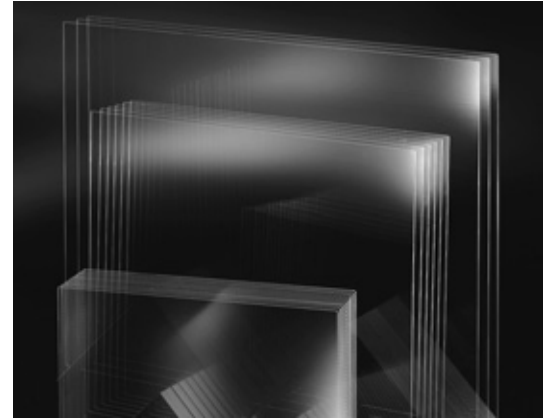


OA-10G/OA-11

OA-10G and OA-11 are used as substrates for liquid crystal displays and OLED displays, as well as substrates for the formation of various thin films. OA-11 has particularly low deformation and deflection of gravity properties. The substrate is both very thin and highly useful. The high dimensional stability of this glass substrate allows it to withstand high temperature processes which makes it suitable for use in the LTPS and IGZO high-quality-next-generation displays.



Features

1. Smooth surface

Glass substrates formed using overflow technology exhibits flat precision surfaces.

2. Alkali-free

With a maximum alkali oxide content of 0.1% each, these products do not degrade the thin-film characteristics of amorphous or polycrystalline silicon.

3. Thermal dimensional stability

A high strain point and a low thermal expansion coefficient give OA-10G and OA-11 high thermal dimensional stability during TFT forming process and other heat treatment processes.

4. Chemically stable surface

Inert to treating agents used in the semiconductor process and the TFT forming process, so surfaces retain pristine quality.

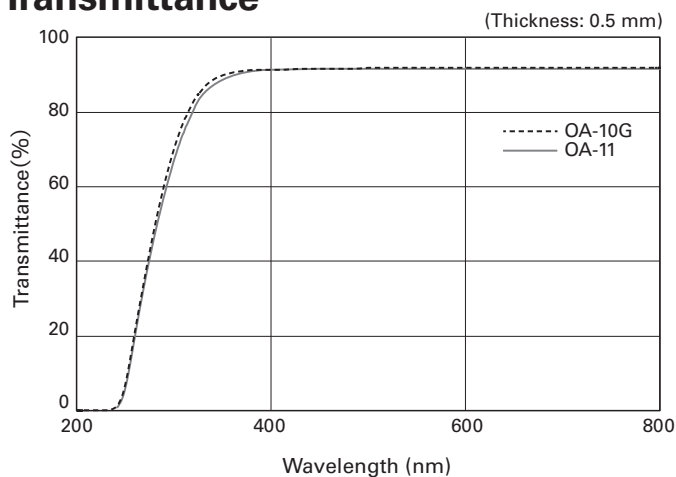
5. Environmentally friendly glass

Environmentally friendly glass that does not contain environmentally hazardous substances, such as As and Sb.

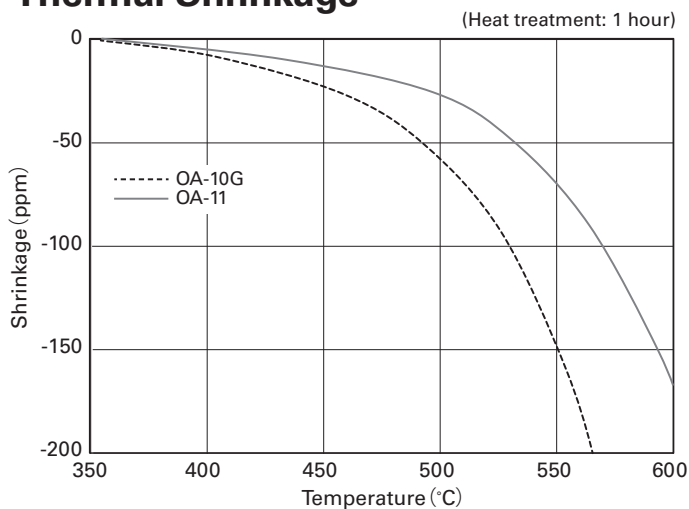
Properties

Properties/Glass Code			OA-10G	OA-11
Density		$\times 10^3 \text{kg/m}^3$	2.46	2.52
Coefficient of thermal expansion	30-380°C	$\times 10^{-7}/\text{K}$	38	37
Strain point		°C	650	685
Young's modulus		GPa	73	78
Poisson's ratio			0.2	0.2
Vickers hardness	Hv		600	620
Volume resistivity Log ρ	350°C	$\Omega \cdot \text{cm}$	12.0	13.0
Dielectric constant	1MHz, RT		5.3	5.6
$\tan \delta$	1MHz, RT		0.001	0.001
Light transmittance	$\lambda=550\text{nm}$	%	92	92
Refractive index (n_d)	587.6nm		1.52	1.53
Chemical durability	10% HCl (80°C-60min)		No visual change	No visual change
	63 BHF (20°C-3min)		No visual change	No visual change
Alkali oxide content		wt %	0.1 max.	0.1 max.
As, Sb content		wt %	Less than 0.1	Less than 0.1

Transmittance



Thermal Shrinkage



Flatness

Subjects	Specifications	Remarks
Waviness	0.06μm max.	Standard length 20mm (SEMI D15-1296)
Surface Roughness	Ra: 0.2nm	AFM

Only on the pattern surface

Dimensions

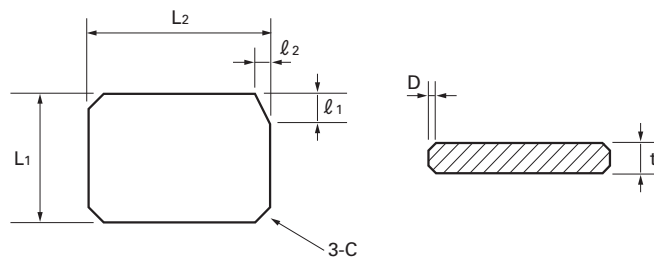
Length (mm)				Thickness (mm)	
L ₁		L ₂		t	
Center	Tolerance	Center	Tolerance	Center	Tolerance
370	±0.2	470	±0.3	0.50	±0.05
550	±0.35	650	±0.4	0.40	±0.04
730	±0.5	920	±0.6	0.30	±0.03
1100	±0.7	1300	±0.8		
1500	±1.0	1850	±1.2		
1950	±1.4	2250	±1.6		
2200	±1.6	2500	±1.7		

Can accommodate requests down to 50μm. (Please refer to the next page.)

Consult us for other dimensions.

Corner Cut		Orientation Corner 1-C		Chamfering
3-C		l ₁	l ₂	D
Center	Tolerance	Center	Tolerance	Simple Round Shape
1.5	±1.0	4.0	±1.0	0.05-0.55

Consult us for other shapes.



Surface Defects (Scratch, Dirt)

None observed in surface inspection carried out using oblique illuminations as shown in the following table.

Grade A	Grade B
10000 lx	1500 lx

Only on the pattern surface

Processing Defects (Peripheral Chipping and Cracking)

Size of Defects (mm)	Maximum Number Allowed
> 1.0	None
≤ 1.0	Disregard

There were no sign of chips nor cracks developing in the glass. Inspection conditions: Surface inspection at 1500 lux.