

Koaksi kabler & Netværkskabel

Coaxial Cables & Data Cables







Ören Kablo begyndte med at producere koakskabler i 1979. Baseret på grundtanken at firmaets strategi fastlægges ud fra til stadighed at følge krav fra kunderne og udviklingen hos konkurrenterne i koakskabel markedet, så har Ören Kablo altid haft succes med at bruge den nyeste teknologi i kabler og i produktion for at sikre kundetilfredshed og – loyalitet i et hastigt forandrende marked.

Produktionen foregår i de moderne fabriksfaciliteter i Silivri Ortaköy Industrial Zone, hvor Ören Kablo fremstiller en bred vifte af produkter så som kabel-TV kabler, digitale satellitkabler, datakabler, interaktiv-TV kabler, CAT5 og CAT6 LAN kabler, styringskabler og brandalarmskabler, og samtidig tilbyder kunderne lavt røgudviklende og flammehæmmende udgaver af "halogenfrie" kabler, også kendt i branchen som brandsikre kabler, af alle disse typer kabler.

Ören Kablo startede produktionen af fysisk skum-PE dielektrikumkabler i begyndelsen af 2009, og leverer nu 60 % af Tyrkiets forbrug af digital TV kabler fra en gasopskummet film/skum/film tre-indsprøjtet fysisk skum polyethylen ekstruderingsproduktionslinje. Oveni resultaterne på det tyrkiske marked så eksporterer Ören Kablo også over hele verden.

Indenfor rammerne af en produktion, som følger ISO 9001-2015 kvalitetsstyringssystemet, så anvender Ören Kablo princippet om at levere første klasses kvalitet og bibe holde kundetilfredshed og – loyalitet.

Ören Kablo entered into cable manufacturing sector with the manufacture of coaxial cables in 1979. Making up its principle to determine its strategies by continually following up the demands of the customers and development of its competitors taking place in the coaxial cable market and segment since its establishment, Ören Kablo has always succeeded to make the best use of advance technology in product and service production to provide customer satisfaction and loyalty in rapidly changing business world.

Carrying out its production activities in its modern manufacturing facilities located in Silivri Ortaköy Industrial Zone, Ören Kablo realising manufacturing wide range of products such as cable TV, digital satellite, data cables, interactive TV cables, CAT5, CAT6 LAN cables, signal command cables and fire warning cables; and at the same time, offers to the use of its customers the low fume and flame retarding versions of "halogen free" cable, which is also known as "fire proof cable" in the sector, for all the products taking place in this range.

Ören Kablo initiated Physical Foam PE insulated cable production in the beginning of 2009 and currently meets 60% of Turkey's digital broadcasting cable need by itself, with the Gas Injection Skin/Foam/Skin triple injected Physical Foamed Polyethylene Extruder manufacturing line investment. Apart from its achievements in the Turkish market, Ören Kablo also exports to worldwide.

Manufacturing within the framework of ISO 9001-2015 Quality Management System, Ören Kablo adopted the principle of providing superior quality and sustainable customer satisfaction and loyalty.



Et netværk er ikke stærkere end det svageste led i kæden

Dette har været Örens motto under udviklingen af Örens HD serie af koaksabler.

For at få en stærk forbindelse i netværket er det nødvendigt med en perfekt tilpasning mellem kabel og konnektor. Med hjælp fra Corning Cablecons ingeniører har vi opnået netop dette med vores Ören HD serie af koaksabler.

Film / Skum / Film

Dette er navnet på 3-lags ekstruderingsmetoden for koaksabler. Alle Örens HD kabler er fremstillet efter denne metode.

Den første film er et meget tyndt lag af fast PE, som indkapsler kablets inderleder. Filmen beskytter dielektrikum mod indtrængning af vand, og beskytter desuden inderlederen mod oxidering.

Det andet lag er den kraftigt komprimerede gasopskummede PE. Derved opnås et dielektrikum med en ekstrem lille cellekonstruktion, hvilket medfører, at Örens HD kabler har en fremragende impedansstabilitet. Dette beskytter desuden dielektrikummet mod indtrængning af fugt.

Også den anden film er et meget tyndt lag af fast PE. Det andet lag, som er gasopskummet, er blødt og svampet og derfor skrøbeligt overfor bøjning af kablet. Det tredje lag af fast PE øger den mekaniske styrke i dielektrikummet, og gør det derfor muligt for Örens HD kabler at bevare deres stabile elektriske egenskaber, selv når kablet bøjes.

Fordelene ved Film / Skum / Film isolering

- Lav kabdæmpning
- Fremragende impedansstabilitet ($75 \pm 2 \Omega$)
- Høj udbredelseshastighed
- Fremragende refleksionsdæmpning
- Kablets dielektrikum er beskyttet mod indtrængning af fugt
- Godt beskyttet mod ældning
- Stabile elektriske egenskaber når kablet bøjes

Limet aluminiumsfolie

Alle Örens HD kabler har to aluminiumsfolier limet henholdsvis til dielektrikummet og til kappen.

Aluminiumsfolien ovenpå dielektrikummet er limet hertil, hvilket giver en glat aluminiumsoverflade ovenpå det gasopskummede PE dielektrikum. Med den limede folie har kablet bedre skærmtæthed. I Örens HD kabler er aluminiumsfolien under kappen limet til denne, hvilket betyder, at kablerne bevarer deres skærmtæthed, selv når kablet bøjes under installationen.

A Network is Only as Strong as Its Weakest Link

This has been the motto we had in Ören in the process of developing Ören HD Series Coaxial cables.

In order to reach a strong link in your Network, you need the Perfect Cable-Connector match. Thanks to the constant feedbacks we received from Corning Cablecon's Engineers, we achieved this with our Ören HD series Coaxial Cables.

Ören HD cables combined with the listed Corning Cabelcon connectors not only deliver the Perfect Cable-Connector match performance; moreover, it delivers the ease of connector fitting even under cold weather conditions.

Skin / Foam / Skin

Is the name of the 3 layers extrusion method for the coaxial cables. All Ören HD series coaxial cables have this feature.

The first layer contains a very thin layer of solid PE applied over the inner conductor of the cable. This protects the insulation from water penetration; furthermore, it protects the inner conductor from oxidation.

The second layer is the highly compressed Gas Injected to the PE. This allows the insulation have extremely small cell construction which results in Ören HD cables having excellent impedance stability; furthermore, this protects the insulation from moisture ingress.

The third layer is a very thin layer of Solid PE. The second layer, which is the Gas Injected Foam, is soft and spongy; therefore, it may be fragile against cable bends. This third layer of Solid PE adds mechanical strength to the insulation and allows the Ören HD cables preserve stable electrical parameters even when the cable is bent.

Advantages of the Skin / Foam / Skin Insulation

- Low Attenuation values.
- Excellent Impedance stability. ($75 \pm 2 \Omega$)
- High velocity of propagation.
- Excellent Return Loss performance.
- Insulation of the cable is protected from moisture ingress.
- Well protected against ageing.
- Stable electrical parameters when the cable is bent.

Bonded Aluminium Foil

All the Ören HD cables contain bonded aluminium foil both over the insulation and under the jacket.

The Aluminium foil over the insulation is bonded to the insulation, which allows a smooth aluminium Surface over the Gas Injected PE insulation. Since the aluminium is bonded to the insulation, it also helps the cable having better screening performances.

The aluminium foil under the jacket on Ören HD cables are also bonded to the jacket, which allows the cables preserve their screening performance even in situations of bending the cable during the mounting process.

Thanks to using Bonded aluminium Foil on both over the insulation and under the jacket, Ören HD Cables Screening Performance is in Class A+ level before and after the cable is bent.





ören HD serie Koaksielkabler

Beskytter bedre mod **LTE-signaler**

Klasse A+ ifølge **DS/EN 50117-9-2**

Bedre ældningsbestandighed med **S/F/S-dielektrikum**

Velkendt Ören **HD-kvalitet**



ören **HD Series** Coaxial Cables

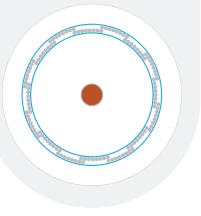
Better Protection From **LTE-Signals**

Class A+ According to **DIN EN 50117-9-2**

For Better Aging Performance **S/F/S Long Life Dielectric**

Known Ören **HD-Quality**





Class A+

HD 063 HFFR



Anvendelse

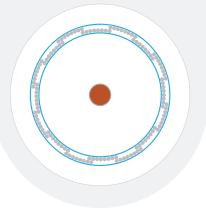
Minikoakskablen er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabeloperatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablerne er halogenfrie, ikke-korroderende og flammehæmmede pga. den HFFR blanding, som er brugt i kabernes konstruktion.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|-----------------------------|-----------------------|---------------------|
| Inderleder | Kabelvægt | 25 kg/km | 5-30 MHz ≤ 2.5 mΩ/m |
| Ø 0.65 mm ren kobber | Kobbervægt | 9.7 kg/km | |
| Dielektrikum | Min. bøjningsradius | 25 mm | |
| Ø 2.80 mm gasopskummet | Maks. trækkraft | 30 N | |
| Film/Skum/Film PE | Temperaturområde | -30 °C ... +70 °C | |
| 1. skærm | Pakning | 100 / 250 m | |
| Aluminiumsfolie (limet til dielektrikum) | | | |
| 2. skærm | Elektriske egenskaber | | |
| Fortinnet kobberfletskærm | Impedans | 75 ± 2 Ω | |
| 3. skærm | Kapacitans | 53 ± 2 pF/m | |
| Aluminiumsfolie | Udbredelseshastighed | 82 % | |
| Kappe | Isolationsmodstand | > 2 GΩxkm | |
| Ø 4.30 mm HFFR* | Maks. spænding | 1000 V | |
| | Testet spænding | 2500 V | |
| | Inderleder DC-modstand | < 61.90 Ω/km | |
| | Refleksionsdæmpning (20°C) | | |
| | 5-470 MHz | > 30 dB | |
| | 470-1200 MHz | > 25 dB | |
| | 1200-2000 MHz | > 23 dB | |
| | 2000-3000 MHz | > 18 dB | |
| | Skærmtæthed | | |
| | 30-1200 MHz | ≥ 95 dB | |
| | 1200-2000 MHz | ≥ 85 dB | |
| | 2000-3000 MHz | ≥ 75 dB | |
| | Standarder | | |
| | Skærmtæthed klasse | klasse A+ | |
| | EN 50117-9-2 | | |
| | Brandklassifikation | | |
| | D _{ca} | | |
| | Brandhæmmende | | |
| | EN 60332-1-2 | | |
| | Test af korroderende gasser | | |
| | TS EN 60754-2 | | |
| | Røgudvikling | | |
| | EN 61034-2 | | |

