

## LMR®-195-LLPX Flexible Low Loss Plenum Coax

### Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- Drop in replacement for RG-142
- UL/NEC/CSA rated CMP/FT6 (listed under UL file #E-170516)
- Any wireless application (e.g. LMDS, MMDS, WLL, GPS, LMR, WLAN, WISP, WiMax, SCADA, Cellular, PCS, Paging) requiring an easily routed, low loss RF cable for in-building systems

• **LMR®-LLPX** is an indoor highly fire retardant cable intended specifically for runs within return air handling plenums (e.g. dropped ceilings, raised floors). It has a UL/NEC & CSA rating of ‘CMP’ and ‘FT6’ respectively.

• **Flexibility** and bendability are hallmarks of the LMR-LLPX cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.

• **Low Loss** is another hallmark feature of LMR-LLPX. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.

• **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).

• **Weatherability:** LMR-LLPX cables are designed for indoor Plenum applications. LMR-LLPX can also be used for applications that originate outdoors (e.g., rooftop) and subsequently enter the building.

• **Connectors:** A variety of connectors are available for LMR-LLPX cable, including the most common interface types. Most employ crimp outer attachment using standard hex crimp sizes.

• **Cable Assemblies:** All LMR-LLPX cable types are available as pre-terminated cable assemblies. Contact TMS for additional jacket colors



Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid BC	0.037	(0.94)
Dielectric	Low density PTFE	0.113	(2.87)
Outer Conductor	Aluminum Tape	0.119	(3.02)
Overall Braid	Tinned Copper	0.142	(3.61)
Jacket	Red Fluoropolymer	0.175	(4.45)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	0.5	(12.7)
Bend Radius: repeated	in. (mm)	2.0	(50.8)
Weight	lb/ft (kg/m)	0.30	(0.05)
Tensile Strength	lb (kg)	40	(18.2)
Flat Plate Crush	lb/in. (kg/mm)	10	(0.18)

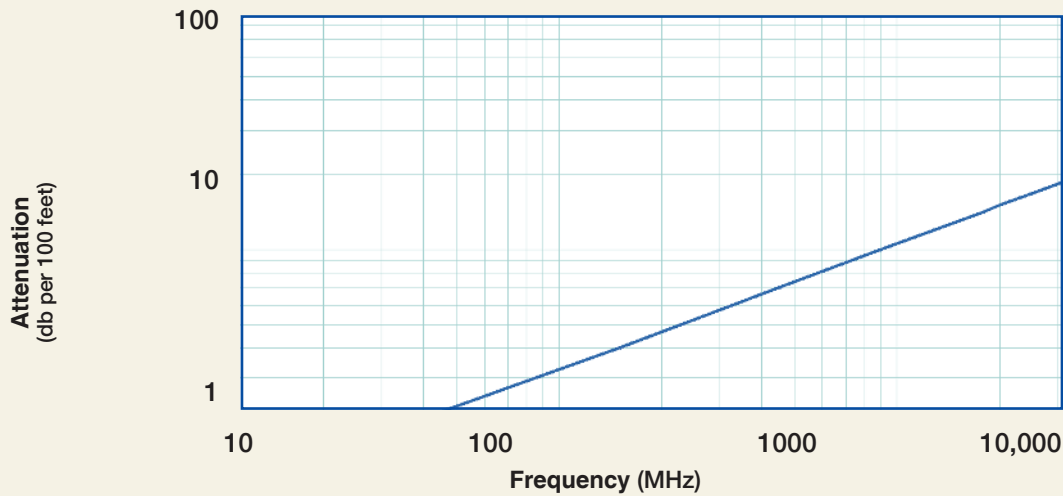
Environmental Specifications			
Performance Property		°F	°C
Installation Temperature Range		-40/+257	-40/+125
Storage Temperature Range		-40/+257	-40/+125
Operating Temperature Range		-40/+125	-40/+125

Electrical Specifications			
Performance Property	Units	US	(metric)
Velocity of Propagation	%	76	
Dielectric Constant	NA	1.73	
Time Delay	nS/ft (nS/m)	1.34	(4.40)
Impedance	ohms	50	
Capacitance	pF/ft (pF/m)	26.7	(87.6)
Inductance	uH/ft (uH/m)	0.067	(0.22)
Shielding Effectiveness	dB	>90	
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	7.6	(24.9)
Outer Conductor	ohms/1000ft (/km)	4.9	(16.1)
Voltage Withstand	Volts DC	1000	
Jacket Spark	Volts RMS	3000	
Peak Power	kW	2.5	

Part Description				
Part No.	Application	Jacket	Color	Stock Code
LMR-195-LLPX	Indoor/Outdoor Plenum CMP/FT-6	Fluoropolymer	Red	54425

**X TIMES MICROWAVE**

**Attenuation vs. Frequency (typical)**



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
<b>Attenuation dB/100 ft</b>	2.0	2.5	4.4	5.3	7.8	10.9	14.1	15.4	16.3	18.3	21.4	28.2	35.7
<b>Attenuation dB/100 m</b>	6.4	8.3	14.4	17.5	25.1	35.6	46.2	50.7	53.5	60.0	70.2	92.5	117.1
<b>Avg. Power kW</b>	1.6	1.25	0.72	0.59	0.41	0.29	0.22	0.20	0.19	0.17	0.15	0.11	0.08

**Calculate Attenuation =**

$(0.356297) \cdot \sqrt{\text{FMHz}} + (0.000183) \cdot \text{FMHz}$  (interactive calculator available at [http://www.timesmicrowave.com/cable\\_calculators](http://www.timesmicrowave.com/cable_calculators))

**Attenuation:**

VSWR=1.0 ; Ambient = +25°C (77°F)

**Power:**

VSWR= 1.0; Ambient = +40°C; Jacket = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading



Connectors		Part Number	Stock Code	VSWR** Freq. (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in (mm)	Width in (mm)	Weight lb (g)
1. N male	Straight Plug	TC-195-NMH-X	3190-2880	<1.25:1 (2.5)	Knurl	Solder	Crimp	S/G	1.5 (38.1)	0.75 (19.1)	0.073 (33.1)
2. N male	Right Angle	TC-195-NMH-RA-D	3190-2425	<1.35:1 (6)	Hex/Knurl	Solder	Crimp	A/G	1.3 (32.1)	1.19 (30.1)	0.083 (37.5)
3. SMA male	Straight Plug	TC-195-SM-SS-X	3190-2878	<1.25:1 (2.5)	Hex	Solder	Crimp	SS/G	1.0 (25.4)	0.32 (8.1)	0.015 (6.8)
4. TNC male	Straight Plug	TC-195-TM-X	3190-2879	<1.25:1 (2.5)	Knurl	Solder	Crimp	S/G	1.4 (35.6)	0.59 (15.0)	0.045 (20.4)

(20.4)



**Install Tools**



Type	Part Number	Stock Code	Description
Crimp Tool	CT-240/200/195/100	3190-667	Crimp tool for LMR-100, 195, 200 and 240 connectors
Deburr Tool	DBT-U	3192-001	Removes center conductor rough edges
Cutting Tool	CCT-02	3192-165	Cable end flush cut tool
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool
Strip Tool	CST-195/200	3192-102	Combination prep tool for LMR-195 & 200
Replacement Blade Kit	RB-CST	3192-086	Replacement blade kit for all strip tools

