

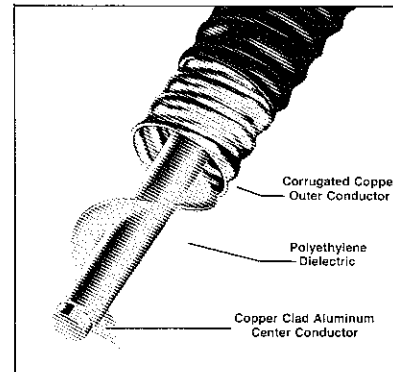
1/2" and 7/8" Air Dielectric Flexwell HCC

Coaxial Cable

Cablewave Systems air dielectric Flexwell coaxial cables offer a combination of remarkable flexibility, rugged strength, and superior electrical performance. The designs include a copper clad aluminum center conductor, extruded spiral polyethylene dielectric insulator, corrugated copper outer conductor, and protective polyethylene jacket. Air dielectric Flexwell is used extensively in communications and electronic systems in the HF through microwave frequency range.

The helix is extruded precisely onto (and covers) the center conductor, to achieve better uniformity, lower attenuation, and better mechanical stability than similar size competitive air dielectric coaxial cables. The Flexwell "locked" insulator construction results in superior phase stability through temperature changes and bending.

Copper clad aluminum meets ASTM-B-566-72.



ELECTRICAL CHARACTERISTICS

| Cable Type (part no.) | Cable Size | Impedance ohms | Velocity of Propagation percent | Max. Freq. 90% fco GHz | Attenuation dB/100ft. (dB/100m) | | | Average Power kW, @ 40° Ambient | | |
|--------------------------|------------|----------------|---------------------------------|------------------------|---------------------------------|-------------|-------------|---------------------------------|---------|----------|
| | | | | | 30 MHz | 400 MHz | 1000 MHz | 30 MHz | 400 MHz | 1000 MHz |
| HCC 12-50J (810901-001) | 1/2" | 50 | 91.5 | 11.3 | .455 (1.49) | 1.72 (5.64) | 2.79 (9.15) | 3.7 | .98 | .61 |
| HCC 78-50J* (810902-001) | 7/8" | 50 | 91.5 | 5.13 | .202 (.66) | .783 (2.56) | 1.29 (4.23) | 13.0 | 3.3 | 2.1 |

* 75 ohm version available upon request.

MECHANICAL CHARACTERISTICS

| Cable Type (part no.) | Center Conductor O.D., inches (mm) | Outer Conductor | | Jacket O.D., in. (mm) | Minimum Bending Radius, in. (mm) | Cable Weight lbs./ft. (kg/m) |
|-------------------------|------------------------------------|-----------------|----------------|-----------------------|----------------------------------|------------------------------|
| | | I.D., in. (mm) | O.D., in. (mm) | | | |
| HCC 12-50J (810901-001) | .160 (4.06) | .353 (8.97) | .484 (12.29) | .584 (14.83) | 5 (127) | .182 (.271) |
| HCC 78-50J (810902-001) | .354 (8.99) | .793 (20.14) | 1.00 (25.4) | 1.10 (27.94) | 10 (254) | .530 (.788) |

