

1. Requirements for Production-Ready Drawings for Windows and Barrier Materials

In order to process your order as quickly as possible, we need a complete drawing by the time you place your order at the latest; ideally, this should be a digital DXF file. A DXF file is always required for free-form designs.

Please note the following:

- **Dimensions relevant to manufacturing**
 - **External Dimensions** (Tolerances in accordance with the dimensional tolerances for cabin windows; see p. 2)
 - **Drilling Holes:** Diameter/radius **AND** center dimensions/position (please do not specify the outer edge of the hole); for **countersunk holes:** additionally, for tapered holes: depth and angle of the countersink; or for stepped/tenon holes: depth and diameter
 - **Curves:** Radius
 - Sharp internal corners are not feasible from a manufacturing standpoint; the remaining internal radius must be at least 1.5 mm
 - **Chamfers:** Only 45° is possible (other angles require a special tool): Specify the chamfer depth (e.g., 1 mm)
 - **Angle/Slope:** Specified using side dimensions **AND** a angle measure
 - **Thread:** Specify thread size (metric only)
- **Nominal thickness, including thickness tolerances:**
 - Glass: depends on the melt → no information
 - Plastic: as specified in the product specifications (tolerances in accordance with the dimensional tolerances for cabin windows; see p. 3)
- **Labeling/Markings**
 - Position (x/y) as shown in the drawing
 - Types:
 - STANDARD (see p. 4 and following)
 - OR as requested by the customer
 - OR label (enclosed with a release from custody) for self-application

2. Dimensional Tolerances for Cabin Windows

2.1 General tolerances for length and angle dimensions of plastic and mineral glass cabin windows:

Nominal size range in mm	Glass		Plastic, non-transparent panel material					Perpendicularity in degrees
	rectan- gular	round	rectan- gular	round	free- form	radius	drilling	
> 15 – 30	–	± 0.20	–	± 0.30	–	± 1.0	± 0.30	± 1.0
> 30 – 120	± 0.30	± 0.30	± 0.30	± 0.30	± 0.30	± 1.0	± 0.30	± 0.5
> 120 – 400	± 0.50	–	± 0.50	± 0.50	± 0.50	–	–	± 0.5
> 400 – 1000	–	–	± 0.80	± 0.80	± 1.00	–	–	± 0.5
> 1000 – 2000	–	–	± 1.20	–	–	–	–	± 0.5
> 2000 – 3000	–	–	± 2.00	–	–	–	–	± 0.5

All dimensions in mm.

2.2 Permissible Thickness Tolerances

2.2.1 Plastic Cabin Windows

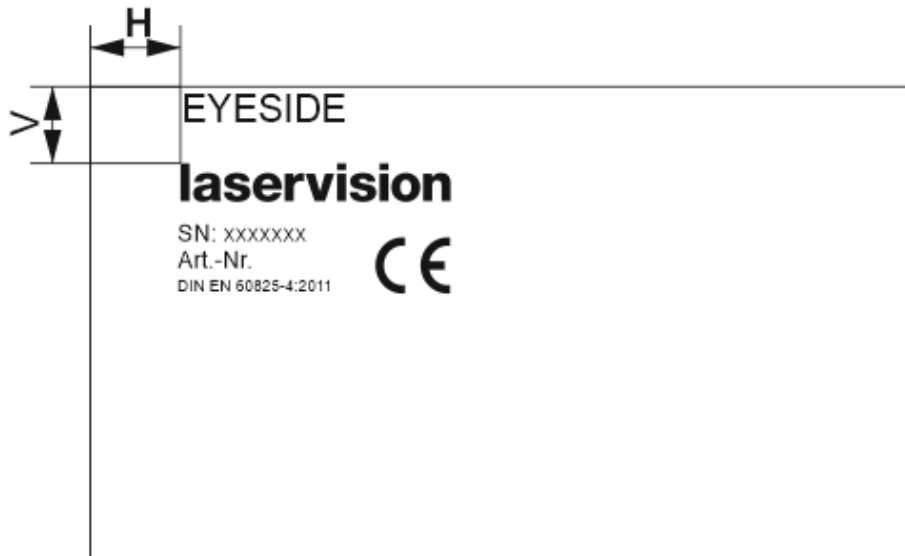
	PC-Window		PMMA GS-Window	
Standard Requirements	DIN EN ISO 11963:2018		DIN EN ISO 7823-1:2003	
	Nominal thickness (mm)	Tolerance (mm)	Nominal thickness (mm)	Tolerance (mm)
	$1.5 \leq h \leq 5$	$\pm 10\%$	h	$\pm (0.4 \text{ mm} + 0.1 \cdot h)$
	$5 \leq h$	$\pm 5\%$		
Product Specifications	Nominal thickness (mm)	Tolerance (mm)	Nominal thickness (mm)	Tolerance (mm)
P5B04			3	2.3 .. 3.7
P1D01	6	± 0.3		
P5E04			3	2.3 .. 3.7
P5E05			3	2.3 .. 3.7
P1E12			6	5 .. 7
P1E13			3.2	2.48 .. 3.92
P1H09			3.2	2.48 .. 3.92
P1K03			3.175	2.8 .. 3.56
P1L03			3.175	2.8 .. 3.56
P1L23			3.18	2.46 .. 3.90
P1N01			3.175	2.8 .. 3.56
P1P10	3.1	± 0.1		
	6.1	± 0.1		
P1P16	6.1	± 0.1		
P1P20	6.1	± 0.1		
P1P21	3.1	± 0.1		

