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## Photography — Dimensions of glass plates

*Photographie — Dimensions des plaques de verre*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 14548:1998), which has been technically revised.

The main changes compared to the previous edition are as follows:

- [Clause 2](#) has been updated;
- [Clause 3](#) has been added as it is now a mandatory element;
- [Annex A](#) has been added to address new, non-standard plate sizes, which do not align with the sizes of the dry plate and wet plate area.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The purpose of this document is the inclusion of an annex to cover the dimensions of sheet films, which are being used in newly manufactured holders for antique glass plate cameras.

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# Photography — Dimensions of glass plates

## 1 Scope

This document specifies the nominal sizes of photographic glass plates, together with cutting dimensions and their tolerances. It also specifies the nominal substrate thicknesses and their tolerances, as well as providing a cross-reference for sheet films being used in newly manufactured holders for 19<sup>th</sup> century glass plate cameras.

## 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.

ISO 1, *Geometrical product specifications (GPS) — Standard reference temperature for the specification of geometrical and dimensional properties*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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

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

## 4 Conditions for measurement of dimensions

### 4.1 Dimensions

The dimensions and tolerances specified in this document shall apply at the time of manufacture (except where specifically stated otherwise), when measured under atmospheric conditions of  $(23 \pm 2)$  °C and  $(50 \pm 5)$  % relative humidity, as specified in ISO 554.

### 4.2 Calibration of measuring instruments

All measuring instrument calibrations shall be conducted at a temperature of 20 °C as specified in ISO 1, and a relative humidity of 50 %.

## 5 Dimensions

### 5.1 Cutting dimensions

Cutting dimensions and tolerances of plates shall conform to the values given in [Tables 1](#) and [2](#).

### 5.2 Substrate thickness

Substrate thicknesses of glass plates shall conform to the values given in [Table 3](#).

## 6 Squareness

Squareness, edge straightness, shape and compliance with specified dimensions shall be checked at the same time by comparison of any given plate with two perfect rectangles, independently located, one made according to the minimum dimensional tolerance specified in this document, and the other according to the maximum tolerance. No point on the perimeter of the plate shall fall within the smaller rectangle. No point on perimeter of the plate shall fall outside the larger rectangle.

## 7 Package marking

Sufficient data shall be provided on a product's packaging to inform the user of proper use and handling.

Product packaging shall be marked so as to indicate

- a) product name and size,
- b) conditions of use (such as safelight), and
- c) conditions of shipping and storage.

To accomplish this, each of the packages which constitute the product's packaging should be marked so as to indicate one or more of the following<sup>1)</sup>:

- product name or trade name;
- nominal product size with the smaller dimension first;
- quantity of units contained in the package;
- name or trade mark of manufacturer;
- expiration date or "develop before" date;
- manufacturer's recommended safelight conditions;
- manufacturer's recommended storage conditions;
- appropriate processing/recommended processing conditions.

**Table 1 — Preferred sizes of plates**

Dimensions in millimetres

Nominal size	Dimensions		
	minimum	aim	maximum
65 × 90	63,5 × 88,5	64,0 × 89,0	64,5 × 89,5
100 × 100	100,8 × 100,8	101,2 × 101,2	101,6 × 101,6
100 × 130	100,1 × 125,5	100,8 × 126,2	101,6 × 127,0
100 × 250	99,5 × 252,4	100,3 × 253,2	101,2 × 254,0
130 × 130	126,2 × 126,2	126,6 × 126,6	127,0 × 127,0
355 × 430	354,8 × 431,0	355,6 × 431,8	356,4 × 432,6
430 × 430	431,0 × 431,0	431,8 × 431,8	432,6 × 432,6
510 × 610	506,4 × 607,4	508,0 × 609,0	509,6 × 611,6
572,2 × 668,7	571,4 × 667,9	572,2 × 668,7	573,0 × 669,5
610 × 810	607,4 × 810,4	609,2 × 812,4	611,1 × 814,3
710 × 810	709,7 × 811,3	711,2 × 812,8	712,7 × 814,3

1) There may be legal requirements in certain countries for additional data to be marked on the package.

Table 1 (continued)

Nominal size	Dimensions		
	minimum	aim	maximum
810 × 1 090	811,3 × 1 090,7	812,8 × 1 092,2	814,3 × 1 093,7

Table 2 — Recognized sizes of plates

Dimensions in millimetres

Nominal size	Dimensions		
	minimum	aim	maximum
76 × 76	75,4 × 75,4	75,8 × 75,8	76,2 × 76,2
150 × 330	151,2 × 328,6	152,0 × 330,0	152,4 × 330,6
200 × 254	201,7 × 252,5	202,4 × 253,2	203,2 × 254,0
280 × 406	277,8 × 404,8	279,4 × 406,4	281,0 × 408,0
762 × 1 016	760,4 × 1 014,4	762,0 × 1 016,0	763,6 × 1 017,6

Table 3 — Substrate thickness of plates

Dimensions in millimetres

Nominal substrate thickness	Substrate thickness	
	minimum	maximum
1,0	0,76	1,12
1,6	1,45	1,83
2,3	2,03	2,51
3,3	2,87	3,50
5,0	4,57	5,20

## Annex A (informative)

### Non-standard plate sizes

Recently revived interest in antique photographic processes amongst the fine arts and amateur photographic communities has led to increasing popularity of both wet plate and dry plate photography. As glass plates are too thick to fit in more commonly available sheet film holders, wet and dry plate enthusiasts scour the second-hand market for holders specifically made for glass plate negatives. However, as most of the available plate holders are often a century or more in age, they will often be unserviceable or can be expected to fall into disrepair during modern-day use. Hence, a side effect of this resurgent popularity of 19<sup>th</sup> century photographic processes is an increasing demand for accessories such as newly manufactured plate holders. As more manufacturers begin to address this demand, they will need to make assumptions about the dimensions of glass and metal plate negatives being produced commercially for the photographic market.

