# 1 5/8"-A flame-retardant $C_{ca}$

## DESCRIPTION

**Cable type :** *5438 A-HLFRC*

**Reference :** *EC7-50-A-FRC*

**Cable with UV resistant, halogen free, low smoke, flame retardant jacket according to IEC 60754, IEC 60332-1, IEC 60332-3 cat. C, IEC 61034, UL-1685-FT4/IEEE 1202 and EN 50399 $C_{ca}$-s1,d2,a1.**
**Compliant to EN 50575.**

## CHARACTERISTICS

### Construction

| | |
|---|---|
| **• Inner conductor** | |
| Material | **corrugated copper tube** |
| Diameter *(mm)* | **17.7** |
| **• Dielectric** | |
| Material | **gas-injected cellular polyethylene** |
| Diameter *(mm)* | **43.0** |
| **• Outer conductor** | |
| Material | **corrugated copper tube** |
| Diameter *(mm)* | **46.6** |
| **• Outer sheath** | |
| Material | **flame retardant polyolefin** |
| Thickness *(mm)* | **1.7** |
| Diameter *(mm)* | **50.0** |

### Mechanical characteristics

| | |
|---|---|
| **• Minimum bending radius** | |
| a) single bending *(cm)* | **20** |
| b) 15 repeated bends | **40** |
| **• Maximum pulling strength** *(daN)* | **250** |
| **• Recommended temperature range** | |
| - Storage | **-70 to +85 °C** |
| - Installation | **-40 to +60 °C** |
| - Operation | **-55 to +85 °C** |
| **• Max. length per hoisting grip** *(m)* | **70** |
| **• Maximum hanger spacing** *(m)* | **1.5** |
| **• Flat plate crush res.** *(kg/mm)* | **2.4** |
| **• Bending moment** *(Nm)* | **38** |
| **• Approximate weight** *(kg/km)* | **1190** |

### Electrical characteristics

| | |
|---|---|
| • Characteristic impedance *(Ω)* | **50 ± 1** |
| • Nominal capacity *(pF/m)* | **75** |
| • Relative propagation velocity *(%)* | **89** |
| • Inductance *(µH/m)* | **0.187** |
| • DC-resistance at 20°C | |
| - inner conductor *(Ω/km)* | **1.44** |
| - outer conductor *(Ω/km)* | **0.5** |
| • RF peak voltage *(kV)* | **5.5** |
| • RF peak power *(kW)* | **302** |
| • Cut-off-frequency *(GHz)* | **2.8** |
| • Insulation resistance *(MΩ.km)* | **>> 5000** |

**• Attenuation[1] and power rating**

| Frequency *(MHz)* | Attenuation at 20°C (68° F) [2] *(dB/100m)* | Mean power rating [3] *(kW)* |
|---|---|---|
| 10 | 0.20 | 49.42 |
| 20 | 0.29 | 34.76 |
| 30 | 0.36 | 28.27 |
| 80 | 0.59 | 17.09 |
| 100 | 0.67 | 15.22 |
| 150 | 0.82 | 12.32 |
| 200 | 0.96 | 10.60 |
| 300 | 1.18 | 8.55 |
| 400 | 1.38 | 7.33 |
| 450 | 1.47 | 6.88 |
| 500 | 1.56 | 6.50 |
| 600 | 1.72 | 5.89 |
| 700 | 1.87 | 5.41 |
| 800 | 2.01 | 5.03 |
| 894 | 2.14 | 4.73 |
| 960 | 2.23 | 4.55 |
| 1000 | 2.28 | 4.45 |
| 1500 | 2.86 | 3.54 |
| 1700 | 3.07 | 3.30 |
| 1800 | 3.17 | 3.19 |
| 1880 | 3.25 | 3.12 |
| 2000 | 3.37 | 3.01 |
| 2170 | 3.53 | 2.87 |
| 2200 | 3.56 | 2.85 |
| 2300 | 3.65 | 2.77 |
| 2400 | 3.74 | 2.71 |
| 2500 | 3.83 | 2.64 |
| 2700 | 4.01 | 2.53 |
| 3000 | - | - |
| 4000 | - | - |
| 6000 | - | - |

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

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

A = 0.064
B = 0.000253

[2] Nominal values
[3] Ambient temperature = 40°C; temperature of inner conductor = 100°C; VSWR = 1.0; no solar loading