PRODUCT DATASHEET

ICA12-50JPLB

1/2" Plenum-Rated Air-Dielectric Coaxial Cable, Black Color
Designed for Public Safety to Commercial 5G Applications

Plenum-Rated 1/2" Air Dielectric Cable, Premium Design

RFS Technologies' 1/2" air dielectric cable is specifically engineered to meet stringent plenum requirements in both the United States and Canada, ensuring compliance with NEC, NFPA and CSA safety standards for use in air-handling spaces. Designed for exceptional RF performance and low loss, this cable is widely used in Distributed Antenna System (DAS) projects for in-building wireless communication, including commercial buildings, airports, hospitals, and other high-density venues. Its flexible construction allows for easy routing in tight plenum spaces, while its robust shielding ensures minimal signal interference. Ideal for applications requiring high signal integrity and regulatory compliance.

FEATURES / BENEFITS

- **High-Frequency Performance up to 6 GHz**. Engineered to support RF signals across a broad frequency range up to 6 GHz meeting the demands of today's advanced wireless communication systems, including 5G networks.
- **Superior Shielding for Maximum Interference Protection**. The solid outer conductor provides complete 360° RFI/EMI shielding, significantly reducing signal leakage and minimizing system interference in high-density RF environments.
- **Exceptional Intermodulation Performance**. With both solid inner and outer conductors, the cable virtually eliminates passive intermodulation (PIM), ensuring clean signal transmission.
- **Optimized for Plenum-Space Installations**. Engineered to meet plenum-rated safety standards in the U.S. and Canada, this cable is ideal for indoor DAS applications in office buildings, hospitals, airports, and other public venues requiring strict fire safety compliance.

Technical features

APPLICATIONS

Applications		In Building	DAS

STRUCTURE

Size		1/2"
Inner Conductor Diameter	mm (in)	4.8 (0.19)
Inner Conductor Material		Copper-plated Aluminum Wire
Dielectric Diameter	mm (in)	11.8 (0.464)
Dielectric Material		Extruded Polyethylene
Outer Conductor Diameter	mm (in)	13.8 (0.54)
Outer Conductor Material		Corrugated Copper
Jacket Diameter	mm (in)	15.93 (0.627)
Jacket Material		Flame Retardant PVC
Cable Type		Air-Dielectric, Corrugated

TESTING AND ENVIRONMENTAL

Fire Performance		CMP (Communications Multipurpose Plenum)
Regulatory Compliance		NFPA 262 (UL910) / CATVP / CMP / UL444 / Canadian CSA C.22.2/FT6
Installation Temperature	°C(°F)	-20 to 60 (-4 to 140)
Storage Temperature	°C (°F)	-40 to 85 (-40 to 185)
Operation Temperature	°C(°F)	-40 to 85 (-40 to 185)

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ELECTRICAL SPECIFICATIONS

Impedance	Ω	50 +/- 1
Maximum Frequency	GHz	6
Velocity	%	88
Capacitance	pF/m (pF/ft)	76 (23.2)
Inductance	uH/m (uH/ft)	0.19 (0.058)
Peak Power Rating	kW	40
RF Peak Voltage	Volts	2000
Jacket Spark	Volt RMS	8000
Inner Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	1.48 (0.45)
Outer Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	1.9 (0.58)
Return Loss (VSWR) Performance		24 (1.13) @ 698-960 MHz 24 (1.13) @ 1395-1432 MHz 24 (1.13) @ 1700-2155 MHz 20 (1.22) @ 2300-2700 MHz 18 (1.29) @ 3550-4200 MHz 18 (1.29) @ 5150-6000 MHz

MECHANICAL SPECIFICATIONS

Cable Weight, Nominal	kg/m (lb/ft)	0.246 (0.165)
Minimum Bending Radius, Single Bend	mm (in)	76 (3)
Minimum Bending Radius, Repeated Bends	mm (in)	127 (5)
Bending Moment	Nm (lb-ft)	4.1 (3)
Tensile Strength	N (lb)	1110 (250)
Recommended / Maximum Clamp Spacing	m (ft)	0.5 / 0.9 (1.8 / 3)
Crush Strength	kg/mm (lb/ln)	1.96 (110)

ATTENUATION @ 20°C (68°F) AND POWER RATING @ 40°C (104°F)

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.15	0.05	40
1	0.21	0.06	34.30
1.5	0.26	0.08	27.90
2	0.30	0.09	24.20
10	0.67	0.20	10.70
20	0.95	0.29	7.55
30	1.17	0.36	6.15
50	1.52	0.47	4.74
88	2.04	0.62	3.53
100	2.18	0.67	3.30
108	2.27	0.69	3.17
150	2.70	0.82	2.67
174	2.92	0.89	2.47
200	3.14	0.96	2.30
300	3.89	1.19	1.85
400	4.54	1.39	1.59
450	4.84	1.48	1.49
500	5.13	1.56	1.41
512	5.19	1.58	1.39
600	5.66	1.73	1.28
700	6.16	1.88	1.17
750	6.40	1.95	1.13
800	6.64	2.02	1.09
824	6.75	2.06	1.07
894	7.06	2.15	1.02
900	7.08	2.16	1.02
925	7.19	2.19	1.01
960	7.34	2.24	0.99
1000	7.51	2.29	0.96
1250	8.52	2.60	0.85
1400	9.08	2.77	0.80
1500	9.45	2.88	0.77
1700	10.20	3.09	0.71
1800	10.50	3.20	0.69
2000	11.20	3.40	0.65
2100	11.50	3.50	0.63

2200	11.80	3.59	0.62
2300	12.10	3.69	0.60
2400	12.40	3.78	0.59
2500	12.70	3.87	0.58
2600	13	3.96	0.56
2700	13.30	4.05	0.55
3000	14.10	4.31	0.52
3500	15.50	4.73	0.47
3600	15.80	4.81	0.47
4000	16.80	5.13	0.44
4500	18.10	5.51	0.41
5000	19.30	5.88	0.38
5500	20.40	6.23	0.36
6000	21.60	6.58	0.34

Related Products

	Premium Connector		Standard C03 Connector		Standard C02 Connector	
Interface	**Connector Model Number**	**Toolkit**	**Connector Model Number**	**Toolkit**	**Connector Model Number**	**Toolkit**
N Male	NM-LCF12-D01	TRIM-SET-L12-D01	NM-LCF12-C03	TRIM-SET-L12-C02	NM-LCF12-C02-6	TRIM-SET-L12-C02
N Female	NF-LCF12-D01		NF-LCF12-C03		NF-LCF12-C02-6	
4.3-10 Male	43M-LCF12-D01		43M-LCF12-C03		N/A	
4.3-10 Female	43MFLCF12-D01		43F-LCF12-C03		N/A	
716 DIN Male	716M-LCF12-D01		716M-LCF12-C03		N/A	
716 DIN Female	716F-LCF12-D01		716F-LCF12-C03		N/A	

Other connector types are available upon request.

External Document Links

Notes

Cable Model and Color Options

Model Number	Jacket Color	Outer Conductor Material
ICA12-50JPL	Blue	Copper
ICA12-50JPLR	Red	
ICA12-50JPLW	White	
ICA12-50JPLB	Black	
ICA12-50JPLL	Blue	Aluminum
ICA12-50JPLLR	Red	
ICA12-50JPLLW	White	
ICA12-50JPLLB	Black	