Application

This Mini Coax type cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|---|-------------------------|---------------------|---------------------|
| Inner Conductor | Cable Weight | 25 kg/km | 5-30 MHz ≤ 2.5 mΩ/m |
| Ø 0.65 mm Bare Copper | Copper Weight | 9.7 kg/km | |
| Insulation | Min. Bending Radius | 25 mm | |
| Ø 2.80 mm Gas Injected | Max. Tensile Strength | 30 N | |
| Skin/Foam/Skin PE | Temperature Range | -30 °C ... +70 °C | |
| 1 st Shielding | Packing | 100 / 250 m | |
| Aluminum Foil (Bonded to the Insulation) | | | |
| 2 nd Shielding | Electrical Properties | | |
| Tinned Copper Wire Braiding | Impedance | 75 ± 2 Ω | |
| 3 rd Shielding | Capacitance | 53 ± 2 pF/m | |
| Aluminum Foil | Velocity of Propagation | 82 % | |
| Outer Sheath | Insulation Resistance | > 2 GΩxkm | |
| Ø 4.30 mm HFFR* | Operating Voltage | 1000 V | |
| | Test Voltage | 2500 V | |
| | Inner Conductor DCR | < 61.90 Ω/km | |
| | Return Loss (20°C) | | |
| | 5-470 MHz | > 30 dB | |
| | 470-1200 MHz | > 25 dB | |
| | 1200-2000 MHz | > 23 dB | |
| | 2000-3000 MHz | > 18 dB | |
| | Screening Attenuation | | |
| | 30-1200 MHz | ≥ 95 dB | |
| | 1200-2000 MHz | ≥ 85 dB | |
| | 2000-3000 MHz | ≥ 75 dB | |
| | Standards | | |
| | Screening Class | Class A+ | |
| | EN 50117-9-2 | | |
| | Euro Class | | |
| | D _{ca} | | |
| | Flame Retardancy | | |
| | EN 60332-1-2 | | |
| | Corrosive Gases Test | | |
| | TS EN 60754-2 | | |
| | Smoke Density | | |
| | EN 61034-2 | | |



Class A+

HD 083 HFFR



Anvendelse

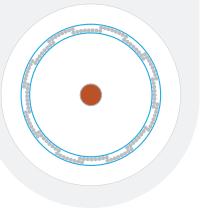
Dette RG59 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabeloperatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablerne er halogenfrie, ikke-korroderende og flammehæmmende pga. den HFFR blanding, som er brugt i kabernes konstruktion.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|------------------------|-----------------------|-----------------------------|
| Inderleder | Kabelvægt | 40 kg/km | 5-30 MHz |
| Ø 0.80 mm ren kobber | Kobbervægt | 12.7 kg/km | ≤ 2.5 mΩ/m |
| Dielektrikum | Min. bøjningsradius | 30 mm | Skærmtæthed |
| Ø 3.60 mm gasopskummet | Maks. trækraft | 50 N | 30-1200 MHz |
| Film/Skum/Film PE | Temperaturområde | -30 °C ... +70 °C | ≥ 95 dB |
| 1. skærm | Pakning | 100 / 250 m | 1200-2000 MHz |
| Aluminiumsfolie (limet til dielektrikum) | | | ≥ 85 dB |
| 2. skærm | Impedans | 75 ± 2 Ω | 2000-3000 MHz |
| Fortinnet kobberfletskærm | Kapacitans | 53 ± 2 pF/m | ≥ 75 dB |
| 3. skærm | Udbredelseshastighed | 83 % | |
| Aluminiumsfolie (limet til kappen) | Isolationsmodstand | > 2 GΩkm | Refleksionsdæmpning (20°C) |
| Kappe | Maks. spænding | 1100 V | 5-470 MHz |
| Ø 5.25 mm HFFR* | Testet spænding | 2500 V | > 30 dB |
| | Inderleder DC-modstand | < 34.50 Ω/km | 470-1200 MHz |
| | | | > 25 dB |
| | | | 1200-2000 MHz |
| | | | > 23 dB |
| | | | 2000-3000 MHz |
| | | | > 18 dB |
| | | | |
| | | | Standarder |
| | | | Skærmtæthed klasse A+ |
| | | | EN 50117-9-2 |
| | | | Brandklassifikation |
| | | | D _{ca} |
| | | | Brandhæmmende |
| | | | EN 60332-1-2 |
| | | | Test af korroderende gasser |

Application

This RG 59 type cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

| Cable Construction | Technical Properties | | Attenuations (20°C) | | Transfer Impedance |
|---|-------------------------|-------------------|---------------------|---------------|---------------------|
| Inner Conductor | Cable Weight | 40 kg/km | 50 MHz | 5.70 dB/100m | 5-30 MHz ≤ 2.5 mΩ/m |
| Ø 0.80 mm Bare Copper | Copper Weight | 12.7 kg/km | 230 MHz | 11.90 dB/100m | |
| Insulation | Min. Bending Radius | 30 mm | 470 MHz | 17.70 dB/100m | |
| Ø 3.60 mm Gas Injected | Max. Tensile Strength | 50 N | 860 MHz | 23.90 dB/100m | |
| Skin/Foam/Skin PE | Temperature Range | -30 °C ... +70 °C | 1000 MHz | 25.70 dB/100m | |
| 1 st Shielding | Packing | 100 / 250 m | 1200 MHz | 28.10 dB/100m | |
| Aluminum Foil (Bonded to the Insulation) | | | 2150 MHz | 38.60 dB/100m | |
| 2 nd Shielding | | | 3000 MHz | 46.10 dB/100m | |
| Tinned Copper Wire Braiding | Electrical Properties | | Return Loss (20°C) | | |
| 3 rd Shielding | Impedance | 75 ± 2 Ω | 5-470 MHz | > 30 dB | |
| Aluminum Foil (Bonded to the Jacket) | Capacitance | 53 ± 2 pF/m | 470-1200 MHz | > 25 dB | |
| Outer Sheath | Velocity of Propagation | 83 % | 1200-2000 MHz | > 23 dB | |
| Ø 5.25 mm HFFR* | Insulation Resistance | > 2 GΩxkm | 2000-3000 MHz | > 18 dB | |
| | Operating Voltage | 1100 V | | | |
| | Test Voltage | 2500 V | | | |
| | Inner Conductor DCR | < 34.50 Ω/km | | | |



Class A++

HD 083 A++ HFFR



Anvendelse

Dette RG59 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabeloperatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablerne er halogenfrie, ikke-korroderende og flammehæmmede pga. den HFFR blanding, som er brugt i kabernes konstruktion.

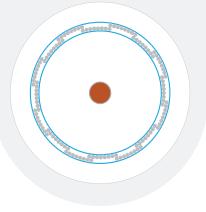
| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|--|--|--|---|
| Inderleder Ø 0.81 mm ren kobber | Kabelvægt 13.7 kg/km | 5 MHz 50 MHz 230 MHz 470 MHz 860 MHz 1000 MHz 1200 MHz 2150 MHz 3000 MHz | 1.90 dB/100m 5.60 dB/100m 11.90 dB/100m 17.50 dB/100m 23.70 dB/100m 25.50 dB/100m 27.80 dB/100m 38.40 dB/100m 45.90 dB/100m |
| Dielektrikum Ø 3.60 mm gasopskummet Film/Skum/Film PE | Min. bøjningsradius 45 mm | | |
| 1. skærm Aluminiumsfolie (limet til dielektrikum) | Maks. trækraft 40 N | | |
| 2. skærm Fortinnet kobberfletskærm | Temperaturområde -30 °C ... +70 °C | | |
| 3. skærm Aluminiumsfolie (limet til kappen) | Pakning 100 / 300 / 500 m | | |
| Elektriske egenskaber | | Refleksionsdæmpning (20°C) | Skærmtæthed |
| Kappe 5.25 mm ± 0.10 mm HFFR* | Impedans 75 ± 2 Ω | 5-470 MHz 470-1200 MHz 1200-2000 MHz 2000-3000 MHz | 30-1200 MHz 1200-2000 MHz 2000-3000 MHz |
| | Kapacitans 53 ± 2 pF/m | > 30 dB > 25 dB > 23 dB > 18 dB | ≥ 115 dB ≥ 110 dB ≥ 105 dB |
| | Udbredelseshastighed 83 % | | |
| | Isolationsmodstand > 2 GΩkm | | |
| | Maks. spænding 1100 V | | |
| | Testet spænding 2500 V | | |
| | Inderleder DC-modstand < 34.50 Ω/km | | |
| Standarder | | | |
| | | | Skærmtæthed klasseklasse A++ EN 50117-9-2 |
| | | | Brandklassifikation D _{ca} |
| | | | Brandhæmmende EN 60332-1-2 |
| | | | Test af korroderende gasser TS EN 60754-2 |
| Røgudvikling | | | |
| | | | EN 61034-2 |

