New & Improved Plenum Rated
LMR-LLPX Cables

The LMR-LLPX is an improved series of plenum rated coaxial cables, which provides the same low attenuation as the LMR-LLPL series but with an upgraded, rugged red jacket. The new LMR-LLPX series cables accepts all standard Times Microwave plenum connectors and can be prepped with the easy to use CST strip tools. The LMR-LLPX series is offered in sizes 195 to 1200.

The red jacket of the LMR-LLPX series addresses the requirement for a red jacketed cable for public safety and in-building applications. The new fluoropolymer jacket offers many added features and benefits including:

- Extended temperature range (-40℃ to 125℃)
- Higher power handling
- Higher Oxygen Index jacket for improved plenum flame and smoke performance
- Lower coefficient of friction for easier installations
- Better cut-through and abrasion resistance
- Advanced chemical resistance and overall UV resistance

TIMES MICROWAVE SYSTEMS

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)	.88	(22.3)
Bend Radius: repeated	in. (mm)	2.0	(50.8)
Bending Moment	ft-lb (N-m)	0.1	(0.14)
Weight	lb/ft (kg/m)	.030	(0.05)
Tensile Strength	lb (kg)	30	(13.6)
Flat Plate Crush	lb/in. (kg/mm)	65	(1.16)

Environmental Specifications

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

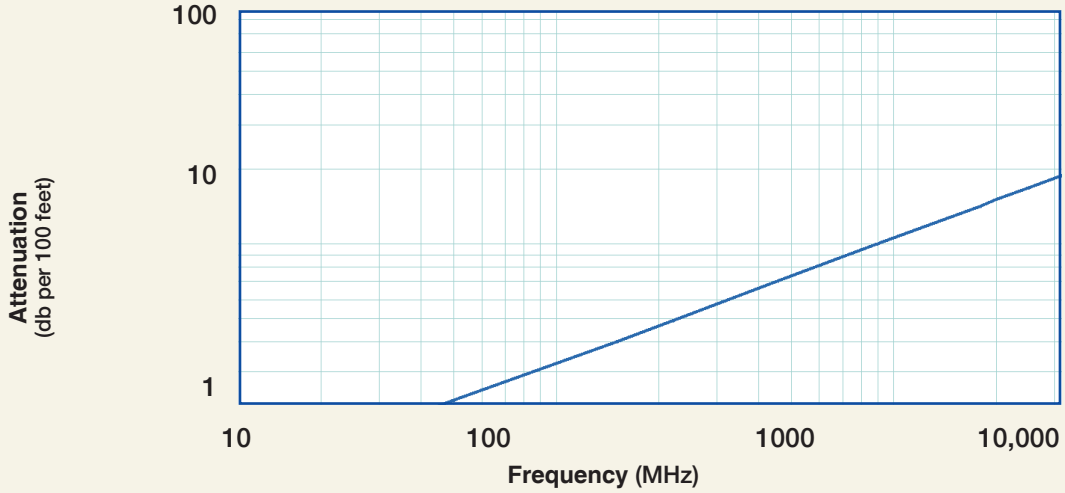
Electrical Specifications

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
LMRR-195-LLPX	Indoor/Outdoor Plenum CMP/FT-6	Fluoropolymer	Red	54425

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	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
Attenuation dB/100 m	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
Avg. Power kW	1.6	1.25	.72	.59	.41	.29	.22	.20	.19	.17	.15	.11	.08

Calculate Attenuation =

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

Attenuation:

VSWR=1.0 ; Ambient = +25°C (77°F)

Power:

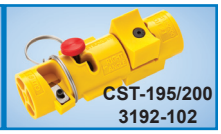
VSWR= 1.0; Ambient = +40°C; Jacket = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading

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 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

TIMES MICROWAVE SYSTEMS

LMR®-200-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description			
Part No.	Application	Jacket Color	Stock Code
LMR-200-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer Red	54458

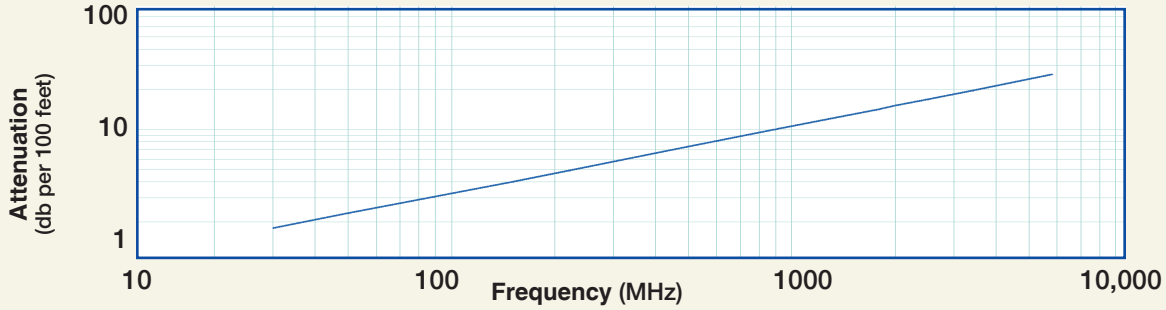
Environmental Specifications		
Performance Property	°F	°C
Installation Temperature Range	-40/+257	-40/+125
Storage Temperature Range	-40/+257	-40/+125
Operating Temperature Range	-40/+257	-40/+125

Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid Bare Copper	0.040	(1.02)
Dielectric	Low density PTFE	0.118	(3.00)
Outer Conductor	Aluminum Tape	0.123	(3.12)
Overall Braid	Tinned Copper	0.146	(3.71)
Jacket	Red Fluoropolymer	0.175	(4.45)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	.88	(22.3)
Bend Radius: repeated	in. (mm)	2.0	(50.8)
Bending Moment	ft-lb (N-m)	0.2	(0.27)
Weight	lb/ft (kg/m)	0.030	(0.05)
Tensile Strength	lb (kg)	30	(13.6)
Flat Plate Crush	lb/in. (kg/mm)	65	(1.16)

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)	6.5	(21.3)
Outer Conductor	ohms/1000ft (/km)	4.9	(16.1)
Voltage Withstand	Volts DC	1000	
Jacket Spark	Volts RMS	3000	
Peak Power	kW	2.5	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	1.8	2.3	4.1	4.9	7.1	10.0	13.0	14.3	15.1	16.0	19.8	26.1	31.3
Attenuation dB/100 m	5.9	7.7	13.3	16.1	23.2	32.9	42.7	48.9	49.5	55.5	65.0	85.7	102.8
Avg. Power kW	1.7	1.3	0.76	.62	.43	.30	.23	.21	.20	.18	.16	.11	.08

Calculate Attenuation = (0.329080) • $\sqrt{\text{FMHz}}$ + (0.00018) • FMHz (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)
VSWR = 1.0, Ambient = +40C; Jacket = +75C (167F); Sea Level; dry air; atmospheric pressure; no solar loading

Connectors

Interface	Description	Part Number	Stock Code	VSWR** Freq. (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in	Length (mm)	Width in	Width (mm)	Weight lb	Weight (g)
1. BNC Male	Straight Plug	TC-200-BM	3190-225	<1.25:1 (2.5)	Knurl	Solder	Crimp	S/G	1.7	(43.2)	0.56	(14.2)	0.045	(20.4)
2. Mini-UHF	Straight Plug	TC-200-MUHF	3190-444	<1.25:1 (2.5)	Knurl	Solder	Crimp	NG	1.1	(27.9)	0.45	(11.4)	0.015	(6.8)
3. N Male	Straight Plug	TC-200-NM	3190-224	<1.25:1 (2.5)	Knurl	Solder	Crimp	S/G	1.5	(38.1)	0.75	(19.1)	0.073	(33.1)
4. N Male	Reverse Polarity	TC-200-NM-RP	3190-959	<1:25:1 (2.5)	Knurl	Solder	Crimp	N/G	1.5	(38.0)	0.75	(19.1)	0.073	(33.1)
5. TNC Male	Straight Plug	TC-200-TMC	3190-240	<1.25:1 (2.5)	Knurl	Solder	Clamp	S/G	1.7	(43.2)	0.59	(15.0)	0.045	(20.4)
6. TNC Female	Straight Jack	TC-200-TF	3190-263	<1.25:1 (2.5)	NA	Solder	Crimp	N/G	1.3	(33.0)	0.57	(14.5)	0.033	(15.0)
7. SMA-Male	Straight plug	TC-200-SM	3190-612	<1.25:1 (8)	Hex	Solder	Crimp	SS/G	1.0	(25.4)	0.32	(8.1)	0.015	(6.8)
8. SMA-Rev.Polarity	Straight Plug	TC-200-SM-RP	3190-327	<1.25:1 (2.5)	Hex	Solder	Crimp	SS/G	1.0	(25.4)	0.32	(8.1)	0.015	(6.8)

