SABIC Innovative Plastics™

Lexan* Thermoclear* Plus 2UV Softlite Sheet — Product Datasheet

Description

Lexan* Thermoclear* Plus 2UV Softlite sheet grades are members of the Lexan Thermoclear sheet range of high quality, multi-wall polycarbonate glazing sheets extruded from Lexan resin. The complete range offers next to remarkable impact strength, light weight, long term weather resistance, outstanding thermal insulation properties, 2 sides UV protected and a more than **excellent light transmission** (~7% higher than standard Opal White) **at 100% light diffusion and it reduces significantly the "rainbow" effect** with direct sunlight.

Typical Property Values ◆

Grade-Color	Gauge (mm)	Weight (kg/m²)	Sound Red. value‡ (dB)	U-Value¥ (W/m² K)	Hail Impact Test¶ (m/sec)	LT• D65 (%LT)	DST• (%DST)	TST• (%TST)	SHGC#	LSGR	SC
LT2UV452RS10											
Clear	4.5	1.0	16	3.86	>21	83	75	83	0.83	1.00	0.95
Opal White	4.5	1.0	16	3.86	>21	67	62	70	0.70	0.96	0.80
Softlite	**4.5**	**1.0**	**16**	**3.86**	**>21**	**78**	**72**	**79**	**0.79**	**0.99**	**0.91**
LT2UV62RS13											
Clear	6	1.3	17	3.56	>21	82	76	82	0.82	1.00	0.94
Opal White	6	1.3	17	3.56	>21	66	63	69	0.69	0.96	0.79
Softlite	**6**	**1.3**	**17**	**3.56**	**>21**	**79**	**73**	**77**	**0.77**	**1.03**	**0.89**
LT2UV82RS15											
Clear	8	1.5	18	3.26	>21	81	77	82	0.82	0.99	0.94
Opal White	8	1.5	18	3.26	>21	64	62	68	0.68	0.94	0.78
Softlite	**8**	**1.5**	**18**	**3.26**	**>21**	**79**	**73**	**77**	**0.77**	**1.03**	**0.89**
LT2UV83TS17											
Clear	8	1.7	19	2.92	>21	73	71	75	0.75	0.97	0.86
Opal White	8	1.7	19	2.92	>21	61	59	66	0.66	0.92	0.76
Softlite	**8**	**1.7**	**19**	**2.92**	**>21**	**72**	**67**	**75**	**0.75**	**0.96**	**0.86**
LT2UV102RS17											
Clear	10	1.7	19	3.02	>21	81	76	80	0.80	1.01	0.92
Opal White	10	1.7	19	3.02	>21	64	62	68	0.68	0.94	0.78
Softlite	**10**	**1.7**	**19**	**3.02**	**>21**	**78**	**72**	**76**	**0.76**	**1.03**	**0.87**

Continue on next page

Color number reference table:

Color	Color number
Clear	112
Opal White	WH7A092X
Softlite	**NA9D110X**

◆ These property values have been derived from Lexan* resin data for the material used to produce this sheet product
‡ Sound reduction values based on Sabic calculated values according DIN 52210-75
¥ U-values based on Sabic calculated values according ISO 10077 (EN673)
¶ Hail simulation test developed by TNO, the Netherlands, artificial hailstones of 20 mm diameter are shot at the sheet at min. speed of 21m/sec.
• LT (Light Transmission) and TST (Total Solar Transmission) measurements according ISO 9050 (EN 410) on 600x600 mm samples
TST (Total Solar Transmission) divided by 100 equals Solar Heat Gain Coefficient (SHGC) or g-value.
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Typical Property Values ◆ (continued)

