



Microwave Laminate Quick Reference

The following is a reference guide which highlights those characteristics that are critical when making a material selection. All of Polyflon’s microwave materials are fully isotropic, uniform in construction in all three axis. Polyflon does not use any bonding or adhesive materials in the manufacture of its substrates.

PROPERTY	Units	Microwave Laminate			
		CuFlon	POLYGUIDE	NorCLAD	Clad ULTEM®
Dielectric Material		Virgin PTFE	Irradiated Polyolefin	Polyphenylene Oxide	ULTEM 1000
Dielectric Constant, 3 GHz		2.05	2.32	2.55	3.05
Dissipation Factor, 3 GHz		0.00045	0.00031	0.00110	.00300
Dielectric Breakdown	V/mil	1000	500	500	830
Operating Temperature Range	°C	-55 to 175 °C	-55 to 85 °C	-55 to 125 °C	-55 to 175 °C
Volume Resistivity	Ω-cm	10 ¹⁸	10 ¹⁶	10 ¹⁷	6.7 x 10 ¹⁷
Peel Strength, 25 °C	lb/in, avg	8	8	8	8
Moisture Absorption	%	<.01%	<.01%	0.06	.25
Specific Gravity		2.2	0.95	1.1	1.27
CTE X, dielectric only	ppm/°C	129	108	53	56
CTE Y, dielectric only	ppm/°C	129	108	53	56
CTE Z, dielectric only	ppm/°C	129	108	53	56
Standard Availability, Dielectric Thickness	inches	0.00025 thru 0.125	0.031, 0.062 & 0.125	0.062, 0.125, 0.250, .375, .500	0.035, 0.060 0.094 & 0.125
Panel Size	inches	<= 0.005" 9" x 9"	all thicknesses 12" x 18"	all thicknesses 20" x 22"	all thicknesses 12" x 18"
Panel Size	inches	>=0.010" 12" x 18"			

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