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

Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S200TT	GK-S200TT	Standard Ground Kit (each)

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
Strip Tool	CST-195/200	3192-102	Combination prep tool for LMR-195/200
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool
Replacement Blade Kit	RB-CST	3192-086	Replacement Kit for all CST strip tools

TIMES MICROWAVE SYSTEMS

LMR®-240-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description				
Part No.	Application	Jacket	Color	Stock Code
LMR-240-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54459

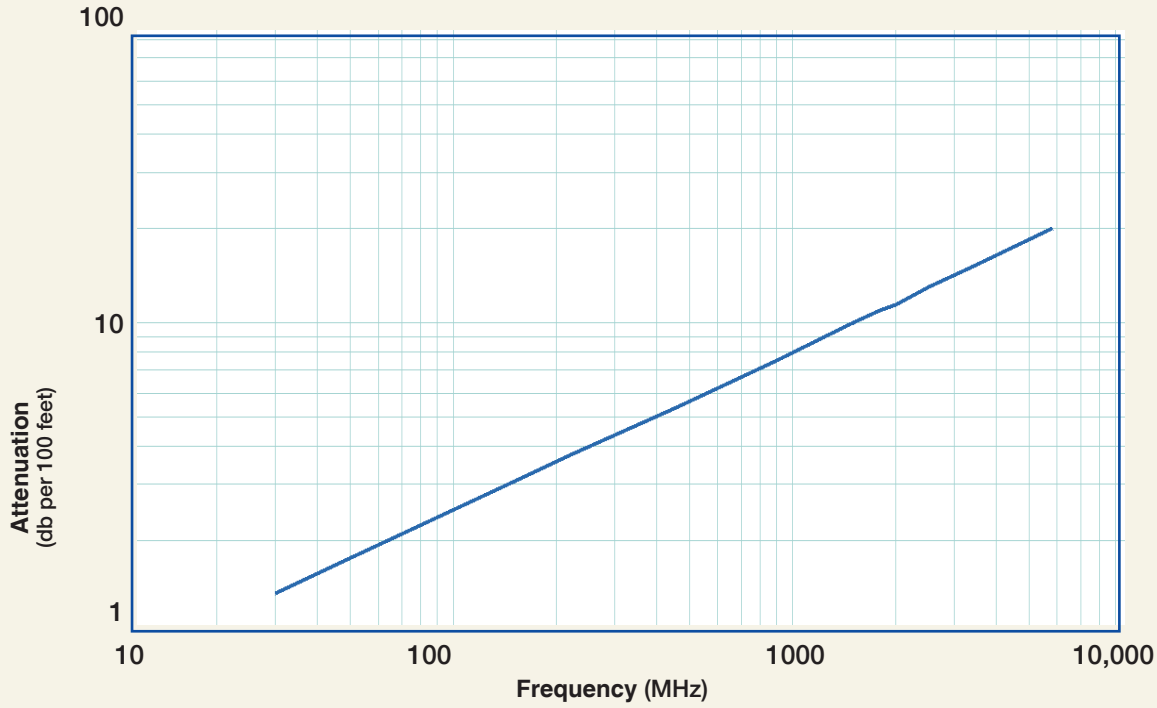
Environmental Specifications		
Performance Property	°F	°C
Installation Temperature Range	-40/+257	-40/+125
Storage Temperature Range	-40/+257	-40/+125
Operating Temperature Range	-40/+257	-40/+125

Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid Bare Copper	0.051	(1.30)
Dielectric	Low density PTFE	0.150	(3.81)
Outer Conductor	Aluminum Tape	0.155	(3.94)
Overall Braid	Tinned Copper	0.178	(4.52)
Jacket	Red Fluoropolymer	0.214	(5.43)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	1.0	(25.4)
Bend Radius: repeated	in. (mm)	2.5	(63.5)
Bending Moment	ft-lb (N-m)	0.25	(0.34)
Weight	lb/ft (kg/m)	.040	(0.06)
Tensile Strength	lb (kg)	60	(27.22)
Flat Plate Crush	lb/in. (kg/mm)	85	(1.52)

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)	4.0	(13.1)
Outer Conductor	ohms/1000ft (/km)	3.9	(12.8)
Voltage Withstand	Volts DC	1500	
Jacket Spark	Volts RMS	5000	
Peak Power	kW	5.6	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	1.4	1.8	3.1	3.7	5.4	7.6	9,9	10.9	11.5	12.9	15.1	20.0	24.3
Attenuation dB/100 m	4.5	5,8	10.1	12.2	17.6	25.0	32.5	35.7	37.7	42.3	49.6	65.6	79.7
Avg. Power kW	2.5	1.9	1.1	.91	.63	.44	.34	.31	.29	.26	.23	.17	.12

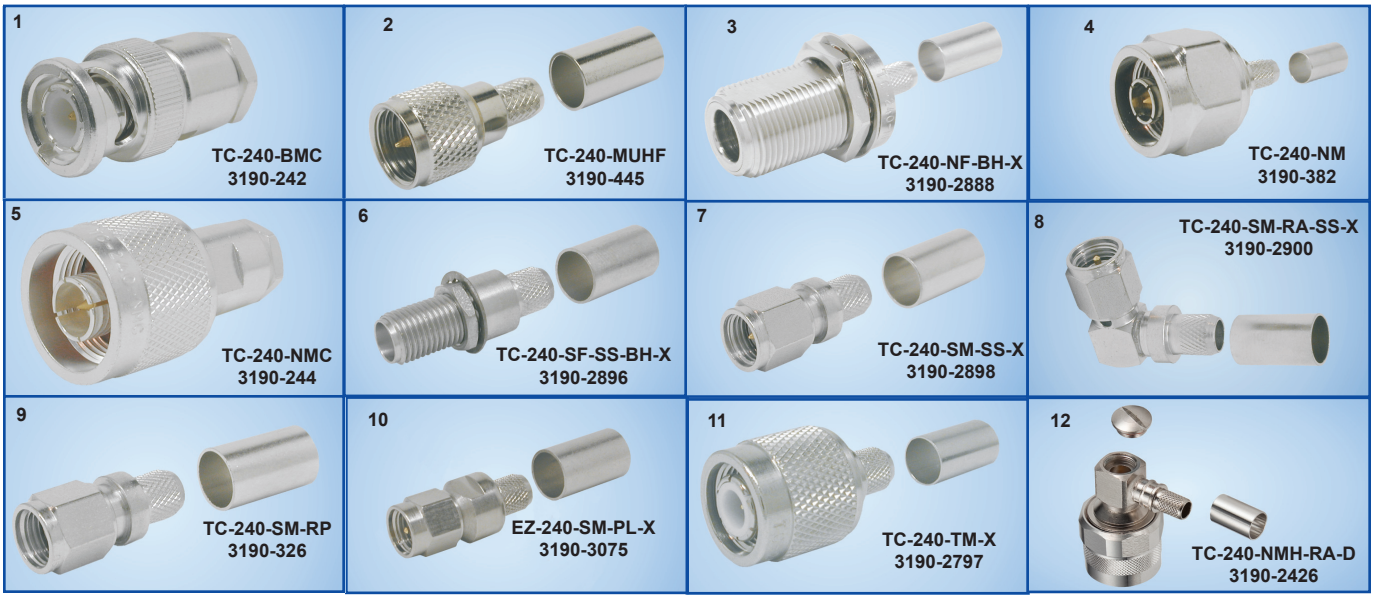
Calculate Attenuation =
$(0.248520) \cdot \sqrt{FMHz} + (0.000183) \cdot FMHz$ (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)

