EUCARAY® RMC 158-HLFR-B2ca "A" Series

1-5/8 radiating cable covering a wide range of frequencies and applications

Radiating Cables

Eupen EUCARAY® radiating cables have been developed to provide RF-coverage for wireless applications in confined areas. They provide homogeneous and continuous RF-coverage, and allow simultaneous transmission of multiple wireless services. EUCARAY® radiating cables are engineered and produced in Belgium to highest quality standards for best performance and longest lifetime.

Product Description

The EUCARAY®RMC 158-HLFR-B2ca "A" Series is a broadband radiating cable. It offers high performance over the complete frequency range. The size of 1-5/8" features lowest achievable loss.

Features and Benefits

- From 30 to 2800 MHz with resonant frequencies*
- Robust Cable, easy to bend
- Main Applications: GSM, DCS-1800, UMTS, WLAN, LTE

Certification and Fire Behaviour

Halogen-free, Low-smoke and Flame-retardant outer jacket:
- Low corrosive gas emission acc. to IEC 60754-2
- Flame retardant acc. to IEC 60332-1-2 and IEC 60332-3 Cat. C
- Low smoke emission acc. to IEC 61034
- Reaction to fire according EN 50399 $B2_{ca}$ s1a,d1,a1
- Compliant to EN 50575

Ordering Information

Ordering name: **RMC 158-HLFR-B2ca**

Recommended connectors and cable preparation tool:
- 7-16 Female: 716FR158MPA
- 4.3-10 Female: 43FR158MPA
- N Female: NF50R158MPA
- Tool: SPTC50R158

*) EUCARAY® achieves low coupling losses due to the patented slot design. Resonant frequencies are narrow-band VSWR peaks that usually occur in non-used bands of the radio-spectrum. Their amplitude generally decreases the higher the order.

More information under: www.radiating-cables.com www.eupen.com

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Technical Information

• Size		1"5/8
• Frequency range	MHz	30 - 2800
• Recommended Frequency bands		GSM, DCS-1800, UMTS, WLAN, LTE
• Cable Type		RMC (Radiated Mode Cable)
• Material		Flame retardant polyolefin
• Slot design		Groups of slots at short intervals
• Impedance	Ω	50 +/- 2
• Velocity Ratio	%	89
• Capacitance	pF/m (pF/ft)	75 (22.9)
• Inner Conductor DC resistance	Ω/1000m (Ω/1000 ft)	1.44 (0.44)
• Outer Conductor DC resistance	Ω/1000m (Ω/1000 ft)	1.28 (0.39)
• Inner Conductor Material		Corrugated copper tube
• Dielectric Material		Cellular polyethylene
• Outer Conductor Material		Overlapping corrugated copper foil with slot groups
• Diameter Inner Conductor	mm (in)	17.7 (0.697)
• Diameter Dielectric	mm (in)	43.0 (1.693)
• Diameter over Jacket	mm (in)	48.0 (1.89)
• Minimum Bending Radius, Single Bend	mm (in)	400 (15.75)
• Cable Weight	kg/m (lb/ft)	1.061 (0.713)
• Tensile Strength	daN (lbf)	200 (441)
• Indication of Slot Alignment		embossed line 180° opposite
• Storage Temperature	°C (°F)	-70 to +85 (-94 to +185)
• Installation Temperature	°C (°F)	-25 to +60 (-13 to +140)
• Operation Temperature	°C (°F)	-40 to +85 (-40 to +185)

• Longitudinal Loss and Coupling Loss[1)]

Frequency	Longitudinal Loss	Coupling Loss	
	dB/100m (dB/100ft)	$C_{50\%}$ (dB)	$C_{95\%}$ (dB)
75 MHz	0.58 (0.18)	66	77
150 MHz	0.84 (0.26)	76	85
225 MHz	1.06 (0.32)	61	64
450 MHz	1.59 (0.48)	71	76
900 MHz	2.44 (0.74)	70	75
1800 MHz	4.27 (1.30)	57	62
1900 MHz	4.55 (1.39)	56	60
2200 MHz	5.60 (1.71)	54	58
2400 MHz	6.50 (1.98)	52	60
2600 MHz	7.61 (2.32)	59	67
2700 MHz	8.27 (2.52)	59	67
2800 MHz	8.99 (2.74)	55	61

• Resonant Frequencies	MHz	199, 598, 997, 1396, 1795, 2193, 2592
• Recommended Clamp Spacing	m (ft)	1.5 (4.92)
• Distance to Wall Recommended / Min.	mm (in)	80 - 180 (3.15 - 7.00) / 50 (1.96)

The above stated values are nominal values and subject to manufacturing tolerances as follows: Longitudinal Loss +/-5 % and Coupling Loss +/- 5 dB.
As with any radiating cable, the performance in building or tunnel may deviate from figures measured according to the IEC 61196-4 standard.

[1)] Measured in tunnel according to **IEC 61196-4 - Ground Level Method**.
Distance = 2m. C50 & (C95) are the average coupling losses with 50% (95%) probability calculated in accordance with the standard.

Coupling loss measurements taken in accordance with IEC 61196-4 - Free Space Method are available on request.

All information on this datasheet is subject to change without notice.