Application

This RG 59 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

| Cable Construction | | Technical Properties | | Attenuations (20°C) | | Transfer Impedance | |
|---------------------------|---|-------------------------|-------------------|---------------------|---------------|-----------------------|------------|
| Inner Conductor | Ø 0.81 mm Bare Copper | Cable Weight | 41 kg/km | 5 MHz | 1.90 dB/100m | 5-30 MHz | ≤ 0.9 mΩ/m |
| Ø 3.60 mm Gas Injected | Skin/Foam/Skin PE | Copper Weight | 13.7 kg/km | 50 MHz | 5.60 dB/100m | Screening Attenuation | |
| 1 st Shielding | Aluminum Foil (Bonded to the Insulation) | Min. Bending Radius | 45 mm | 230 MHz | 11.90 dB/100m | 30-1200 MHz | ≥ 115 dB |
| 2 nd Shielding | Tinned Copper Wire Braiding | Max. Tensile Strength | 40 N | 470 MHz | 17.50 dB/100m | 1200-2000 MHz | ≥ 110 dB |
| 3 rd Shielding | Aluminum Foil (Bonded to the Jacket) | Temperature Range | -30 °C ... +70 °C | 860 MHz | 23.70 dB/100m | 2000-3000 MHz | ≥ 105 dB |
| Outer Sheath | 5.25 mm ± 0.10 mm HFFR* | Packing | 100 / 300 / 500 m | 1000 MHz | 25.50 dB/100m | Standards | |
| Electrical Properties | | Impedance | | 1200 MHz | 27.80 dB/100m | Screening Class | Class A++ |
| | | Capacitance | 75 ± 2 Ω | 2150 MHz | 38.40 dB/100m | EN 50117-9-2 | |
| | | Velocity of Propagation | 53 ± 2 pF/m | 3000 MHz | 45.90 dB/100m | Euro Class | |
| | | Insulation Resistance | 83 % | Return Loss (20°C) | | D _{ca} | |
| | | Operating Voltage | > 2 GΩxkm | 5-470 MHz | > 30 dB | Flame Retardancy | |
| | | Test Voltage | 1100 V | 470-1200 MHz | > 25 dB | EN 60332-1-2 | |
| | | Inner Conductor DCR | 2500 V | 1200-2000 MHz | > 23 dB | Corrosive Gases Test | |
| | | | < 34.50 Ω/km | 2000-3000 MHz | > 18 dB | TS EN 60754-2 | |
| | | | | Smoke Density | | EN 61034-2 | |

oren HD 103 A++ HFFR (1.0/4.6) Class A++ EN 50117



Class A++

HD 103 A++ HFFR



Anvendelse

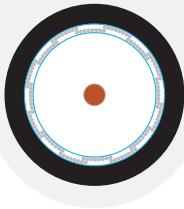
Dette RG6 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabeloperatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablerne er halogenfrie, ikke-korroderende og flammehæmmende pga. den HFFR blanding, som er brugt i kabernes konstruktion.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|--|----------------------------|--|
| Inderleder Ø 1.02 mm ren kobber | Kabelvægt 52 kg/km | 5 MHz 1.40 dB/100m | 5-30 MHz ≤ 0.9 mΩ/m |
| Dielektrikum Ø 4.60 mm gasopskummet Film/Skum/Film PE | Kobbervægt 20 kg/km | 50 MHz 4.20 dB/100m | |
| 1. skærm Aluminiumsfolie (limet til dielektrikum) | Min. bøjningsradius 50 mm | 230 MHz 8.50 dB/100m | |
| 2. skærm Fortinnet kobberfletskærm | Maks. trækkraft 80 N | 470 MHz 13.60 dB/100m | |
| 3. skærm Aluminiumsfolie (limet til kappen) | Temperaturområde -30 °C ... +70 °C | 860 MHz 18.60 dB/100m | |
| Kappe 6.60 mm ± 0.10 mm HFFR* | Pakning 100 / 300 / 500 m | 1000 MHz 20.10 dB/100m | |
| | | 1200 MHz 22.10 dB/100m | |
| | | 2150 MHz 30.90 dB/100m | |
| | | 3000 MHz 37.80 dB/100m | |
| Elektriske egenskaber | | Refleksionsdæmpning (20°C) | Skærmtæthed |
| | Impedans 75 ± 2 Ω | 5-470 MHz > 30 dB | 30-1200 MHz ≥ 115 dB |
| | Kapacitans 53 ± 2 pF/m | 470-1200 MHz > 25 dB | 1200-2000 MHz ≥ 110 dB |
| | Udbredelseshastighed 84 % | 1200-2000 MHz > 23 dB | 2000-3000 MHz ≥ 105 dB |
| | Isolationsmodstand > 2 GΩxkm | 2000-3000 MHz > 18 dB | |
| | Maks. spænding 1300 V | | |
| | Testet spænding 3000 V | | |
| | Inderleder DC-modstand < 22.10 Ω/km | | |
| Standarder | | | |
| | | | Skærmtæthed klasseklasse A++ EN 50117-9-2 |
| | | | Brandklassifikation D _{ca} |
| | | | Brandhæmmende EN 60332-1-2 |
| | | | Test af korroderende gasser TS EN 60754-2 |
| | | | Røgudvikling EN 61034-2 |

Application

This RG 6 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|--|--|---------------------------|---------------------------------------|
| Inner Conductor Ø 1.02 mm Bare Copper | Cable Weight 52 kg/km | 5 MHz 1.40 dB/100m | 5-30 MHz ≤ 0.9 mΩ/m |
| Insulation Ø 4.60 mm Gas Injected Skin/Foam/Skin PE | Copper Weight 20 kg/km | 50 MHz 4.20 dB/100m | |
| 1 st Shielding Aluminum Foil (Bonded to the Insulation) | Min. Bending Radius 50 mm | 230 MHz 8.50 dB/100m | |
| 2 nd Shielding Tinned Copper Wire Braiding | Max. Tensile Strength 80 N | 470 MHz 13.60 dB/100m | |
| 3 rd Shielding Aluminum Foil (Bonded to the Jacket) | Temperature Range -30 °C ... +70 °C | 860 MHz 18.60 dB/100m | |
| Outer Sheath 6.60 mm ± 0.10 mm HFFR* | Packing 100 / 300 / 500 m | 1000 MHz 20.10 dB/100m | |
| | | 1200 MHz 22.10 dB/100m | |
| | | 2150 MHz 30.90 dB/100m | |
| | | 3000 MHz 37.80 dB/100m | |
| Electrical Properties | | Return Loss (20°C) | Screening Attenuation |
| | Impedance 75 ± 2 Ω | 5-470 MHz > 30 dB | 30-1200 MHz ≥ 120 dB |
| | Capacitance 53 ± 2 pF/m | 470-1200 MHz > 25 dB | 1200-2000 MHz ≥ 110 dB |
| | Velocity of Propagation 84 % | 1200-2000 MHz > 23 dB | 2000-3000 MHz ≥ 105 dB |
| | Insulation Resistance > 2 GΩxkm | 2000-3000 MHz > 18 dB | |
| Standards | | | |
| | | | Screening Class EN 50117-9-2 |
| | | | Euro Class D _{ca} |
| | | | Flame Retardancy EN 60332-1-2 |
| | | | Corrosive Gases Test TS EN 60754-2 |
| | | | Smoke Density EN 61034-2 |



Class A++

HD 103 A++ PE



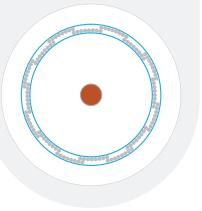
Anvendelse

Dette RG11 kabel er lavet specielt til brug i multimedianetværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablet kan anvendes både inden- og udendørs. PE Kappen er UV beskyttet og egnet til nedgravnings i følge Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

Application

This RG 11 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. It is suitable for outdoor usage. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Vejledende-tekniske-retningslinjer-ver.-11.1-mai-2018 §3.9.3.1

| Cable Construction | | Technical Properties | | Attenuations (20°C) | | Transfer Impedance | |
|---------------------------|---|-------------------------|-------------------|---------------------|---------------|-----------------------|------------|
| Inner Conductor | Ø 1.02 mm Bare Copper | Cable Weight | 46 kg/km | 5 MHz | 1.40 dB/100m | 5-30 MHz | ≤ 0.9 mΩ/m |
| Ø 4.60 mm Gas Injected | Skin/Foam/Skin PE | Copper Weight | 20 kg/km | 50 MHz | 4.20 dB/100m | Screening Attenuation | |
| 1 st Shielding | Aluminum Foil (Bonded to the Insulation) | Min. Bending Radius | 50 mm | 230 MHz | 8.50 dB/100m | 30-1200 MHz | ≥ 115 dB |
| 2 nd Shielding | Tinned Copper Wire Braiding | Max. Tensile Strength | 80 N | 470 MHz | 13.60 dB/100m | 1200-2000 MHz | ≥ 110 dB |
| 3 rd Shielding | Aluminum Foil (Bonded to the Jacket) | Temperature Range | -40 °C ... +70 °C | 860 MHz | 18.60 dB/100m | 2000-3000 MHz | ≥ 105 dB |
| Outer Sheath | Ø 6.60 mm ± 0.10 mm PE | Packing | 100 / 300 / 500 m | 1000 MHz | 20.10 dB/100m | | |
| | | Electrical Properties | | 1200 MHz | 22.10 dB/100m | Standards | |
| | | Impedance | 75 ± 2 Ω | 2150 MHz | 30.90 dB/100m | Screening Class | Class A++ |
| | | Capacitance | 53 ± 2 pF/m | 3000 MHz | 37.80 dB/100m | EN 50117-10-2 | |
| | | Velocity of Propagation | 84 % | Return Loss (20°C) | | Euro Class | |
| | | Insulation Resistance | > 2 GΩxkm | 5-470 MHz | > 30 dB | F _{ca} | |
| | | Operating Voltage | 1300 V | 470-1200 MHz | > 25 dB | | |
| | | Test Voltage | 3000 V | 1200-2000 MHz | > 23 dB | | |
| | | Inner Conductor DCR | < 22.10 Ω/km | 2000-3000 MHz | > 18 dB | | |


