



# Makrolon® DX-NR sheet

## Polycarbonate diffuser sheet for outdoor LED lighting

Makrolon DX-NR is a translucent polycarbonate product specifically designed for use as a lighting lens in outdoor applications. The diffuser technology helps to provide uniform luminance and ensures elimination of LED hot spots while maintaining high light transmission. The advanced UV resistance technology provides long lasting weathering performance and the non-reflective texture built into the UV resistant side of the sheet, enhances its aesthetics.

When compared to other light diffusing products such as glass and acrylic, Makrolon DX-NR has superior impact strength and toughness. Its higher flammability resistance and wider service temperature provide an additional advantage over acrylic diffusers.

Typical Properties*			
Property	Test Method	Units	Values
<b>PHYSICAL</b>			
Specific Gravity	ASTM D 792	-	1.2
Water Absorption, 24 hrs	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.38
Light Transmission @ 0.060" / 0.118"	ASTM D 1003	%	69 / 61
Light Diffusion @ 0.060" / 0.118"	FWHM	degrees	150 / 152
<b>MECHANICAL</b>			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Instrumented Impact @ 0.118"	ASTM D 3763	ft-lbs	47
<b>THERMAL</b>			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10 <sup>-5</sup>
Coefficient of Thermal Conductivity	ASTM C 177	BTU-in/hr-ft <sup>2</sup> -°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
<b>ELECTRICAL</b>			
Dielectric Constant @10 Hz	ASTM D 150	-	3.0
Dielectric Constant @ 60 Hz	ASTM D 150	-	3.2
Volume Resistivity	ASTM D 257	Ohm-cm	>8 x 10 <sup>15</sup>
<b>FLAMMABILITY</b>			
Flame Class @ 0.060"	UL 94	-	V2**
@ 0.118"	UL 94	-	HB**
Horizontal Burn	ASTM D 635	in.	<1 (CC1)
Glow Wire Flammability Index	DIN EN 60695-2-12	°F	1560
Glow Wire Ignition Test	DIN EN 60695-2-13	°F	1607

\*Typical properties are not intended for specification purposes

\*\*Test results, product not UL 94 Listed

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