



1 5/8"-A

STANDARD

Cable type : **5438 A**

Reference : **EC7-50-A**

Cable with standard UV resistant PE jacket,
halogen free according to IEC 60754

CHARACTERISTICS

Construction

• Inner conductor	
Material	corrugated copper tube
Diameter (mm) (in)	17.7 (0.7)
• Dielectric	
Material	gas-injected cellular polyethylene
Diameter (mm) (in)	43 (1.69)
• Outer conductor	
Material	corrugated copper tube
Diameter (mm) (in)	46.6 (1.83)
• Outer sheath	
Thickness (mm) (in)	1.7 (0.07)
Diameter (mm) (in)	50.0 (1.97)

Mechanical characteristics

• Minimum bending radius	
a) single bending (cm) (in)	20 (7.9)
b) 15 repeated bends (cm) (in)	40 (15.7)
• Maximum pulling strength (daN) (lb)	
	250 (562)
• Recommended temperature range	
- Storage	-70 to +85 °C (-94 to +185 °F)
- Installation	-40 to +60 °C (-40 to +140 °F)
- Operation	-55 to +85 °C (-67 to +185 °F)
• Max. length per hoisting grip (m) (ft)	
	70 (230)
• Maximum hanger spacing (m) (ft)	
	1.5 (4.9)
• Flat plate crush res. (kg/mm) (lb/in)	
	2.4 (138)
• Bending moment (Nm) (lb-ft)	
	38 (27.9)
• Approximate weight^[4] (kg/km) (lb/ft)	
	1019 (0.69) / 1131 (0.766)

VSWR characteristics

• VSWR^[5]_{max}	600 - 1000 MHz	< 1.15
• VSWR^[5]_{max}	1700 - 2300 MHz	< 1.15
• VSWR^[5]_{max}	2500 - 2700 MHz	< 1.15

Electrical characteristics

• Characteristic impedance (Ω)	50 ± 1
• Nominal capacity (pF/m) (pF/ft)	75 (22.9)
• Relative propagation velocity (%)	89
• Inductance (μ H/m) (μ H/ft)	0.187 (0.057)
• DC-resistance at 20°C (68°F)	
- inner conductor (Ω /km) (Ω /1000ft)	1.44 (0.44)
- outer conductor (Ω /km) (Ω /1000ft)	0.5 (0.15)
• RF peak voltage (kV)	5.5
• RF peak power (kW)	302
• Cut-off-frequency (GHz)	2.8
• Insulation resistance ($M\Omega \cdot km$)	>> 5000

Attenuation^[1] and power rating

Frequency (MHz)	Attenuation at 20°C (68°F) ^[2]		Mean power rating ^[3] (kW)
	(dB/100m)	(dB/100ft)	
10	0.20	0.061	49.4
20	0.29	0.088	34.8
30	0.36	0.110	28.3
80	0.59	0.180	17.1
100	0.67	0.204	15.2
150	0.82	0.250	12.3
200	0.96	0.293	10.6
300	1.18	0.360	8.55
400	1.38	0.421	7.33
450	1.47	0.448	6.88
500	1.56	0.476	6.50
600	1.72	0.524	5.89
700	1.87	0.570	5.41
800	2.01	0.613	5.03
894	2.14	0.652	4.73
960	2.23	0.680	4.55
1000	2.28	0.695	4.45
1500	2.86	0.872	3.54
1700	3.07	0.936	3.30
1800	3.17	0.966	3.19
1880	3.25	0.991	3.12
2000	3.37	1.027	3.01
2170	3.53	1.076	2.87
2200	3.56	1.085	2.85
2300	3.65	1.113	2.77
2400	3.74	1.140	2.71
2500	3.83	1.168	2.64
2700	4.01	1.223	2.53

[1] The attenuation can be approximated by the formula:

$$\alpha(f[\text{MHz}]) = A \cdot \sqrt{f[\text{MHz}]} + B \cdot f[\text{MHz}] \quad (\text{dB}/100\text{m})$$

$$A = 0.064$$

$$B = 0.000253$$

[2] Nominal values

[3] Ambient temperature = 40°C (104°F); temperature of inner conductor = 100°C (212°F);

VSWR = 1.0; no solar loading

[4] Standard PE jacket / HLFR Jacket

[5] Maximum VSWR value, measured on standard reel length

