POLYVANTIS

PRODUCT DATASHEET

LEXAN™ 8010E FILM

DESCRIPTION

LEXAN™ 8010E polycarbonate sheeted film is a transparent optical with polished finished at both sides, offers excellent clarity and optical quality in all thickness, high heat resistance, and superior dimension stability for graphics art applications. Derived from one of the world's toughest polymers, LEXAN 8010E also provides a high gloss surface finish while meeting additional requirement for gauge control and flatness.

TYPICAL PROPERTY VALUES*

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
MECHANICAL						
Tensile Strength @ Yield	ASTM D882	psi	8700	ISO 527	MPa	60
Ultimate	ASTM D882	psi	9130	ISO 527	MPa	63
Tensile Modulus	ASTM D882	psi	340000	ISO 527	MPa	2340
Tensile Elongation at Break	ASTM D882	%	80-120	ISO 527	%	80-120
Gardner Impact Strength at 0.03" (0.75 mm)	ASTM D3029	ft-lb	23	ISO 6603-1	J	31
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	245
Propagation	ASTM D1922	g/mil	30-55		kN/m	10-20
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	566		J	30.2
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	130			130
0.020" (0.50 mm)	ASTM D2176-69	double folds	35			35
THERMAL						
Coefficient of Thermal Conductivity at 0.02" (0.5mm)	ASTM D5470	Btu/hr/ft^2/°F/in	1.35		W/m°K	0.20
Coefficient of Thermal Expansion						
CTE -20~100˚C, cross-flow	ASTM E831	(x10^{-5}/°F)	4.4	ISO 11359	(x10^{-5}/°C)	7.9
CTE -20~100˚C, inflow	ASTM E831	(x10^{-5}/°F)	3.9	ISO 11359	(x10^{-5}/°C)	7.1
Glass Transition Temperature	ASTM D3417 / D3418	°F	302	ISO 11357	°C	150
Heat Deflection Temp. by TMA at 1.8 MPa		°F	290	ISO 75 Modified	°C	143
PHYSICAL						
Density	ASTM D792	slug/ft^3	2.3	ISO 1183	kg/m^3	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.12	ISO 62	% change	0.12
Surface Roughness (RMS)	ASME B46-1	µm	0.01			
Surface Tension	Dyne Pens	Dyne	38-40			
Pencil Hardness (500g loading)	ASTM D3363	-	B			
Taber Abrasion (500g, 100cycles)	ASTM D1044	delta Haze	30			

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
OPTICAL						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	91			
Yellowness Index	ASTM D1925	%	<1.0			
Haze	ASTM D1003	%	0.1			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	103	ISO 2813	-	103
ELECTRICAL						
Dielectric Strength in oil, short time						
@ 72°F (23°C), 10 mils (0.25 mm)	ASTM D149-97a Method A	kv/mil	1.81	IEC 60243	kv/mm	71
Dielectric Constant						
@ 1.1 GHz	ASTM D150	-	2.82	IEC 60250	-	2.82
Dissipation Factor						
@ 1.1 GHz	ASTM D150	-	0.007	IEC 60250	-	0.007
Volume Resistivity	ASTM D257	Ω-cm	1.13E+16	IEC 60093	Ω-cm	1.13E+16
Surface Resistivity	ASTM D257	Ω/square	9.8E+15	IEC 60093	Ω/square	9.8E+15
Arc Resistance, Tungsten Electrodes	ASTM D495	s	70			

- These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department. Reported values are based on 0.500 mm (0.020”) thickness film and are tested at machine direction unless otherwise noted.

MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
0.500 - 1.200 mm	± 3%

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