Attenuation:
VSWR=1.0; Ambient = +25°C (77°F)

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

TIMES MICROWAVE SYSTEMS

LMR®-240-LLPX
Flexible Low Loss Plenum Coax



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. BNC Male	Straight Plug	TC-240-BMC	3190-242	<1.25:1	(2.5)	Knurl	Solder	Clamp	S/G	1.7	(43)	0.56	(14.2)	0.040	(18.1)
2. Mini-UHF	Straight Plug	TC-240-MUHF	3190-445	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/G	1.1	(28)	0.45	(11.4)	0.014	(6.4))
3. N Female	Bulkhead Jack	TC-240-NF-BH-X	3190-2888	<1.25	(2.5)	NA	Solder	Crimp	A/G	1.7	(44)	0.88	(22.2)	0.115	(52.2)
4. N Male	Straight Plug	TC-240-NM	3190-382	<1.25:1	(2.5)	Hex	Solder	Crimp	N/S	1.5	(38)	0.75	(19.1)	0.086	(39.0)
5. N Male	Straight Plug	TC-240-NMC	3190-244	<1.25:1	(2.5)	Knurl	Solder	Clamp	S/G	1.5	(38)	0.75	(19.1)	0.082	(37.2)
6. SMA Female	Bulkhead Jack	TC-240-SF-SS-BH-X	3190-2896	<1.25:1	(2.5)	NA	Solder	Crimp	SS/G	1.1	(29)	0.31	(7.9)	0.019	(8.6)
7. SMA Male	Straight Plug	TC-240-SM-SS-X	3190-2898	<1.25:1	(10)	Hex	Solder	Crimp	SS/G	1.0	(25)	0.32	(8.1)	0.016	(7.3)
8. SMA Male	Right Angle	TC-240-SM-RA-SS-X	3190-2900	<1.35:1	(6)	Hex	Solder	Crimp	SS/G	0.8	(20)	0.65	(16.5)	0.019	(8.6)
9. SMA Male	Rev. Polarity	TC-240-SM-RP	3190-326	<1.25:1	(2.5)	Hex	Solder	Crimp	SS/G	1.0	(25)	0.32	(8.1)	0.016	(7.3)
10. SMA Male	Straight Plug	EZ-240-SM-PL-X	3190-3075	<1.25:1	(6)	Hex	Spring Finger	Crimp	A/G	1.0	(25.4)	0.32	(8.1)	0.016	PL)
11. TNC Male	Straight Plug	TC-240-TM-X	3190-2797	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/S	1.7	(43)	0.59	(15.0)	0.043	19.5)
12. N Male	Right Angle	TC-240-NMH-RA-D	3190-2426	<1.35:1	(6)	Hex/Knurl	Solder	Crimp	A/G	1.2	(32.4)	1.22	(31.0)	0.091	(41.7)

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


GK-S240TT

Hardware Accessories

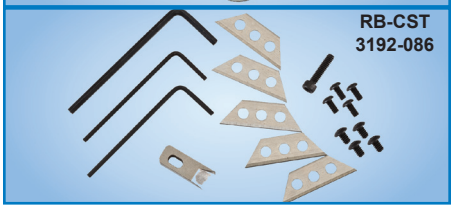
Type	Part Number	Stock Code	Description
Ground Kit	GK-S240TT	GK-S240TT	Standard Ground Kit (each)


CT-240/200/195/100 - 3190-667


CCT-02
3192-165


CST-240A
3192-152


DBT-U
3192-001


RB-CST
3192-086


WSB-240
3109-400

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
Strip Tool	CST-240A	3192-152	Prep tool for LMR-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
Replacement Blade Kit	RB-CST	3192-086	Replacement kit for all CST strip tools
Weather Seal Boots	WSB-240	3109-400	Weather seal/strain relief boots (10 pk) for use with most popular LMR-240-X series connectors

TIMES MICROWAVE SYSTEMS

LMR®-300-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description				
Part Number	Application	Jacket Color		Stock Code
LMR-300-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54428

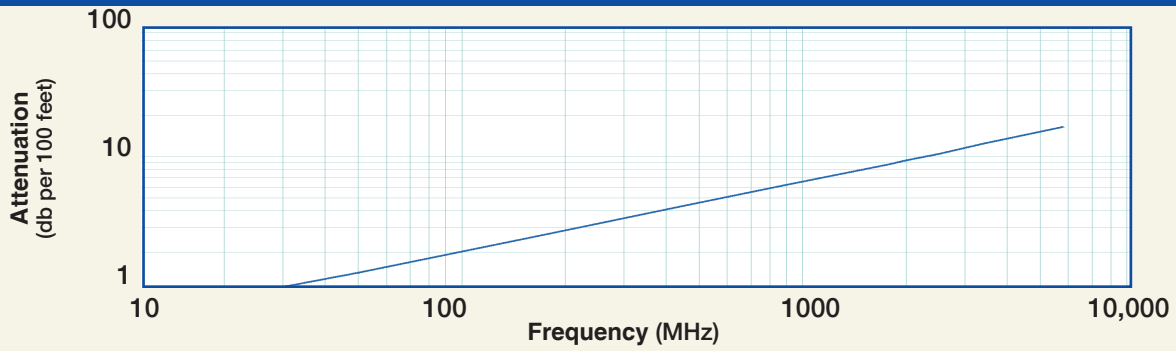
Environmental Specifications		
Performance Property	°F	°C
Installation Temperature Range	-40/+257	-40/+125
Storage Temperature Range	-40/+257	-40/+125
Operating Temperature Range	-40/+257	-40/+125

Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid Bare Copper	0.063	(1.60)
Dielectric	Low density PTFE	0.190	(4.83)
Outer Conductor	Aluminum Tape	0.196	(4.98)
Overall Braid	Tinned Copper	0.225	(5.72)
Jacket	Red Fluoropolymer	0.260	(6.60)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	1.3	(33.0)
Bend Radius: repeated	in. (mm)	3.0	(76.2)
Bending Moment	ft-lb (N-m)	0.38	(0.52)
Weight	lb/ft (kg/m)	.065	(0.10)
Tensile Strength	lb (kg)	120	(54.5)
Flat Plate Crush	lb/in. (kg/mm)	30	(0.54)

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)	2.61	(8.6)
Outer Conductor	ohms/1000ft (/km)	2.21	(7.3)
Voltage Withstand	Volts DC	2000	
Jacket Spark	Volts RMS	5000	
Peak Power	kW	10	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	1.1	1.4	2.5	3.0	4.3	6.2	8.1	8.9	9.4	10.5	12.3	16.4	19.8
Attenuation dB/100 m	3.6	4.7	8.2	9.9	14.3	20.3	26.4	29.1	30.7	34.5	40.5	53.7	65.0
Avg. Power kW	3.4	2.6	1.5	1.2	.87	.61	.47	.43	.40	.36	.32	.23	.17

Calculate Attenuation = (0.200950) • $\sqrt{\text{FMHz}}$ + (0.000183) • FMHz (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; Jacket = +75°C (167°F);
Sea Level; dry air; atmospheric pressure; no solar loading

Connectors

Interface	Description	Part Number	Stock Code	VSWR Freq.	VSWR (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in	Length (mm)	Width in	Width (mm)	Weight lb	Weight (g)
1. SMA Male	Straight Plug	TC-300-SM	3190-501	<1.25:1	(2.5)	Hex	Solder	Crimp	SS/G	1.0	(25)	0.35	(8.9)	0.018	(8.2)
2. SMA Female	Bulkhead Jack	TC-300-SF-BH	3190-590	<1.25:1	(2.5)	NA	Solder	Crimp	SS/G	1.1	(28)	0.31	(7.9)	0.022	(10.0)
3. TNC Male	Straight Plug	TC-300-TM	3190-500	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/S	1.7	(43)	0.59	(15.0)	0.050	(22.7)
4. N Male	Right Angle	TC-300-NMH-RA-D	3190-2761	<1.30:1	(2.5)	Hex/Knurl	Solder	Crimp	N/S	1.4	(35)	1.41	(35.8)	0.130	(59.0)