Grade-Color	Gauge (mm)	Weight (kg/m²)	Sound Red. value‡ (dB)	U-Value ¥ (W/m²K)	Hail Impact Test¶ (m/sec)	LT• D65 (%LT)	DST# (%DST)	TST# (%TST)	SHGC#	LSGR#	SC #
LT2UV103TS17											
Clear	10	1.7	21	2.68	>21	73	71	75	0.75	0.97	0.86
Opal White	10	1.7	21	2.68	>21	61	59	66	0.66	0.92	0.76
Softlite	**10**	**1.7**	**21**	**2.68**	**>21**	**72**	**67**	**72**	**0.72**	**1.00**	**0.83**
LT2UV105R175											
Clear	10	1.75	20	2.39	>21	65	61	65	0.65	1.00	0.75
Opal White	10	1.75	20	2.39	>21	60	58	59	0.59	1.02	0.68
Softlite	**10**	**1.75**	**20**	**2.39**	**>21**	**62**	**58**	**64**	**0.64**	**0.97**	**0.74**
LT2UV163TS27											
Clear	16	2.7	21	2.27	>21	74	70	78	0.78	0.95	0.90
Opal White	16	2.7	21	2.27	>21	63	60	69	0.69	0.91	0.79
Softlite	**16**	**2.7**	**21**	**2.27**	**>21**	**72**	**67**	**73**	**0.73**	**0.99**	**0.84**
LT2UV163X28											
Clear	16	2.8	22	2.10	>21	67	63	71	0.71	0.94	0.82
Opal White	16	2.8	22	2.10	>21	60	57	64	0.64	0.94	0.74
Softlite	**16**	**2.8**	**22**	**2.10**	**>21**	**65**	**61**	**67**	**0.67**	**0.97**	**0.77**
LT2UV166RS27											
Clear	16	2.7	22	1.84	>21	61	57	64	0.64	0.95	0.74
Opal White	16	2.7	22	1.84	>21	52	49	60	0.60	0.87	0.69
Softlite	**16**	**2.7**	**22**	**1.84**	**>21**	**59**	**55**	**67**	**0.67**	**0.88**	**0.77**
LT2UV205RS33											
Clear	20	3.3	22	1.77	>21	64	60	71	0.71	0.90	0.82
Opal White	20	3.3	22	1.77	>21	55	53	60	0.60	0.92	0.69
Softlite	**20**	**3.3**	**22**	**1.77**	**>21**						
LT2UV205X32											
Clear	20	3.2	22	1.69	>21	58		66	0.66	0.88	0.76
Opal White	20	3.2	22	1.69	>21	50		51	0.51	0.98	0.59
Softlite	**20**	**3.2**	**22**	**1.69**	**>21**	**55**	**53**	**62**	**0.62**	**0.89**	**0.71**
LT2UV256RS35											
Clear	25	3.5	23	1.45	>21	58	54	66	0.66	0.88	0.76
Opal White	25	3.5	23	1.45	>21	49	47	63	0.63	0.78	0.72
Softlite	**25**	**3.5**	**23**	**1.45**	**>21**	**56**	**52**	**60**	**0.60**	**0.93**	**0.70**
LT2UV255X34											
Clear	25	3.4	23	1.51	>21	57		65	0.65	0.88	
Opal White	25	3.4	23	1.51	>21	49		54	0.54	0.91	
Softlite	**25**	**3.4**	**23**	**1.51**	**>21**	**54**	**52**	**61**	**0.61**	**0.89**	**0.70**
LT2UV325X38											
Clear	32	3.8	24	1.32	>21	55	54	65	0.65	0.85	0.75
Opal White	32	3.8	24	1.32	>21	48	46	48	0.48	1.00	0.55
Softlite	**32**	**3.8**	**24**	**1.32**	**>21**	**54**	**50**	**59**	**0.59**	**0.92**	**0.68**
LT2UV359X40											
Clear	35	4.0	24	1.187	>21	51	49	53	0.53	0.96	0.61
Opal White	35	4.0	24	1.187	>21	44	43	49	0.49	0.90	0.56
Softlite	**35**	**4.0**	**24**	**1.187**	**>21**	**47**	**44**	**49**	**0.49**	**0.96**	**0.56**
LT2UV409X43											
Clear	40	4.3	25	1.103	>21	51	49	52	0.52	0.98	0.52
Opal White	40	4.3	25	1.103	>21	43	42	48	0.48	0.90	0.55
Softlite	**40**	**4.3**	**25**	**1.103**	**>21**	**45**	**43**	**48**	**0.48**	**0.94**	**0.55**
LT2UV459X45											
Clear	45	4.5	26	1.036	>21	50	48	52	0.52	0.96	0.52
Opal White	45	4.5	26	1.036	>21	42	42	47	0.47	0.89	0.54
Softlite	**45**	**4.5**	**26**	**1.036**	**>21**	**46**	**44**	**49**	**0.49**	**0.94**	**0.56**

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Definitions

Light Transmission D65 (% LT):
Percentage of the incident visible light that passes through the sheet.

