

**AlumiBend**[™]**AlumiBend[™] Cables to 90 GHz**
Space Qualified and Ultra-Light

- Phase stable over temperature
- Low loss
- Multipaction Resistant
- 40% lighter than copper
- For applications up to 90 GHz
- Space Qualified

MegaPhase's aluminum jacketed semi-rigid coaxial cable assemblies are cost-effective, high-performance alternatives to standard semi-rigid coax. Suitable for applications up to 90 GHz, these low loss cable assemblies feature a microporous dielectric, which provides lower attenuation and higher operating temperatures. Additionally, AlumiBend[™] offers great phase stability vs. temperature when compared to solid PTFE semi-rigid cables. The MegaPhase AL Series is unique in that it is easily bent using a fixture to its finished shape and still maintains its shape after bending.

Electrical Data

Maximum Frequency:

AL047: 90 GHz

AL086: 67 GHz

AL141: 26.5 GHz

Impedance:50 Ω nominal**Propagation Velocity:**

76.5% nominal

Time Delay:

1.33 ns/ft (4.36 ns/m)

Shielding Effectiveness:

-110 dB minimum (cable only)

Dielectric Withstanding Voltage:

AL047: 2.0 kV at 60 Hz

AL086 & AL141: 5.0 kV rms at 60 Hz

Capacitance:

29 pF/ft (95.1 pF/m)

Mechanical Data

Finished Outer Diameter:

AL047: 0.047 in (0.119 cm)

AL086: 0.0865 in (0.220 cm)

AL141: 0.141 in (0.358 cm)

Static Bend Radius:

AL047: 0.125 in (0.318 cm)

AL086: 0.25 in (0.635 cm)

AL141: 0.50 in (1.270 cm)

Weight with Standard Jacket/Armor:

AL047: 0.0022 lbs./ft (0.0033 kg/m)

AL086: 0.0063 lbs./ft (0.0094 kg/m)

AL141: 0.0167 lbs./ft (0.0249 kg/m)

Operating Temp. Range:

-67 to 482° F (-55 to +250° C)



AlumiBend™ Cables to 90 GHz (continued)

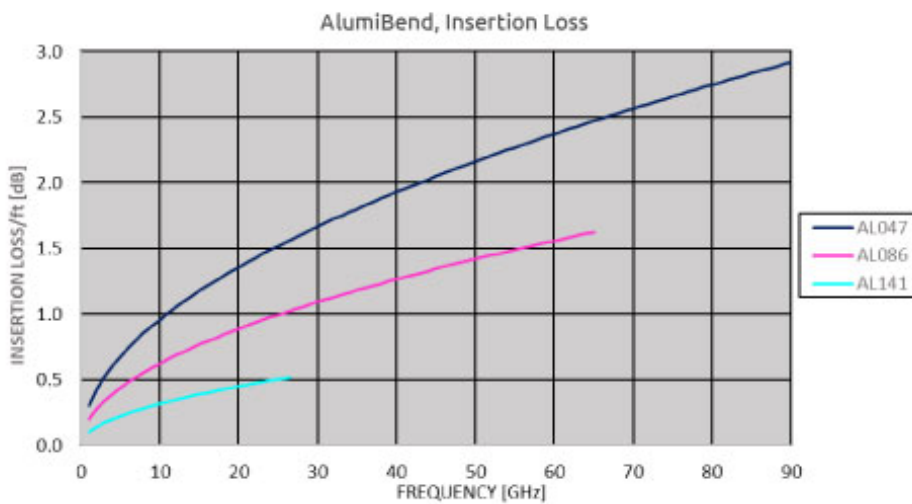
Cable Construction

Inner Conductor: Solid Ag-plated Cu
Dielectric: LD PTFE
Outer Conductor: Ag-plated Al

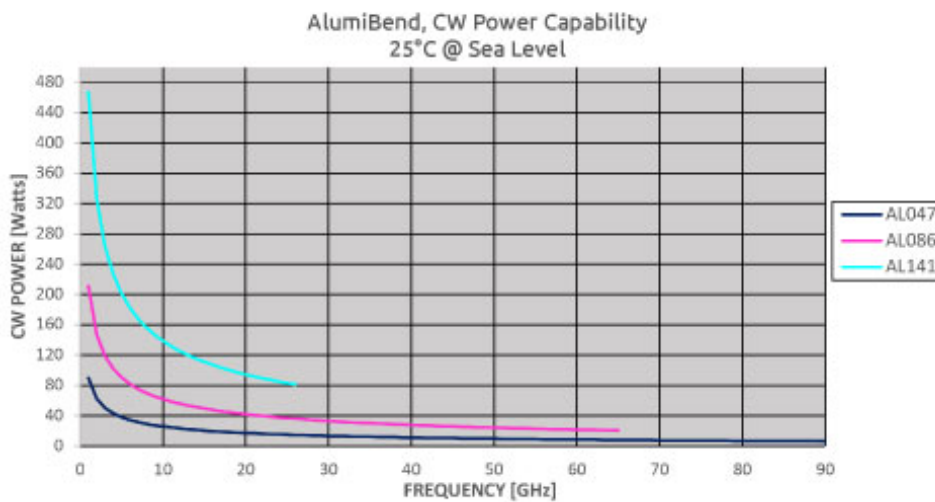
Available Connectors (cable dependent)