SHIPPING INFORMATION

| Cable Type and Length ft. (m) | | Package | Shipping Size inches (mm) | Shipping Volume cu. ft. (cu. m) | Tare Weight lbs. (kg) |
|-------------------------------|----------------------|---------------------|----------------------------------|---------------------------------|-----------------------|
| 1/2" | 7/8" | | | | |
| 0-100 (0-30) | 0-100 (0-30) | Carton | 28 x 28 x 4 (711 x 711 x 101) | 1.8 (0.05) | 4 (2) |
| 100-300 (30-91) | 100-300 (30-91) | Carton | 60 x 60 x 12 (1524 x 1524 x 304) | 25.0 (0.71) | 40 (18) |
| 0-350 (0-106) | — | Non-returnable reel | 33 dia. x 20 wide (833 x 508) | 12.6 (0.35) | 106 (48) |
| 350-1050 (106-320) | — | Non-returnable reel | 43 dia. x 23 wide (1092 x 584) | 24.6 (0.69) | 211 (96) |
| 1050-4450 (320-1356) | — | Non-returnable reel | 51 dia. x 36 wide (1295 x 914) | 54.2 (1.53) | 342 (155) |
| — | 0-1000 (0-305) | Non-returnable reel | 75 dia. x 23 wide (1905 x 584) | 74.8 (2.12) | 402 (182) |
| — | 1000-1400 (305-427) | Non-returnable reel | 78 dia. x 25 wide (1981 x 635) | 88.0 (2.49) | 578 (262) |
| — | 1400-2150 (427-655) | Non-returnable reel | 63 dia. x 31 wide (1600 x 1168) | 71.2 (2.99) | 484 (219) |
| — | 2150-4350 (655-1326) | Non-returnable reel | 75 dia. x 44 wide (1905 x 1117) | 143.2 (4.05) | 716 (324) |

NOTE: Reel size, volume and weight includes lagging. Standard factory bulk lengths are 2,500 ft. (765 m) ± 10% for 1/2" and 7/8" air dielectric Flexwell. Maximum lengths of 7/8" cable with 7/8" EIA connectors attached are 25% less than listed cable lengths without connectors. The normal tolerance on specified lengths is -0 +2%. Special tolerances available upon request. Attenuation values are nominal.

Coaxial Cable

Connectors for 1/2" and 7/8" Air Flexwell

| | |
|--|--|
| | 7/8" EIA (GP) Cable Ohms Part No. 7/8" 50 738259* (Inner Connector P/N 612951) |
| | 7/8" EIA (GB) Cable Ohms Part No. 7/8" 50 738256* (Inner Connector P/N 612951) |
| | N Male Cable Ohms Part No. 1/2" 50 738200 7/8" 50 738250 |
| | N Female Cable Ohms Part No. 1/2" 50 738201 7/8" 50 738251 |
| | LC Male Cable Ohms Part No. 7/8" 50 738254 |
| | UHF Female Cable Ohms Part No. 7/8" 50 738253 |
| | Splice Cable Ohms Part No. 1/2" 50 738204 7/8" 50 738257 |
| | End Terminal Cable Ohms Part No. 7/8" 50 738258 |

* Inner connector supplied loose

FOR 2 GHz LOW VSWR CABLES SEE PAGE 158.

| N Male (Low VSWR Tunable) | | | N Female (Low VSWR Tunable) | | |
|--|------|----------|-----------------------------|------|----------|
| Cable | Ohms | Part No. | Cable | Ohms | Part No. |
| 7/8" | 50 | 738 260 | 7/8" | 50 | 738261 |
| 7/8" EIA Anchor Inner Connector | | | 612951 | | |
| 7/8" EIA 90° Miter Elbow | | | 920225 | | |
| 1 1/2" EIA—7/8" EIA Plate Reducer | | | 920247 | | |
| For rigid line components, see pages 167 to 175. | | | | | |

CONNECTOR DIMENSIONS AND WEIGHT

| Type | 1/2" | | | 7/8" | | |
|-----------------------------|---------------|-----------------|------------------|---------------|-----------------|------------------|
| | O.D. in. (mm) | Length in. (mm) | Weight lbs. (kg) | O.D. in. (mm) | Length in. (mm) | Weight lbs. (kg) |
| 7/8" EIA (GP) | — | — | — | 1.4 (36) | 4.2 (106) | 1.5 (0.7) |
| 7/8" EIA (GB) | — | — | — | 1.4 (36) | 4.2 (106) | 1.5 (0.7) |
| N Male | 1.0 (25) | 3.2 (81) | 0.5 (0.2) | 1.4 (36) | 3.9 (98) | 0.9 (0.4) |
| N Female | 1.0 (25) | 3.2 (82) | 0.5 (0.2) | 1.4 (36) | 3.9 (100) | 0.8 (0.4) |
| L C Male | — | — | — | 1.4 (36) | 4.4 (113) | 0.8 (0.4) |
| L C Female | — | — | — | 1.4 (36) | 4.3 (109) | 0.8 (0.4) |
| UHF Female | — | — | — | 1.4 (36) | 4.6 (117) | 0.8 (0.4) |
| Splice | 1.0 (25) | 3.4 (87) | 0.6 (0.3) | 1.4 (36) | 4.7 (119) | 1.2 (0.5) |
| End Terminal | — | — | — | 1.4 (36) | 4.9 (124) | 0.9 (0.4) |
| N Male (Low VSWR Tunable) | — | — | — | 1.4 (36) | 7.9 (200) | 1.8 (0.8) |
| N Female (Low VSWR Tunable) | — | — | — | 1.4 (36) | 1.4 (36) | 1.8 (0.8) |