Class A+

HQ 113 HFFR



Anvendelse

Disse kabler bruges til CCTV-signaler og til fordeling af bredbånds- og CATV-signaler i systemer, hvor der er krav til lav kabeldæmpning. Disse kabler er halogenfrie, frigiver ikke korroderede gasser, og er brandhæmmende pga. den HFFR blanding, som er anvendt til deres ydre kappe.

Kablets opbygning

| | |
|---|--|
| Inderleder | |
| Ø 1.13 mm ren kobber | |
| Dielektrikum | |
| Ø 4.80 mm gasopskummet | |
| Film/Skum/Film PE | |
| 1. skærm | |
| Aluminiumsfolie (limet til dielektrikum) | |
| 2. skærm | |
| Aluminiumsfletskærm | |
| 3. skærm | |
| Aluminiumsfolie (limet til kappen) | |
| Kappe | |
| Ø 6.60 mm HFFR* Hvid | |
| HF8130 | |

Tekniske egenskaber

| | |
|---------------------|---------------------------------|
| Kabelvægt | 47 kg/km |
| Kobbervægt | 9.9 kg/km |
| Min. bøjningsradius | 30 mm |
| Maks. trækkraft | 110 N |
| Temperaturområde | -30 °C ... +70 °C |
| Pakning | 5 / 10 / 25 / 100 / 250 / 500 m |

Elektriske egenskaber

| | |
|------------------------|--------------|
| Impedans | 75 ± 2 Ω |
| Kapacitans | 53 ± 2 pF/m |
| Udbredelseshastighed | 84 % |
| Isolationsmodstand | > 2 GΩxkm |
| Maks. spænding | 1300 V |
| Testet spænding | 3000 V |
| Inderleder DC-modstand | < 17.80 Ω/km |

Kableldæmpning (20°C)

| | |
|----------|---------------|
| 5 MHz | 1.40 dB/100m |
| 50 MHz | 4.10 dB/100m |
| 230 MHz | 8.90 dB/100m |
| 470 MHz | 12.90 dB/100m |
| 860 MHz | 17.90 dB/100m |
| 1000 MHz | 19.20 dB/100m |
| 1200 MHz | 21.90 dB/100m |
| 2150 MHz | 29.90 dB/100m |
| 3000 MHz | 36.20 dB/100m |

Refleksionsdæmpning (20°C)

| | |
|---------------|---------|
| 5-470 MHz | > 26 dB |
| 470-1200 MHz | > 23 dB |
| 1200-2000 MHz | > 20 dB |
| 2000-3000 MHz | > 18 dB |

Transferimpedans

| | |
|----------|------------|
| 5-30 MHz | ≤ 2.5 mΩ/m |
|----------|------------|

Skærmtæthed

| | |
|---------------|---------|
| 30-1200 MHz | ≥ 95 dB |
| 1200-2000 MHz | ≥ 85 dB |
| 2000-3000 MHz | ≥ 75 dB |

Standarer

| | |
|--------------------|-----------|
| Skærmtæthed klasse | klasse A+ |
| EN 50117-9-2 | |

Brandklassifikation

D_{ca}

| | |
|---------------|--|
| Brandhæmmende | |
| EN 60332-1-2 | |

| | |
|-----------------------------|--|
| Test af korroderende gasser | |
| TS EN 60754-2 | |

| | |
|--------------|--|
| Røgudvikling | |
| EN 61034-2 | |

Application

These types of cables are used for CCTV and indoor CATV distributions and connections of systems which require low attenuations. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

Cable Construction

| | |
|---|--|
| Inner Conductor | |
| Ø 1.13 mm Bare Copper | |
| Insulation | |
| Ø 4.80 mm Gas Injected | |
| Skin/Foam/Skin PE | |
| 1 st Shielding | |
| Aluminum Foil (Bonded to the Insulation) | |
| 2 nd Shielding | |
| Aluminum Wire Braiding | |
| 3 rd Shielding | |
| Aluminum Foil (Bonded to the Jacket) | |
| Outer Sheath | |
| Ø 6.60 mm HFFR* White | |
| HF8130 | |

Technical Properties

| | |
|-----------------------|---------------------------------|
| Cable Weight | 47 kg/km |
| Copper Weight | 9.9 kg/km |
| Min. Bending Radius | 30 mm |
| Max. Tensile Strength | 110 N |
| Temperature Range | -30 °C ... +70 °C |
| Packing | 5 / 10 / 25 / 100 / 250 / 500 m |

Electrical Properties

| | |
|-------------------------|--------------|
| Impedance | 75 ± 2 Ω |
| Capacitance | 53 ± 2 pF/m |
| Velocity of Propagation | 84 % |
| Insulation Resistance | > 2 GΩxkm |
| Operating Voltage | 1300 V |
| Test Voltage | 3000 V |
| Inner Conductor DCR | < 17.80 Ω/km |

Attenuations (20°C)

| | |
|----------|---------------|
| 5 MHz | 1.40 dB/100m |
| 50 MHz | 4.10 dB/100m |
| 230 MHz | 8.90 dB/100m |
| 470 MHz | 12.90 dB/100m |
| 860 MHz | 17.90 dB/100m |
| 1000 MHz | 19.20 dB/100m |
| 1200 MHz | 21.90 dB/100m |
| 2150 MHz | 29.90 dB/100m |
| 3000 MHz | 36.20 dB/100m |

Return Loss (20°C)

| | |
|---------------|---------|
| 5-470 MHz | > 26 dB |
| 470-1200 MHz | > 23 dB |
| 1200-2000 MHz | > 20 dB |
| 2000-3000 MHz | > 18 dB |

Transfer Impedance

| | |
|----------|------------|
| 5-30 MHz | ≤ 2.5 mΩ/m |
|----------|------------|

Screening Attenuation

| | |
|---------------|---------|
| 30-1200 MHz | ≥ 95 dB |
| 1200-2000 MHz | ≥ 85 dB |
| 2000-3000 MHz | ≥ 75 dB |

Standards

| | |
|-----------------|----------|
| Screening Class | Class A+ |
| EN 50117-9-2 | |

Euro Class

D_{ca}

| | |
|------------------|--|
| Flame Retardancy | |
| EN 60332-1-2 | |

| | |
|----------------------|--|
| Corrosive Gases Test | |
| TS EN 60754-2 | |

| | |
|---------------|--|
| Smoke Density | |
| EN 61034-2 | |



Class A+

HD 113 Cu/Cu PE



Anvendelse

Dette kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. PE kablet er beregnet til at nedgravning. Udover at blive fremført til et indendørs afdelingspunkt må det ikke bruges indenfor. PE Kappen er UV beskyttet og egnet til nedgravning i følge Vejledende-tekniske-retningslinier-ver-11.1-maj-2018 §3.9.3.1

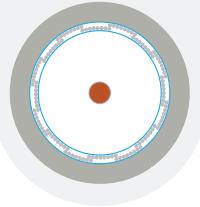
Application

This cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. The PE cable is intended for burial; except for feeding the indoor delivery point, it must not be used inside. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Veilede-tekniske-retningslinier-ver.-11.1-mai-2018 §3.9.3.1

| Cable Construction | | Technical Properties | | Attenuations (20°C) | | Transfer Impedance | |
|---|-------------------------|----------------------|--------------------|---------------------|-----------------|--------------------|--|
| Inner Conductor | Cable Weight | 48 kg/km | 5 MHz | 1.40 dB/100m | 5-30 MHz | ≤ 2.5 mΩ/m | |
| Ø 1.13 mm Bare Copper | Copper Weight | 17.7 kg/km | 50 MHz | 4.10 dB/100m | 30-1200 MHz | ≥ 95 dB | |
| Insulation | Min. Bending Radius | 30 mm | 230 MHz | 8.90 dB/100m | 1200-2000 MHz | ≥ 85 dB | |
| Ø 4.80 mm Gas Injected | Max. Tensile Strength | 120 N | 470 MHz | 12.90 dB/100m | 2000-3000 MHz | ≥ 75 dB | |
| Skin/Foam/Skin PE | Temperature Range | -40 °C ... +70 °C | 860 MHz | 17.90 dB/100m | | | |
| 1 st Shielding | Packing | 100 / 350 / 500 m | 1000 MHz | 19.20 dB/100m | | | |
| Cu-Pet Foil | | | 1200 MHz | 21.90 dB/100m | | | |
| 2 nd Shielding | | | 2150 MHz | 29.90 dB/100m | | | |
| Copper Wire Braiding | Impedance | 75 ± 2 Ω | 3000 MHz | 36.20 dB/100m | | | |
| 3 rd Shielding | Capacitance | 53 ± 2 pF/m | | | | | |
| Cu-Pet Foil (Bonded to the Outer Sheath) | Velocity of Propagation | 84 % | | | | | |
| Outer Sheath | Insulation Resistance | > 2 GΩxkm | Return Loss (20°C) | | Standards | | |
| Ø 7.00 mm PE | Operating Voltage | 1300 V | 5-470 MHz | > 26 dB | Screening Class | EN 50117-10-2 | |
| | Test Voltage | 3000 V | 470-1200 MHz | > 23 dB | Euro Class | F _{ca} | |
| | Inner Conductor DCR | < 17.80 Ω/km | 1200-2000 MHz | > 20 dB | | | |
| | | | 2000-3000 MHz | > 18 dB | | | |



