PRODUCT DATASHEET

ICA58-50JPLR

5/8" Plenum-Rated Corrugated Coaxial Cable, 50 Ω, 6 GHz, Red Color



ClearFill®Line Plenum-Rated 5/8" Air Dielectric Cable

RFS Technologies' 5/8" air dielectric cable is specifically engineered to meet stringent plenum requirements in both the United States and Canada, ensuring compliance with NEC and NFPA 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 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

- **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.
- **Improved Attenuation and Power Rating vs 1/2" Cables**. Its larger size delivers superior electrical performance, enabling lower signal loss and higher power capacity—ideal for longer cable runs in large or complex venues.
- **Easier to Install Than 7/8" Cables**. With a smaller bend radius and reduced bending moment, the cable offers greater flexibility and ease of installation—especially in tight spaces or high-density pathways..
- **High-Frequency Performance up to 6 GHz**. Engineered to support RF signals across a broad frequency range—including up to 6 GHz—this cable meets the demands of today's advanced wireless communication systems, including 5G and future-ready networks.
- **Low PIM contribution**. With solid inner and outer conductors, the cable offers a minimized risk of PIM (Passive InterModulation) contribution, supporting clean and reliable signal transmission in demanding RF environments
- **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.

Technical features

APPLICATIONS

Applications		DAS (Distributed Antenna System)	Public Safety	Inbuilding Communication

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

STRUCTURE

Size		5/8
Inner Conductor Diameter	mm (in)	6.7 (0.264)
Inner Conductor Material		Copper-Clad Aluminum Wire
Dielectric Diameter	mm (in)	16 (0.63)
Dielectric Material		Extruded Polyethylene
Outer Conductor Diameter	mm (in)	18.45 (0.726)
Outer Conductor Material		Corrugated Copper
Jacket Diameter	mm (in)	21 (0.827)
Jacket Material		PVC, Plenum Rated, Red
Cable Type		Air-Dielectric, Corrugated

TESTING AND ENVIRONMENTAL

Fire Performance		Flame Retardant, Plenum Rated
Flame Retardant Jacket Specifications		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 +/- 1
Maximum Frequency	GHz	6
Velocity	%	90
Capacitance	pF/m (pF/ft)	76 (23.2)
Inductance	uH/m (uH/ft)	0.19 (0.058)
Peak Power Rating	kW	55.6
RF Peak Voltage	Volts	2360
Jacket Spark	Volt RMS	11000
Inner Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	0.75 (0.23)
Outer Conductor dc Resistance	Ω/1000 m (Ω/1000 ft)	1.43 (0.44)
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

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MECHANICAL SPECIFICATIONS

Cable Weight, Nominal	kg/m (lb/ft)	0.44 (0.25)
Minimum Bending Radius, Single Bend	mm (in)	75 (3)
Minimum Bending Radius, Repeated Bends	mm (in)	178 (7)
Bending Moment	Nm (lb-ft)	7.4 (5.5)
Tensile Strength	N (lb)	1150 (259)
Recommended / Maximum Clamp Spacing	m (ft)	0.7 / 1 (2.3 / 3.3)
Crush Strength	kg/mm (lb/ln)	2.14 (120)

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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	0.11	0.03	55.60
1	0.16	0.05	47.68
1.5	0.19	0.06	38.78
2	0.22	0.07	33.64
10	0.50	0.15	14.87
20	0.72	0.22	10.50
30	0.88	0.27	8.55
50	1.14	0.35	6.59
88	1.53	0.47	4.91
100	1.64	0.50	4.59
108	1.70	0.52	4.41
150	2.02	0.62	3.71
174	2.18	0.67	3.43
200	2.35	0.72	3.20
300	2.91	0.89	2.57
400	3.39	1.03	2.21
450	3.62	1.10	2.07
500	3.83	1.17	1.96
512	3.88	1.18	1.93
600	4.22	1.29	1.78
700	4.59	1.40	1.63
750	4.77	1.45	1.57
800	4.94	1.51	1.52
824	5.02	1.53	1.49
894	5.25	1.60	1.42
900	5.27	1.61	1.42
925	5.35	1.63	1.40
960	5.47	1.67	1.38
1000	5.59	1.70	1.33
1250	6.33	1.93	1.18
1400	6.75	2.06	1.11
1500	7.01	2.14	1.07
1700	7.53	2.30	0.99
1800	7.78	2.37	0.96
2000	8.26	2.52	0.90
2100	8.49	2.59	0.88

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2200	8.73	2.66	0.86
2300	8.96	2.73	0.83
2400	9.18	2.80	0.82
2500	9.40	2.86	0.81
2600	9.62	2.93	0.78
2700	9.83	3.00	0.77
3000	10.46	3.19	0.72
3500	11.45	3.49	0.65
3600	11.65	3.55	0.65
4000	12.40	3.78	0.61
4500	13.31	4.06	0.57
5000	14.19	4.32	0.53
5500	15.03	4.58	0.50
6000	15.86	4.83	0.47

Related Products

	Standard C03 Connector	
Interface	**Connector Model Number**	**Toolkit**
N Male	NM-ICA58-C03	TRIM-ICA58-C03
N Female	NF-ICA58-C03	
4.3-10 Male	43M-ICA58-C03	
4.3-10 Female	43F-ICA58-C03	

Other connector types may be available upon request.

External Document Links

LINK TO VEX FILE

Notes

The cable is IP68 and the jacket is UV resistant.

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