ORDERING INFORMATION

Connectors may be ordered by the part number listed or by a cable designer followed by an interface abbreviation, i.e. HCC 78-50 EIA(GP) for 7/8" EIA (gas pass) connector for 7/8" air Flexwell cable. Panel and bulkhead mount versions of several connectors are available and may be ordered by adding the suffix "(P)" or "(B)", i.e. HCC 12-50NF(B) for N female bulkhead mount connector for 1/2" air Flexwell or HCC 78-50NF(P) for N female panel mount connector for 7/8" air dielectric Flexwell cable.

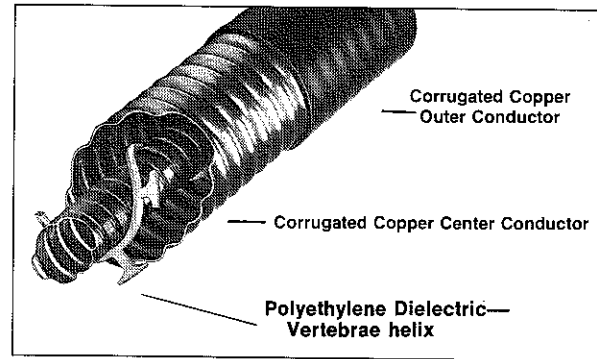
An anchor inner connector, "O" ring gasket, and hardware are supplied with each EIA connector. Normally a gas pass (GP) connector is used at the antenna end and a gas barrier (GB) type at the equipment end to facilitate antenna pressurization. EIA connectors for air dielectric Flexwell use brass flanges.

4 1/8" Air Dielectric Flexwell

Coaxial Cable

Cablewave Systems air dielectric Flexwell coaxial cables achieve a combination of remarkable flexibility, rugged strength, and superior electrical performance. The 4 1/8" (4 1/2" O.D.) cable design includes a corrugated tubular copper center conductor, spiral polyethylene dielectric, corrugated outer conductor, and black polyethylene jacket. The special helix insulator construction contributes to low dielectric loss and excellent mechanical stability.

Air dielectric 4 1/8" Flexwell cable is used extensively in high power applications in the broadcast frequency bands and for lowest practical insertion loss at frequencies through 1 GHz.



ELECTRICAL CHARACTERISTICS

| Cable Type (part no.) | Cable Size | Impedance Ohms | Velocity of Propagation percent | Max. Freq. 90% fco GHz | Attenuation dB 100 ft. (db/100m) | | | Average Power kW 40 Ambient | | |
|-----------------------------|------------|----------------|---------------------------------|------------------------|----------------------------------|-------------|-------------|-----------------------------|---------|---------|
| | | | | | 1 MHz | 100 MHz | 800 MHz | 1 MHz | 100 MHz | 800 MHz |
| HF4 1/8" Cu2Y (8101944-008) | 4 1/2" | 50 | 97 | 1.0 | .008 (.028) | .085 (.280) | .259 (.850) | 720 | 72 | 26 |

