CABLE ASSEMBLIES

Flexible cable 6/50 D (ECO230)



P/N: ST291 326

APPLICATION NOTE

Designed by SYNERGY, ECO230 is an alternative solution to 5 mm dia. cables when higher power level is required:

- **Advantageous in term of electrical performance:** its optimized construction allows better attenuation and screening effectiveness than RG cables.
- **Environmental advantages::** halogen and sulphur free, this cable does not emit any toxic substance when submitted to fire. The flame retardant jacket allows ECO230 to meet fire resistance standards.
- **Advantageous in term of price:** ECO230 design has integrated all Radiall knowledge to reach the best performance with a very competitive price.

ECO230 is UL style 1375 approved.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	OFC[1] copper	1.46	0.057
Dielectric	Foam PE[2]	4.07	0.160
Inner shield	Al[3] foil	4.27	0.168
Outer shield	TC[4] braid	4.75	0.187
Jacket	Black LSZH[5] PE	5.90	0.232

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 2Ω	
Operating frequency range	DC - 4 GHz	
Shielding effectiveness	90 dB (DC - 3 GHz)	
Voltage withstanding	3 000 V rms	
Peak power	3.3 kW	
Capacitance	84 pF / m	25.5 pF / ft
Velocity of propagation	79 % (4.2 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	25 mm	0.98 inch
Weight	62 g / m	0.0417 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 / 40 °C)

GHz	dB / m	dB / ft	Watts
0.2	0.12	0.04	391
0.4	0.17	0.05	277
0.6	0.21	0.06	226
0.8	0.25	0.08	196
1.0	0.28	0.08	175
1.5	0.35	0.10	143
2.0	0.40	0.12	124
2.5	0.45	0.14	111
3.0	0.50	0.15	101
4.0	0.59	0.18	88
Attenuation calculation (dB/m)	(0.264 x √f GHz) + (0.015 x f GHz)		
Power calculation (W)	175 / √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

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

Flexible cable 10/50 D (ECO393: alternative to RG393)



ECO-Friendly cable
Cost effective solution

P/N: ST291 491 060

APPLICATION NOTE

Designed by SYNERGY, ECO393 is an alternative solution to RG393:

- **Advantageous in term of electrical performance:** its optimized construction allows better attenuation and screening effectiveness than RG393
- **Environmental advantages::** halogen and sulphur free, this cable does not emit any toxic substance when submitted to fire. The flame retardant jacket allows ECO393 to meet fire resistance standards.
- **Advantageous in term of price:** ECO393 design has integrated all Radiall knowledge to reach the best performance with a very competitive price.

ECO393 is UL style 1375 approved.
This cable is compatible with a large range

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid OFC[1]	2.40	0.094
Dielectric	Foam PE[2]	7.25	0.285
Inner shield	Al[3] foil	7.35	0.289
Outer shield	TC[4] braid	7.85	0.309
Jacket	Black LSZH PE[5]	9.10	0.358

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 2Ω	
Operating frequency range	DC - 3 GHz	
Shielding effectiveness	80 dB (DC - 3 GHz)	
Voltage withstanding	10 000 V rms	
Peak power	6.6 kW	
Capacitance	88 pF / m	26.6 pF / ft
Velocity of propagation	75 % (4.4 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	40 mm	1.57 inch
Weight	130 g / m	0.0875 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	0.05	0.01	1 265
0.2	0.07	0.02	894
0.3	0.08	0.03	730
0.5	0.11	0.03	566
1.0	0.16	0.05	400
1.5	0.20	0.06	327
2.0	0.24	0.07	283
2.5	0.27	0.08	253
3.0	0.30	0.09	231
Attenuation calculation (dB/m)	(0.14 x √f GHz) + (0.02 x f GHz)		
Power calculation (W)	400 / √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