

Aircell® 5 Heatex®

low-loss, halogen-free, flame-retardant,
suitable for installation in buildings
and for railway applications



Aircell 5 Heatex is a flexible and thin coaxial cable with a 5 mm outer diameter designed for the frequency range from DC to 10 GHz. Its low-loss characteristics and compatibility with standard RG 58 connectors make it the top choice not only for Wireless LAN applications but also for general RF communications.

The low attenuation of Aircell 5 Heatex is achieved through advanced manufacturing techniques and a low-loss PE-LLC dielectric with a foaming rate of more than 70%. This unique dielectric not only ensures low attenuation but also provides water resistance and long-term stability. Aircell 5 Heatex features a solid inner conductor extruded from low-oxygen copper. Additional advantages of this cable include double shielding, consisting of overlapping 100% tight copper foil and an additional shield braiding of bare copper wires with 70% coverage. The copper foil is coated with PE to prevent foil cracking due to short-radius bends.

The jacket of the cable is made of a halogen-free and flame-retardant copolymer. Thanks to this Heatex jacket, the cable has a low fire load, low flame propagation, limited smoke emission, and reduced production of toxic and corrosive gases. With the fire protection rating Cca, Aircell 5 Heatex is approved for installation in public buildings.

Aircell 5 Heatex is certified for railway applications for both interior and exterior use, meeting the requirements of sets R15 and R16 of the EN45545-2 standard.

Key features

Diameter	5.0 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	29.54 dB
f max	10 GHz
Euroclass according to EN 50575	Cca

Characteristics

- Certified according to EN 45545-2:2013+A1:2015 and EN 45545-2:2020 Requirement Sets R15 + R16 for railway applications
- Flame resistance tested according to EN 60332-1-2:2004 + A1:2015 + A11:2016 and EN 60332-1-3:2004 + A1:2015
- Smoke density tested according to DIN EN 61034-2:2005
- Smoke gas toxicity tested according to EN 50305:2002 Sec. 9.2
- Vertical flame spread tested according to EN 50305:2002 Sec. 9.1.2 (Bundle test for cables Ø ≤ 6 mm)
- Halogen-free tested according to DIN EN 50306-1:2003
- Halogen acid gas content tested according to DIN EN 60754-1:2015 (HCl < 0.5 %)
- Acidity of the combustion gases tested according to DIN EN 60754-2:2015 (pH value > 4.3)
- Conductivity of the combustion gases tested according to DIN EN 60754-2:2015 (< 10.0 µS/mm)
- Fluorine content tested according to EN 60684-2:2011 Sec. 45.2 Procedure A (< 0.1 %)
- Insulation material according to DIN EN 50290-2-23 (VDE 0819), Tab. 2/A (HD 624.3)
- Jacket material according to DIN EN 50290-2-27 (HD 624.7)
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- Fire-resistant, low smoke, halogen-free (LSZH)
- UV-resistant

Technical Data

Inner conductor	bare copper wire
Inner conductor Ø	1 × 1.13 mm
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	3.1 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	70 %
Outer conductor Ø	3.7 mm
Jacket	thermoplastic copolymer (FRNC) black
Weight	37 kg/km
Min. Bending radius	4 × Ø single, 8 × Ø repeated
Temperature range	-55 to +85 °C transport & fixed installation -40 to +85 °C mobile application
Pulling strength	100 N

Electrical Data at 20 °C

Capacitance (1 kHz)	78 nF/km
Velocity factor	0.85
Shielding attenuation 1 GHz	≥ 90 dB
DC-resistance inner conductor	≤ 20.5 Ω/km
DC-resistance outer conductor	22 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	4 kV
Max. voltage	2.5 kV

Aircell 5 Heatex RG 58/U RG 213/U

Capacitance	78 pF/m	102 pF/m	101 pF/m
Velocity factor	0.85	0.66	0.66
Attenuation (dB/100m)			
10 MHz	2.78	5.00	2.00
100 MHz	8.93	17.00	7.00
500 MHz	20.49	39.00	17.00
1000 MHz	29.54	54.60	22.50
3000 MHz	53.57	118.00	58.50

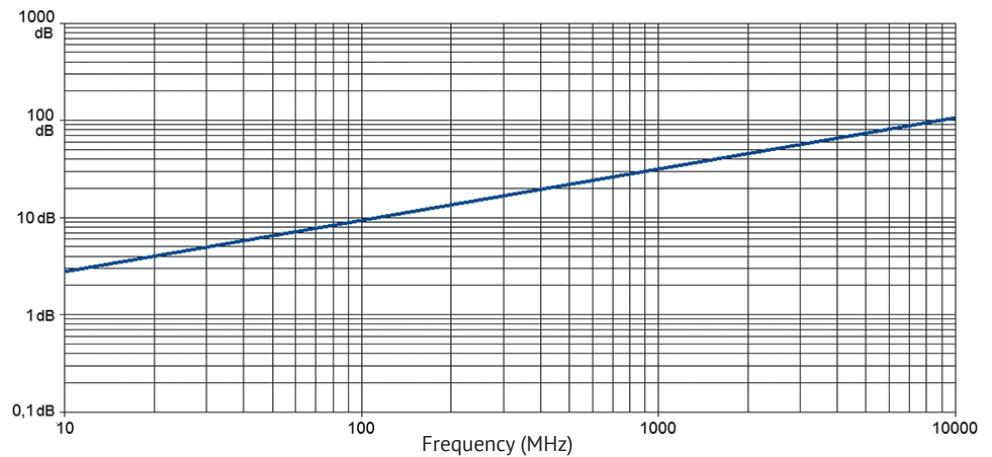
Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	1.97	1000 MHz	29.54
10 MHz	2.78	1296 MHz	33.92
50 MHz	6.28	1500 MHz	36.70
100 MHz	8.93	1800 MHz	40.50
144 MHz	10.76	2000 MHz	42.88
200 MHz	12.74	2400 MHz	47.38
300 MHz	15.70	3000 MHz	53.57
432 MHz	18.99	4000 MHz	62.88
500 MHz	20.49	5000 MHz	71.30
800 MHz	26.24	6000 MHz	78.85
		10000 MHz	106.40

Max. Power Handling (W at 40 °C)

10 MHz	1.885	3000 MHz	98
100 MHz	587	4000 MHz	83
500 MHz	256	5000 MHz	74
1000 MHz	178	6000 MHz	66
2000 MHz	122	10000 MHz	49

Typ. Attenuation (dB/100 m at 20 °C)



Typ. Return Loss

