

EUCARAY® Radiating Cables



EUCARAY® RMC 78-B "A" Series

7/8" radiating cable optimized for GSM and GSM-R 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 78-B "A" Series radiating cable offers best performance to cost relation for medium frequencies. The size of 7/8" features low loss and low bending radius.





Features and Benefits

- From 30 to 2400 MHz with resonant frequencies*
- Robust Cable, with low bending radius
- Main Applications: TETRA, GSM-900, GSM-R

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 EN60332-1-2 E_{ca}
- Compliant to EN 50575

Ordering Information

Ordering name: RMC 78-B-HLFR "A" Series

Recommended connectors and cable preparation tool:

• 7-16 Female: <u>716FR78A</u>

• N Female: NF50R78A; NM50R78A

• Tool: <u>SPTC50R78</u>

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

^{*)} 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.



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CARAY® RMC 78-B "A" Series

Technical Information

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• Size		7/8"
 Frequency range 	MHz	30 - 2400
 Recommended Frequency bands 		TETRA, GSM-900, GSM-R
Cable Type		RMC (Radiated Mode Cable)
Material		Flame retardant polyolefin
Slot design		Groups of slots at short intervals
• Impedance	Ω	50 +/- 2
 Velocity Ratio 	%	88
Capacitance	pF/m (pF/ft)	72 (22)
 Inner Conductor DC resistance 	$\Omega/1000$ m ($\Omega/1000$ ft)	1.63 (0.5)
 Outer Conductor DC resistance 	$\Omega/1000$ m ($\Omega/1000$ ft)	2.50 (0.76)
 Inner Conductor Material 		Smooth copper tube
Dielectric Material		Cellular polyethylene
 Outer Conductor Material 		Overlapping corrugated copper foil with slot groups
Diameter Inner Conductor	mm (in)	9.2 (0.362)
 Diameter Dielectric 	mm (in)	23.5 (0.925)
 Diameter over Jacket 	mm (in)	27.0 (1.063)
 Minimum Bending Radius, Single Bend 	mm (in)	350 (13.78)
Cable Weight	kg/m (lb/ft)	0.400 (0.269)
 Tensile Strength 	daN (lbf)	130 (287)
 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⁾ 		
 Minimum Bending Radius, Single Bend Cable Weight Tensile Strength Indication of Slot Alignment Storage Temperature Installation Temperature Operation Temperature 	mm (in) kg/m (lb/ft) daN (lbf) °C (°F) °C (°F)	350 (13.78) 0.400 (0.269) 130 (287) embossed line 180° opposite -70 to +85 (-94 to +185) -25 to +60 (-13 to +140)

Frequency	Longitudinal Loss	Coupli	ng Loss
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	dB/100m (dB/100ft)	C50% (dB)	C95% (dB)
75 MHz	1.30 (0.40)	56	67
150 MHz	1.62 (0.49)	60	65
225 MHz	1.91 (0.58)	62	72
380 MHz	2.47 (0.75)	60	64
450 MHz	2.72 (0.83)	59	63
790 MHz	3.84 (1.17)	54	57
870 MHz	4.10 (1.25)	53	56
900 MHz	4.19 (1.28)	53	56
960 MHz	4.38 (1.34)	52	55
1800 MHz	6.97 (2.13)	66	78
2170 MHz	8.08 (2.46)	65	76
2400 MHz	8.77 (2.67)	64	75

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 Resonant Frequencies 	MHz	63;189;315;441;567;693;819;945(+/-5 MHz);1071;1197;1323;1449;1575;1701;1827;1953;2079;2205;2331
 Recommended Clamp Spacing 	m (ft)	1.0 (3.28)
 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.

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.

¹⁾ Measured in tunnel according to IEC 61196-4 - Ground Level Method.