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

Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S300TT	GK-S300TT	Standard Ground Kit (each)

Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-400/300	3190-666	Crimp tool for LMR 300 connectors
Deburr Tool	DBT-U	3192-001	Removes center conductor rough edges
Cutting Tool	CCT-02	3192-165	Cable end flush cut tool
Strip Tool	CST-300	3192-084	Combination prep tool for LMR-300
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool
Replacement Blade Kit	RB-CST	3192-086	Replacement blade kit for all strip tools

TIMES MICROWAVE SYSTEMS

LMR®-400-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-400-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54470

Environmental Specifications

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

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	Solid BCCAl	0.095	(2.41)
Dielectric	Low density PTFE	0.285	(7.24)
Outer Conductor	Aluminum Tape	0.291	(7.39)
Overall Braid	Tinned Copper	0.320	(8.13)
Jacket	Red Fluoropolymer	0.370	(9.40)

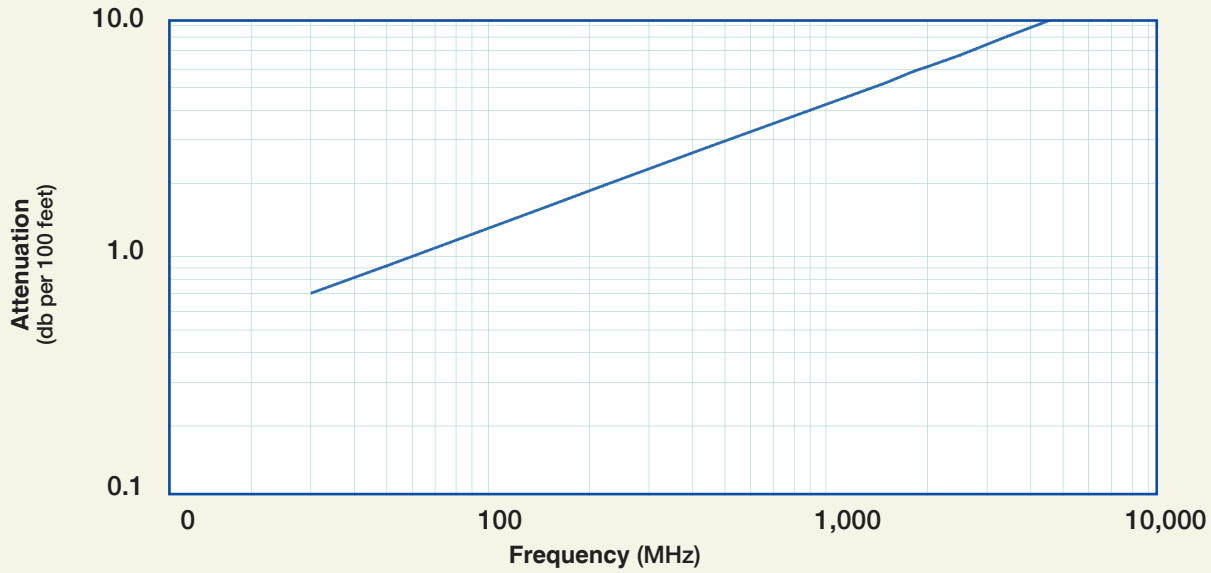
Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	1.85	(47.0)
Bend Radius: repeated	in. (mm)	4.0	(101.6)
Bending Moment	ft-lb (N-m)	0.5	(0.68)
Weight	lb/ft (kg/m)	.104	(0.15)
Tensile Strength	lb (kg)	120	(54.5)
Flat Plate Crush	lb/in. (kg/mm)	185	(3.31)

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)	1.8	(5.9)
Outer Conductor	ohms/1000ft (/km)	1.65	(5.4)
Voltage Withstand	Volts DC	2500	
Jacket Spark	Volts RMS	8000	
Peak Power	kW	16	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	0.7	0.9	1.6	1.9	2.8	4.0	5.2	5.7	6.1	6.8	8.0	10.7	13.0
Attenuation dB/100 m	2.3	3.0	5.3	6.4	9.2	13.2	17.1	18.9	19.9	22.4	26.4	35.1	42.7
Avg. Power kW	6.2	4.8	2.8	2.3	1.6	1.1	.84	.78	.73	.65	.57	.41	.34

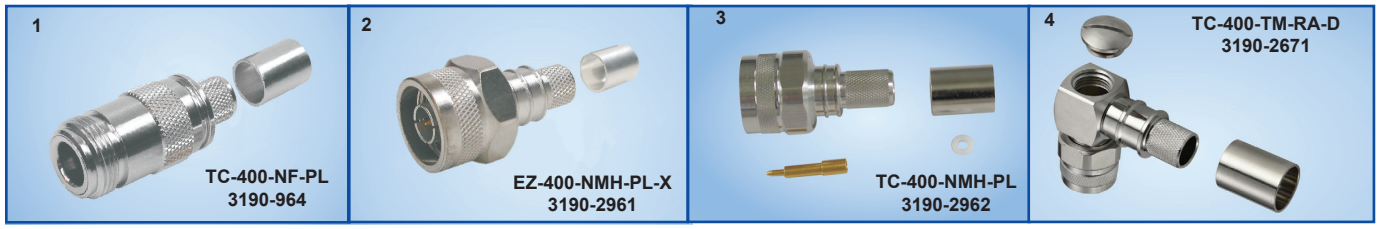
Calculate Attenuation =
$(0.129140) \bullet \sqrt{FMHz} + (0.000150) \bullet FMHz$ (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)

Attenuation:
VSWR=1.0 ; Ambient = +25°C (77°F)

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

TIMES MICROWAVE SYSTEMS

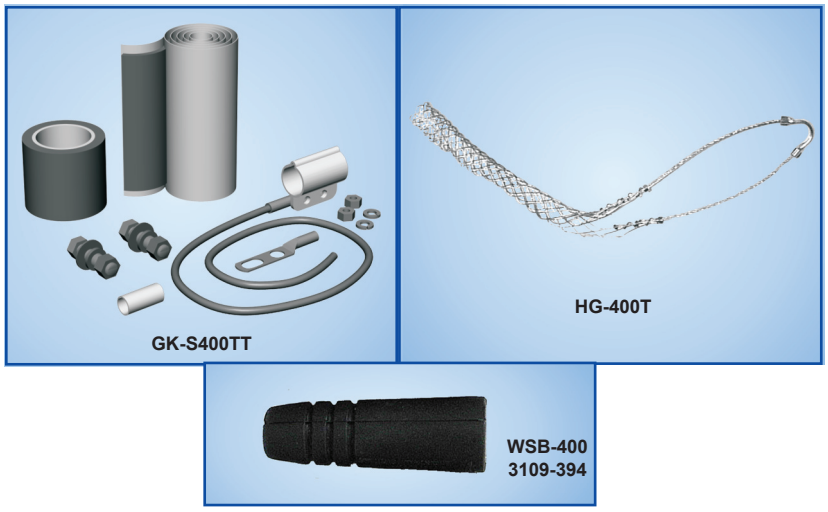
LMR®-400-LLPX
Flexible Low Loss Plenum Coax



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	TC-400-NF-PL	3190-964	<1.25:1 (2.5)	NA	Solder	Crimp	N/G	1.8 (45)	0.66 (16.8)	0.105 (47.6)
2. N Male	Straight Plug	EZ-400-NMH-PL-X	3190-2961	<1.25:1 (2.5)	Hex/Knurl	Spring Finger	Crimp	A/G	1.5 (38)	0.89 (22.6)	0.113 (51.3)
3. N Male	Straight Plug	TC-400-NMH-PL	3190-2962	<1.25:1 (2.5)	Hex/Knurl	Solder	Crimp	S/G	1.5 (38)	0.89 (22.6)	0.113 (51.3)
4. TNC Male	Right Angle	TC-400-TM-RA-D	3190-2671	<1.35:1 (6)	Hex/Knurl	Solder	Crimp	A/G	1.2 (30)	1.48 (37.6)	0.110 (50.0)