HD 163 HFFR (1.6/7.2) Class A+ EN 50117



Class A+

HD 163 HFFR



Anvendelse

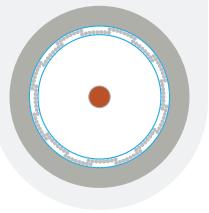
Dette RG11 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablet er halogenfrit, frigiver ikke korroderede gasser, og er brandhæmmende pga. den HFFR blanding, som er anvendt til yderkappen. Kablet må benyttes indendørs og kan ligeledes opsættes udendørs, da det er bestandigt overfor vand og UV. Må ikke ligge permanent nedskænet i vand eller nedgraves.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|--|---|---|
| Inderleder Ø 1.63 mm ren kobber | Kabelvægt 34.3 kg/km | 50 MHz 230 MHz 470 MHz 860 MHz 1000 MHz 1200 MHz 2150 MHz 3000 MHz | 3.10 dB/100m 6.10 dB/100m 8.70 dB/100m 12.70 dB/100m 14.00 dB/100m 14.70 dB/100m 21.80 dB/100m 26.80 dB/100m |
| Dielektrikum Ø 7.15 mm gasopskummet | Min. bøjningsradius 80 mm | | |
| Film/Skum/Film PE | Maks. trækkraft 225 N | | |
| 1. skærm | Temperatureområde -30 °C ... +70 °C | | |
| Aluminiumsfolie (limet til dielektrikum) | Pakning 250 m | | |
| 2. skærm | | | |
| Udglødet kobberfletskærm | | | |
| 3. skærm | | | |
| Aluminiumsfolie (limet til kappen) | | | |
| Kappe Ø 10.00 mm HFFR* | | | |
| Elektriske egenskaber | | Refleksionsdæmpning (20°C) | Standarer |
| | Impedans 75 ± 2 Ω | 5-470 MHz 470-1200 MHz 1200-2000 MHz 2000-3000 MHz | Skærmtæthed klasse A+ EN 50117-9-2 |
| | Kapacitans 53 ± 2 pF/m | > 30 dB > 25 dB > 23 dB > 18 dB | Brandklassifikation B2 _{ca} , s1a, d1, a2 |
| | Udbredelseshastighed 84 % | | Brandhæmmende EN 60332-1-2 |
| | Isolationsmodstand > 2 GΩxkm | | Test af korroderende gasser TS EN 60754-2 |
| | Maks. spænding 2000 V | | Røgudvikling EN 61034-2 |
| | Testet spænding 5000 V | | |
| | Inderleder DC-modstand < 8.50 Ω/km | | |

Application

This RG11 cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. The cable is halogen free, non-corrosive and flame retardant, thanks to the HFFR compound that has been used on its construction. The cable can be used indoor, and can also be installed outdoor, as it is resistant to water and UV. The cable must not lie permanently submerged in water or buried in the ground.

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|--|--|---|---|
| Inner Conductor Ø 1.63 mm Bare Copper | Cable Weight 100 kg/km | 50 MHz 230 MHz 470 MHz 860 MHz 1000 MHz 1200 MHz 2150 MHz 3000 MHz | 3.10 dB/100m 6.10 dB/100m 8.70 dB/100m 12.70 dB/100m 14.00 dB/100m 14.70 dB/100m 21.80 dB/100m 26.80 dB/100m |
| Insulation Ø 7.15 mm Gas Injected | Copper Weight 34.3 kg/km | | |
| Skin/Foam/Skin PE | Min. Bending Radius 80 mm | | |
| 1 st Shielding Aluminum Foil (Bonded to the Insulation) | Max. Tensile Strength 225 N | | |
| 2 nd Shielding Annealed Copper Wire Braiding | Temperature Range -30 °C ... +70 °C | | |
| 3 rd Shielding Aluminum Foil (Bonded to the Jacket) | Packing 250 m | | |
| Outer Sheath Ø 10.00 mm HFFR* | | | |
| Electrical Properties | | Return Loss (20°C) | Screening Attenuation |
| | Impedance 75 ± 2 Ω | 5-470 MHz 470-1200 MHz 1200-2000 MHz 2000-3000 MHz | 30-1200 MHz ≥ 95 dB |
| | Capacitance 53 ± 2 pF/m | > 30 dB > 25 dB > 23 dB > 18 dB | 1200-2000 MHz ≥ 85 dB |
| | Velocity of Propagation 84 % | | 2000-3000 MHz ≥ 75 dB |
| | Insulation Resistance > 2 GΩxkm | | |
| | Operating Voltage 2000 V | | |
| | Test Voltage 5000 V | | |
| | Inner Conductor DCR < 8.50 Ω/km | | |
| Standards | | | |
| | | | Screening Class EN 50117-9-2 |
| | | | Euro Class B2 _{ca} , s1a, d1, a2 |
| | | | Flame Retardancy EN 60332-1-2 |
| | | | Corrosive Gases Test TS EN 60754-2 |
| | | | Smoke Density EN 61034-2 |



HD 163 A++ HFFR



Anvendelse

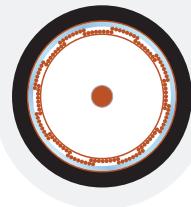
Dette RG11 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablet er halogenfrit, frigiver ikke korroderede gasser, og er brandhæmmende pga. den HFFR blanding, som er anvendt til yderkappen.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans | | |
|---|--|--|--|---|------------|
| Inderleder Ø 1.63 mm ren kobber | Kabelvægt Kobbervægt Min. bøjningsradius Maks. trækraft Temperatureområde Pakning | 102 kg/km 36 kg/km 75 mm 225 N -30 °C ... +70 °C 100 / 300 / 500 / 1000 m | 5 MHz 50 MHz 230 MHz 470 MHz 860 MHz 1000 MHz 1200 MHz 2150 MHz 3000 MHz | 1.10 dB/100m 2.70 dB/100m 6.00 dB/100m 8.80 dB/100m 12.50 dB/100m 13.80 dB/100m 15.00 dB/100m 20.60 dB/100m 25.10 dB/100m | ≤ 0.9 mΩ/m |
| Dielektrikum Ø 7.20 mm gasopskummet | | | | | |
| Film/Skum/Film PE | | | | | |
| 1. skærm | | | | | |
| Aluminiumsfolie (limet til dielektrikum) | | | | | |
| 2. skærm | | | | | |
| Udglødet kobberfletskærm | | | | | |
| 3. skærm | | | | | |
| Aluminiumsfolie (limet til kappen) | | | | | |
| Kappe | | | | | |
| Ø 10.00 ± 0.10 mm HFFR* | | | | | |
| Elektriske egenskaber | | Refleksionsdæmpning (20°C) | Skærmtæthed | | |
| | | 5-470 MHz 470-1200 MHz 1200-2000 MHz 2000-3000 MHz | 30-1200 MHz 1200-2000 MHz 2000-3000 MHz | | |
| | | > 30 dB > 25 dB > 23 dB > 18 dB | ≥ 115 dB ≥ 110 dB ≥ 105 dB | | |
| Standarder | | Brandklassifikation | | | |
| | | D _{ca} | | | |
| | | Brandhæmmende | | | |
| | | EN 60332-1-2 | | | |
| | | Test af korrodende gasser | | | |
| | | TS EN 60754-2 | | | |
| Røgudvikling | | EN 61034-2 | | | |

Application

This RG 11 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance | |
|---|-------------------------|--------------------------|-----------------------|---------------|
| Inner Conductor | Cable Weight | 102 kg/km | 5-30 MHz | ≤ 0.9 mΩ/m |
| Ø 1.63 mm Bare Copper | Copper Weight | 36 kg/km | 50 MHz | 2.70 dB/100m |
| Insulation | Min. Bending Radius | 75 mm | 230 MHz | 6.00 dB/100m |
| Ø 7.20 mm Gas Injected | Max. Tensile Strength | 225 N | 470 MHz | 8.80 dB/100m |
| Skin/Foam/Skin PE | Temperature Range | -30 °C ... +70 °C | 860 MHz | 12.50 dB/100m |
| 1 st Shielding | Packing | 100 / 300 / 500 / 1000 m | 1000 MHz | 13.80 dB/100m |
| Aluminum Foil (Bonded to the Insulation) | Electrical Properties | | 1200 MHz | 15.00 dB/100m |
| 2 nd Shielding | Impedance | 75 ± 2 Ω | 2150 MHz | 20.60 dB/100m |
| Tinned Copper Wire Braiding | Capacitance | 53 ± 2 pF/m | 3000 MHz | 25.10 dB/100m |
| 3 rd Shielding | Velocity of Propagation | 84 % | Return Loss (20°C) | |
| Aluminum Foil (Bonded to the Jacket) | Insulation Resistance | > 2 GΩxkm | 5-470 MHz | > 30 dB |
| Outer Sheath | Operating Voltage | 2000 V | 470-1200 MHz | > 25 dB |
| Ø 10.00 ± 0.10 mm HFFR* | Test Voltage | 5000 V | 1200-2000 MHz | > 23 dB |
| | Inner Conductor DCR | < 8.50 Ω/km | 2000-3000 MHz | > 18 dB |
| | | | Screening Attenuation | |
| | | | 30-1200 MHz | ≥ 115 dB |
| | | | 1200-2000 MHz | ≥ 110 dB |
| | | | 2000-3000 MHz | ≥ 105 dB |
| | | | Standards | |
| | | | Screening Class | Class A++ |
| | | | 50117-9-2 | |
| | | | Euro Class | |
| | | | D _{ca} | |
| | | | Flame Retardancy | |
| | | | EN 60332-1-2 | |
| | | | Corrosive Gases Test | |
| | | | TS EN 60754-2 | |
| | | | Smoke Density | |
| | | | EN 61024-2 | |


