
Ophthalmic optics — Spectacle frames — Measuring system and terminology

*Optique ophtalmique — Montures de lunettes — Système de mesure et
terminologie*



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Foreword

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Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 8624 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

This second edition cancels and replaces the first edition (ISO 8624:1991), which has been technically revised.

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Ophthalmic optics — Spectacle frames — Measuring system and terminology

1 Scope

This International Standard specifies a measuring system for spectacle frames. It applies to fronts which are intended to be symmetrical.

2 Measuring system

The measuring system for spectacle frames shall be as detailed in Figures 1 and 2 and in Table 1.

If codes are used as abbreviations in spectacle frame documentation, the standardized letter codes in Table 1 shall be employed.

The measuring system is based on the boxed lens (boxing) system, which uses a rectangle tangential to the lens shape as the basis for the determination of the dimensions of the spectacle front. The upper tangent is common to both lens shapes and shall be regarded as horizontal. The measuring system comprises several horizontal and vertical dimensions and reference points. The knowledge of these is necessary for the manufacturing, ordering and adjustment of spectacle frames, as well as for the exact mounting of spectacle lenses into spectacle frames.

NOTE Annex A includes complementary terms and definitions relating to spectacle frame measurement.

Table 1 — Terms, codes and definitions (see Figures 1 and 2)

Term	Code	Definition
boxed centre	C	intersection of the <i>horizontal</i> and <i>vertical centrelines</i> of the rectangular box which circumscribes the <i>lens shape</i> ^a
horizontal boxed lens size; horizontal lens size	<i>a</i>	distance between the vertical sides of the rectangular box which circumscribes the <i>lens shape</i> ^{a, b}
vertical boxed lens size; vertical lens size	<i>b</i>	distance between the horizontal sides of the rectangular box which circumscribes the <i>lens shape</i> ^a
boxed centre distance; distance between centres	<i>c</i>	distance between the <i>boxed centres</i> , C
distance between lenses	<i>d</i>	horizontal distance between the nasal vertical sides of the rectangular boxes which circumscribe the right and left <i>lens shapes</i> ^c
overall length of side	<i>l</i>	length (see Figure 2) from the intersection of the dowel screw's axis with the median plane of the joint to the end of the side and parallel to the centreline of it, the drop having been straightened

^a In the definitions, the term *lens shape* refers to the shape of hypothetical spectacle lenses with:

- for a spectacle lens having a bevelled edge, the outermost edge of the spectacle lens, the lens having a bevel which includes a symmetrical angle of 120° and a bevel width greater than the width of the groove in the front;
- for a spectacle lens having a flat or grooved edge, the outermost edge of the spectacle lens.

^b For spectacle frames having a significant *face form angle*, the *horizontal boxed lens size* shall be measured in the “plane” of the individual *lens shape*.

^c Previous users of the obsolete datum system should note that this is the datum measurement “minimum between lenses”.

NOTE Words in italics are terms defined within this International Standard.