1.85mm, 2.4mm, 2.92mm, 3.5mm,
SMA, TNC, Type N

Insertion Loss



Cable CW Power Handling



AlumiBend™ Cables to 90 GHz (continued)

Specifications

| Frequency | | AL047 | | AL086 | | AL141 | | Conn Loss dB | VSWR |
|-----------|------|-------------|-------|-------------|-------|-------------|-------|--------------|------|
| Band | GHz | Attenuation | | Attenuation | | Attenuation | | | |
| | | dB/ft | dB/m | dB/ft | dB/m | dB/ft | dB/m | | |
| UHF | 0.3 | 0.165 | 0.540 | 0.107 | 0.351 | 0.055 | 0.180 | 0.006 | 1.10 |
| | 0.5 | 0.213 | 0.697 | 0.138 | 0.454 | 0.071 | 0.232 | 0.009 | |
| | 0.8 | 0.269 | 0.882 | 0.175 | 0.574 | 0.090 | 0.294 | 0.012 | |
| L | 1.0 | 0.301 | 0.987 | 0.196 | 0.642 | 0.100 | 0.328 | 0.014 | |
| S | 2.0 | 0.426 | 1.397 | 0.277 | 0.910 | 0.142 | 0.465 | 0.024 | 1.15 |
| | 2.4 | 0.467 | 1.531 | 0.304 | 0.997 | 0.155 | 0.509 | 0.027 | |
| | 3.0 | 0.522 | 1.712 | 0.340 | 1.116 | 0.174 | 0.570 | 0.032 | |
| C | 4.0 | 0.603 | 1.978 | 0.393 | 1.290 | 0.201 | 0.658 | 0.040 | |
| | 6.0 | 0.740 | 2.426 | 0.482 | 1.582 | 0.246 | 0.806 | 0.055 | |
| X | 8.0 | 0.855 | 2.804 | 0.558 | 1.830 | 0.284 | 0.932 | 0.070 | 1.20 |
| | 10.0 | 0.957 | 3.138 | 0.625 | 2.049 | 0.318 | 1.042 | 0.084 | 1.25 |
| | 12.4 | 1.066 | 3.498 | 0.697 | 2.285 | 0.354 | 1.161 | 0.101 | 1.30 |
| Ku | 15.0 | 1.174 | 3.850 | 0.767 | 2.517 | 0.390 | 1.278 | 0.118 | |
| | 18.0 | 1.287 | 4.222 | 0.842 | 2.761 | 0.427 | 1.400 | 0.139 | |
| K | 20.0 | 1.358 | 4.453 | 0.888 | 2.913 | 0.450 | 1.477 | 0.152 | 1.35 |
| | 22.0 | 1.425 | 4.673 | 0.932 | 3.058 | 0.472 | 1.549 | 0.165 | |
| | 24.0 | 1.489 | 4.884 | 0.975 | 3.196 | 0.493 | 1.619 | 0.178 | |
| | 26.5 | 1.566 | 5.135 | 1.025 | 3.362 | 0.519 | 1.702 | 0.194 | |
| Ka | 28.0 | 1.610 | 5.280 | 1.054 | 3.458 | | | 0.204 | 1.40 |
| | 30.0 | 1.667 | 5.468 | 1.092 | 3.582 | | | 0.217 | |
| | 32.0 | 1.723 | 5.650 | 1.129 | 3.702 | | | 0.230 | |
| | 34.0 | 1.776 | 5.827 | 1.164 | 3.819 | | | 0.243 | 1.45 |
| | 36.0 | 1.829 | 5.998 | 1.199 | 3.932 | | | 0.256 | |
| V | 40.0 | 1.929 | 6.328 | 1.265 | 4.150 | | | 0.281 | 1.50 |
| | 45.0 | 2.048 | 6.719 | 1.344 | 4.409 | | | 0.313 | |
| | 50.0 | 2.161 | 7.089 | 1.419 | 4.654 | | | 0.344 | 1.55 |
| | 60.0 | 2.372 | 7.779 | 1.558 | 5.112 | | | 0.406 | |
| | 67.0 | 2.509 | 8.230 | 1.650 | 5.411 | | | 0.450 | |
| W | 80.0 | 2.747 | 9.011 | | | | | 0.503 | 1.60 |
| | 90.0 | 2.918 | 9.571 | | | | | 0.591 | |