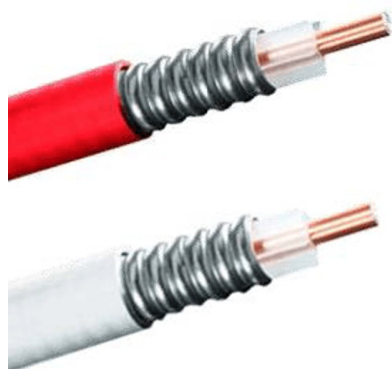


**Aluminum Plenum-Rated 1/2" Air Dielectric Cable, Public Safety Design**

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  |

**TESTING AND ENVIRONMENTAL**

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

**ELECTRICAL SPECIFICATIONS**

|                                       |                         |                                                                                                                                                                   |
|---------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Impedance</b>                      | Ω                       | 50 +/- 2                                                                                                                                                          |
| <b>Maximum Frequency</b>              | GHz                     | 2.2                                                                                                                                                               |
| <b>Velocity</b>                       | %                       | 88                                                                                                                                                                |
| <b>Capacitance</b>                    | pF/m (pF/ft)            | 75 (22.86)                                                                                                                                                        |
| <b>Inductance</b>                     | uH/m (uH/ft)            | 0.19 (0.058)                                                                                                                                                      |
| <b>Peak Power Rating</b>              | kW                      | 40                                                                                                                                                                |
| <b>RF Peak Voltage</b>                | Volts                   | 2000                                                                                                                                                              |
| <b>Jacket Spark</b>                   | Volt RMS                | 8000                                                                                                                                                              |
| <b>Inner Conductor dc Resistance</b>  | Ω/1000 m<br>(Ω/1000 ft) | 1.48 (0.45)                                                                                                                                                       |
| <b>Outer Conductor dc Resistance</b>  | Ω/1000 m<br>(Ω/1000 ft) | 2.29 (0.7)                                                                                                                                                        |
| <b>Return Loss (VSWR) Performance</b> |                         | 24 (1.13) @ 30-300 MHz<br>24 (1.13) @ 450-512 MHz<br>24 (1.13) @ 600-690 MHz<br>24 (1.13) @ 698-960 MHz<br>24 (1.13) @ 1395-1432 MHz<br>24 (1.13) @ 1700-2155 MHz |

**MECHANICAL SPECIFICATIONS**

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

**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      |



|      |       |      |      |
|------|-------|------|------|
| 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        |                          |