2.2.2 Mineral Glass Cabin Windows

Mineral glass laser protection windows are specified by their optical density (OD). Depending on the melt (batch), there may be relatively large variations in the thickness of the window for a given OD. Therefore, more precise thickness specifications cannot be provided, and compliance with tight tolerances cannot be guaranteed. Please inquire about the thickness of the current batch on a case-by-case basis.

3. Standard Marking

3.1 Mineral Glass Cabin Windows



Marking size:

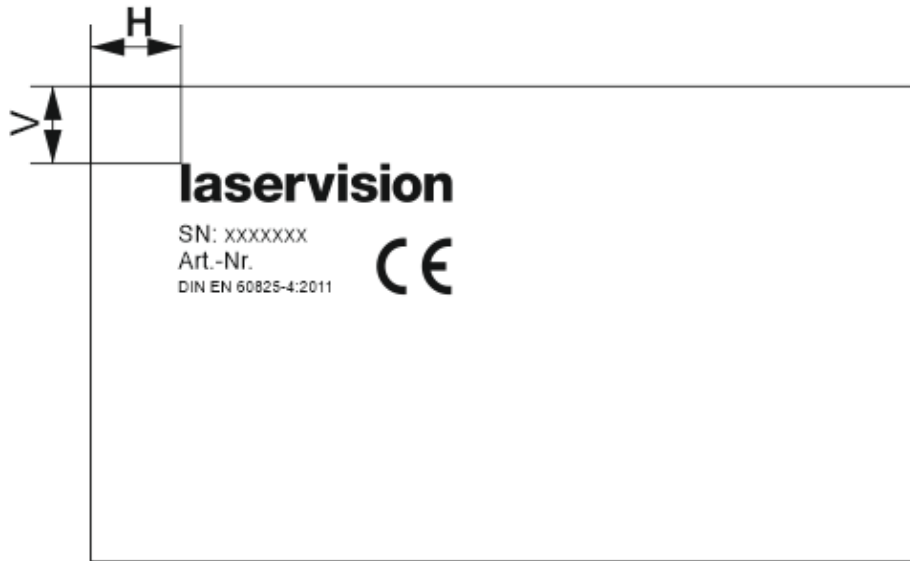
Width x Height ~ 30 mm x ~ 20 mm

EYESIDE
laservision

SN: xxxxxxxx
000T1K03.1CL1
DIN EN 60825-4:2011

CE

3.2 Plastic Cabin Windows



Marking size:

Width x Height ~ 30 mm x ~ 15 mm

laservision

SN: xxxxxxxx
000P1P212002
DIN EN 60825-4:2011



3.3 Label Spacing Based on Dimensions

Dimensions (in mm)	Laser Marking / Label	Laser Marking: H/V Distance
< 65 x 55	Label	Enclosed
65 x 55 - < 200 x 100	Laser Marking	3 mm / 3 mm
> 200 x 100 - < 297 x 210	Laser Marking	5 mm / 5 mm
200 x 100	Laser Marking	10 mm / 10 mm
≥ 297 x 210	Laser Marking	10 mm / 10 mm
≥ 1000 width	Label	Enclosed