PRODUCT DATASHEET

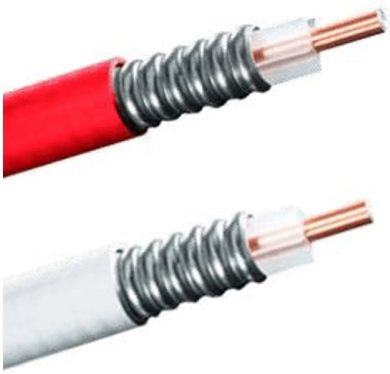
ICA12-50JPLL*-PS

1/2" Aluminum Plenum-Rated Air-Dielectric Coaxial Cable, **Public Safety Version**

Aluminum Plenum-Rated 1/2" Air Dielectric Cable, Public Safety 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, especially in public safety applications such as Emergency Responder Communication Enhancement Systems (ERCES). 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.

The cable is available with a choice of jacket colors. For specific model names, please refer to the table in the notes section.



FEATURES / BENEFITS

- **Public safety-oriented design**. Engineered to support RF signals across a broad frequency range for public safety applications.
- **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.
- **Low PIM Contribution.** With both solid inner and outer conductors, the cable offers a minimized risk of passive intermodulation (PIM) contribution, supporting clean and reliable 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		Public Safety	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 Aluminum
Jacket Diameter	mm (in)	15.93 (0.627)
Jacket Material		Flame Retardant PVC
Cable Type		Air-Dielectric, Corrugated

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

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)

ELECTRICAL SPECIFICATIONS

Impedance	Ω	50 +/- 2
Maximum Frequency	GHz	2.2
Velocity	%	88
Capacitance	pF/m (pF/ft)	75 (22.86)
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)	2.29 (0.7)
Return Loss (VSWR) Performance		24 (1.13) @ 30-300 MHz 24 (1.13) @ 450-512 MHz 24 (1.13) @ 600-690 MHz 24 (1.13) @ 698-960 MHz 24 (1.13) @ 1395-1432 MHz 24 (1.13) @ 1700-2155 MHz

MECHANICAL SPECIFICATIONS

Cable Weight, Nominal	kg/m (lb/ft)	0.238 (0.16)
Minimum Bending Radius, Single Bend	mm (in)	76 (3)
Minimum Bending Radius, Repeated Bends	mm (in)	127 (5)
Bending Moment	Nm (lb-ft)	5.4 (4)
Tensile Strength	N (lb)	549 (150)
Recommended / Maximum Clamp Spacing	m (ft)	0.5 / 0.9 (1.8 / 3)
Crush Strength	kg/mm (lb/ln)	1.25 (70)

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

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.16	0.05	40
1	0.23	0.07	32.80
1.5	0.29	0.09	26.80
2	0.33	0.10	23.20
10	0.74	0.23	10.30
20	1.06	0.32	7.22
30	1.30	0.40	5.89
50	1.68	0.51	4.55
88	2.25	0.69	3.40
100	2.41	0.73	3.18
108	2.51	0.76	3.05
150	2.98	0.91	2.57
174	3.22	0.98	2.38
200	3.46	1.05	2.21
300	4.29	1.31	1.79
400	5	1.52	1.53
450	5.32	1.62	1.44
500	5.63	1.72	1.36
512	5.71	1.74	1.34
600	6.22	1.90	1.23
700	6.76	2.06	1.14
750	7.02	2.14	1.09
800	7.28	2.22	1.06
824	7.40	2.25	1.04
894	7.74	2.36	0.99
900	7.76	2.37	0.99
925	7.88	2.40	0.98
960	8.05	2.45	0.96
1000	8.23	2.51	0.93
1250	9.32	2.84	0.83
1400	9.93	3.03	0.78
1500	10.30	3.15	0.75
1700	11.10	3.38	0.70
1800	11.50	3.49	0.67
2000	12.20	3.71	0.63
2100	12.50	3.81	0.62

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2200	12.80	3.92	0.61
Performance beyond 2200MHz is not tested			

Related Products

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

Other connector types are available upon request.

External Document Links

Cable VEX file

Notes

Cable Model and Color Options

Model Number	Jacket Color	Outer Conductor Material
ICA12-50JPLR-PS	Red	Copper
ICA12-50JPLW-PS	White	
ICA12-50JPLLR-PS	Red	Aluminum
ICA12-50JPLLW-PS	White	

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