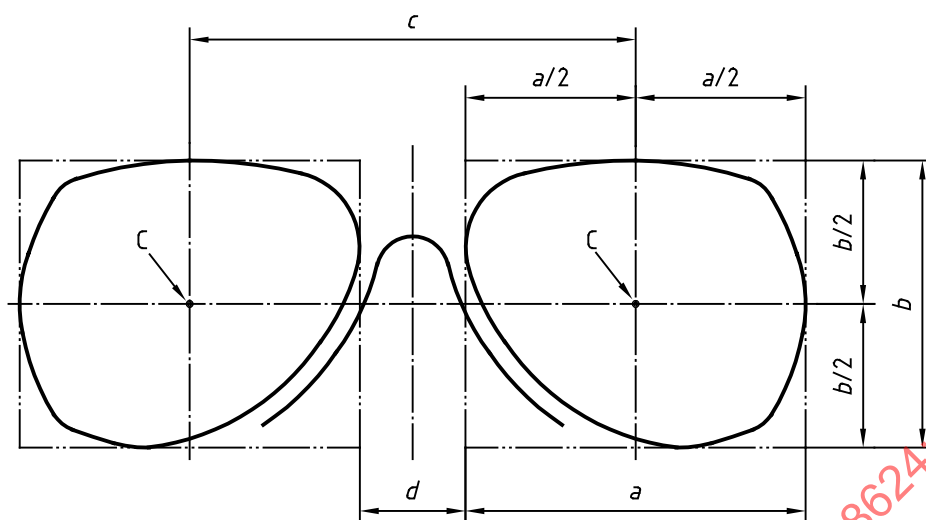
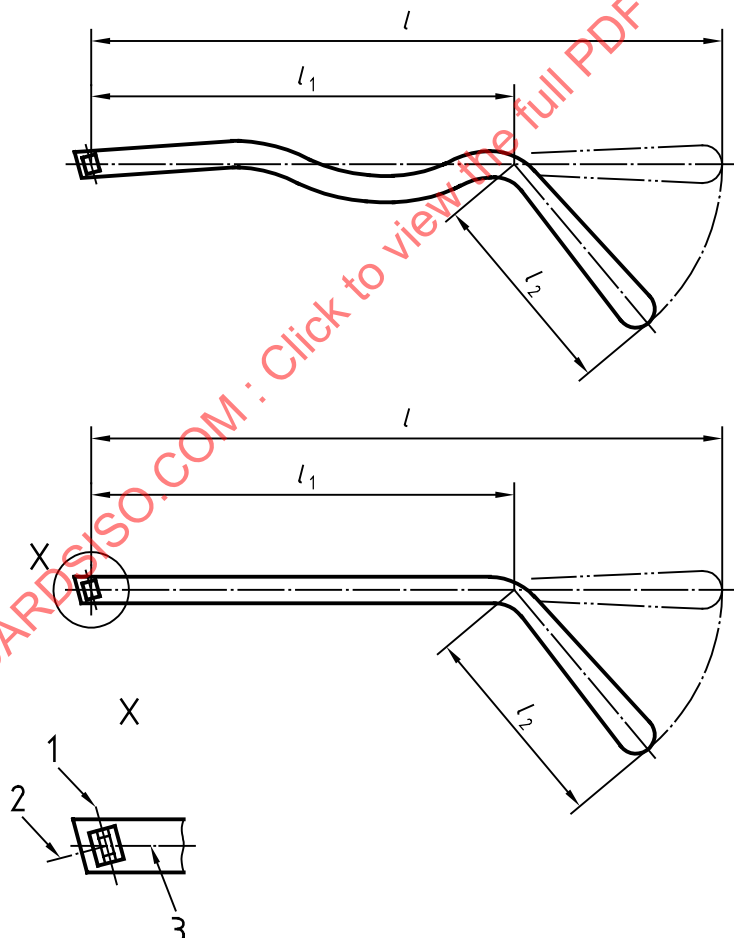


Figure 1 — Code letters and measurements relating to spectacle frame measurements — Spectacle fronts



Key

- 1 Axis of hinge or dowel screw axis
- 2 Median plane of joint
- 3 Centreline of side

Figure 2 — Code letter and measurements relating to spectacle frame measurement — Spectacle sides

Annex A

(informative)

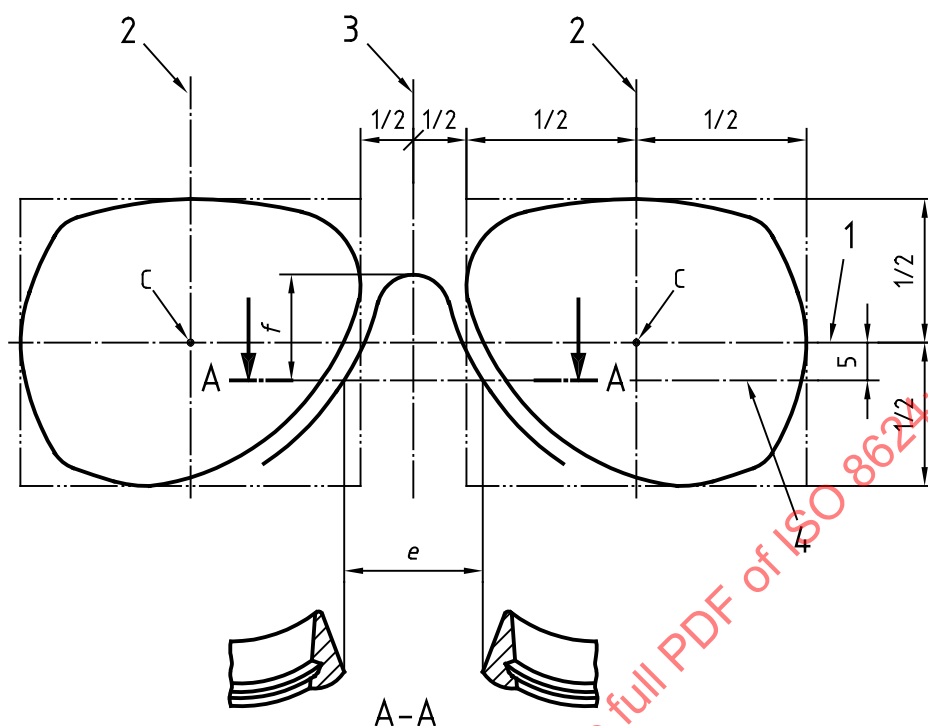
Complementary terms and definitions

The terms and definitions in Table A.1 are not an integral part of the boxed lens system, but are frequently used lens shape or spectacle frame terms.

