

# TLX

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**Excellent Mechanical & Thermal Properties**  
**Low Dissipation Factor**  
**Low & Stable Dielectric Constant**  
**UL 94 V-O Rating**  
**Tightly Controlled Dielectric Constant**

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## *APPLICATIONS*

LNAs, LNBS, and LNCs

PCS/PCN Large Format Antennas

High Power Amplifiers

Passive Components

Taconic has over 35 years of experience coating fiberglass fabric with PTFE (polytetrafluoroethylene). This enables Taconic to manufacture copper clad PTFE/woven glass laminates with exceptionally well controlled electrical and mechanical properties.

The dielectric constant (Dk) range is 2.45 to 2.65. The Dk can be specified anywhere within this range with a tolerance of  $\pm 0.04$ . The dissipation factor is approximately .0019 when measured at 10 GHz.

TLX laminates can be sheared, drilled, milled and plated using standard methods for PTFE/woven fiberglass materials. The laminates are dimensionally stable, and exhibit virtually no moisture absorption during fabrication processes.

TLX laminates are generally ordered clad on one or both sides with 1/2, 1, or 2 oz. electrodeposited copper. Contact our Customer Service Department for alternate claddings.

Typical applications for TLX laminates include radar systems, phased array antennas, mobile communication systems, microwave test equipment, microwave transmission devices and RF components.

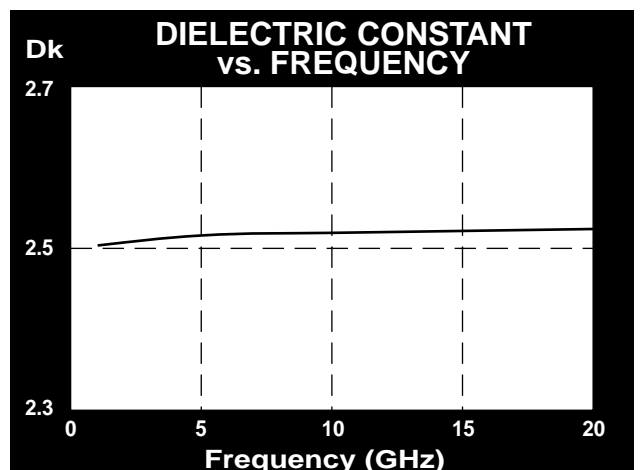
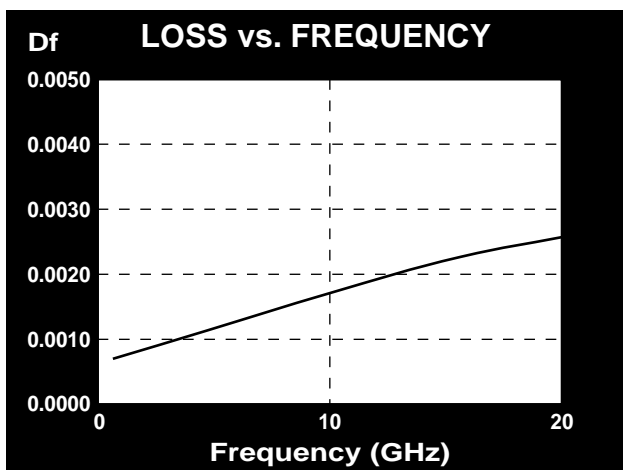
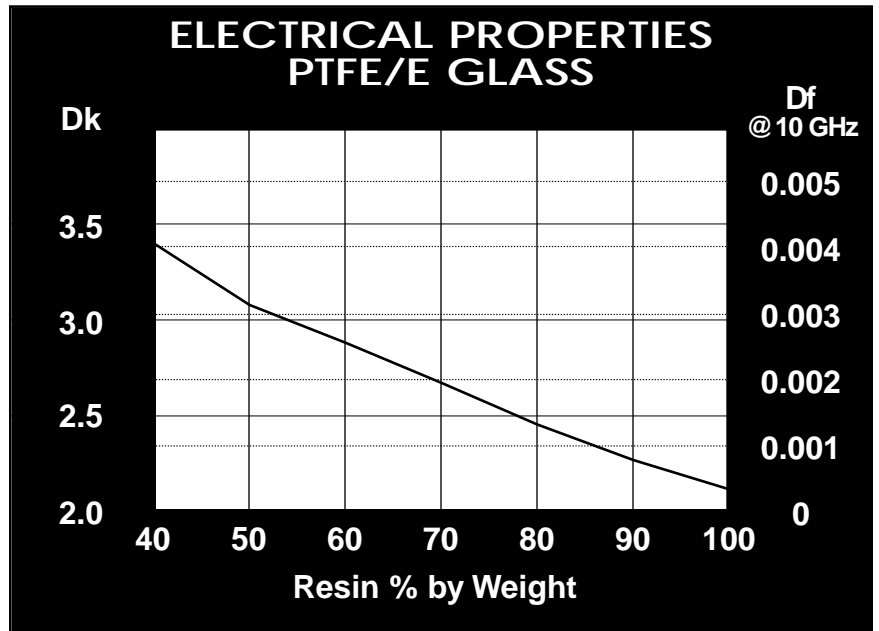
TLX laminates are tested in accordance with IPC-TM 650. A Certificate of Compliance containing actual test data accompanies each shipment.

