



IEC 62899-302-4

Edition 1.0 2024-08

INTERNATIONAL STANDARD

**Printed electronics –
Part 302-4: Equipment – Inkjet – Medium for inkjet printing dot placement
evaluation**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 19.080; 37.100.10

ISBN 978-2-8322-9495-6

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IEC 62899-302-4 has been prepared by IEC technical committee 119: Printed Electronics. It is an International Standard.

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

Draft	Report on voting
119/496/FDIS	119/506/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

Until recently, inkjet technologies were used only for imaging printing (conventional “graphic printing”). However, recent developments of inkjet technologies, such as technologies for inkjet print-head, functional ink or print-head driving technologies, make it possible to extend their applications to printed electronics. For these applications, the accuracy requirement for inkjet drop placement tends to be higher than in graphic printing.

This document considers that “inkjet print dot placement accuracy” is the key parameter to obtain an appropriate output that has adequate print quality. In order to evaluate the inkjet printing system, inkjet print dot placement accuracy is measured. For that purpose, an appropriate medium is used, since the “accuracy” of the printed position is only secured by using an appropriate medium that shows actual dot placement. This document describes what kinds of parameters of an appropriate medium are useful to obtain actual accuracy of dot placement evaluation for printed electronics.

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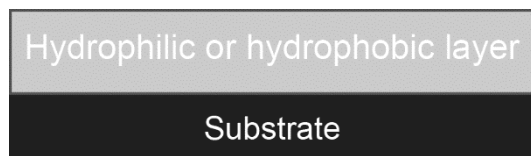
1 Scope

This part of IEC 62899 provides measurement methods and specifications for a medium to measure actual inkjet dot placement for printed electronics applications.

NOTE For this document, a medium is a substrate with (a) certain functional layer(s) to facilitate the ink pinning process (or step). These functional layers are either (a) a liquid absorbing layer or (b) a hydrophilic or hydrophobic layer as shown in Figure 1.



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a) Medium with a liquid absorbing layer

b) Medium with a hydrophilic or hydrophobic layer

NOTE These figures are examples, and do not show all the required layers of a medium.

Figure 1 – Examples of a medium for actual dot placement

2 Normative reference

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.

ISO 216, *Writing paper and certain classes of printed matter – Trimmed sizes – A and B series, and indication of machine direction*

ISO 534, *Paper and board – Determination of thickness, density and specific volume*

ISO 4287, *Geometrical Product Specifications (GPS) – Surface texture: Profile method – Terms, definitions and surface texture parameters*

ISO 8226-1, *Paper and board – Measurement of hygroexpansivity – Part 1: Hygroexpansivity up to a maximum relative humidity of 68 %*

ISO 8226-2, *Paper and board – Measurement of hygroexpansivity – Part 2: Hygroexpansivity up to a maximum relative humidity of 86 %*

ISO 9513, *Metallic materials – Calibration of extensometer systems used in uniaxial testing*

ISO 11359-2, *Plastics – Thermomechanical analysis (TMA) – Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ISO 18910, *Imaging materials – Photographic film and paper – Determination of curl*