

Cheminax Coaxial Cables

Small, Lightweight Coaxial Cables

Product Facts

- Light weight, small size
- Temperature range of -65°C to 200°C [-85°F to 392°F]
- Low capacitance and attenuation
- High velocity of propagation
- High flexibility

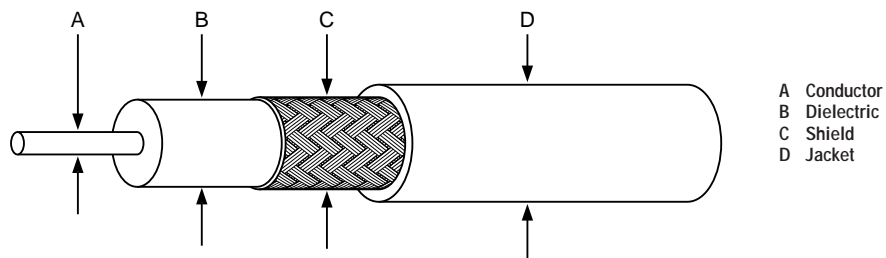


Applications

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.



Available in:	Americas	Europe	Asia Pacific
	■	■	■

Part Numbering System

95 27 A 1 3 1 7 - 0 Example: 9527A1317-0
 XX XX X X X X X X - X

Jacket Color Identification Code

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

Conductor Type

- 1 - Tin-coated copper
- 2 - Silver-coated copper
- 3 - Nickel-coated copper
- 4 - Silver-coated high strength copper alloy
- 5 - Aluminum
- 6 - Nickel-coated high strength copper alloy
- 7 - Tin-coated copper-clad steel
- 8 - Silver-coated copper-clad steel
- 9 - Bare copper
- 0 - Other
- A - Silver-coated CS95

Dielectric Material

- | | |
|------------------------------|--------------------------------|
| 1 - Rayfoam L (Polyethylene) | 6 - Modified XL-ETFE (SPEC 55) |
| 2 - Rayfoam H (Foamed FEP) | 7 - Flex XL-ETFE |
| 3 - Rayolin F (Solid) | 8 - Rayfoam M (Foamed MFA) |
| 4 - Modified FEP (Solid) | 0 - Other |

Outer Jacket Material

- | | |
|--------------------------------------|-----------------------------------|
| 1 - General purpose PVF ² | 6 - Modified XL-ETFE (SPEC 55) |
| 2 - Outerspace PVF ² | 7 - Flex XL-ETFE (SPEC 80) |
| 3 - Thermorad F & S | 8 - Zerohal & Thermorad Low Smoke |
| 4 - Modified FEP | 9 - None |
| 5 - ETFE (Uncrosslinked) | 0 - Other |

Construction

- | | |
|------------------------|----------------------|
| 1 - Round braid | 6 - Triax - other |
| 2 - Flat braid | 7 - Other |
| 3 - 2 round braids | 8 - Composite shield |
| 4 - 2 shields (other) | 9 - Core only |
| 5 - Triax-round braids | 0 - Other |

Variation

- | | |
|---------------------------------|------------------------------|
| A - Standard | U - Low Loss |
| B - Low Noise | W - Waterblocked |
| C-Z - Sequential within any PNs | S - Outer Space Requirements |

Conductor Size (AWG)

Always 2 digits - 0X if under 10 AWG

Impedance

Always 2 digits - last 2 digits if over 100 ohms
 0X (1 digit) if under 10 ohms

Cheminax Coaxial Cables (Continued)

Specifications/Approvals

Series	Raychem
Cheminax cables	1200

Product Dimensions (Nominal)

Typical Product Part No.	Impedance (ohms)	Capacitance pF/m (pF/ft)	Attenuation at 400 MHz dB/100m (dB/100 ft)	A	B	C	D	Weight in kg/km (lb/1000ft)
				Conductor Diameter	Dielectric Diameter	Shield Diameter	Jacket Diameter	
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 Operating Temperature Range*	12 AWG to 30 AWG -65°C to 200°C [-85°F to 392°F]
Electrical	Impedance range Dielectric constant Velocity of propagation	50 ohms to 125 ohms 1.65–2.3 67%–80%

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

Small, Lightweight Coaxial Cables

Properties (per SCD)

Physical	Typical Value of Dielectric Material					
	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			
Physical	Type Value of Jacket Material					
	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 (2500 psi)
Elongation (min.)	250%	50%	100%	200%	150%	150%
Temperature (max.)	125°C [257°F]	200°C [392°F]	200°C [392°F]	200°C [392°F]	125°C [257°F]	150°C [302°F]
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.

