

LMR-400

Flexible Communications Cable

Ideal for...

- Drop-in replacement for RG-8/9913 Air-Dielectric type Cable
- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs
- Any application (e.g. WLL, GPS, LMR, Mobile Antennas, 802.11, WLAN) requiring an easily routed, low loss RF cable



- **Flexible:** With a 1-inch minimum bend radius, LMR-400 cable can be easily routed into and through tight spaces without kinking. The LMR bonded-tape outer conductor provides superior flexibility and ease of bending compared to corrugated copper or smooth wall copper hard-line cables.
- **Low Loss:** LMR-400 has the lowest loss of any RG8/RG213 'type' cable. This is achieved through the use of a high velocity gas-injected closed cell foam dielectric and bonded aluminum tape outer conductor.
- **Weatherproof:** The UV protected black polyethylene jacket makes the cable rugged and resistant to the full range of outdoor environments. The DB version of the cable includes a water blocking material within the braid to protect the cable from moisture ingress and eliminate any potential for corrosion in harsh environments or should the jacket become damaged. Various jacket materials are available to address other indoor and outdoor requirements.
- **RF Shielding:** The bonded aluminum tape outer conductor is overlapped to provide 100% coverage, resulting in >90 dB RF shielding (>180 dB crosstalk) and excellent interference immunity (ingress and egress).
- **Phase Stability:** The intimately bonded structure and foam dielectric of LMR cables provide excellent phase stability over temperature and with bending. The high velocity dielectric results in superior phase stability as compared with solid and air-spaced dielectric cables.
- **Connectors and Assemblies:** Times Microwave provides **FlexTech™** jumper cable assemblies fabricated with LMR-400-DB watertight cable and a variety of connector interface combinations (ref: FlexTech pages). Custom assemblies with phase matching, insertion loss matching, and other special electrical or marking requirements can also be provided. A full range of connectors, including 'EZ' install (non-solder) types, is available for

Part Description

Part Number	Designation	Jacket	Stock Code
LMR-400	Standard outdoor cable	Polyethylene	54001
LMR-400-DB	Watertight cable	Polyethylene	54091
LMR-400-FR	CMR/MPR (PCC-FT4)	Non-Halogen	54030
* LMR-400-LLPL	CMP/MPP (PCC-FT6)	Plenum	54070
LMR-400-PVC	Indoor cable (CATVR)	PVC	54073
LMR-400-UltraFlex	UltraFlex cable	TPE	54040
LMR-400-FR-W	CMR/MPR (PCC FT4)	White Non-Halogen	54188
LMR-400-75	75 Ohm outdoor cable	Polyethylene	54147

* See LMR in-building communications catalog on web site for Plenum connectors.

LMR-400 cable as shown on the next page.

- **LMR-LLPL Low Loss Plenum:** Refer to LMR In-Building Communications catalog on web site for details.

Mechanical Specifications

Minimum bend radius	1.0 in	25.4 mm
Bending moment	0.5 ft lb	0.68 N-m
Weight	0.068 lb/ft	0.10 kg/m
Tensile strength	160 lb	72.6 kG
Flat plate crush	40 lb/in	0.71 g/mm

Construction Specifications

Part Designation	Material	Inches	mm
Inner conductor	Solid BCCAI	0.108	2.74
Dielectric	Foam polyethylene	0.285	7.24
Outer conductor	Aluminum tape	0.291	7.39
Overall braid	Tinned copper	0.320	8.13
Standard jacket	Black polyethylene	0.405	10.29

Environmental Specifications

	°F	°C
Installation temperature range	-40/+185	-40/+85
Storage temperature range	-94/+185	-70/+85
Operating temperature range	-40/+185	-40/+85

Electrical Specifications

Cutoff frequency	16.2 GHz*	
Velocity of propagation	85%	
Voltage withstand	2,500 VDC	
Peak power	16 kW	
DC resistance		
Inner conductor, ohms	1.39/1,000'	4.56/km
Outer conductor, ohms	1.65/1,000'	5.41/km
Jacket spark	8,000 VRMS	
Impedance	50 ohms	
Capacitance	23.9 pF/ft	78.40 pF/m
Inductance	0.060 uH/ft	0.20 uH/m
Shielding effectiveness	>90 dB	
Phase stability	<10 ppm/°C	

*Consult factory for applications over 6 GHz.

Frequency MHz	Attenuation		Avg. Power kW
	dB/100 ft	dB/100 m	
30 MHz	0.7	2.2	3.3
50 MHz	0.9	2.9	2.6
150 MHz	1.5	5.0	1.5
220 MHz	1.9	6.1	1.2
450 MHz	2.7	8.9	0.83
900 MHz	3.9	12.8	0.58
1500 MHz	5.1	16.8	0.44
1800 MHz	5.7	18.6	0.40
2000 MHz	6.0	19.6	0.37
2500 MHz	6.8	22.2	0.33
5800 MHz	10.8	35.5	0.21

Add 15% to tabulated attenuation for LMR-UltraFlex
Attenuation (db/100 ft) = (0.12229) • √FMHz + (0.00026) • FMHz
 (db/100 m) = (0.40123) • √FMHz + (0.00085) • FMHz
 (interactive calculator available at <http://www.timesmicrowave.com>)

Attenuation: VSWR=1.0; Ambient = +25°C (77°F)
Power: VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F);
 Sea Level; dry air; atmospheric pressure; no solar loading