Table A.1 — Complementary terms and definitions (see Figures 2 and A.1 to A.4)

Term	Definition
horizontal centreline	line located at equal distance from the two horizontal tangents of the <i>boxed lens (boxing) system</i> (See 1 in Figure A.1.)
vertical centreline of box	line located at equal distance from the vertical sides of the rectangular box which circumscribes the spectacle <i>lens shape</i> (See 2 in Figure A.1.)
vertical symmetry axis	line located at equal distance from the nasal vertical sides of the rectangular boxes which circumscribe the right and left spectacle <i>lens shapes</i> (See 3 in Figure A.1.)
bridge width line	reference line for bridge measurements positioned 5 mm below the <i>horizontal centreline</i> (See 4 in Figure A.1.)
bridge width ^a	minimum distance between the rims measured along the <i>bridge width line</i> (See <i>e</i> in Figure A.1.)
bridge height	distance from the <i>bridge width line</i> to the lower edge of the bridge, measured along the <i>vertical symmetry axis</i> (See <i>f</i> in Figure A.1.)
length to bend	length from the intersection of the dowel axis with the median plane of the joint to the intersection point of the axis of the tip and side, measured along the side axis (See <i>l₁</i> in Figure 2.)
length of drop	length from the intersection point of the axes of the side and tip to the end of the side (See <i>l₂</i> in Figure 2.)
effective diameter	diameter of the smallest circular uncut lens that can be glazed to the <i>lens shape</i> with its geometrical centre positioned at the boxed centre (See Figure A.3.) NOTE This includes an allowance for edging.
lens shape	outline of the lens periphery with the nasal side and the horizontal indicated
face form angle	angle between the plane of the spectacle frame and the plane of the right <i>lens shape</i> , or of the left <i>lens shape</i> (See Figure A.4.)
^a For spectacle frames with adjustable pads, bridge width applies to the rims, not the pads; for rimless spectacles, it applies to the minimum distance between the nasal edges of the spectacle lenses measured along the <i>bridge width line</i> . (See Figure A.2.) NOTE Words in <i>italics</i> are terms defined with this International Standard.	

Dimensions in millimetres

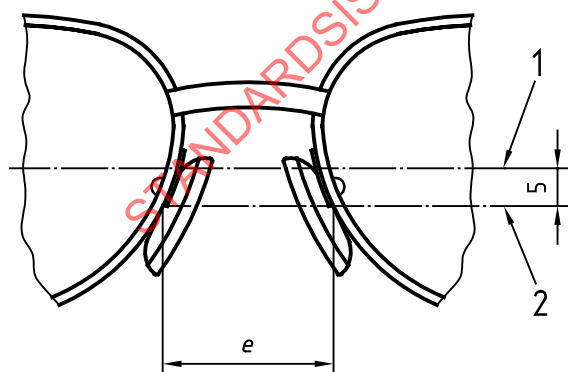


Key

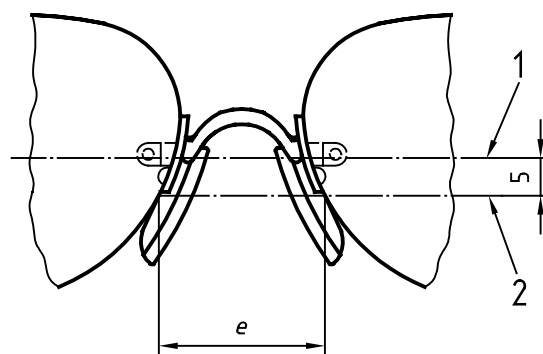
- 1 Horizontal centreline
- 2 Vertical centreline
- 3 Vertical symmetry axis
- 4 Bridge width line
- C Boxed centre

Figure A.1 — Complementary terms relating to fronts

Dimensions in millimetres



a) Metal spectacle frame with pad bridge



b) Rimless spectacle frame with pad bridge

Key

- 1 Horizontal centreline
- 2 Bridge width line

Figure A.2 — Measurement of bridge width