Direct Solar Transmission (%DST):
Percentage of incident solar radiation that passes directly through the sheet.

Total Solar Transmission (%TST):
The percentage of incident Solar radiation transmitted by an object which includes the direct Solar Transmission plus the part of the Solar Absorption reradiated inward.

Solar Heat Gain Coefficient (SHGC):
or g-value is the total solar energy that enters the interior of a building, divided by 100.

Shading Coefficient (SC):
The ratio of the total solar radiation transmitted by a given material to that transmitted by normal 3 mm glass, whose light transmission is 87%. SC=%TST/87.

Light to Solar Gain Ratio (LSGR):
The ratio between total light transmission (LT) and the total solar transmission (TST).

In addition to the standard 2UV grade-color combinations we have other optional sheet configurations available in Lexan Thermoclear Plus 2UV Softlite Sheet. Different outside as well as inside surface treatments are developed to give specific added value properties to the sheet.

Outer surface: **Self-cleaning**

•Lexan* Thermoclear* Easy Clean Sheet
This is the world's first self-cleaning polycarbonate sheet. UV protected on both sides, Lexan Thermoclear Easy Clean sheet features a unique hydrophobic coating on the outside surface that reduces the surface tension of polycarbonate and increases the contact angle of water to the sheet. This causes larger droplets to form and wash away dirt, leaving the sheet almost spotless. Furthermore, it stays clean for longer, thereby reducing the frequency and the associated cost of cleaning.

Outer surface: Superior Weatherability

•Lexan* Thermoclear* SunXP Sheet
In addition to the inherent properties of the Lexan Thermoclear Plus 2UV Softlite range, this range of products offers UV protection on both sides, but with even higher resistance to UV radiation, yellowing and loss of light transmission. This exceptional material is awarded a unique 15 years limited written warranty.

Inner surface: Anti-Drip

•Lexan* Thermoclear* Dripgard Sheet
Lexan Thermoclear Dripgard sheet is suitable for any roof glazing application in which water droplets are unacceptable, such as commercial greenhouses where they could cause crop spoilage. This innovative product has UV protection on the outer surface and a specially developed hydrophilic coating on the inner surface. This coating reduces the formation of condensation droplets by increasing the surface tension of the sheet and decreasing the contact angle. As a consequence, a thin mist of water will form on the inner surface of the sheet, which will not drip and will not affect the excellent light transmission of the material.

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Lexan* Thermoclear* Plus 2UV Softlite Sheet

Product Datasheet

Optional configurations overview and grade names:

Gauge (mm)	Weight (kg/m²)	Easy Clean	SunXP	Dripgard	Easy Clean + Dripgard
6	1.3	LTE62RS13	LT2XP62RS13	LTD62RS13	LTED62RS13
8	1.5	LTE82RS15	LT2XP82RS15	LTD82RS15	LTED82RS15
8	1.7			LTD82RS17	
10	1.7	LTE102RS17	LT2XP102RS17	LTD102RS17	LTED102RS17
10	1.7	LTE103TS17	LT2XP103TS17	LTD103TS17	LTED103TS17
10	1.9			LTD103RS19	
10	2.0	LTE103X20	LT2XP103X20		
16	2.7	LTE163TS27		LTD163TS27	LTED163TS27
16	2.8	LTE163X28	LT2XP163X28	LTD163X28	
20	3.3	LTE205RS33		LTD205RS33	LTED205RS33
20	3.2	LTE205X32			
25	3.5	LTE256RS35	LT2XP256RS35		LTED256RS35
25	3.4	LTE255X34			
32	3.8	LTE325X38	LT2XP325X38		
35	4.0	LTE359X40	LT2XP359X40	LTD359X40	LTED359X40
40	4.3	LTE409X43	LT2XP409X43	LTE409X43	LTED09X43
45	4.5	LTE459X45	LT2XP459X45	LTD459X45	LTED459X45

Other combinations / gauges / colors are available upon request.

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Solar Transmission

Transparent grades of Lexan Thermoclear Plus 2UV Softlite sheet have excellent light transmission. Although Lexan Thermoclear Plus 2UV Softlite Sheet has less solar transmission versus traditional glass, we advise for buildings in hot climates or facing south, Lexan Thermoclear in IR version (absorbing infra red) which will reduce the solar transmission substantially up to 70%.