Class A+

HD 163 Cu/Cu PEF



Anvendelse

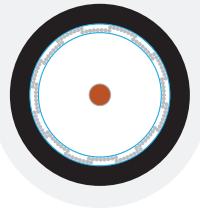
Dette RG11 kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. PEF kablet er beregnet til at nedgravning. Udover at blive fremført til et indendørs afleveringspunkt må det ikke bruges indenfor. PE Kappen er UV beskyttet og egnet til nedgravning i følge Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|--------------------------|------------------------|----------------------------|---------------------|
| Inderleder | Kabelvægt | 90 kg/km | 5-30 MHz < 2.5 mΩ/m |
| Ø 1.63 mm ren kobber | Kobbevægt | 30.3 kg/km | |
| Dielektrikum | Min. bøjningsradius | 75 mm | |
| Ø 7.15 mm gasopskummet | Maks. trækraft | 225 N | |
| Film/Skum/Film PE | Temperaturområde | -40 °C ... +70 °C | |
| 1. skærm | Pakning | 250 m | |
| Cu film | | | |
| 2. skærm | | | |
| Udglødet kobberfletskærm | Impedans | 75 ± 2 Ω | |
| Gel mod vandindtrængning | Kapacitans | 53 ± 2 pF/m | |
| 3. skærm | Udbredelseshastighed | 84 % | |
| Cu film | Isolationsmodstand | > 2 GΩxkm | |
| Kappe | Maks. spænding | 2000 V | |
| Ø 10.00 mm PE | Testet spænding | 5000 V | |
| | Inderleder DC-modstand | < 8.50 Ω/km | |
| Elektriske egenskaber | | Refleksionsdæmpning (20°C) | |
| | | 5-470 MHz > 30 dB | |
| | | 470-1200 MHz > 25 dB | |
| | | 1200-2000 MHz > 23 dB | |
| | | 2000-3000 MHz > 18 dB | |

Application

This RG11 cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. The PEF cable is intended for burial; except for feeding the indoor delivery point, it must not be used inside. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|-------------------------------|-------------------------|-----------------------|---------------------|
| Inner Conductor | Cable Weight | 90 kg/km | 5-30 MHz < 2.5 mΩ/m |
| Ø 1.63 mm Bare Copper | Copper Weight | 30.3 kg/km | |
| Insulation | Min. Bending Radius | 75 mm | |
| Ø 7.15 mm Gas Injected | Max. Tensile Strength | 225 N | |
| Skin/Foam/Skin PE | Temperature Range | -40 °C ... +70 °C | |
| 1 st Shielding | Packing | 250 m | |
| Cu Foil | | | |
| 2 nd Shielding | | | |
| Annealed Copper Wire Braiding | Impedance | 75 ± 2 Ω | |
| Gel Flooding Compound | Capacitance | 53 ± 2 pF/m | |
| 3 rd Shielding | Velocity of Propagation | 84 % | |
| Cu Foil | Insulation Resistance | > 2 GΩxkm | |
| Outer Sheath | Operating Voltage | 2000 V | |
| Ø 10.00 mm PE | Test Voltage | 5000 V | |
| | Inner Conductor DCR | < 8.50 Ω/km | |
| Electrical Properties | | Return Loss (20°C) | |
| | | 5-470 MHz > 30 dB | |
| | | 470-1200 MHz > 25 dB | |
| | | 1200-2000 MHz > 23 dB | |
| | | 2000-3000 MHz > 18 dB | |
| Screening Attenuation | | | |
| | | | |
| | | | |
| Standards | | | |
| | | | |



ÖREN HD 163 A++ PE

RG 11 U/4 (Cu/CuSn) Trishield PE

Class A++



Anvendelse

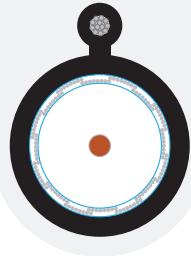
Dette RG11 kabel er lavet specielt til brug i multimedianetværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablet kan anvendes både inden- og udendørs. PE Kappen er UV beskyttet og egnet til nedgraving i følge Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|------------------------|--------------------------|------------------------------|
| Inderleder | Kabelvægt | 87 kg/km | 5-30 MHz |
| Ø 1.63 mm ren kobber | Kobbervægt | 36 kg/km | ≤ 0.9 mΩ/m |
| Dielelektrikum | Min. bøjningsradius | 75 mm | 50 MHz |
| Ø 7.20 mm gasopskummet | Maks. trækraft | 200 N | 230 MHz |
| Film/Skum/Film PE | Temperaturområde | -40 °C ... +70 °C | 470 MHz |
| 1. skærm | Pakning | 100 / 300 / 500 / 1000 m | 860 MHz |
| Aluminiumsfolie (limet til dielektrikum) | | | 1000 MHz |
| 2. skærm | Elektriske egenskaber | | 1200 MHz |
| Udglødet kobberfletskærm | Impedans | 75 ± 2 Ω | 2150 MHz |
| 3. skærm | Kapacitans | 53 ± 2 pF/m | 3000 MHz |
| Aluminiumsfolie (limet til kappen) | Udbredelseshastighed | 84 % | |
| Kappe | Isolationsmodstand | > 2 GΩkm | Refleksionsdæmpning (20°C) |
| Ø 10.00 ± 0.10 mm PE | Maks. spænding | 2000 V | 5-470 MHz |
| | Testet spænding | 5000 V | 470-1200 MHz |
| | Inderleder DC-modstand | < 8.50 Ω/km | 1200-2000 MHz |
| | | | 2000-3000 MHz |
| | | | |
| | | | Skærmtæthed |
| | | | 30-1200 MHz |
| | | | ≥ 115 dB |
| | | | 1200-2000 MHz |
| | | | ≥ 110 dB |
| | | | 2000-3000 MHz |
| | | | ≥ 105 dB |
| | | | Standarder |
| | | | Skærmtæthed klasseklasse A++ |
| | | | EN 50117-10-2 |
| | | | Brandklassifikation |
| | | | F _{ca} |

Application

This RG 11 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. It is suitable for outdoor usage. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Vejledende-tekniske-retningslinjer-ver.-11.1-maj-2018 §3.9.3.1

| Cable Construction | | Technical Properties | | Attenuations (20°C) | | Transfer Impedance | |
|------------------------|---|-------------------------|--------------------------|---------------------|---------------|-----------------------|------------|
| Inner Conductor | Ø 1.63 mm Bare Copper | Cable Weight | 87 kg/km | 5 MHz | 1.10 dB/100m | 5-30 MHz | ≤ 0.9 mΩ/m |
| Ø 7.20 mm Gas Injected | Skin/Foam/Skin PE | Copper Weight | 36 kg/km | 50 MHz | 2.70 dB/100m | Screening Attenuation | |
| Ø 1.63 mm Bare Copper | 1 st Shielding | Min. Bending Radius | 75 mm | 230 MHz | 6.00 dB/100m | 30-1200 MHz | ≥ 115 dB |
| Ø 7.20 mm Gas Injected | Aluminum Foil (Bonded to the Insulation) | Max. Tensile Strength | 200 N | 470 MHz | 8.80 dB/100m | 1200-2000 MHz | ≥ 110 dB |
| Ø 7.20 mm Gas Injected | 2 nd Shielding | Temperature Range | -40 °C ... +70 °C | 860 MHz | 12.50 dB/100m | 2000-3000 MHz | ≥ 105 dB |
| Ø 7.20 mm Gas Injected | Tinned Copper Wire Braiding | Packing | 100 / 300 / 500 / 1000 m | 1000 MHz | 13.80 dB/100m | Standards | |
| Ø 7.20 mm Gas Injected | 3 rd Shielding | Impedance | 75 ± 2 Ω | 1200 MHz | 15.00 dB/100m | Screening Class | Class A++ |
| Ø 7.20 mm Gas Injected | Aluminum Foil (Bonded to the Jacket) | Capacitance | 53 ± 2 pF/m | 2150 MHz | 20.60 dB/100m | EN 50117-10-2 | |
| Ø 7.20 mm Gas Injected | Outer Sheath | Velocity of Propagation | 84 % | 3000 MHz | 25.10 dB/100m | Euro Class | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Insulation Resistance | > 2 GΩxkm | 5-470 MHz | > 30 dB | F _{ca} | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Operating Voltage | 2000 V | 470-1200 MHz | > 25 dB | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Test Voltage | 5000 V | 1200-2000 MHz | > 23 dB | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Inner Conductor DCR | < 8.50 Ω/km | 2000-3000 MHz | > 18 dB | | |
| Electrical Properties | | | | Return Loss (20°C) | | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | 5-470 MHz | > 30 dB | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | 470-1200 MHz | > 25 dB | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | 1200-2000 MHz | > 23 dB | | |
| Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | Ø 7.20 mm Gas Injected | Ø 10.00 ± 0.10 mm PE | 2000-3000 MHz | > 18 dB | | |


