

TUFFAK Lumen XT-V polycarbonate sheet

LIGHT DIFFUSING

TUFFAK Lumen XT-V is a translucent polycarbonate sheet with a textured surface on one side specifically designed for lighting lenses where enhanced flame rating is required. Available in three diffusion levels, Lumen XT-V offers design flexibility and outstanding performance.

INTENDED MARKETS

Industrial Luminaires
Hazardous Location Lighting
Transportation Lenses
Fixtures with NEC Class I Circuits

Regulatory code compliance and certifications

UL 94: Flammability File #E87887

Typical Properties*

Property	Test Method	Units	Values
PHYSICAL			
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			
LV3 @ 0.118"	ASTM D 1003	%	86
LV5 @ 0.118"	ASTM D 1003	%	76
LV7 @ 0.118"	ASTM D 1003	%	62
MECHANICAL			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	8,900
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	100
Flexural Strength	ASTM D 790	psi	14,000
Flexural Modulus	ASTM D 790	psi	370,000
Instrumented Impact @ 0.118"	ASTM D 3763	ft-lbs	48
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10 ⁻⁵
Coefficient of Thermal Conductivity	ASTM C 177	BTU-in/hr-ft ² -°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	222
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	244
ELECTRICAL			
Dielectric Constant @10 Hz	ASTM D 150	-	2.9
Dielectric Constant @ 60 Hz	ASTM D 150	-	2.8
Volume Resistivity	ASTM D 257	Ohm-cm	7.5 e 15
Dissipation Factor @ 60 Hz	ASTM D 150	-	0.002
Arc Resistance, Tungsten Electrodes	ASTM D 495	Seconds	125
Dielectric Strength, in air @ 0.118"	ASTM D 149	V/mil	390
FLAMMABILITY			
Flame Class @ 0.118"	UL 94	-	VO, 5VA
Flame Class @ 0.118"	FAR 25.853 Part 1, a (i) - 60 sec	-	Pass

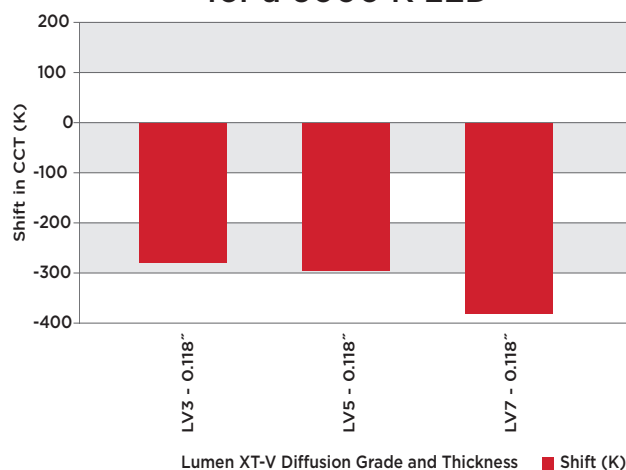
*Typical properties are not intended for specification purposes

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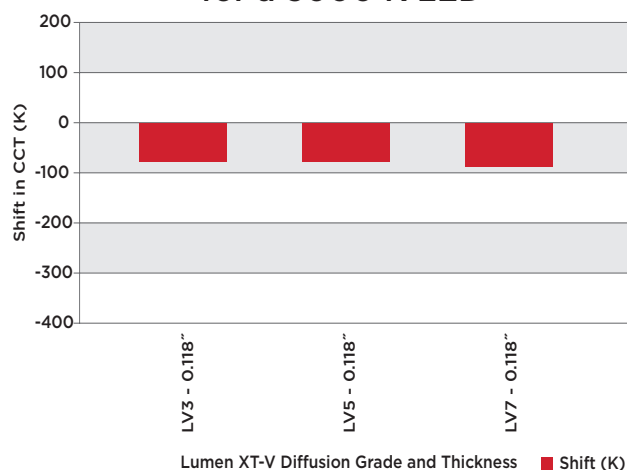
Diffusion and Transmission

Lumen XT Grade	DIFFUSION (FWHM, degrees) 0.118" thickness	% TRANSMISSION (ASTM D 1003) 0.118" thickness
LV3	53	86
LV5	77	76
LV7	135	62

**Correlated Color Temperature Shift
for a 6000 K LED**



**Correlated Color Temperature Shift
for a 3000 K LED**



These graphs show measured shifts in Correlated Color Temperature (CCT) of light from an LED light fixture with a diffuser sheet vs. the same LED fixture without a diffuser. The LED fixtures' CCT without a diffuser is 3000 K and 6000 K.

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