

Ecoflex® 10 Plus

ultraflexible, low loss and suitable for use up to 8 GHz



Ecoflex 10 Plus is an extremely flexible, low loss coaxial cable designed to use in the frequency range up to 8 GHz. Advanced manufacturing techniques combined with the use of a low loss PE-LLC dielectric with a foaming rate of more than 70% result in very low attenuation values, which set standards among flexible coaxial cables.

The high flexibility of Ecoflex 10 Plus results from a hybrid CCA inner conductor containing 7 stranded copper-clad aluminium wires. Each wire has an aluminium core covered by copper cladding which combines copper's good electrical conductivity and aluminium's light weight. During a special manufacturing process the inner conductor is continuously compressed, calibrated and then pre-coated to achieve good attenuation, good return loss values and stable impedance matching. Another advantage of Ecoflex 10 Plus is its double shielding: an overlapping copper foil and an additional shield braiding of bare copper wires with 75 % coverage ensure a high screening attenuation of > 90 dB at 1 GHz. The copper foil has an applied PE coating which prevents foil cracking due to short radius bends. The black PVC jacket of Ecoflex 10 Plus is UV-stabilized.

For the easier installation of this cable, a special high quality solderless N male connector has been developed in addition to a full range of available standard connectors. It can be assembled in a few minutes without special tools. Ecoflex 10 Plus is the

right choice, when a highly flexible, light, low loss and microwave rated cable is required. It can be used for numerous RF applications.

Key features

| | |
|-----------------------------------|---------------|
| Diameter | 10,2 ± 0,2 mm |
| Impedance | 50 ± 2 Ω |
| Attenuation at 1 GHz/100 m | 13,49 dB |
| f max | 8 GHz |
| Euroclass acc. to EN 50575 | Eca |

Characteristics

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
RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
UV-resistant

Technical data

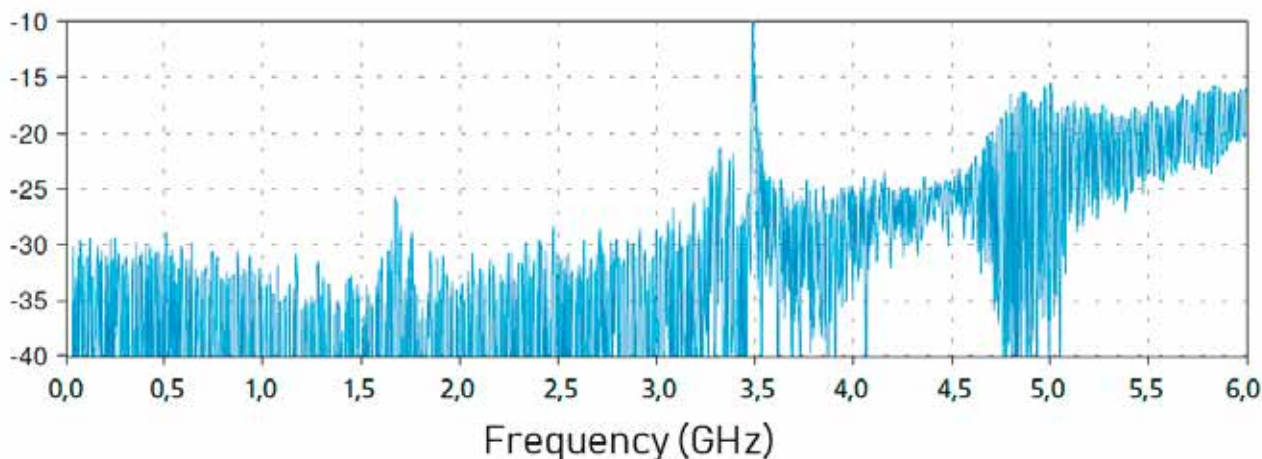
| | |
|---------------------|--|
| Inner conductor | Hybrid CCA – stranded copper-clad aluminium wire |
| Inner conductor Ø | 2,85 mm (7 x 1,0 mm, 10 AWG) |
| Dielectric | foamed Polyethylene (PE) with skin |
| Dielectric Ø | 7,2 mm |
| Outer conductor 1 | copper foil overlapped |
| Shielding factor | 100% |
| Outer conductor 2 | shield braiding of bare copper wires |
| Shielding factor | 75% |
| Outer conductor Ø | 7,9 mm |
| Jacket | PVC black, UV-resistant |
| Weight | 96 kg/km |
| Min. Bending radius | 4XØ single, 8XØ repeated |
| Temperature range | -55 to +85°C Transport & fixed installation -40 to +85°C Flexible use |
| Pulling strength | 600 N |

Electrical data at 20°C

| | |
|-------------------------------|------------|
| Capacitance (1 kHz) | 78 nF/km |
| Velocity factor | 0,85 |
| Screening attenuation 1 GHz | ≥ 90 dB |
| DC-resistance Inner conductor | ≤ 5,4 Ω/km |
| DC-resistance Outer conductor | 6,6 Ω/km |
| Insulation resistance | ≥ 10 GΩ*km |
| Test voltage DC (wire/screen) | 7 kV |
| Max. Voltage | 5 kV |

| | Ecoflex 10 Plus | RG 213/U | RG 58/U |
|-----------------------|-----------------|----------|----------|
| Capacity | 78 pF/m | 101 pF/m | 102 pF/m |
| Velocity factor | 0,85 | 0,66 | 0,66 |
| Attenuation (dB/100m) | | | |
| 10 MHz | 1,14 | 2,00 | 5,00 |
| 100 MHz | 3,80 | 7,00 | 17,00 |
| 500 MHz | 9,12 | 17,00 | 39,00 |
| 1000 MHz | 13,49 | 22,50 | 54,60 |
| 3000 MHz | 25,37 | 58,50 | 118,00 |

Typ. Return loss



Typ. Attenuation (db/100 m at 20°C)

| | | | |
|---------|-------|----------|-------|
| 5 MHz | 0,76 | 1000 MHz | 13,49 |
| 10 MHz | 1,14 | 1296 MHz | 15,68 |
| 50 MHz | 2,66 | 1500 MHz | 17,01 |
| 100 MHz | 3,80 | 1800 MHz | 18,91 |
| 144 MHz | 4,66 | 2000 MHz | 20,14 |
| 200 MHz | 5,51 | 2400 MHz | 22,42 |
| 300 MHz | 6,94 | 3000 MHz | 25,37 |
| 432 MHz | 8,46 | 4000 MHz | 29,55 |
| 500 MHz | 9,12 | 5000 MHz | 33,44 |
| 800 MHz | 11,88 | 6000 MHz | 37,05 |
| | | 8000 MHz | 44,08 |

Max. Power handling (W at 40°C)

| | | | |
|----------|-------|----------|-----|
| 10 MHz | 3.100 | 2400 MHz | 175 |
| 100 MHz | 960 | 3000 MHz | 154 |
| 500 MHz | 413 | 4000 MHz | 130 |
| 1000 MHz | 285 | 5000 MHz | 115 |
| 2000 MHz | 194 | 6000 MHz | 100 |
| | | 8000 MHz | 86 |

Typ. Attenuation (db/100 m at 20°C)

