

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

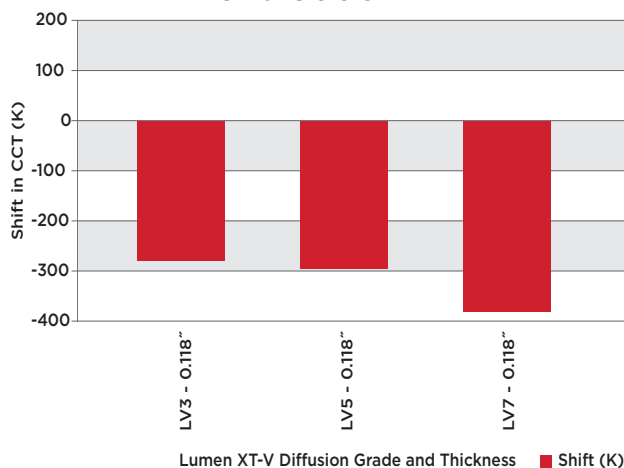
*Typical properties are not intended for specification purposes

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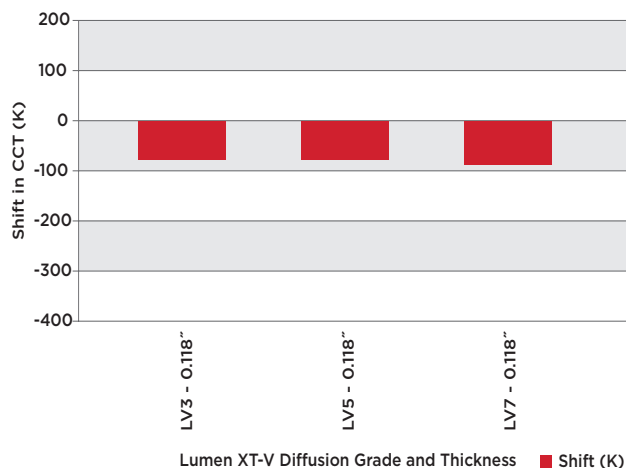
Diffusion and Transmission

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.

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.