charge controllers or optimizers.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61683, *Photovoltaic systems – Power conditioners – Procedure for measuring efficiency*

IEC TS 61836, *Solar photovoltaic energy systems – Terms, definitions and symbols*

EN 50160, *Voltage characteristics of electricity supplied by public distribution networks*