CABLE ASSEMBLIES

Flexible cable 2.6/50 D (ECO316DX)



ECO-Friendly cable
Cost effective solution

P/N: ST291 217 020

APPLICATION NOTE

Designed by SYNERGY, ECO316DX is an alternative solution to ECO316D when higher power level is required:

- **Advantageous in term of electrical performance:** the crosslink foam polyethylene used as dielectric material allows higher temperature level (thus power range) than ECO316D.
- **Environmental advantages::** halogen and sulphur free, this cable does not emit any toxic substance when submitted to fire. The flame retardant jacket allows ECO316DX to meet fire resistance standards.
- **Advantageous in term of price: ECO316DX** design has integrated all Radiall knowledge to reach the best performance with a very competitive price.

ECO316DX is UL style 1375 and 3651 approved.

This cable is compatible with a large range of standard connector series.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Stranded SPC[1]	0.54	0.021
Dielectric	X foam PE[2]	1.54	0.061
Inner shield	SPC[1] braid	2.03	0.080
Outer shield	SPC[1] braid	2.50	0.098
Jacket	Black with blue stripe LSZH PE[3]	3.16	0.124

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 2Ω	
Operating frequency range	DC - 6 GHz	
Shielding effectiveness	70 dB (DC - 5 GHz)	
Voltage withstanding	1 500 V rms	
Capacitance	94.5 pF / m	28.7 pF / ft
Velocity of propagation	71 % (4.7 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	5 mm	0.196 inch
Weight	21 g / m	0.0140 lbs / ft

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range	-40 / +105 °C	-40 / +221 °F
Fire resistance	Yes (UL1581 VW1 / IEC 332-1)	
Halogen free	Yes (IEC 754-2)	

FREQUENCY / ATTENUATION (typ.) / CW MAX POWER (sea level / 25 °C)

GHz	dB / m	dB / ft	Watts
0.5	0.58	0.17	127
1.0	0.86	0.26	90
1.5	1.09	0.33	73
2.0	1.30	0.40	64
2.5	1.50	0.45	57
3.0	1.68	0.51	52
3.5	1.85	0.56	48
4.0	2.02	0.61	45
5.0	2.34	0.71	40
6.0	2.64	0.80	37
Attenuation calculation (dB/m)	(0.71 x √f GHz) + (0.15 x f GHz)		
Power calculation (W)	90 / √f GHz		

[1] SPC = Silver Plated Copper
[2] X foam PE = Crosslink foam PolyEthylene
[3] LSZH PE = Low Smoke Zero Halogen PolyEthylene

Note:
Typical attenuation for a couple of connectors (dB) = 0.045 x √f (GHz)

Flexible cable 5/50 D (ECO142: alternative to RG142)



ECO-Friendly cable
Cost effective solution

P/N: ST291 325 290

APPLICATION NOTE

Designed by SYNERGY, ECO142 is an alternative solution to RG142:

- **Advantageous in term of electrical performance:** its optimized construction allows better attenuation and screening effectiveness than RG142.
- **Environmental advantages::** halogen and sulphur free, this cable does not emit any toxic substance when submitted to fire. The flame retardant jacket allows ECO142 to meet fire resistance standards.
- **Advantageous in term of price:** ECO142 design has integrated all Radiall knowledge to reach the best performance with a very competitive price.

ECO142 is UL style 1375 approved.

This cable is compatible with a large range

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid OFC[1] copper	0.95	0.037
Dielectric	Foam PE[2]	2.85	0.112
Inner shield	Al[3] foil	3.10	0.122
Outer shield	TC[4] braid	3.50	0.138
Jacket	Black LSZH PE[5]	4.50	0.177

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 2Ω	
Operating frequency range	DC - 3 GHz	
Shielding effectiveness	80 dB (DC - 3 GHz)	
Voltage withstanding	5 000 V rms	
Peak power	2.7 kW	
Capacitance	87 pF / m	26.4 pF / ft
Velocity of propagation	77 % (4.3 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	15 mm	0.590 inch
Weight	36 g / m	0.0242 lbs / ft

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range	-40 / +85 °C	-40 / +185 °F
Fire resistance	Yes (UL1581 VW1 / IEC 332-1)	
Halogen free	Yes (IEC 754-2)	

FREQUENCY / ATTENUATION (typ.) / CW MAX POWER (sea level / 25 °C)

GHz	dB / m	dB / ft	Watts
0.1	0.12	0.04	411
0.2	0.18	0.05	291
0.3	0.22	0.07	237
0.5	0.28	0.09	184
1.0	0.41	0.12	130
1.5	0.50	0.15	106
2.0	0.58	0.18	92
2.5	0.66	0.20	82
3.0	0.73	0.22	75
Attenuation calculation (dB/m)	(0.385 x √f GHz) + (0.02 x f GHz)		
Power calculation (W)	130 / √f GHz		

[1] OFC = Oxygen Free Copper
[2] PE = PolyEthylene
[3] Al = Aluminum
[4] TC = Tinned Copper
[5] LSZH PE = Low Smoke Zero Halogen PolyEthylene