TIMES MICROWAVE SYSTEMS

LMR®-1200-LLPL
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor Plenum Feeder runs
- UL/NEC/CSA rated CMP/FT6
- 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®- LLPL** is an indoor highly fire retarded 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-1200-LLPL 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-1200-LLPL. 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-1200-LLPL cables are designed for indoor Plenum applications. Black jacketed LMR-LLPL versions can be supplied for applications that originate outdoors (e.g., rooftop) and subsequently enter the building.

- **Connectors**: Type-N male and female connectors are available for LMR-1200-LLPL cable. Other interface types can be provided by using a short jumper cable assembly.

- **Cable Assemblies**: All LMR-1200-LLPL cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-1200-LLPL	Indoor/Outdoor Plenum CMP/FT6	FRPVC	Orange	54063

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	BC Tube	0.310	(7.87)
Dielectric	Low density PTFE	0.920	(23.37)
Outer Conductor	Aluminum Tape	0.926	(23.52)
Overall Braid	Tinned Copper	0.972	(24.69)
Jacket	Orange FRPVC	1.200	(30.48)

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Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	6.50	(165.1)
Bend Radius: repeated	in.s (mm)	12.0	(304.8)
Bending Moment	ft-lbs (N-m)	15.0	(20.34)
Weight	lbs/ft (kg/m)	0.7	(1.04)
Tensile Strength	lbs (kg)	975	(442.7)
Flat Plate Crush	lbs/in. (kg/mm)	375	(6.70)

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)	0.37	(1.21)
Outer Conductor	ohms/1000ft (/km)	0.37	(1.2)
Voltage Withstand	Volts DC	6000	
Jacket Spark	Volts RMS	8000	
Peak Power	kW	90	

Environmental Specifications

Performance Property	°F	°C
Installation Temperature Range	+23/+167	-5/+75
Storage Temperature Range	+23/+167	-5/+75
Operating Temperature Range	+23/+167	-5/+75

Attenuation vs. Frequency (typical)
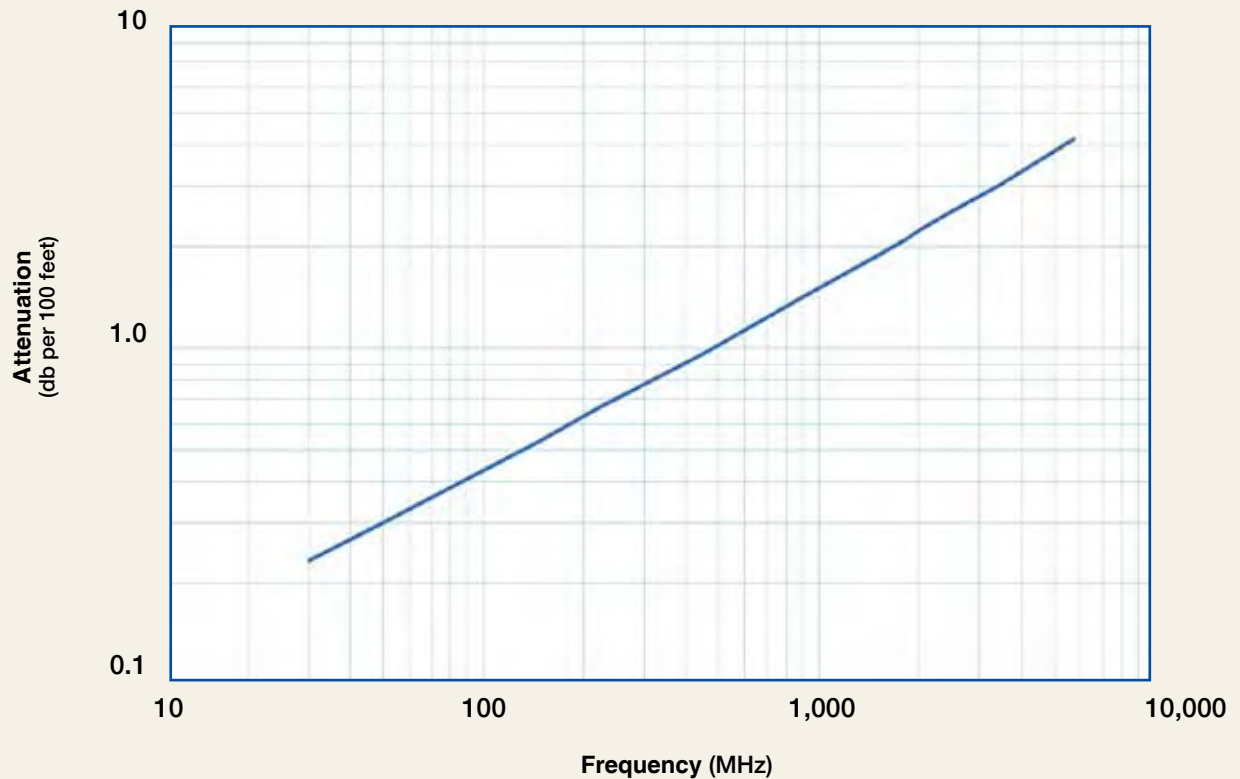
Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400
Attenuation dB/100 ft	0.2	0.3	0.5	0.7	1.0	1.4	1.9	2.1	2.2	2.5	3.1
Attenuation dB/100 m	0.8	1.0	1.8	2.2	3.2	4.6	6.2	6.9	7.3	8.3	10.0
Avg. Power kW	23.42	18.01	10.17	8.31	5.66	3.86	2.90	2.60	2.45	2.15	1.79