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



Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S400TT	GK-S400TT	Standard Grounding Kit (each)
Hoisting Grip	HG-400T	HG-400T	Laced Type (each)
Weather Seal Boots	WSB-400	3109-394	Weather seal/strain relief boots (10pk) for use with most popular LMR-400-X series connectors

Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-U	3192-181	Crimp Handle
Crimp Dies	Y1719	3190-202	.429" Hex Dies
Crimp Tool	CT-400/300	3190-666	Crimp tool for LMR 400 connectors
Crimp Rings	CR-400	3190-830	Crimp rings for TC/EZ-400 connectors (package of 10)
Strip Tool	CST-400	3192-004	Combination prep tool for LMR-400 crimp and clamp connectors
Mid-Span Strip Tool	GST-400	3190-2174	For ground strap attachment
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
Replacement Blade Kit	RB-CST	3192-086	Replacement kit for all CST strip tools
Tool Kit	TK-400EZ	3190-1601	Tool kit for LMR-400 crimp/clamp connectors (includes CCT-02, CST-400, CT-400/300, Tool Pouch)

TIMES MICROWAVE SYSTEMS

LMR®-500-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-500-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54460

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	Solid BCCAl	0.121	(3.07)
Dielectric	Low density PTFE	0.370	(9.40)
Outer Conductor	Aluminum Tape	0.376	(9.55)
Overall Braid	Tinned Copper	0.405	(10.29)
Jacket	Red Fluoropolymer	0.465	(11.81)

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)	1.09	(3.6)
Outer Conductor	ohms/1000ft (/km)	1.27	(4.2)
Voltage Withstand	Volts DC	3000	
Jacket Spark	Volts RMS	8000	
Peak Power	kW	11.6	

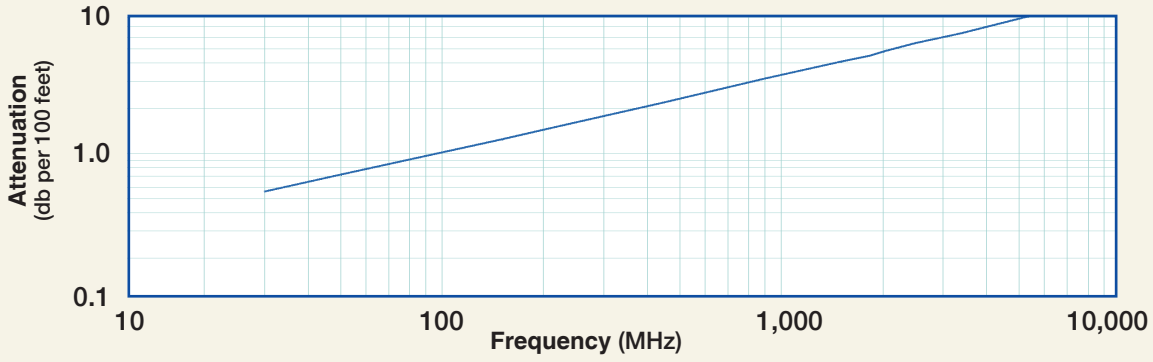
Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	2.3	(58.4)
Bend Radius: repeated	in. (mm)	5.0	(127.0)
Bending Moment	ft-lb (N-m)	1.75	(2.37)
Weight	lb/ft (kg/m)	.170	(0.25)
Tensile Strength	lb (kg)	195	(88.5)
Flat Plate Crush	lb/in. (kg/mm)	200	(3.57)

Environmental Specifications

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

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	0.6	0.7	1.3	1.5	2.2	3.1	4.1	4.5	4.8	5.4	6.4	8.5	10.4
Attenuaiton dB/100 m	1.8	2.4	4.1	5.0	7.2	10.3	13.5	14.8	15.7	17.7	20.9	27.9	34.1
Avg. Power kW	8.9	6.9	3.9	3.2	2.2	1.5	1.2	1.1	1.0	.91	.81	.60	.50

Calculate Attenuation = (0.100260) • $\sqrt{\text{FMHz}}$ + (0.000150) • FMHz (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; Jacket = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading

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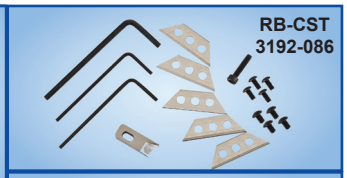
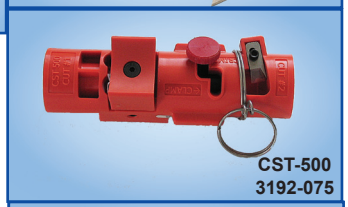
Connectors

Interface	Description	Number	Part Code	Stock Freq.	VSWR** (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-500-NMH-X	3190-2514	<1.35:5	(6)	Hex/Knurl	Solder	Crimp	A/G	1.8 (45)	0.87 (22.0)	0.099 (45.0)
2. N Male	Right Angle	TC-500-NMH-RA-D	3190-2513	<1.25:1	(6)	Hex/Knurl	Solder	Crimp	A/G	1.5 (39)	1.6 (42.0)	0.279 (127.0)
3. N Male	Straight Plug	TC-500-NMC-PL	3190-900	<1.25:1	(2.5)	Hex	Solder	Clamp	S/G	2.1 (53)	0.92 (23.4)	0.228 (103.4)

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





Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-U	3192-181	Crimp Handle (Dies Required)
Crimp Tool	CT-500	3192-169	Crimp tool for LMR-500 connectors
Crimp Dies	Y151	3190-465	.532" Hex Dies
Deburr Tool	DBT-U	3192-001	Removes center conductor rough edges
Cutting Tool	CCT-02	3192-165	Cable end flush cut tool
Strip Tool	CST-500	3192-075	Combination prep tool for LMR-500
Replacement Blade Kit	RB-CST	3192-086	Replacement blade kit for all CST strip

TIMES MICROWAVE SYSTEMS

LMR®-600-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-600-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54461

Environmental Specifications

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

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	Solid BCCAl	0.150	(3.81)
Dielectric	Low density PTFE	0.455	(11.56)
Outer Conductor	Aluminum Tape	0.461	(11.71)
Overall Braid	Tinned Copper	0.490	(12.45)
Jacket	Red Fluoropolymer	0.565	(14.38)

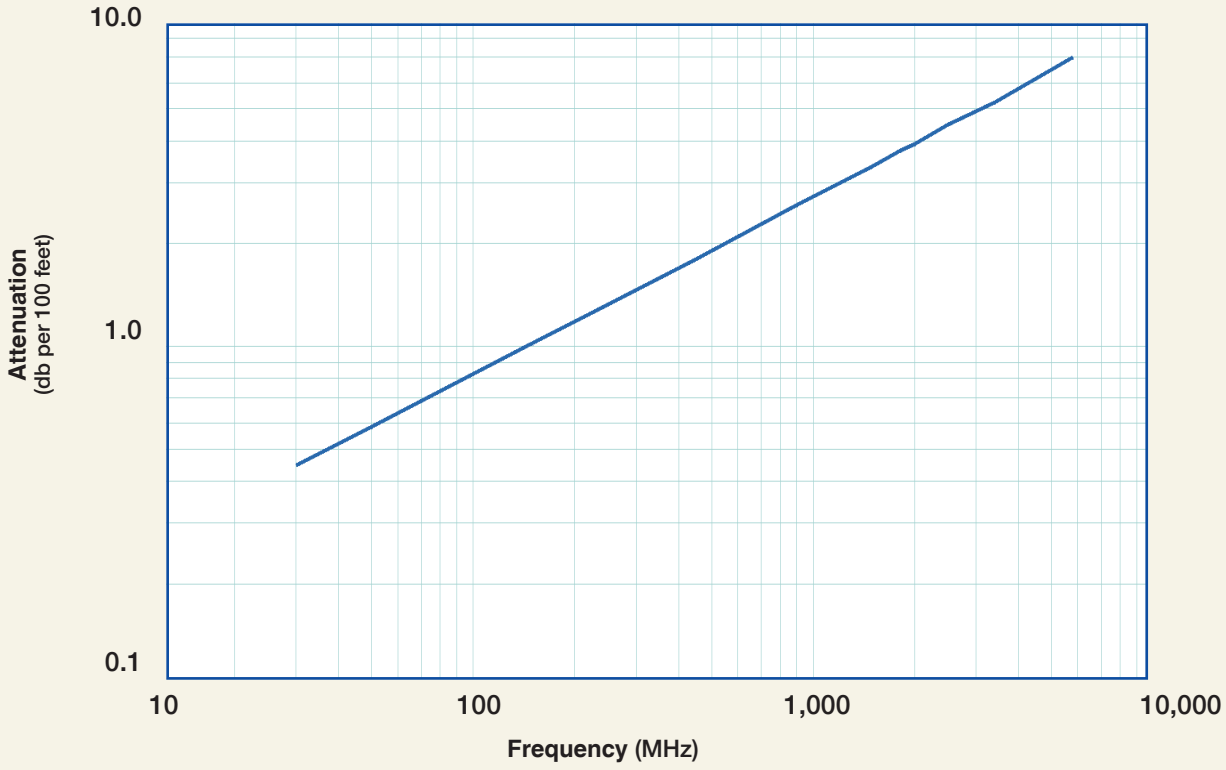
Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	2.80	(71.1)
Bend Radius: repeated	in (mm)	6.0	(152.4)
Bending Moment	ft-lb (N-m)	2.75	(3.73)
Weight	lb/ft (kg/m)	0.21	(0.31)
Tensile Strength	lb (kg)	265	(120.3)
Flat Plate Crush	lb/in. (kg/mm)	210	(3.75)