MECHANICAL CHARACTERISTICS

| Cable Type (part no.) | Center Conductor O.D., in. (mm) | Outer Conductor | | Jacket O.D., in. (mm) | Minimum Bending Radius, in. (mm) | Cable Weight lbs. ft. (kg/m) |
|-----------------------------|---------------------------------|-----------------|----------------|-----------------------|----------------------------------|------------------------------|
| | | I.D., in. (mm) | O.D., in. (mm) | | | |
| HF4 1/8" Cu2Y (8101944-008) | 1.76 (44.8) | 3.86 (96.7) | 4.30 (98) | 4.57 (116) | 40 (1000) | 3.8 (5.6) |

SHIPPING INFORMATION

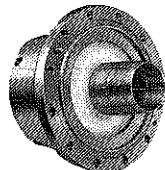
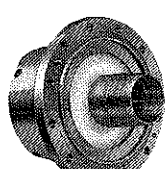

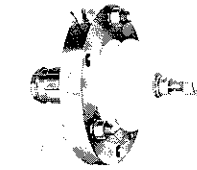
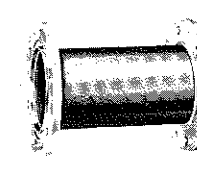
| Cable Type and Length ft. (m) 4 1/8" (4 1/2" O.D.) | Package | Shipping Size inches (mm) | Shipping Volume cu. ft. (cu. m) | Tare Weight lbs. (kg) |
|---|-----------------|----------------------------------|---------------------------------|-----------------------|
| 0-80 (0-24) | Returnable reel | 83 dia. x 41 wide (2108 x 1041) | 163.4 (4.62) | 848 (384) |
| 80-190 (24-58) | Returnable reel | 91 dia. x 41 wide (2311 x 1041) | 196.4 (5.56) | 949 (430) |
| 190-400 (58-122) | Returnable reel | 101 dia. x 65 wide (2565 x 1651) | 383.6 (10.86) | 1566 (710) |
| 400-780 (122-238) | Returnable reel | 111 dia. x 60 wide (2819 x 1524) | 427.8 (12.11) | 1906 (864) |
| 400-780 (122-238) | Returnable reel | 133 dia. x 78 wide (3310 x 1981) | 798.4 (21.70) | 3420 (1551) |
| 780-1050 (238-320) | Returnable reel | 145 dia. x 65 wide (3680 x 1650) | 790.8 (22.34) | 4264 (1936) |

NOTE: Reel size, volume and weight includes lagging.

The normal tolerance on specified lengths is -0 +2%. Special tolerances available upon request. Attenuation values are nominal.

Coaxial Cable

Connectors for 4 1/8" Air Flexwell

| | |
|---|--|
|  | 6 1/8" EIA (GB, Male) Cable Ohms Part No. 4 1/8" 50 734645 |
|  | 6 1/8" EIA (GP, Male) Cable Ohms Part No. 4 1/8" 50 734646 |
|  | 6 1/8" EIA-3/8" EIA Taper Reducer Ohms Part No. 50 920251 |
|  | End Terminal Ohms Part No. 50 920255 |
|  | 6 1/8" EIA Male-to-Male Adapter Ohms Part No. 50 920259 |