UV Resistance

Despite transmitting visible light very well, Lexan Thermoclear Plus 2UV Softlite sheet is almost opaque to radiation in the UV and far infra-red region. This useful shielding property can prevent discoloration of sensitive materials such as fabrics or other organic materials placed under or behind Lexan Thermoclear Plus 2UV Softlite sheet glazing in, for example, a factory warehouse, museum or shopping centre. The complete Lexan Thermoclear Plus 2UV Softlite sheet range features a proprietary two sides surface treatment designed to protect the sheet against the degrading effects of ultra-violet radiation in natural sunlight. It has superior resistance to outdoor weathering.

Warranty

SABIC Innovative Plastics offers a Ten (10) Year Limited Written Warranty on Lexan Thermoclear Plus 2UV Softlite sheet covering discoloration, loss of light transmission and loss of strength due to weathering. See warranty for details.

Thermal insulation

The multi-wall structure of Lexan Thermoclear Plus 2UV Softlite sheet offers significant advantages where thermal insulation is a major consideration. The hollow form provides excellent insulation characteristics with heat losses significantly lower than mono-wall glazing materials.

Fire Test Performance

Lexan Thermoclear Plus 2UV Softlite sheet has good fire behavior characteristics, and receives high ratings in several major European fire performance tests. More detailed information is available from your local SABIC Innovative Plastics' Service Center or authorized dealer.

Sound insulation

The sound insulation characteristics of a material are largely pre-determined by its stiffness, mass and physical construction. According to DIN 52210-75, the maximum obtainable sound is 24dB.

Impact Strength

Lexan Thermoclear Plus 2UV Softlite sheet has outstanding impact performance over a wide temperature range, -40°C to 120°C, and also after prolonged outdoor exposure.

Hail Simulation

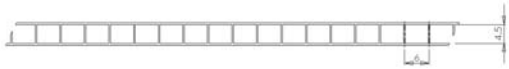
As roofing material Lexan Thermoclear Plus 2UV Softlite sheet is subjected to the extremes of weather; like storms, hail, wind, snowfall and ice formation. Under these conditions, the product is virtually unbreakable and is able to accommodate the subsequent temperature change to sunny conditions without breaking or buckling. It should be noted that when glass and acrylic are tested their failure characteristics are typical brittle, whilst Lexan Thermoclear Plus 2UV Softlite sheet shows a ductile deformation, e.g. small indentations.

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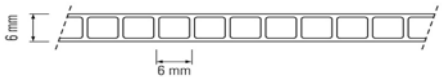
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Structures and nomenclatures