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)	0.73	(2.40)
Outer Conductor	ohms/1000ft (/km)	1.20	(3.9)
Voltage Withstand	Volts DC	4000	
Jacket Spark	Volts RMS	8000	
Peak Power	kW	40	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800	8000
Attenuation dB/100 ft	0.5	0.6	1.0	1.2	1.8	2.6	3.4	3.7	3.9	4.4	5.3	7.1	8.8
Attenuation dB/100 m	1.5	1.9	3.3	4.1	5.9	8.5	11.1	12.2	12.9	14.5	17.2	23.2	29.0
Avg. Power kW	11.8	9.1	5.2	4.3	3.0	2.1	1.6	1.4	1.3	1.2	1.1	.8	.7

Calculate Attenuation =

$(0.081390) \cdot \sqrt{FMHz} + (0.000150) \cdot FMHz$ (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)

Attenuation:

VSWR=1.0 ; Ambient = +25°C (77°F)

Power:

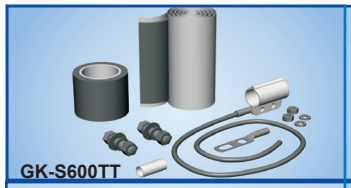
VSWR=1.0; Ambient = +40°C; Jacket = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading

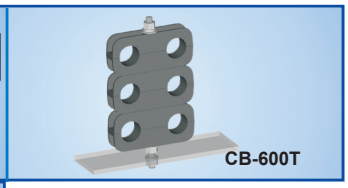
TIMES MICROWAVE SYSTEMS

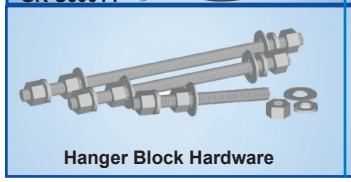
LMR®-600-LLPX
Flexible Low Loss Plenum Coax

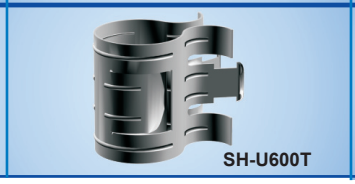
Connectors

Interface	Part Description	Stock Number	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. LC Male	Straight plug	TC-600-LCM-PL	3190-1221	<1.25:1 (1)	Hex	Solder	Clamp	N/S	3.1 (78.7)	1.62 (41.1)	1.20 (544)
2. N Male	Straight Plug	EZ-600-NMH-PL-X	3190-2963	<1.25:1 (2.5)	Hex/Knurl	Spring Finger	Crimp	A/G	2.1 (53)	0.92 (23.4)	0.166 (75.3)
3. N Male	Straight Plug	TC-600-NMH-PL	3190-760	<1.25:1 (2.5)	Hex	Solder	Crimp	S/G	2.1 (53)	0.92 (23.4)	0.208 (93.4)
4. N Female	Straight Plug	TC-600-NF-PL	3190-965	<1.25:1 (6)	N/A	Solder	Crimp	S/G	2.3 (58.4)	0.87 (22.1)	0.150 (67.8)
5. BNC Male	Right Angle	TC-600-BM-RA	3190-2734	<30:1 (4)	Knurl	Solder	Crimp	A/G	1.8 (45.5)	1.54 (39.0)	0.164 (74.3)









Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S600TT	GK-S600TT	Standard Grounding Kit (each)
Hoisting Grip	HG-600T	HG-600T	Split/Laced Type (each)
Cold Shrink	CS-A600T	CS-A600T	Cable to Antenna Junction (each)
Cold Shrink	CS-60120T	CS-60120T	LMR-600 to -1200 Junction (each)
Cold Shrink	CS-60170T	CS-60170T	LMR-600 to -1700 Junction (each)
Hanger Blocks	CB-600T	CB-600T	Dual Cable Support Block (kit of 10)
Hanger Block Supporting Hardware			Complete Range of Supporting Hardware & Adapters Available
Snap-In Hangers	SH-U600T	SH-U600T	Snap-In Hangers (Kit of 10)
Weather Seal Boots	WSB-600	3109-401	Weather seal/strain relief boots (10pk) for use with most popular LMR-600-X series connectors

Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-U	3192-181	Crimp Handle (Dies Required)
Crimp Tool	CT-600	3192-170	Crimp tool for LMR 600 connector
Crimp Dies	Y1720	3190-203	.610" Hex Dies
Crimp Rings	CR-600	3190-831	Crimp Rings for TC/EZ-600 connectors (pkg of 10)
Midspan Strip Tool	GST-600A	3190-1051	For ground strap attachment
Cutting Tool	CCT-02	3192-165	Cable end flush cut tool
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool
Replacemnt Blade Kit	RB-CST	3192-086	Replacement blade kit for all CST strip tools
Replacement Blades	RB-456	3190-421	Replacement blades for CST-600C and ST-600EZ
Prep Tool	CST-600	3192-052	Prep tool for LMR-600 crimp/clamp style connectors
Tool Kit	TK-600EZ	3190-1602	Tool kit for LMR-600 crimp/clamp connectors (includes CCT-02, CST-600, CT-600, Tool Pouch)

TIMES MICROWAVE SYSTEMS

LMR®-900-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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

Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-900-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54462

Environmental Specifications

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

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	BC Tube	0.227	(5.77)
Dielectric	Low density PTFE	0.680	(17.27)
Outer Conductor	Aluminum Tape	0.686	(17.42)
Overall Braid	Tinned Copper	0.732	(18.59)
Jacket	Red Fluoropolymer	0.802	(20.36)