See "How to Order" on back page for a complete product listing.

## TLX-9 TYPICAL VALUES

Property	Test Method	Units	Value	Units	Value
Dielectric Constant @ 10 GHz	IPC-TM 650 2.5.5.5		2.50		2.50
Dissipation Factor @ 10 GHz	IPC-TM 650 2.5.5.5		0.0019		0.0019
Moisture Absorption	IPC-TM 650 2.6.2.1	%	<0.02	%	<0.02
Dielectric Breakdown	IPC-TM 650 2.5.6	kV	>60	kV	>60
Volume Resistivity	IPC-TM 650 2.5.17.1	Mohm/cm	10 <sup>7</sup>	Mohm/cm	10 <sup>7</sup>
Surface Resistivity	IPC-TM 650 2.5.17.1	Mohm	10 <sup>7</sup>	Mohm	10 <sup>7</sup>
Arc Resistance	IPC-TM 650 2.5.1	seconds	>180	seconds	>180
Flexural Strength Lengthwise	IPC-TM 650 2.4.4	lbs./in.	>23,000	N/mm <sup>2</sup>	>159
Flexural Strength Crosswise	IPC-TM 650 2.4.4	lbs./in.	>19,000	N/mm <sup>2</sup>	>131
Peel Strength (1oz copper)	IPC-TM 650 2.4.8	lbs./linear in.	12.0	N/mm	2.1
Thermal Conductivity	ASTM F 433	W/m/K	0.19	W/m/K	0.19
x-y CTE	ASTM D 3386 (TMA)	ppm/°C	9-12	ppm/°C	9-12
z CTE	ASTM D 3386 (TMA)	ppm/°C	130-145	ppm/°C	130-145
UL-94 Flammability Rating	UL-94		V-0		V-0

Type	Dk
TLY-5A	2.17
TLY-5	2.20
TLY-3	2.33
TLT-0   TLX-0	2.45
TLT-9   TLX-9	2.50
TLT-8   TLX-8	2.55
TLT-7   TLX-7	2.60
TLT-6   TLX-6	2.65
TLE-95	2.95
TLC-27	2.75
TLC-30	3.00
TLC-32	3.20
RF-30	3.00
RF-35	3.50
RF-60	6.15
CER-10	10



# How to Order

Designation	Dielectric Constant	Dielectric Thickness	Dielectric Thickness
TLX - 0	2.45 +/- .04	.0050" - .0190"	0.13mm – 0.48mm
		.0200" - .0300"	0.50mm – 0.76mm
		≥ .0310"	≥ 0.78mm
TLX - 9	2.50 +/- .04	.0050" - .0190"	0.13mm – 0.48mm
		.0200" - .0300"	0.50mm – 0.76mm
		≥ .0310"	≥ 0.78mm
TLX - 8	2.55 +/- .04	.0050" - .0190"	0.13mm – 0.48mm
		.0200" - .0300"	0.50mm – 0.76mm
		≥ .0310"	≥ 0.78mm
TLX - 7	2.60 +/- .04	.0050" - .0190"	0.13mm – 0.48mm
		.0200" - .0300"	0.50mm – 0.76mm
		≥ .0310"	≥ 0.78mm
TLX - 6	2.65 +/- .04	.0050" - .0190"	0.13mm – 0.48mm
		.0200" - .0300"	0.50mm – 0.76mm
		≥ .0310"	≥ 0.78mm

Standard sheet size is 36" x 48" (914mm x 1220mm). Please contact our Customer Service Department for the availability of other sizes and claddings.

TLX can be ordered with the following electrodeposited copper:

Panels may be ordered cut to size

Designation	Weight	Copper Thickness	Copper Thickness
CH	1/2 oz./sq. ft.	~ .0007"	~18 µm
C1	1 oz./sq. ft.	~ .0014"	~ 35 µm
C2	2 oz./sq. ft.	~ .0028"	~ 70 µm

Typical Panel Sizes	
12" x 18"	304mm x 457mm
16" x 18"	406mm x 457mm
18" x 24"	457mm x 610mm
16" x 36"	406mm x 914mm
24" x 36"	610mm x 914mm
18" x 48"	457mm x 1220mm

An example of our part number is: TLX-9-0310-CH/CH-18" x 24" (TLX-9-0310-CH/CH-457mm x 610mm)

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