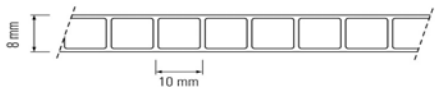
LT2UV452RS10



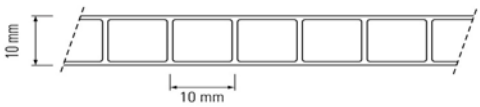
LT2UV62RS13



LT2UV82RS15



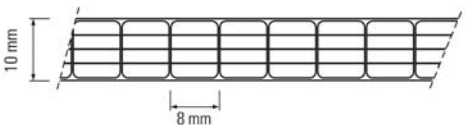
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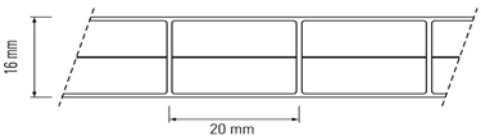
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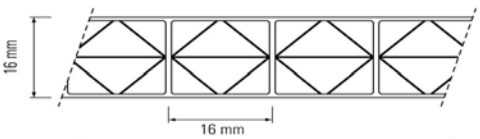
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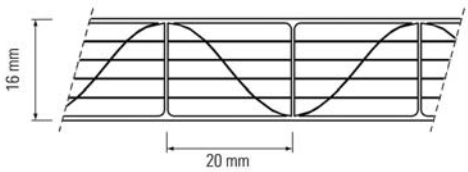
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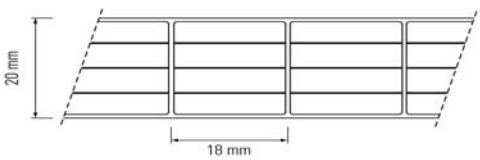
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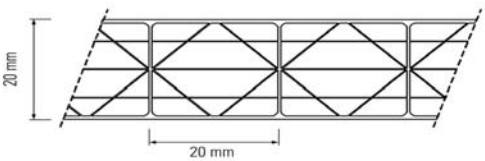
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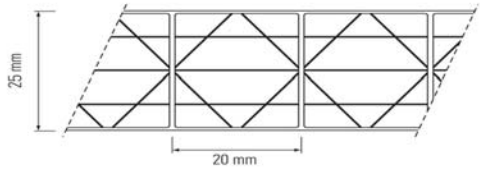
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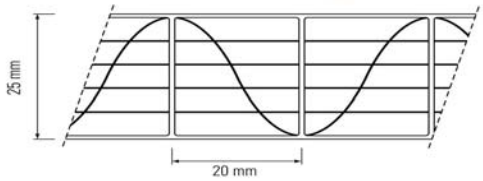
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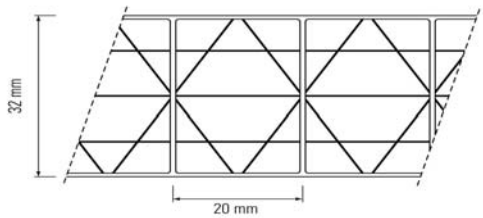
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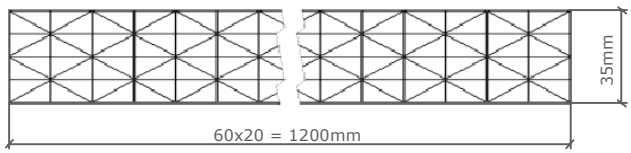
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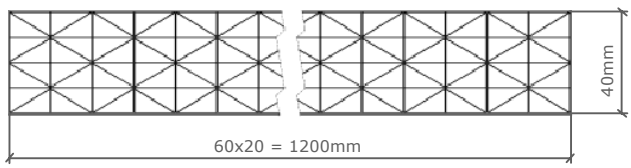
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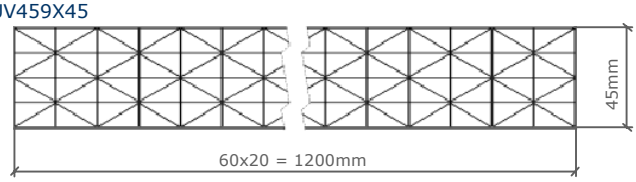
LT2UV359X40



LT2UV409X43



LT2UV459X45



Lexan* Thermoclear* Plus 2UV Softlite Sheet Product Datasheet

General Guidelines

Storage
Lexan Thermoclear Plus 2UV Softlite sheet should be stored and protected against atmospheric influences like sun, rain, etc. Care should be exercised when handling and transporting Lexan Thermoclear Plus 2UV Softlite sheet in order to prevent scratches on the panel surface and damage to the panel edges.

Cleaning
Periodic cleaning using correct procedure is recommended to prolong service life. For extensive cleaning recommendations please read our technical manual. Small surfaces; gently wash sheet with a solution of mild soap and lukewarm water, using a soft, grid-free cloth or sponge to loosen any dirt or grime.
Do not use any corrosive materials or chemicals to clean Lexan Thermoclear Plus 2UV Softlite sheets.

Chemical Resistance
Neoprene, EPT or EPDM rubbers with an approximate Shore Hardness of A65 are recommended. When using glazing compounds it is essential that the sealant system accepts a certain amount of movement to allow for thermal expansion, without loss of adhesion to the frame or sheet. Silicone sealants are generally recommended for use with Lexan Thermoclear Plus 2UV Softlite sheet. It is strongly advised when using sealing to check before compatibility before use.

Sawing
Lexan Thermoclear Plus 2UV Softlite sheet can be cut easily and accurately with standard workshop equipment. This includes common circular, hand and hacksaws. Saw dust should be blown out of the channels using clean compressed air. Circular saw blade should be fine-toothed panel blades. When hand or power hacksaws are used, the sheet should be clamped to the worktable to avoid undesirable vibration.

Thermal expansion allowance
Since Lexan Thermoclear Plus 2UV Softlite sheet has a greater linear thermal expansion coefficient than that of traditional glazing materials, care should be taken to allow for free expansion of the sheet to prevent bowing and internal thermal stress. Thermal expansion allowance must be made for both the length and width of the Lexan Thermoclear Plus 2UV Softlite sheet. In general, thermal expansion of the sheet is approximately 3 mm per linear meter.



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