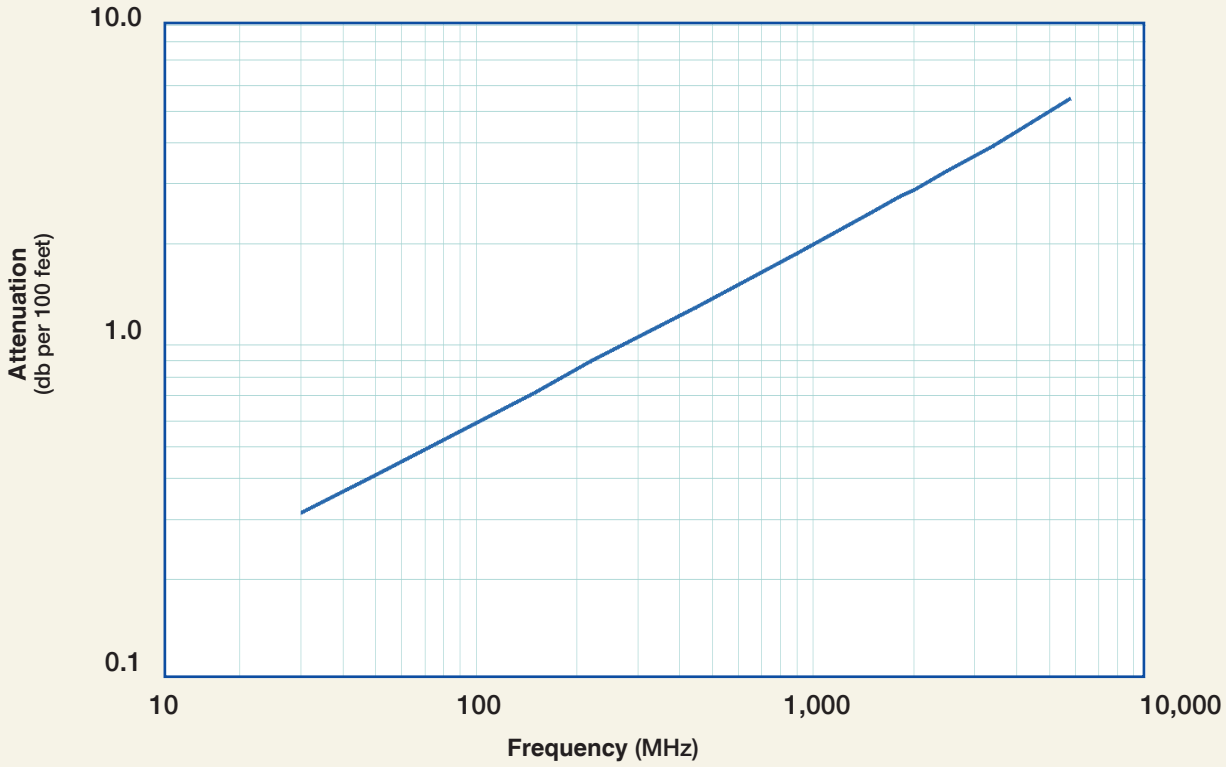
Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	4.0	(101.6)
Bend Radius: repeated	in. (mm)	9.0	(228.6)
Bending Moment	ft-lbs (N-m)	9.0	(12.20)
Weight	lbs/ft (kg/m)	0.480	(.72)
Tensile Strength	lbs (kg)	660	(299.6)
Flat Plate Crush	lbs/in. (kg/mm)	300	(5.36)

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)	0.63	(2.07)
Outer Conductor	ohms/1000ft (/km)	0.55	(1.8)
Voltage Withstand	Volts DC	5000	
Jacket Spark	Volts RMS	8000	
Peak Power	kW	62	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800
Attenuation dB/100 ft	0.3	0.4	0.7	0.9	1.3	1.9	2.5	2.8	2.9	3.3	4.0	5.4
Attenuation dB/100 m	1.0	1.4	2.4	2.9	4.3	6.2	8.2	9.0	9.6	10.9	13.0	17.8
Avg. Power kW	21.0	16.3	9.2	7.5	5.2	3.5	2.7	2.4	2.3	2.0	1.7	1.2

Calculate Attenuation =

$(0.057220) \cdot \sqrt{FMHz} + (0.000183) \cdot FMHz$ (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; Jacket = +75°C (167°F); Sea Level; dry air; atmospheric pressure; no solar loading

TIMES MICROWAVE SYSTEMS

LMR®-900-LLPX
Flexible Low Loss Plenum Coax

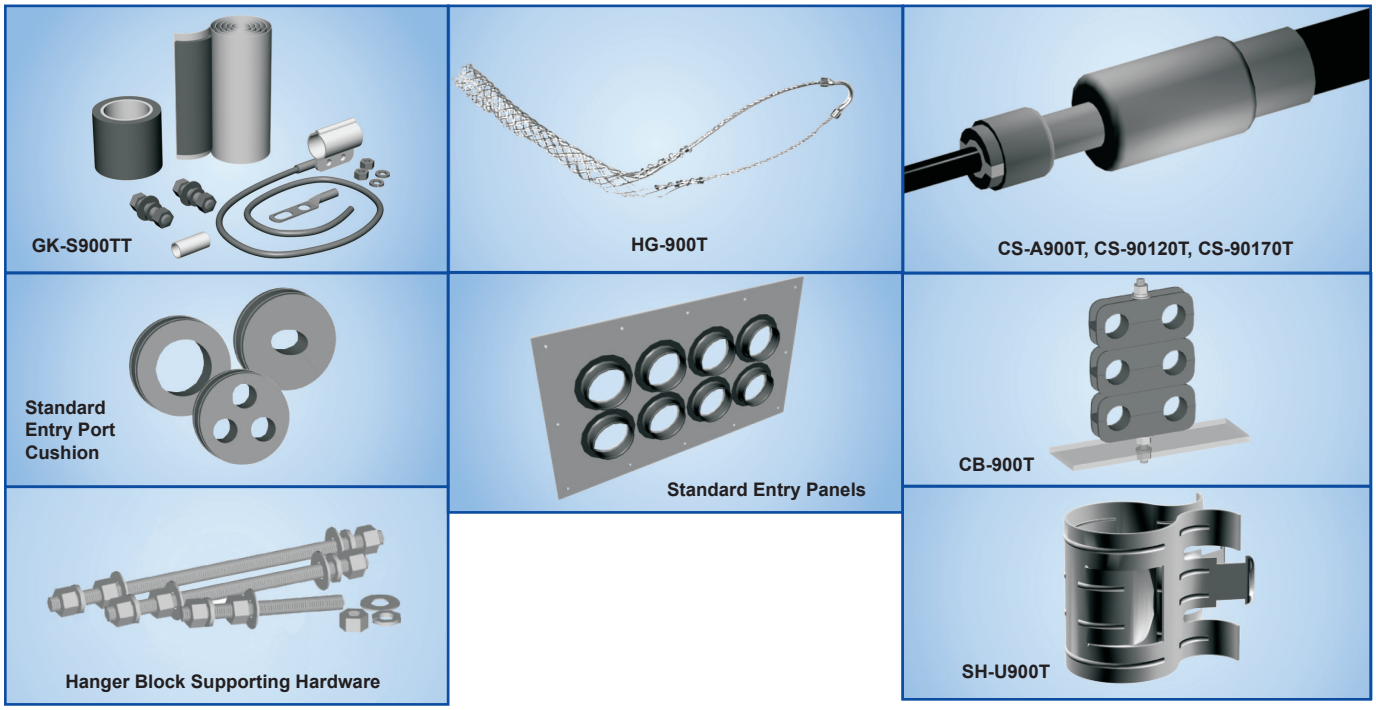
Connectors

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. 7-16 Male	Straight Plug	EZ-900-716-MC-PL-2	3190-1549	<1.25:1	(2.5)	Hex	Press Fit	Clamp	S/S	2.0	(51)	1.44	(36.6)	0.485	(220.0)
2. N Female	Straight Jack	EZ-900-NFC-PL-2	3190-1586	<1.25:1	(2.5)	NA	Press Fit	Clamp	S/G	2.0	(51)	1.38	(35.1)	0.443	(200.9)
3. N Male	Straight Plug	EZ-900-NMC-PL-2	3190-1585	<1.25:1	(2.5)	Hex/Knurl	Press Fit	Clamp	S/S	2.0	(51)	1.38	(35.1)	0.463	(210.0)

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

Install Tools

Type	Part Number	Stock Code	Description
Strip Tool	ST-900C	3190-1310	For LMR 900 Clamp Style Connectors
Midspan Strip Tool	GST-900A	3190-435	For Ground Strap Attachment
Wrenches	WR-900	3190-510	1-1/4" Box Wrench (2 required)
Cutting Tool	CCT-02	3192-165	Cable end flush cut tool
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool



Hardware Accessories

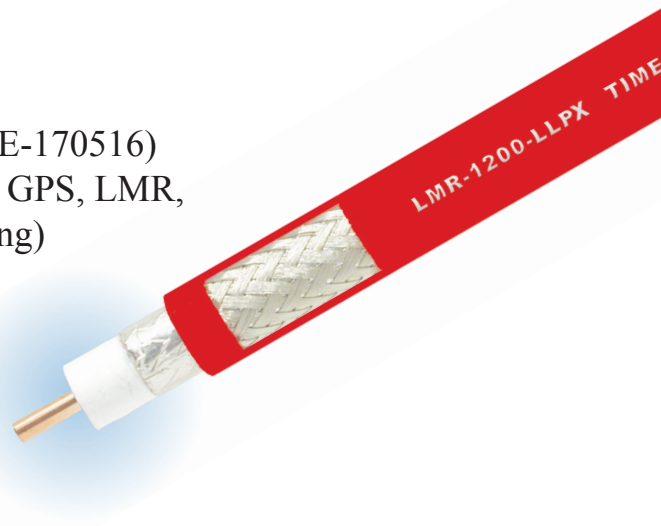
Type	Part Number	Stock Code	Description
Ground Kit	GK-S900TT	GK-S900TT	Standard Grounding Kit (each)
Hoisting Grip	HG-900T	HG-900T	Split/Laced Type (each)
Cold Shrink	CS-A900T	CS-A900T	Cable to Antenna Junction (each)
Cold Shrink	CS-90120T	CS-90120T	LMR-900 to -1200 Junction (each)
Cold Shrink	CS-90170T	CS-90170T	LMR-900 to -1700 Junction (each)
Port Cushion	SC-900T-3	SC-900T-3	Three Cables (each)
Standard Entry Panels			Full Range of Port Styles/Combinations Available
Hanger Blocks	CB-900T	CB-900T	Dual Cable Support Block (kit of 10)
Hanger Block Supporting Hardware			Complete Range of Supporting Hardware and Adapters Available
Snap-in Hangers	SH-U900T	SH-U900T	Snap-in Hanger (Kit of 10)

TIMES MICROWAVE SYSTEMS

LMR®-1200-LLPX
Flexible Low Loss Plenum Coax

Ideal for...

- Indoor/Outdoor Plenum Feeder runs
- 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



Part Description

Part Number	Application	Jacket	Color	Stock Code
LMR-1200-LLPX	Indoor/Outdoor Plenum CMP/FT6	Fluoropolymer	Red	54463

Environmental Specifications

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

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	Red Fluoropolymer	1.05	(26.66)

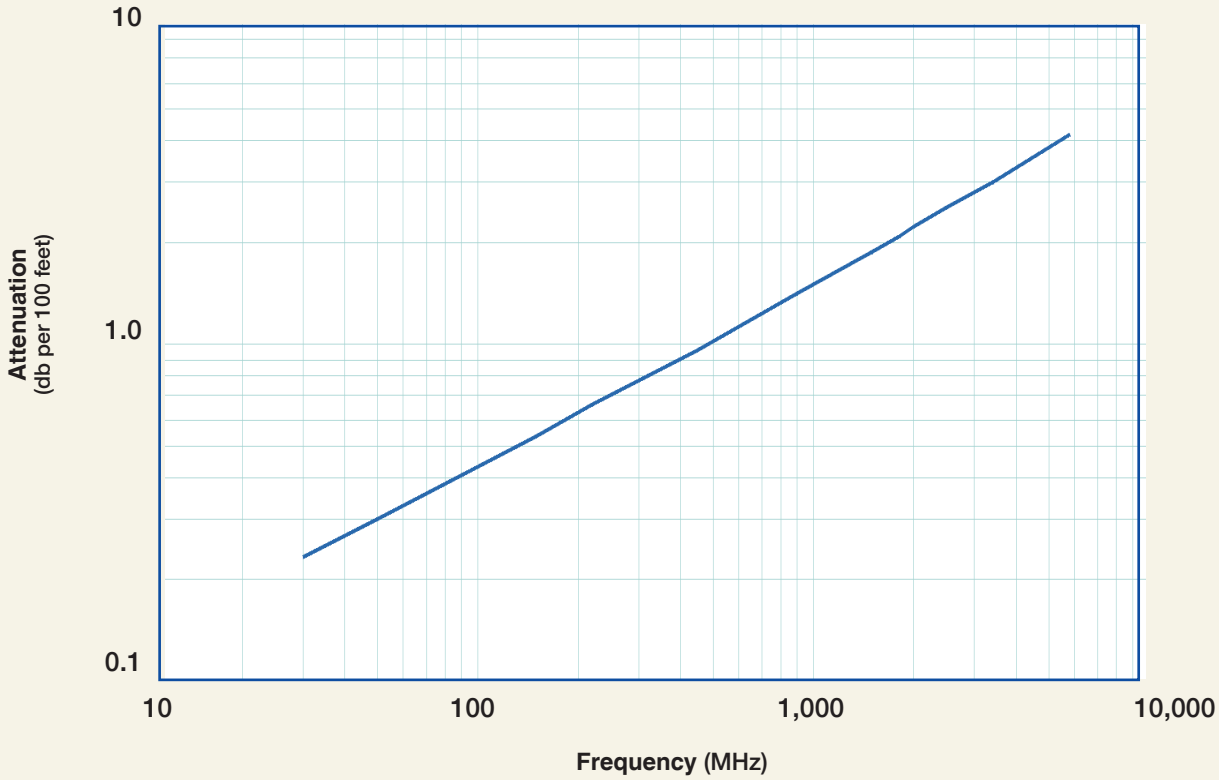
Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	5.25	(133.3)
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)	0.62	(.93)
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	

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	37.0	28.0	16.0	13.2	9.0	6.1	4.6	4.2	3.9	3.4	2.7

Calculate Attenuation =
$(0.041720) \cdot \sqrt{FMHz} + (0.000183) \cdot FMHz$ (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

TIMES MICROWAVE SYSTEMS

LMR®-1200-LLPX
Flexible Low Loss Plenum Coax

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

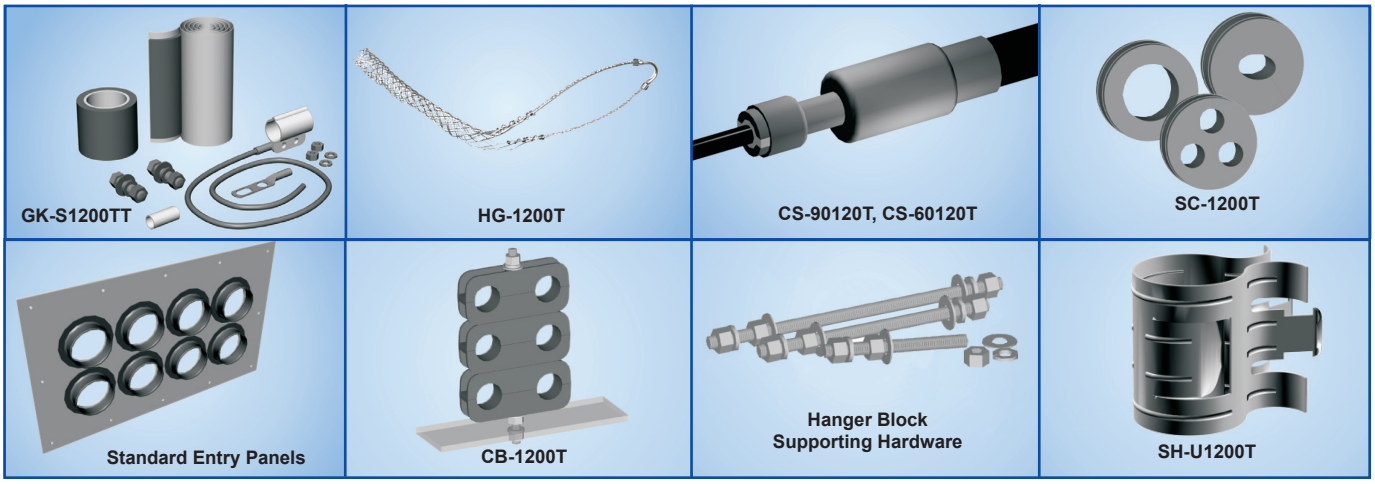

WR-1200A, WR1200B
3190-512/511


CCT-02
3192-165


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-02	3192-165	Cable end flush cut tool
Strip Tool	ST-1200-CH	3192-124	For LMR-1200 clamp style connectors
Replacement Blade	RB-02	3192-166	Replacement blade for cutting tool



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)