Historical dimensions of dry plates, such as 4 × 5 plates being exactly 4" × 5" cannot be relied upon as a reference. A true industry-wide standard did not exist during the dry plate photographic era spanning the 1880s through to the 1930s. Additionally, the century-long standardization of dimensions for sheet film has had an influence on the manufacture of new plate holders. Custom order manufacturing aside, new holders will only accept plates sized to their sheet film equivalent. For example, some newly-made 4 × 5 plate holders will only accept plates with maximum dimensions of 100 mm × 126 mm. In general, the trend is to accept plates that are (knowingly or unknowingly) sized to equivalent sheet sizes in ISO 1012.

This document currently only governs a few standard plate sizes, which do not align with the sizes of the dry plate and wet plate era. This document is written to include the modern X-ray plate and holography industries as well as the standardized sizes used by astronomical observatories into the 1990s. As such, the standardized dimensions are inadequate to support the needs of the new companies that are supporting the renewed interest in commercial and consumer plate photography.

It is therefore recommended that plate sizes not addressed in this document follow the dimensional and tolerancing rules indicated for sheet film sizes in ISO 1012:1998, Tables 6, 7, and 8, specifically. These tables are included below. Plates sized per these tables will be able to fit both newly manufactured holders as well as antique plate holders from the dry plate era which are still in circulation. The dimensions and tolerances provided below will work with commonly-available holders on the market today. That includes both new and antique holders, which is why they do not appear to be consistent.

**Table A.1 — Preferred sheet sizes** (see ISO 1012:1998, Table 6)

Dimensions in millimetres

Nominal	Aim	Tolerances
90 × 120	88,5 × 118,5	±0,5 ± 0,5
130 × 180	128 × 178	±1,0 ± 1,0
180 × 240	178 × 238	±1,0 ± 1,0
240 × 300	238 × 298	±1,0 ± 1,0
300 × 400	298 × 398	±1,0 ± 1,0

**Table A.2 — Recognized sheet sizes** (see ISO 1012:1998, Table 7)

Dimensions in millimetres

Nominal	Aim	Tolerances
60 × 130	58,5 × 128	±0,5 ± 1,0

Table A.2 (continued)

Nominal	Aim	Tolerances
65 × 90	63,5 × 88,5	±0,5 ± 0,5
83 × 108	81 × 106,4	±0,4 ± 0,4
102 × 127	99,6 × 125	±0,4 ± 0,4
100 × 150	98 × 148	±1,0 ± 1,0
121 × 165	118,3 × 163,5	±0,4 ± 0,8
165 × 216	163,5 × 213,8	±0,8 ± 0,8
178 × 432	176,4 × 427,6	±0,8 ± 0,8
203 × 254	201,6 × 252,8	±0,8 ± 0,8
254 × 305	252,8 × 303,2	±0,8 ± 0,8
279 × 356	278,6 × 354,8	±0,8 ± 0,8
305 × 508	303,2 × 507,2	±0,8 ± 0,8
508 × 610	507,2 × 608,8	±0,8 ± 0,8

Table A.3 — Cutting and tolerance rules for new sheet sizes (see ISO 1012:1998, Table 8)

Dimensions in millimetres

Nominal	Aim	Tolerances
Up to and including 120	Nominal minus 1,5	±0,5
Greater than 120, up to and including 650	Nominal minus 2,0	±1,0
Greater than 650	Nominal minus 2,5	±1,5

Table A.4 — Glass plate sizes in use by the consumer photography market

Dimensions in millimetres

Nominal	Aim	Tolerances
50 × 65	49,5 × 63,5	±0,5 ± 0,5
65 × 90	63,5 × 88,5	±0,5 ± 0,5
83 × 108	81,5 × 106,4	±0,5 ± 0,5
83 × 140	81,5 × 138,5	±0,5 ± 0,5
90 × 120	88,5 × 118,5	±0,5 ± 0,5
102 × 127	99,6 × 125	±0,5 ± 1,0
121 × 165	118,3 × 163,5	±1,0 ± 1,0
127 × 178	125,5 × 176,5	±1,0 ± 1,0
130 × 180	128 × 178	±1,0 ± 1,0
165 × 216	163,5 × 214,5	±1,0 ± 1,0
180 × 240	178 × 238	±1,0 ± 1,0
203 × 254	201,6 × 252,8	±1,0 ± 1,0
279 × 356	278,6 × 354,8	±1,0 ± 1,0
203 × 508	201,6 × 507,2	±1,0 ± 1,0
305 × 508	303,2 × 507,2	±1,0 ± 1,0