

# LEXAN™ EXL FILAMENT AMHI240F

## DESCRIPTION

LEXAN™ EXL AMHI240F filament is a high impact polycarbonate product available in black and white colors. It provides high impact strength and improved ductility over standard polycarbonate at room temperature and extreme low temperatures.

## TYPICAL PROPERTY VALUES

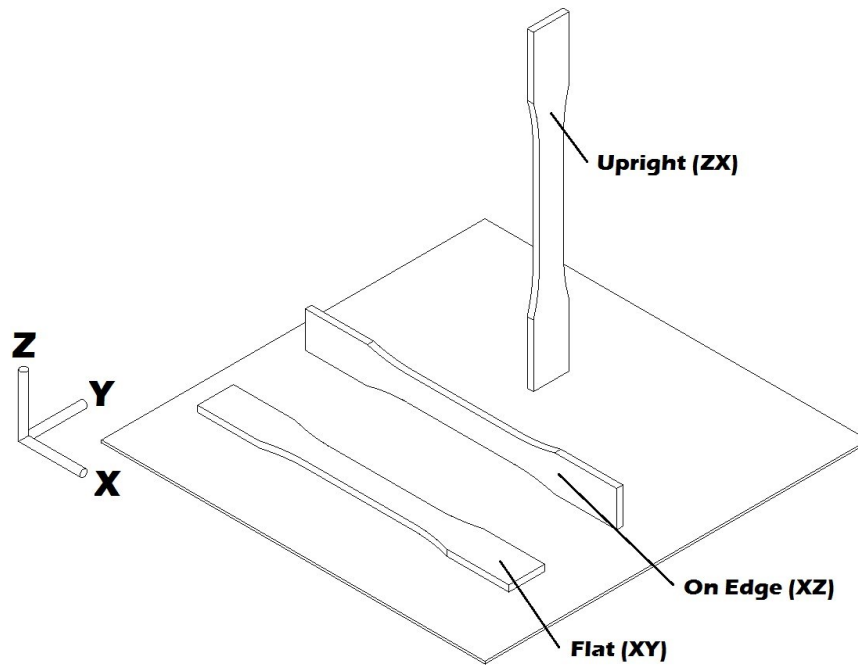
Revision 20201207

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
<b>Tensile Modulus</b>			
XY ORIENTATION	1730	MPa	ASTM D638
XZ ORIENTATION	1910	MPa	ASTM D638
ZX ORIENTATION	1800	MPa	ASTM D638
XY ORIENTATION	1843	MPa	ISO 527
XZ ORIENTATION	1898	MPa	ISO 527
ZX ORIENTATION	1845	MPa	ISO 527
<b>Tensile Stress, brk, Type I, 5 mm/min</b>			
XY ORIENTATION	45	MPa	ASTM D638
XZ ORIENTATION	55	MPa	ASTM D638
ZX ORIENTATION	40	MPa	ASTM D638
XY ORIENTATION	49	MPa	ISO 527
XZ ORIENTATION	51	MPa	ISO 527
ZX ORIENTATION	45	MPa	ISO 527
<b>Tensile Strain, brk, Type I, 5 mm/min</b>			
XY ORIENTATION	7	%	ASTM D638
XZ ORIENTATION	5	%	ASTM D638
ZX ORIENTATION	3	%	ASTM D638
XY ORIENTATION	7	%	ISO 527
XZ ORIENTATION	7	%	ISO 527
ZX ORIENTATION	3	%	ISO 527
<b>Flexural Modulus, 1.3 mm/min</b>			
XY ORIENTATION	1530	MPa	ASTM D790
XZ ORIENTATION	1910	MPa	ASTM D790
ZX ORIENTATION	1500	MPa	ASTM D790
XY ORIENTATION	1626	MPa	ISO 178
XZ ORIENTATION	1952	MPa	ISO 178
ZX ORIENTATION	1676	MPa	ISO 178
<b>Izod Impact, notched, 23°C</b>			
XY ORIENTATION	205	J/m	ASTM D256
XZ ORIENTATION	320	J/m	ASTM D256
ZX ORIENTATION	55	J/m	ASTM D256
XY ORIENTATION	18	kJ/m <sup>2</sup>	ISO 180
XZ ORIENTATION	28	kJ/m <sup>2</sup>	ISO 180
ZX ORIENTATION	6	kJ/m <sup>2</sup>	ISO 180

