

# Aircell<sup>®</sup> 7

highly flexible, low-loss,  
and stray radiation resistant



Aircell 7 is an ultraflexible coaxial cable designed for frequencies up to 6 GHz. Due to its low loss in relation to the outer diameter and the small bending radius, the cable can be used for numerous RF applications.

The low attenuation of Aircell 7 is achieved by using advanced manufacturing techniques and low-loss PE-LLC dielectric with a foaming rate of more than 70%. This unique dielectric also offers water resistance and long-term stability. The inner conductor, containing 19 stranded bare copper wires of low oxygen copper (OFC), provides the cable its remarkable flexibility. Further advantages of this cable include the use of double shielding, which is constructed of overlapping 100% tight copper foil and an additional shield braiding of bare copper wires with 85% coverage. The copper foil has an applied PE coating that prevents foil cracking due to short-radius bends. The black PVC jacket of Aircell 7 is UV-stabilized.

Aircell 7 is the right choice when a super flexible, low loss, and microwave-rated cable is required. It can be used for numerous RF applications.

## Key features

|  |              |
|--|--------------|
| Diameter                               | 7,3 ± 0,2 mm |
| Impedance                              | 50 ± 2 Ω     |
| Attenuation at 1 GHz/100 m             | 20,44 dB     |
| <b>f max</b>                           | <b>6 GHz</b> |
| <b>Euroclass according to EN 50575</b> | <b>Eca</b>   |

## Characteristics

- Conductor/screen material according to DIN EN 13602 Cu-ETP-A
- Jacket material according to DIN EN 50290-2-22 (VDE 0819), compound type TM 52 (HD 624.2)
- Flame-retardant according to IEC 60332-1-2
- Flame-retardant according to UN/ECE-R 118:2019-06 § 6.2.6, ISO 6722-1:2011-10 § 5.22
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- UV-resistant

## Technical Data

|                     |  |
|---------------------|--|
| Inner conductor     | Stranded copper (Cu) wire  |
| Inner conductor Ø   | 1.9 mm (19 × 0.38 mm, 14 AWG)  |
| Dielectric          | foamed cellular polyethylene (PE) with skin                                      |
| Dielectric Ø        | 5.0 mm   |
| Outer conductor 1   | overlapping copper (Cu) foil   |
| Shielding factor    | 100 %  |
| Outer conductor 2   | Copper (Cu) shield braiding of bare copper wires                                 |
| Shielding factor    | 85 %   |
| Outer conductor Ø   | 5.7 mm   |
| Jacket              | PVC black, UV-stabilized   |
| Weight              | 70 kg/km   |
| Min. Bending radius | 4 × Ø single, 8 × Ø repeated   |
| Temperature range   | -55 to +85 °C transport & fixed installation<br>-40 to +85 °C mobile application |
| Pulling strength    | 300 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 | ≤ 9.0 Ω/km |
| DC-resistance outer conductor | 8.7 Ω/km   |
| Insulation resistance         | ≥ 10 GΩ*km |
| Test Voltage DC (wire/screen) | 10 kV      |
| Max. voltage                  | 8 kV       |

## Aircell 7 RG 213/U RG 58/U

|                      |         |          |          |
|----------------------|---------|----------|----------|
| Capacitance          | 78 pF/m | 101 pF/m | 102 pF/m |
| Velocity factor      | 0.85    | 0.66     | 0.66     |
| Attenuation(dB/100m) |         |          |          |
| 10 MHz               | 2.09    | 2.00     | 5.00     |
| 100 MHz              | 5.97    | 7.00     | 17.00    |
| 500 MHz              | 13.98   | 17.00    | 39.00    |
| 1000 MHz             | 20.44   | 22.50    | 54.60    |
| 3000 MHz             | 38.84   | 58.50    | 118.00   |

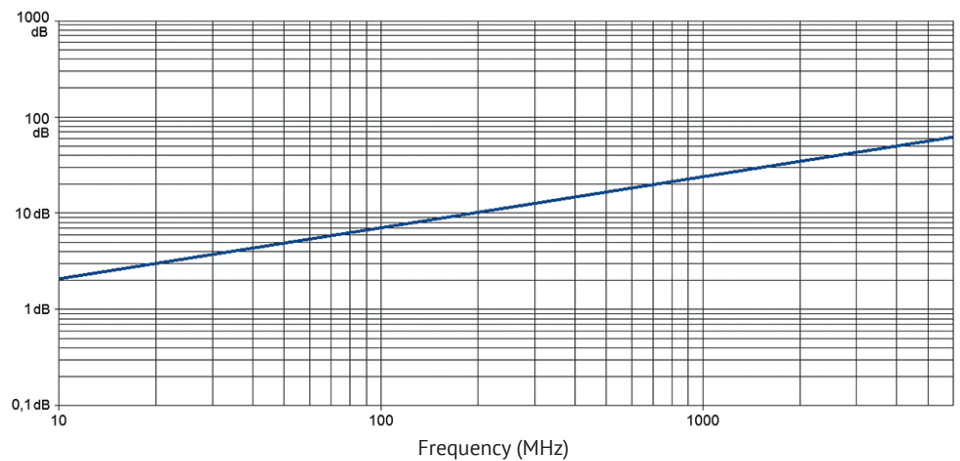
## Typ. Attenuation (dB/100 m at 20 °C)

|         |       |          |       |
|---------|-------|----------|-------|
| 5 MHz   | 1.52  | 1000 MHz | 20.44 |
| 10 MHz  | 2.09  | 1296 MHz | 23.60 |
| 50 MHz  | 4.29  | 1500 MHz | 25.73 |
| 100 MHz | 5.97  | 1800 MHz | 28.50 |
| 144 MHz | 7.22  | 2000 MHz | 30.29 |
| 200 MHz | 8.59  | 2400 MHz | 33.82 |
| 300 MHz | 10.64 | 3000 MHz | 38.84 |
| 432 MHz | 12.92 | 4000 MHz | 46.66 |
| 500 MHz | 13.98 | 5000 MHz | 54.19 |
| 800 MHz | 18.05 | 6000 MHz | 61.66 |

## Max. Power Handling (W at 40 °C)

|          |       |          |     |
|----------|-------|----------|-----|
| 10 MHz   | 2.040 | 2400 MHz | 118 |
| 100 MHz  | 620   | 3000 MHz | 104 |
| 500 MHz  | 260   | 4000 MHz | 89  |
| 1000 MHz | 191   | 5000 MHz | 78  |
| 2000 MHz | 131   | 6000 MHz | 70  |

## Typ. Attenuation (dB/100 m at 20 °C)



## Typ. Return Loss