Calculate Attenuation =
$(0.041720) \cdot \sqrt{F_{MHz}} + (0.000183) \cdot F_{MHz}$ (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)
Attenuation:
VSWR=1.0 ; Ambient = +25°C (77°F)
Power:
VSWR=1.0; Ambient = +40°C; Jacketr = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading

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EZ-1200-NFC-PL
3190-912

EZ-1200-NMC-PL-2
3190-6021

Connectors

Interface	Description	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 Female	Straight Jack	EZ-1200-NFC-PL	3190-912	<1.25:1 (2.5)	NA	Press Fit	Clamp	S/S	2.0 (51)	1.65(41.9)	0.650(294.8)
2. N Male	Straight Plug	EZ-1200-NMC-PL-2	3190-6021	<1.25:1 (2.5)	Hex	Press Fit	Clamp	S/S	2.0 (51)	1.65(41.9)	0.659(298.9)

* Finishes: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy **VSWR spec based on 3 foot cable with a connector pair

GST-1200A
3190-436

WR-1200A, WR1200B
3190-512/511

CCT-01
3190-1544

ST-1200-CH
3192-124

Install Tools

Type	Part Number	Stock Code	Description
Midspan Strip Tool	GST-1200A	3190-436	For Ground Strap Attachment
Wrench	WR-1200A	3190-512	1-9/16" Box Wrench (1 required)
Wrench	WR-1200B	3190-511	1-7/16" Box Wrench (1 required)
Cutting Tool	CCT-01	3190-1544	Cable end flush cut tool
Strip Tool	ST-1200-CH	3192-124	For LMR-1200 clamp style connectors
Replacement Blade	RB-01	3190-1609	Replacement blade for cutting tool

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| GK-S1200TT | HG-1200T | CS-90120T, CS-60120T | SC-1200T |
| Standard Entry Panels | CB-1200T | Hanger Block Supporting Hardware | SH-U1200T |

Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S1200TT	GK-S1200TT	Standard Grounding Kit (each)
Hoisting Grip	HG-1200T	HG-1200T	Split/Laced Type (each)
Cold Shrink	CS-90120T	CS-90120T	LMR-900 to -1200 Junction (each)
Cold Shrink	CS-60120T	CS-60120T	LMR-600 to -1200 Junction (each)
Standard Entry Port Cushion	SC-1200T-3	SC-1200T-3	Three Cables (each)
Standard Entry Panels	Full Range of Port Styles/Combinations Available		
Hanger Blocks	CB-1200T	CB-1200T	Dual Cable Support Block (kit of 10)
Hanger Block Supporting Hardware	Complete Range of Supporting Hardware & Adapters Available		
Snap-In Hangers	SH-U1200T	SH-U1200T	Snap-In Hangers (Kit of 10)