Class A++

ÖREN HD 163 A++ AP

RG 11 U/4 (Cu/CuSn) Trishield AP


Anvendelse

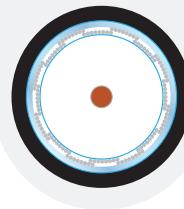
Dette RG11 kabel er lavet specielt til brug i multimedianetværk, og opfylder kravene til klasse A++ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed PE kablet med stålwire er beregnet til ophængning samt nedgravning. Udover at blive fremført til et indendørs afleveringspunkt må det ikke bruges indenfor. PE Kappen er UV beskyttet og egnet til nedgravning i følge Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|------------------------------|--------------------------|--|
| Inderleder | Kabelvægt | 130 kg/km | 5-30 MHz $\leq 0.9 \text{ m}\Omega/\text{m}$ |
| Ø 1.63 mm ren kobber | Kobbervægt | 35.1 kg/km | |
| Dielektrikum | Min. bøjningsradius | 75 mm | 30-1200 MHz $\geq 115 \text{ dB}$ |
| Ø 7.20 mm gasopskummet | Maks. trækraft | 200 N | 1200-2000 MHz $\geq 110 \text{ dB}$ |
| Film/Skum/Film PE | Temperaturområde | -40 °C ... +70 °C | 2000-3000 MHz $\geq 105 \text{ dB}$ |
| 1. skærm | Pakning | 100 / 300 / 500 / 1000 m | |
| Aluminiumsfolie (limet til dielektrikum) | | | |
| 2. skærm | Elektriske egenskaber | | |
| Udglodet kobberfletskærm | Impedans | 75 ± 2 Ω | |
| 3. skærm | Kapacitans | 53 ± 2 pF/m | |
| Aluminiumsfolie (limet til kappen) | Udbredelseshastighed | 84 % | |
| Ophængningswire | Isolationsmodstand | > 2 GΩxkm | Refleksionsdæmpning (20°C) |
| Ø 7 x 0.7 mm Galvaniseret stål | Maks. spænding | 2000 V | 5-470 MHz > 30 dB |
| Kappe | Testet spænding | 5000 V | 470-1200 MHz > 25 dB |
| Ø 10.00 / 16.20 mm +/- 0,20 mm | Inderleder DC-modstand | < 8.50 Ω/km | 1200-2000 MHz > 23 dB |
| | | | 2000-3000 MHz > 18 dB |

Application

This RG 11 type cable is specifically designed for use in multimedia networks and complies with screening of class A++ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. It is suitable for outdoor usage. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|---|------------------------------|--------------------------|--|
| Inner Conductor | Cable Weight | 130 kg/km | 5-30 MHz $\leq 0.9 \text{ m}\Omega/\text{m}$ |
| Ø 1.63 mm Bare Copper | Copper Weight | 35.1 kg/km | |
| Insulation | Min. Bending Radius | 75 mm | 30-1200 MHz $\geq 115 \text{ dB}$ |
| Ø 7.20 mm Gas Injected | Max. Tensile Strength | 200 N | 1200-2000 MHz $\geq 110 \text{ dB}$ |
| Skin/Foam/Skin PE | Temperature Range | -40 °C ... +70 °C | 2000-3000 MHz $\geq 105 \text{ dB}$ |
| 1 st Shielding | Packing | 100 / 300 / 500 / 1000 m | |
| Aluminum Foil (Bonded to the Insulation) | | | |
| 2 nd Shielding | Electrical Properties | | |
| Tinned Copper Wire Braiding | Impedance | 75 ± 2 Ω | |
| 3 rd Shielding | Capacitance | 53 ± 2 pF/m | |
| Aluminum Foil (Bonded to the Jacket) | Velocity of Propagation | 84 % | |
| Suspension Wire | Insulation Resistance | > 2 GΩxkm | Screening Attenuation |
| Ø 7 x 0.7 mm Galvanized Steel | Operating Voltage | 2000 V | 30-1200 MHz > 30 dB |
| Outer Sheath | Test Voltage | 5000 V | 470-1200 MHz > 25 dB |
| Ø 10.00 / 16.20 mm +/- 0,20 mm | Inner Conductor DCR | < 8.50 Ω/km | 1200-2000 MHz > 23 dB |
| | | | 2000-3000 MHz > 18 dB |



Class A+

HD 223 Cu/Cu PEF

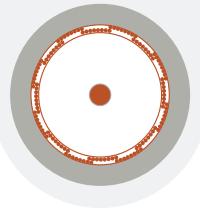
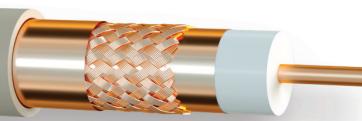


Anvendelse

Dette kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. PEF kablet er beregnet til at nedgravning. Udover at blive fremført til et indendørs afluveringspunkt må det ikke bruges indenfor. PE Kappen er UV beskyttet og egnet til nedgravning i følge Vejledende-tekniske-retningslinier-ver.-11.1-maj-2018 §3.9.3.1

Application

This cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. The PEF cable is intended for burial; except for feeding the indoor delivery point, it must not be used inside. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline; Veileddende-tekniske-retningslinjer-ver.-11.1-mai-2018 §3.9.3.1



Class A+

HD 223 Cu/Cu HFFR



Anvendelse

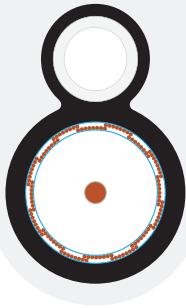
Dette kabel er lavet specielt til brug i multimedia netværk, og opfylder kravene til klasse A+ skærmtæthed, som efterspørges af kabel-TV operatører. Kablet har lav dæmpning, høj skærmtæthed og høj ældningsbestandighed. Kablet er halogenfrit, frigiver ikke korroderede gasser, og er brandhæmmende pga. den HFFR blanding, som er anvendt til yderkappen. Kablet må benyttes indendørs og kan ligeledes opsættes udendørs, da det er bestandigt overfor vand og UV. Må ikke ligge permanent nedsenket i vand eller nedgraves.

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|---|---|--|---|
| Inderleder Ø 2.20 mm ren kobber | Kabelvægt 161 kg/km Kobbevægt 54.7 kg/km | 5 MHz 0.75 dB/100m 50 MHz 2.10 dB/100m | 5-30 MHz ≤ 2.5 mΩ/m |
| Dielektrikum Ø 9.90 mm gasopskummet Film/Skum/Film PE | Min. bøjningsradius 150 mm Maks. trækraft 400 N Temperaturområde -30 °C ... +70 °C Pakning 250 m | 230 MHz 4.70 dB/100m 470 MHz 7.10 dB/100m 860 MHz 9.80 dB/100m 1000 MHz 10.90 dB/100m 1200 MHz 12.70 dB/100m 2000 MHz 17.10 dB/100m | 30-1200 MHz ≥ 95 dB 1200-2000 MHz ≥ 85 dB 2000-3000 MHz ≥ 75 dB |
| 1. skærm Cu film | | | |
| 2. skærm Udglødet kobberfletskærm | Elektriske egenskaber Impedans 75 ± 2 Ω Kapacitans 53 ± 2 pF/m Udbredelseshastighed 83 % Isolationsmodstand > 2 GΩkm Maks. spænding 2000 V Testet spænding 8000 V Inderleder DC-modstand < 4.70 Ω/km | Refleksionsdæmpning (20°C) 5-470 MHz > 30 dB 470-1000 MHz > 25 dB 1000-1200 MHz > 20 dB | Skærmtæthed Skærmtæthed klasse A+ EN 50117-11-1 Brandklassifikation D _{ca} |
| 3. skærm Cu film | | | |
| Kappe Ø 12.70 mm HFFR* Grå | | | |

Application

This cable is specifically designed for use in multimedia networks and complies with screening of class A+ level, which is the high demand of Cable Network Operators. It has characteristics such as low loss, high screening efficiency, and high resistance to aging. The cable is halogen free, non-corrosive and flame retardant, thanks to the HFFR compound that has been used on its construction. The cable can be used indoor, and can also be installed outdoor, as it is resistant to water and UV. The cable must not lie permanently submerged in water or buried in the ground.

