

Exolon® Optica LX500

High Optical Solid Polycarbonate Sheet



Your benefits:

- premium optical quality
- extreme impact strength
- resistance to a wide range of temperatures
- thermoformable, cold bendable

Exolon® Optica LX500 solid sheets are clear, polished polycarbonate sheets for applications which require highest optical quality, such as automotive glazing or laminated products for security glazing. They offer premium optical properties, with unparalleled low levels of distortion and visual defects.

Exolon® Optica LX500 sheets offer extreme impact strength that exceeds the physical properties of other products of their class. The sheets resist temperatures of -100 to +120 °C, and can be thermoformed, cold curved and machined with ease.

Applications:

Potential applications of **Exolon® Optica LX500** sheets include

- Bullet-resistant glass-PC lamination
- Antiballistic glazing for military, police or VIP vehicles
- Forestry and agricultural vehicles
- Burglary-resistant glazing
- Security glazing in architecture
- Window glazing in cars, police vehicles, vans, buses and leisure vehicles
- Panoramic roofs in cars
- Visors and museum glazing

	Test Conditions	Typical values ⁽¹⁾	Unit	Standard
Physical				
Density	water at 23 °C	1200	kg/m ³	ISO 1183-1
Water absorption saturation	23 °C, 50% relative humidity	0.30	%	ISO 62
Water absorption equilibrium	Procedure A	0.12	%	ISO 62
Refractive index		1.587	–	ISO 489
Mechanical				
Tensile modulus	1 mm/min	2350	MPa	ISO 527-1,-2
Yield stress	50 mm/min	> 60	MPa	ISO 527-1,-2
Yield strain	50 mm/min	6	%	ISO 527-1,-2
Strain at break	50 mm/min	120	%	ISO 527-1,-2
Flexural modulus	2 mm/min	2350	MPa	ISO 178
Flexural strength	2 mm/min	90	MPa	ISO 178
Charpy impact strength	23 °C, unnotched	non-break	kJ/m ²	ISO 179-1eU
Charpy impact strength	23 °C, 3 mm, notched	80P	kJ/m ²	ISO 179-1eA
Izod impact strength	23 °C, 3.2 mm, notched	70P	kJ/m ²	ISO 180-A
Thermal				
Vicat softening temperature	50 N, 50°C/h	148	°C	ISO 306
Thermal conductivity	23°C	0.20	W/(mK)	ISO 8302
Coefficient of linear thermal expansion	23 to 55°C	0.65	10 ⁻⁴ /K	ISO 11359-1, -2
Temperature of deflection under load	1.80 Mpa	128	°C	ISO 75-1, -2
Temperature of deflection under load	0.45 Mpa	140	°C	ISO 75-1, -2

⁽¹⁾ These values are measured on injection molded samples, and are not intended for specification purposes.

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Ideas, innovative, intelligent, interesting... Exolon Group i-line represents the next generation of quality products. This seal guarantees innovative and intelligent first-class solutions at all times for a multitude of requirements.

Light Transmission: test method according to ASTM D1003

Light transmission %	3	4	5	6	8	10	12
Exolon® Optica LX500 clear 099	89	88	88	87	86	84	83

Light Transmission: test method according to EN 410

The stated values are typical values only.

Light transmission %	3	4	5	6	8	10	12
Exolon® Optica LX500 clear 099	88	87	87	86	85	83	82

Availability:

Exolon® Optica LX500 is available in thicknesses of 3 – 12 mm.

Dimensions (standard):

3,050 x 2,050 mm

Other sizes, sheet thicknesses or colours, please contact us.

Permanent Service Temperature: The permanent service temperature without load is approx. 120 °C.

Optical Properties:

The premium optical quality of **Exolon® Optica LX500** is based on extensive research and experience in the production of polycarbonate sheets. The sheets not only have extremely low distortion levels, easily passing diopter value requirements of maximum 0.06 points according to DIN 52305-A-AZ (glazing in vehicles), they also meet stringent requirements on optical defects like inclusions and transparent surface defects. The production and inspection processes are monitored by our Quality Department in line with our ISO 9001 certification.

Optical specifications:

Sample 500 x 500 mm, optical distortion.

Sheet thickness (mm)	3	4	5	6	8	10	12
Diopter (DIN 52305)	0.01	0.01	0.02	0.02	0.03	0.03	0.03

Maximum diopter under 55 degrees inclination with ripple perpendicular to the projected lines acc. DIN 52305.



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