Raychem Alternatives to RG Cables

RG/U	Raychem Alternative	Comments
4	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
5	5018D3311-0	Small/light
8	5012E1339-0	Dimensionally similar
11	7518A1311-0	Small/light
29	5020A1311-0	Small/light
31	5012E1339-0	Dimensionally similar
55	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
58	5021D1331-0	Dimensionally similar
	5020A1311-0	Small/light
	5018A1311-0	Improved electricals
59	7523D1331-0	Dimensionally similar
	7524A1311-0	Small/light
62	7520A1311-0	Improved electricals
	9524A1311-0	Small/light
63	2524A1311-0	Small/light
87	5012A3311-0	Small/light
89	5012A3311-0	Small/light
115	5012A3311-0	Small/light
122	5020A1311-0	Improved electricals
124	7524A1311-0	Small/light
133	9524A1311-0	Small/light
140	7524A1311-0	Small/light
141	5020A1311-0	Small/light
142	5019D3318-0	Small/light
	5018D3311-0	Improved electricals
144	7518A1311-0	Small/light
149	7518A1311-0	Small/light

RG/U	Raychem Alternative	Comments
159	5020A1311-0	Small/light
174	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
178	5030A1317-0	Small/light
	5028A1317-0	Improved electricals
179	7530A1317-0	Small/light
	7528A1317-0	Improved electricals
180	9530E1014-0	Small/light
	9527A1318-9	Improved electricals
188	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
210	9524A1311-0	Small/light
213	5012E1339-0	Dimensionally similar
214	5012A3311-0	Small/light
223	5019D3318-0	Small/light
	5018D3311-0	Improved electricals
225	5012A3311-0	Small/light
235	5012A3311-0	Small/light
279	7524A1311-0	Dimensionally similar
282	5024A1311-0	Small/light
302	7524A1311-0	Small/light
303	5020A1311-0	Small/light
304	5018A1311-0	Small/light
316	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
393	5012A3311-0	Small/light
400	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
403	5030A5314-0	Small/light

Note: To complement the mechanical and electrical features of Cheminax miniature coax cable, Tyco Electronics offers Raychem SolderSleeve, SolderTacts, and PinPak termination devices and RF connector devices. Controlled electrical cables and components are available for data bus systems.

Cheminax — High Performance Alternatives to Standard Cables (Continued)

Raychem Alternatives to UR Cables

UR	Raychem Alternative	Comments
43	5020A1311-0	Small/light
57	7518A1311-0	Small/light
65	7518A1311-0	Small/light
67	5012E1339-0	Dimensionally similar
70	7524A1311-0	Small/light
72	5020A1311-0	Small/light
76	5020A1311-0	Small/light
84	7524A1311-0	Small/light
90	7522A1311-0	Small/light
95	5026A1311-0	Small/light
96	9524A1311-0	Dimensionally similar
102	5012E1339-0	Dimensionally similar
104	7522A1311-0	Small/light
105	7518A1311-0	Small/light
106	7222A1311-0	Small/light
107	5012E1339-0	Small/light
108	5020A1311-0	Small/light
109	5026A1311-0	Small/light
110	5030A1317-0	Small/light
111	7530A1317-0	Small/light
112	5012A3311-0	Small/light
113	7518A1311-0	Small/light
116	5026A1311-0	Small/light
117	7524A1311-0	Small/light
200	7524A1311-0	Dimensionally similar
201	7522A1311-0	Dimensionally similar
202	7522A1311-0	Dimensionally similar
203	7520A1311-0	Small/light
204	7518A1311-0	Dimensionally similar
205	7518A1311-0	Dimensionally similar
207	7524A1311-0	Small/light
208	7524A1311-0	Small/light
210	7524A1311-0	Small/light
301	5020A1311-0	Small/light
306	7524A1311-0	Small/light

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