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>Izod Impact, notched, -30°C</b>			
XY ORIENTATION	170	J/m	ASTM D256
XZ ORIENTATION	230	J/m	ASTM D256
ZX ORIENTATION	40	J/m	ASTM D256
XY ORIENTATION	15	kJ/m <sup>2</sup>	ISO 180
XZ ORIENTATION	12	kJ/m <sup>2</sup>	ISO 180
ZX ORIENTATION	4	kJ/m <sup>2</sup>	ISO 180
<b>Izod Impact, un-notched, 23°C</b>			
XY ORIENTATION	855	J/m	ASTM D256
XZ ORIENTATION	880	J/m	ASTM D256
ZX ORIENTATION	250	J/m	ASTM D256
XY ORIENTATION	61	kJ/m <sup>2</sup>	ISO 180
XZ ORIENTATION	96	kJ/m <sup>2</sup>	ISO 180
ZX ORIENTATION	19	kJ/m <sup>2</sup>	ISO 180
<b>Izod Impact, un-notched, -30°C</b>			
XY ORIENTATION	1000	J/m	ASTM D256
XZ ORIENTATION	940	J/m	ASTM D256
ZX ORIENTATION	260	J/m	ASTM D256
XY ORIENTATION	72	kJ/m <sup>2</sup>	ISO 180
XZ ORIENTATION	97	kJ/m <sup>2</sup>	ISO 180
ZX ORIENTATION	22	kJ/m <sup>2</sup>	ISO 180
<b>Instrumented Impact Total Energy, 23 °C</b>			
XY ORIENTATION	14	J	ASTM D3763
XZ/ZX ORIENTATION	17	J	ASTM D3763
<b>Instrumented Impact Total Energy, -30 °C</b>			
XY ORIENTATION	13	J	ASTM D3763
XZ/ZX ORIENTATION	10	J	ASTM D3763
<b>Charpy Impact Strength, un-notched, 23°C</b>			
XY ORIENTATION	88	kJ/m <sup>2</sup>	ISO 179
XZ ORIENTATION	151	kJ/m <sup>2</sup>	ISO 179
ZX ORIENTATION	23	kJ/m <sup>2</sup>	ISO 179
<b>Charpy Impact Strength, notched, 23°C</b>			
XY ORIENTATION	19	kJ/m <sup>2</sup>	ISO 179
XZ ORIENTATION	30	kJ/m <sup>2</sup>	ISO 179
ZX ORIENTATION	6	kJ/m <sup>2</sup>	ISO 179
<b>THERMAL</b>			
<b>HDT, 1.82 MPa, 3.2 mm, unannealed</b>			
XY ORIENTATION	139	°C	ASTM D648
XZ ORIENTATION	138	°C	ASTM D648
ZX ORIENTATION	138	°C	ASTM D648
XY ORIENTATION	137	°C	ISO 75
XZ ORIENTATION	137	°C	ISO 75
ZX ORIENTATION	136	°C	ISO 75
<b>Vicat Softening Temp, Rate A/50</b>			
XY ORIENTATION	148	°C	ASTM D1525
XZ ORIENTATION	149	°C	ASTM D1525

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
ZX ORIENTATION	149	°C	ASTM D 1525
XY ORIENTATION	148	°C	ISO 306
XZ ORIENTATION	149	°C	ISO 306
ZX ORIENTATION	149	°C	ISO 306
<b>Coefficient of Thermal Expansion - flow</b>			
XY ORIENTATION	77	µm/(m·°C)	ASTM E831
XZ ORIENTATION	80	µm/(m·°C)	ASTM E831
ZX ORIENTATION	79	µm/(m·°C)	ASTM E831
<b>Coefficient of Thermal Expansion - x-flow</b>			
XY ORIENTATION	77	µm/(m·°C)	ASTM E831
XZ ORIENTATION	81	µm/(m·°C)	ASTM E831
ZX ORIENTATION	79	µm/(m·°C)	ASTM E831
<b>PHYSICAL</b>			
<b>Density</b>	1.19	g/cm <sup>3</sup>	ASTM D792
<b>ELECTRICAL</b>			
<b>Volume Resistivity</b>			
XY ORIENTATION	1.4E+15	Ω.cm	ASTM D257
XZ/ZX ORIENTATION	1.5E+15	Ω.cm	ASTM D257
<b>Dielectric Constant</b>			
XY ORIENTATION at 1.9 GHz	2.6	-	ASTM D150
XZ/ZX ORIENTATION at 1.9 GHz	2.7	-	ASTM D150
<b>Dissipation Factor</b>			
XY ORIENTATION at 1.9 GHz	0.005	-	ASTM D150
XZ/ZX ORIENTATION at 1.9 GHz	0.005	-	ASTM D150
<b>FLAME CHARACTERISTICS</b>			
<b>UL94 Flame Class Rating <sup>(1)</sup></b>			
XY ORIENTATION, 3.0 mm (Black)	V-0	-	UL 94
XZ ORIENTATION, 3.0 mm (Black)	V-0	-	UL 94
ZX ORIENTATION, 3.0 mm (Black)	V-2	-	UL 94
XY ORIENTATION, 3.0 mm (White)	V-2	-	UL 94
XZ ORIENTATION, 3.0 mm (White)	V-2	-	UL 94
ZX ORIENTATION, 3.0 mm (White)	V-2	-	UL 94

(1) UL results provided herein may not be sufficient to waive end use part testing for UL listing. Contact UL for further details.



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