# Cheminax Coaxial Cables

*Small, lightweight coaxial cables*

## Applications

Cheminax controlled electrical cables are used in the aircraft and aerospace industries. They have a wide range of applications in missiles, avionics, radio-frequency and microwave systems, computers, security and surveillance systems, and communications.

Cheminax coaxial cables were designed to solve interconnect problems in electronic systems, such as computers, military equipment, and other areas of high-density packing, where cables are required to perform to more exacting specifications than standard radio-grade (RG) or UL recognized (UR) constructions.

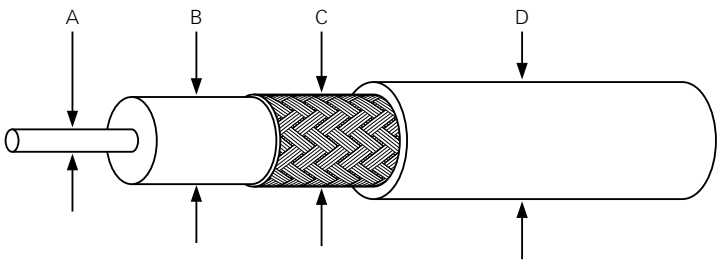
Tyco Electronics' advanced materials technology has allowed the design and development of Raychem Cheminax miniature coaxial cables that offer substantial savings in size and weight while improving mechanical performance and reducing attenuation.

Cables can be designed that are either smaller and lighter than standard RG and UR cables or provide significantly lower attenuation and capacitance with no significant increase in size.

## Features and benefits

- Light weight, small size.
- Temperature range of −65°C to 200°C.
- Low capacitance and attenuation.
- High velocity of propagation.
- High flexibility.

| ***Available in:*** | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |




A Conductor
B Dielectric
C Shield
D Jacket

## Specifications/approvals

| Series | UL | Raychem |
|---|---|---|
| Cheminax cables | 1837, 3258, 3259, and 3264 | 1200 |

## Product dimensions (nominal)

| Typical product part numbers | Impedance (ohms) | Capacitance pF/m (pF/ft) | Attenuation at 400 MHz dB/100m (dB/100 ft) | A Conductor diameter mm (in) | B Dielectric diameter mm (in) | C Shield diameter mm (in) | D Jacket diameter mm (in) | Weight in kg/km (lb/1000ft) |
|---|---|---|---|---|---|---|---|---|
| 5012E1339 | 50 | 98.4 (30.0) | 14.8 (4.5) | 2.26 (.089) | 7.24 (.285) | 7.98 (.314) | 10.24 (.403) | 162.2 (109.0) |
| 5012M1612 | 50 | 82.0 (25.0) | 16.1 (4.9) | 2.26 (.089) | 6.07 (.239) | 6.60 (.260) | 7.06 (.278) | 74.5 (50.1) |
| 5024A1311 | 50 | 83.7 (25.5) | 50.3 (15.3) | 0.62 (.025) | 1.70 (.067) | 2.18 (.085) | 2.67 (.104) | 11.8 (7.9) |
| 5026D1027 | 50 | 88.9 (27.1) | 63.7 (19.4) | 0.48 (.019) | 1.27 (.050) | 1.70 (.067) | 2.21 (.087) | 11.8 (7.9) |
| 5030A1317 | 50 | 90.2 (27.5) | 97.5 (29.7) | 0.30 (.012) | 0.79 (.031) | 1.12 (.044) | 1.57 (.062) | 4.5 (3.0) |
| 5030A1424 | 50 | 100.4 (30.6) | 94.5 (28.8) | 0.30 (.012) | 0.86 (.034) | 1.19 (.047) | 1.60 (.063) | 5.7 (3.8) |
| 7520A1311 | 75 | 56.1 (17.1) | 20.0 (6.1) | 1.02 (.040) | 4.57 (.180) | 5.11 (.201) | 6.12 (.241) | 43.2 (29.0) |
| 7524A1311 | 75 | 56.4 (17.2) | 31.8 (9.7) | 0.62 (.025) | 2.82 (.111) | 3.25 (.128) | 3.86 (.152) | 19.2 (12.9) |
| 7528H1424 | 75 | 54.5 (16.6) | 44.0 (13.4) | 0.32 (.013) | 1.37 (.054) | 1.73 (.068) | 2.13 (.084) | 8.9 (6.0) |
| 7530A1317 | 75 | 60.4 (18.3) | 58.8 (17.9) | 0.30 (.012) | 1.35 (.053) | 1.78 (.07) | 2.29 (.09) | 8.3 (5.6) |
| 7530H1424 | 75 | 57.4 (17.5) | 58.1 (17.7) | 0.30 (.012) | 1.30 (.051) | 1.73 (.068) | 2.03 (.08) | 8.5 (5.7) |
| 9522A1311 | 95 | 44.3 (13.5) | 19.7 (6.0) | 0.79 (.031) | 5.51 (.217) | 6.05 (.238) | 7.32 (.288) | 55.1 (37.0) |
| 9527J1528 | 95 | 44.3 (13.5) | 31.8 (9.7) | 0.43 (.017) | 2.84 (.112) | 3.18 (.125) | 3.58 (.141) | 19.2 (12.9) |
| 9530H1014 | 95 | 44.3 (13.5) | 44.3 (13.5) | 0.30 (.012) | 1.83 (.072) | 2.26 (.089) | 2.62 (.103) | 13.1 (8.8) |

