IEC 62899-303-1

Edition 1.0 2018-05

INTERNATIONAL STANDARD

Printed electronics –
Part 303-1: Equipment – Roll-to-roll printing – Mechanical dimensions

IEC 62899-303-1:2018-05(en)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 19.080; 37.100.10

ISBN 978-2-8322-5672-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 62899-303-1 has been prepared by IEC technical committee 119:Printed Electronics.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
119/205/FDIS	119/215/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 62899 series, published under the general title *Printed electronics*, can be found on the IEC website.

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

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- withdrawn,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

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

Printed electronics technologies have recently emerged from the trial stage to the actual commercialization of products based upon these technologies. In order to develop these technologies on an industrial scale, it is important to have industrial scale equipment to produce a big number of products. However, unlike other electronic products, this emerging printed electronics technology does not have any standard for the mechanical dimensions of the final product or devices.

‘Printing’ means generally ‘image printing’ or simply ‘print’. Printing has a long history of more than 1 000 years. Within that long history, international standards for industries, defining the size of paper and the input and output from the printing process, have been used to great effect. By having a standard for input and output, printing equipment could have a standard mechanical dimension, which would serve to avoid the complication of developing printing equipment to support unknown input or output size.

In order to follow that good practice, IEC TC 119 is introducing a document to establish standard mechanical dimensions of input and output from printed electronics equipment.

PRINTED ELECTRONICS –

Part 303-1: Equipment – Roll-to-roll printing – Mechanical dimensions

1 Scope

This part of IEC 62899 defines standard mechanical dimensions (especially related to the web size) of equipment for printed electronics. This document covers web-based printing equipment, but it can be used for sheet-based products.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
roll-to-roll process
R2R process
R2R
printing process used to print onto the web and supplied and produced on a roll

3.2
alignment mark
mark that indicates where to align the fabrication process

3.3
trigger mark
mark that indicates where the printing process needs to initiate that process

4 Mechanical dimensions

4.1 General

The measuring conditions for the mechanical dimensions shall be as follows:

– room temperature
– room humidity

Report these measuring conditions.

4.2 Overview of printing equipment for printed electronics

Figure 1 shows an overview of the R2R printing system.

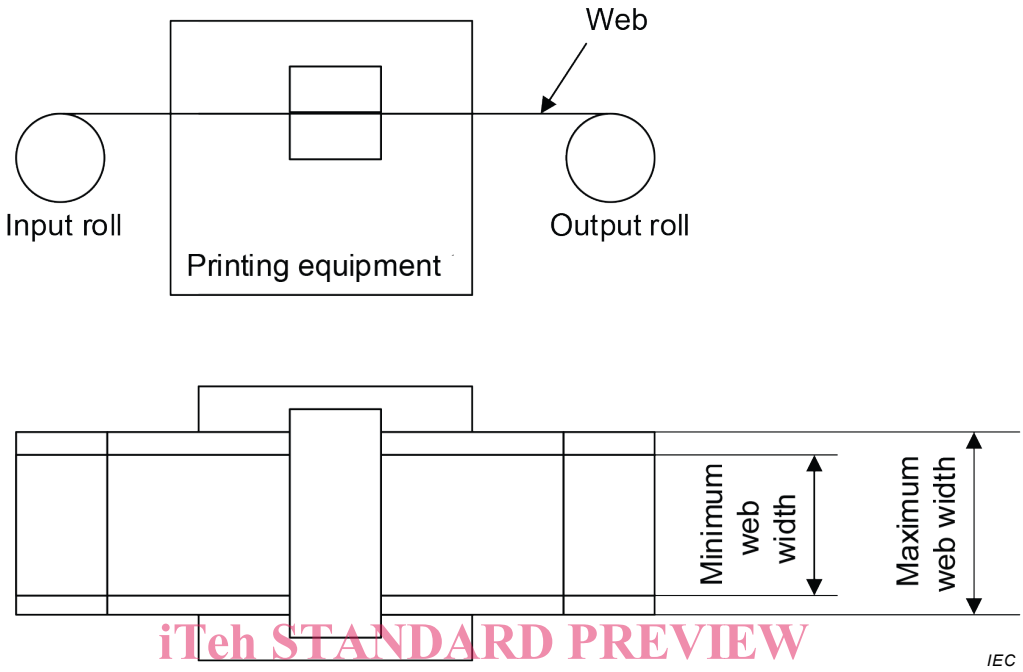

Figure 1 – Overview of R2R printing system

4.3 Width

As Figure 1 shows, the maximum web width shall be the size of the widest web width that equipment can handle. The minimum web width shall be the size of the narrowest web width that equipment can handle. This width shall be measured in millimetres.

The recommended maximum web width shall be 300 mm, 500 mm, 600 mm, 900 mm, 1 200 mm or 1 500 mm, unless there is an agreement between supplier and customer. Those values are nominal values.

Figure 2 shows the mechanical dimensions, especially the alignment of the printing equipment.

Annex A shows the mechanical dimensions, including length for reference purposes.