CONNECTOR DIMENSIONS AND WEIGHTS

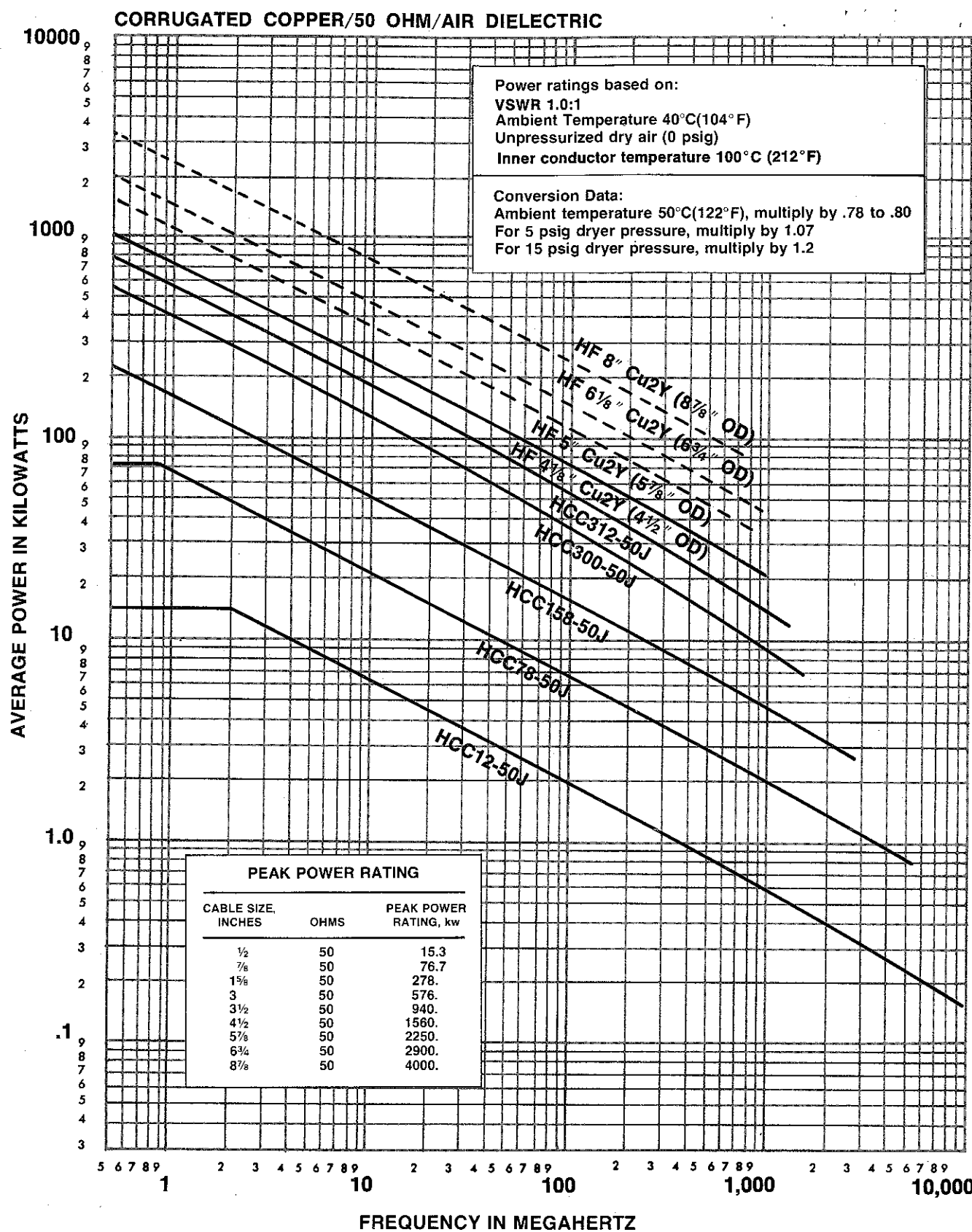
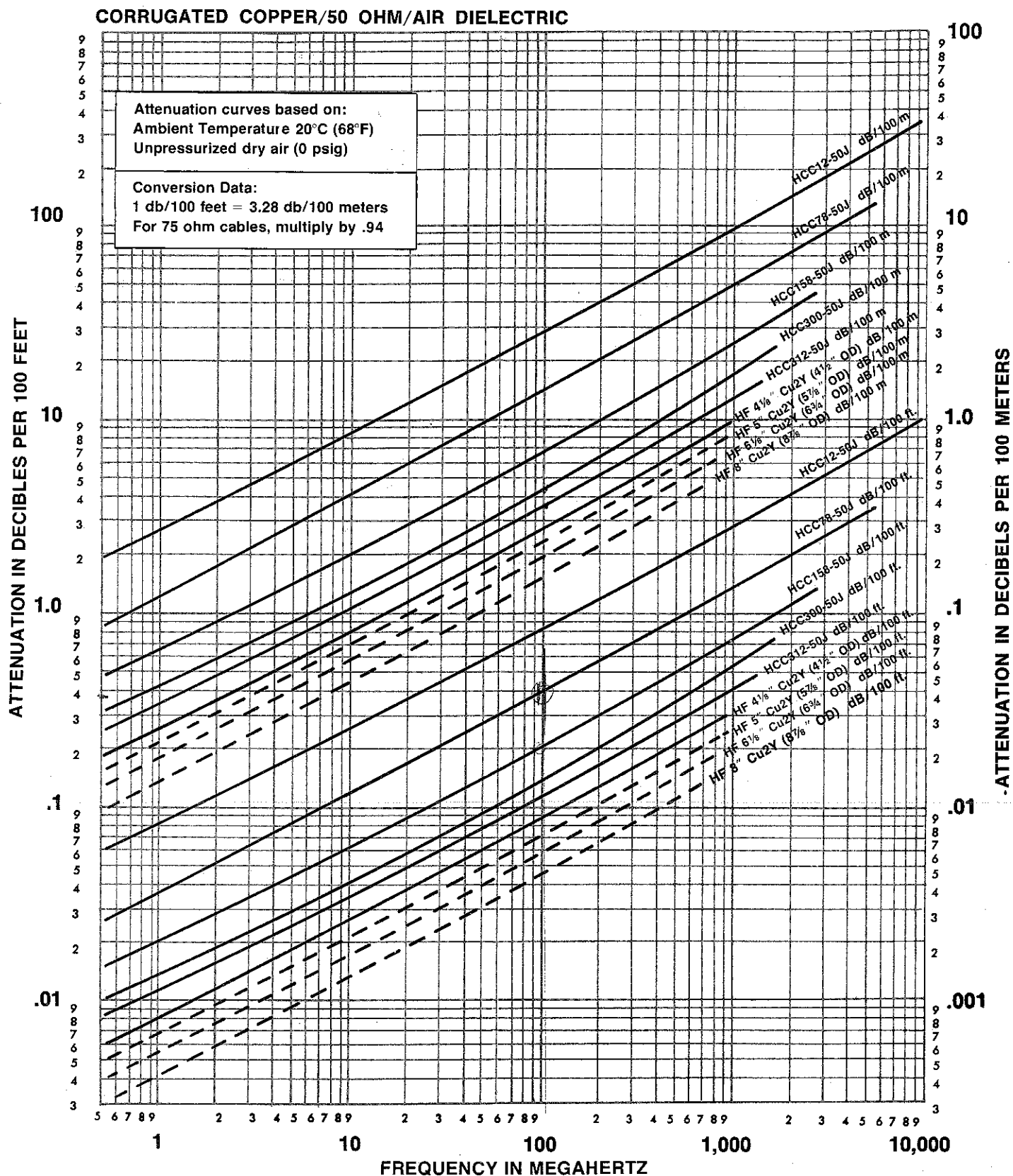
| Type | O.D. in. (mm) | Length in. (mm) | Weight lbs. (kg) |
|-----------------|---------------|-----------------|------------------|
| 6 1/8" EIA (GB) | 6.2 (158) | 4.5 (114) | 20.5 (9.3) |
| 6 1/8" EIA (GP) | 6.2 (158) | 4.5 (114) | 20.5 (9.3) |
| Taper Reducer | 8.1 (206) | 8.2 (209) | 11.5 (5.2) |
| End Terminal | 8.1 (206) | 8.0 (203) | 11.7 (5.3) |
| Female Adapter | 8.1 (206) | 6.0 (152) | 18.0 (8.2) |

ORDERING INFORMATION

Connectors may be ordered by the part number listed or by a cable designator followed by an interface abbreviation, i.e. HF 618 EIA (GP) for 6 1/8" EIA gas pass connector.

The 6 1/8" EIA connectors are male type and include an anchor inner connector, "O" ring gasket, and hardware. EIA connectors for Air Flexwell coaxial cable are supplied with brass flanges. Normally, a gas pass (GP) connector is used at the antenna and a gas barrier (GB) connector at the equipment end. Spanner wrenches are supplied with 6 1/8" EIA connectors.

FOR RIGID LINE COMPONENTS SEE PAGE 169.



Coaxial Cable