Note: All values are nominal.

## Product characteristics

| | | |
|---|---|---|
| General | Conductor range | 12 AWG to 30 AWG |
| | Operating temperature range* | –65°C to 200°C |
| Electrical | Impedance range | 50 ohms to 125 ohms |
| | Dielectric constant | 1.65–2.3 |
| | Velocity of propagation | 67%–80% |

*Temperature rating varies depending on materials used in specific construction.

# Cheminax Coaxial Cables *(cont'd.)*

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***Properties (per SCD)***

| | Typical value of dielectric material | | | | | |
|---|---|---|---|---|---|---|
| Physical | Rayfoam L | Rayfoam H | Rayolin F | | | |
| Tensile (min.) | 6.8 MPa *(1000 psi)* | 4.1 MPa *(600 psi)* | 12.2 MPa *(1800 psi)* | | | |
| Elongation (min.) | 50% | 50% | 200% | | | |
| Electrical | | | | | | |
| Dielectric withstand (min.) | 1000 V | 1000 V | 1000 V | | | |
| Velocity of propagation (nom.) | 78% | 78% | 67% | | | |
| Dielectric constant | 1.65 | 1.65 | 2.2 | | | |
| | Type value of jacket material | | | | | |
| Physical | Thermorad | SPEC 55 | FlexLine | FEP | Zerohal | SPEC 44 |
| Tensile (min.) | 13.6 MPa *(2000 psi)* | 34 MPa *(5000 psi)* | 20.4 MPa *(3000 psi)* | 13.6 MPa *(2000 psi)* | 8.2 MPa *(1200 psi)* | 27.2 MPa *(4000 psi)* |
| Elongation (min.) | 250% | 50% | 100% | 200% | 150% | 200% |
| Temperature (max.) | 125°C | 200°C | 200°C | 200°C | 125°C | 150°C |
| Flammability* | Method C | Method B | Method B | Method B | Method B | Method B |
| Fluid category* | C | A | A | A | C | |

*See Raychem specification WCD-1200 for details.

## Cheminax Coaxial Cable Part Numbering System

50 26 A 1 3 1 4 - 0

**Jacket color**

| | |
|---|---|
| 0 = Black | 6 = Blue |
| 1 = Brown | 7 = Violet |
| 2 = Red | 8 = Gray |
| 3 = Orange | 9 = White |
| 4 = Yellow | 9X = Transparent white |
| 5 = Green | |

**Conductor type**

1 = Tin-coated copper
2 = Silver-coated copper
3 = Nickel-coated copper
4 = Silver-coated high-strength copper alloy
6 = Nickel-coated high strength copper Alloy
7 = Tin-coated copper-clad steel
8 = Silver-coated copper-clad steel
9 = Bare copper
A = CS95

**Dielectric**

| | |
|---|---|
| 1 = Rayfoam L | 4 = FEP (solid) |
| 2 = Rayfoam H | 6 = SPEC 55 (modified XL-ETFE) |
| 3 = Rayolin F | 0 = Other |

**Jacket**

| | |
|---|---|
| 1 = General purpose PVF2 | 6 = SPEC 55 |
| 2 = Outerspace PVF2 | 7 = FlexLine |
| 3 = Thermorad | 8 = Zerohal |
| 4 = FEP | 9 = None |
| 5 = Uncrosslinked ETFE | 0 = Other |

**Construction**

| | |
|---|---|
| 1 = Single round shield | 6 = Triax - other |
| 2 = Single flat shield | 8 = Composite shield |
| 3 = Double round shield | 9 = Core only |
| 4 = 2 shield (other) | 0 = Other |
| 5 = Triax-round shield | |

**Variation**

Letter assigned by Raychem.
(This is not a revision indicator.)

**Conductor size (AWG)**

Always two digits.

**Impedance**

Always two digits (if 100 ohms or higher, use last two digits only).