**Product Data Sheet** **LCF78-50JA-A8**

# 7/8" CELLFLEX® Premium Attenuation Low-Loss Foam-Dielectric Coaxial Cable

## Product Description

CELLFLEX®7/8" premium attenuation low loss flexible cable

Application: Main feed line

7/8" CELLFLEX® Low-Loss Foam Dielectric Coaxial Cable

## Features/Benefits

- **Ultra Low Attenuation**
  The further reduced attenuation of CELLFLEX® premium attenuation coaxial cable results in extremly efficient signal transfer in your RF system, especially at high frequencies.
- **Complete Shielding**
  The solid outer conductor of CELLFLEX® coaxial cable creates a continuous RFI/EMI shield that minimizes system interference.
- **Low VSWR**
  Special low VSWR versions of CELLFLEX® coaxial cables contribute to low system noise.
- **Outstanding Intermodulation Performance**
  CELLFLEX® coaxial cable's solid inner and outer conductors virtually eliminate intermods. Intermodulation performance is also confirmed with state-of-the-art equipment at the RFS factory.
- **High Power Rating**
  Due to their low attenuation, outstanding heat transfer properties and temperature stabilized dielectric materials, CELLFLEX® cable provides safe long term operating life at high transmit power levels.
- **Wide Range of Application**
  Typical areas of application are: feedlines for broadcast and terrestrial microwave antennas, wireless cellular, PCS and ESMR base stations, cabling of antenna arrays, and radio equipment interconnects.

## Technical Features

### Structure

| | | | |
|---|---|---|---|
| Inner conductor: | Copper Tube | [mm (in)] | 9.3 (0.37) |
| Dielectric: | Foam Polyethylene | [mm (in)] | 21.5 (0.85) |
| Outer conductor: | Corrugated Copper | [mm (in)] | 25.2 (0.99) |
| Jacket: | Polyethylene, PE | [mm (in)] | 27.8 (1.09) |

### Mechanical Properties

| | | |
|---|---|---|
| Weight, approximately | [kg/m (lb/ft)] | 0.43 (0.29) |
| Minimum bending radius, single bending | [mm (in)] | 120 (5) |
| Minimum bending radius, repeated bending | [mm (in)] | 250 (10) |
| Bending moment | [Nm (lb-ft)] | 13.0 (9.6) |
| Max. tensile force | [N (lb)] | 1440 (324) |
| Recommended / maximum clamp spacing | [m (ft)] | 0.8 / 1.0 (2.75 / 3.25) |

### Electrical Properties

| | | |
|---|---|---|
| Characteristic impedance | [Ω] | 50 +/- 1 |
| Relative propagation velocity | [%] | 90 |
| Capacitance | [pF/m (pF/ft)] | 74.0 (22.5) |
| Inductance | [µH/m (µH/ft)] | 0.185 (0.056) |
| Max. operating frequency | [GHz] | 5 |
| Jacket spark test RMS | [V] | 8000 |
| Peak power rating | [kW] | 85 |
| RF Peak voltage rating | [V] | 2920 |
| DC-resistance inner conductor | [Ω/km (Ω/1000ft)] | 1.62 (0.494) |
| DC-resistance outer conductor | [Ω/km (Ω/1000ft)] | 1.34 (0.408) |

### Recommended Temperature Range

| | | |
|---|---|---|
| Storage temperature | [°C (°F)] | -70 to +85 (-94 to +185) |
| Installation temperature | [°C (°F)] | -40 to +60 (-40 to +140) |
| Operation temperature | [°C (°F)] | -50 to +85 (-58 to +185) |

### Other Characteristics

| | | | |
|---|---|---|---|
| Fire Performance: | Halogene Free | | |
| VSWR Performance: | Premium for 890 - 960 MHz and 1710 - 2200 MHz | [dB (VSWR)] | 23 (1.153:1) |
| Other Options: | Phase stabilized and phase matched cables and assemblies are available upon request. | | |

| Frequency | Attenuation | | Power |
|---|---|---|---|
| [ MHz ] | [ dB/100m ] | [ dB/100ft ] | [ kW ] |
| 0.5 | 0.0780 | 0.0238 | 85.0 |
| 1.0 | 0.110 | 0.0336 | 85.0 |
| 1.5 | 0.135 | 0.0412 | 73.6 |
| 2.0 | 0.156 | 0.0476 | 63.7 |
| 10 | 0.351 | 0.107 | 28.3 |
| 20 | 0.498 | 0.152 | 20.0 |
| 30 | 0.612 | 0.186 | 16.2 |
| 50 | 0.793 | 0.242 | 12.5 |
| 88 | 1.06 | 0.323 | 9.38 |
| 100 | 1.13 | 0.345 | 8.80 |
| 108 | 1.18 | 0.358 | 8.42 |
| 150 | 1.39 | 0.425 | 7.15 |
| 174 | 1.50 | 0.458 | 6.63 |
| 200 | 1.62 | 0.493 | 6.14 |
| 300 | 2.0 | 0.608 | 4.97 |
| 400 | 2.32 | 0.707 | 4.28 |
| 450 | 2.47 | 0.753 | 4.02 |
| 500 | 2.61 | 0.796 | 3.81 |
| 512 | 2.64 | 0.806 | 3.77 |
| 600 | 2.88 | 0.876 | 3.45 |
| 700 | 3.12 | 0.951 | 3.19 |
| 750 | 3.24 | 0.987 | 3.07 |
| 800 | 3.35 | 1.02 | 2.97 |
| 824 | 3.41 | 1.04 | 2.91 |
| 894 | 3.56 | 1.08 | 2.79 |
| 900 | 3.57 | 1.09 | 2.78 |
| 925 | 3.62 | 1.10 | 2.75 |
| 960 | 3.70 | 1.13 | 2.69 |
| 1000 | 3.78 | 1.15 | 2.63 |
| 1250 | 4.27 | 1.30 | 2.33 |
| 1400 | 4.54 | 1.38 | 2.19 |
| 1500 | 4.71 | 1.44 | 2.11 |
| 1700 | 5.05 | 1.54 | 1.97 |
| 1800 | 5.21 | 1.59 | 1.91 |
| 2000 | 5.52 | 1.68 | 1.80 |
| 2100 | 5.67 | 1.73 | 1.75 |
| 2200 | 5.82 | 1.77 | 1.71 |
| 2400 | 6.11 | 1.86 | 1.63 |
| 2500 | 6.25 | 1.91 | 1.59 |
| 2600 | 6.39 | 1.95 | 1.56 |
| 2700 | 6.53 | 1.99 | 1.52 |
| 3000 | 6.93 | 2.11 | 1.43 |
| 3500 | 7.56 | 2.30 | 1.31 |
| 4000 | 8.16 | 2.49 | 1.22 |
| 4900 | 9.17 | 2.80 | 1.08 |
| 5000 | 9.28 | 2.83 | 1.07 |

Attenuation at 20°C (68°F) cable temperature
Mean power rating at 40°C (104°F) ambient temperature