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|--|--|--|---|
| Inner Conductor Ø 2.20 mm Bare Copper | Cable Weight 161 kg/km Copper Weight 54.7 kg/km | 5 MHz 0.75 dB/100m 50 MHz 2.10 dB/100m | 5-30 MHz ≤ 2.5 mΩ/m |
| Insulation Ø 9.90 mm Gas Injected Skin/Foam/Skin PE | Min. Bending Radius 150 mm Max. Tensile Strength 400 N Temperature Range -30 °C ... +70 °C Packing 250 m | 230 MHz 4.70 dB/100m 470 MHz 7.10 dB/100m 860 MHz 9.80 dB/100m 1000 MHz 10.90 dB/100m 1200 MHz 12.70 dB/100m 2000 MHz 17.10 dB/100m | 30-1200 MHz ≥ 95 dB 1200-2000 MHz ≥ 85 dB 2000-3000 MHz ≥ 75 dB |
| 1st Shielding Cu Foil | | | |
| 2nd Shielding Annealed Copper Wire Braiding | Electrical Properties Impedance 75 ± 2 Ω Capacitance 53 ± 2 pF/m Velocity of Propagation 83 % Insulation Resistance > 2 GΩkm Operating Voltage 2000 V Test Voltage 8000 V Inner Conductor DCR < 4.70 Ω/km | Return Loss (20°C) 5-470 MHz > 30 dB 470-1000 MHz > 25 dB 1000-1200 MHz > 20 dB | Screening Attenuation Screening Class EN 50117-11-1 Class A+ Euro Class D _{ca} |
| 3rd Shielding Cu Foil | | | |
| Outer Sheath Ø 12.70 mm HFFR* Grey | | | |


Class A+

Hydra HD 113 Cu/Cu PE - Micro Duct



Anvendelse

Disse kabler er udviklet til brug, hvor kabel-TV operatører på sigt ønsker at opgradere til et netværk med optiske fibre og samtidig ønsker at tilbyde bredbands-og CATV-signaler på koaksialkabler. Derved opnås en høj fleksibilitet til fremtidens IP baserede løsninger, samtidig med kabel-TV operatøren kan anvende den nuværende teknologi. PE kablet er beregnet til at nedgravning. Udover at blive fremført til et indendørs afleveringspunkt må det ikke bruges indenfor. PE Kappen er UV beskyttet og egnet til nedgravning i følge Vejledende-tekniske-retningslinjer-ver.-11.1-maj-2018 §3.9.3.1

| Kablets opbygning | Tekniske egenskaber | Kableldæmpning (20°C) | Transferimpedans |
|--|------------------------|-----------------------|--|
| Fiberrør | Kabelvægt | 83 kg/km | 5-30 MHz $\leq 2.5 \text{ m}\Omega/\text{m}$ |
| $\varnothing 3.5 / 5.0 \text{ mm PE}$ | Kobbervægt | 17.7 kg/km | |
| Rør til indblæsning af fiber | Min. bøjningsradius | 35 mm | |
| Inderleder | Maks. trækkraft | 110 N | |
| $\varnothing 1.13 \text{ mm ren kobber}$ | Temperaturområde | -40 °C ... +70 °C | |
| Dielektrikum | Pakning | 400 m | |
| $\varnothing 4.80 \text{ mm gasopskummet}$ | | | |
| Film/Skum/Film PE | | | |
| 1. skærm | Elektriske egenskaber | | |
| Cu film | Impedans | 75 ± 3 Ω | |
| 2. skærm | Kapacitans | 53 ± 2 pF/m | |
| Udglødet kobberfletskærm | Udbreddelseshastighed | 84 % | |
| 3. skærm | Isolationsmodstand | > 2 GΩ·km | |
| Cu film | Maks. spænding | 1300 V | |
| Kappe | Testet spænding | 3000 V | |
| $\varnothing 9.00 - 14.00 \text{ mm PE}$ | Inderleder DC-modstand | < 17.80 Ω/km | |

| Kableldæmpning (20°C) | | Refleksionsdæmpning (20°C) | Skærmtæthed |
|-----------------------|---------------|----------------------------|-----------------------|
| 5 MHz | 1.40 dB/100m | 5-470 MHz > 26 dB | 30-1200 MHz ≥ 95 dB |
| 50 MHz | 4.10 dB/100m | 470-1200 MHz > 23 dB | 1200-2000 MHz ≥ 85 dB |
| 230 MHz | 8.90 dB/100m | 1200-2000 MHz > 20 dB | 2000-3000 MHz ≥ 75 dB |
| 470 MHz | 12.90 dB/100m | | |
| 860 MHz | 17.90 dB/100m | | |
| 1000 MHz | 19.20 dB/100m | | |
| 1200 MHz | 21.90 dB/100m | | |
| 2150 MHz | 29.90 dB/100m | | |
| 3000 MHz | 36.20 dB/100m | | |

| Refleksionsdæmpning (20°C) | | Standarer |
|----------------------------|-----------------------|-------------------------------------|
| 5-470 MHz > 26 dB | 470-1200 MHz > 23 dB | Skærmtæthed klasse A+ EN 50117-10-2 |
| 1200-2000 MHz > 20 dB | 2000-3000 MHz > 18 dB | Brandklassifikation F _{ca} |
| | | |

Application

This construction is developed for applications where the Cable Network Operators want to upgrade their network to optical fiber but still intend to provide analog or digital video thru RF signals in the traditional way. The construction creates a good flexibility for future IP based applications and at the same time allows the operator to use their existing technology. The PE cable is intended for burial. Except for feeding the indoor delivery point, it must not be used inside. The outer Sheath PE Jacked is UV Protected and suitable for underground installation in accordance with Danish national guideline: Vejledende-tekniske-retningslinjer-ver.-11.1-maj-2018 §3.9.3.1

| Cable Construction | Technical Properties | Attenuations (20°C) | Transfer Impedance |
|--|-------------------------|---------------------|--|
| Micro Duct | Cable Weight | 83 kg/km | 5-30 MHz $\leq 2.5 \text{ m}\Omega/\text{m}$ |
| $\varnothing 3.5 / 5.0 \text{ mm PE}$ | Copper Weight | 17.7 kg/km | |
| Blowing Fiber Duct | Min. Bending Radius | 35 mm | |
| Inner Conductor | Max. Tensile Strength | 110 N | |
| $\varnothing 1.13 \text{ mm Bare Copper}$ | Temperature Range | -40 °C ... +70 °C | |
| Insulation | Packing | 400 m | |
| $\varnothing 4.80 \text{ mm Gas Injected}$ | | | |
| Skin/Foam/Skin PE | | | |
| 1 st Shielding | Electrical Properties | | |
| Cu Foil | Impedance | 75 ± 3 Ω | |
| 2 nd Shielding | Capacitance | 53 ± 2 pF/m | |
| Annealed Copper Wire Braiding | Velocity of Propagation | 84 % | |
| 3 rd Shielding | Insulation Resistance | > 2 GΩ·km | |
| Cu Foil | Operating Voltage | 1300 V | |
| Outer Sheath | Test Voltage | 3000 V | |
| $\varnothing 9.00 - 14.00 \text{ mm PE}$ | Inner Conductor DCR | < 17.80 Ω/km | |

| Attenuations (20°C) | | Screening Attenuation |
|---------------------|---------------|-----------------------|
| 5 MHz | 1.40 dB/100m | 30-1200 MHz ≥ 95 dB |
| 50 MHz | 4.10 dB/100m | 1200-2000 MHz ≥ 85 dB |
| 230 MHz | 8.90 dB/100m | 2000-3000 MHz ≥ 75 dB |
| 470 MHz | 12.90 dB/100m | |
| 860 MHz | 17.90 dB/100m | |
| 1000 MHz | 19.20 dB/100m | |
| 1200 MHz | 21.90 dB/100m | |
| 2150 MHz | 29.90 dB/100m | |
| 3000 MHz | 36.20 dB/100m | |

| Return Loss (20°C) | | Standards |
|-----------------------|-----------------------|-------------------------------|
| 5-470 MHz > 26 dB | 470-1200 MHz > 23 dB | Screening Class EN 50117-10-2 |
| 1200-2000 MHz > 20 dB | 2000-3000 MHz > 18 dB | Euro Class F _{ca} |
| | | |



EC 250 Slim UTP HFFR

CAT 6 U/UTP HFFR



Anvendelse

IEEE 802.3: 10Base-T, 100Base-T, 1000Base-T, IEEE 802.5 16 MB, ISDN, TPDDI, ATM Power over Ethernet (PoE) / PoE+. Kablerne bruges i netværk med 250 MHz båndbredde. Kablerne er halogenfri, korrosionsfri og brandhæmmende, da kablets yderkappe er fremstillet i et HFFR materiale.

Kablets opbygning

- Leder 4 parsnoede AWG 23 tråde, massiv kobber (Nom. 0,52 mm)
- Isolation PE
- Adskiller PE
- Yderkappe HFFR* EN 50290-2-27
- Ø 5,60 mm ± 0,2 mm

Tekniske egenskaber

| | |
|--|-----------------|
| Kabelvægt | 38 kg/km |
| Kobbevægt | 17,3 kg/km |
| Min. bøjningsradius under installation | 50 mm |
| Min. bøjningsradius efter installation | 25 mm |
| Maks. trækraft | 90 N |
| Min. klemstyrke | 1000 N/10 cm |
| Min. slagfasthed | 10 slag |
| Installationstemperatur | 0°C ... +50°C |
| Anvendelsestemperatur | -20°C ... +70°C |
| Pakning, udtræksboks | 305 / 500 m |

Elektriske egenskaber

| | |
|-------------------------------|---------------|
| Maks. ledernonstand | <9.5 Ω / km |
| Maks. forskel i ledernonstand | < 2% |
| Min. isolationsnonstand | 5000 MΩ x m |
| Kapacitet | <60 pF / m |
| Ubalanceret kapacitet | 1600 pF / km |
| Impedans ved 100 MHz | 100 ± 5 Ω |
| Udbredelseshastighed | 66 % |
| Signalforsinkelse | 45 ns / 100 m |
| Testspænding | 1000 V |
| Brugsspænding | 125 V |

20 °C

| |
|------------------------------|
| EIA/TIA-568-C.2 |
| ISO/IEC 11801 2nd ed |
| IEC 61156-5 |
| EN 50173-1 |
| EN 50288-6-1 |
| Euro klassifikation |
| D _{ca} , s2, d2, a1 |
| Flammehæmmende |
| EN 60332-1-2 |
| Test for korrasive gasser |
| TS EN 60754-2 |
| Røgudvikling |
| EN 61034-2 |

Application

IEEE 802.3: 10Base-T, 100Base-T, 1000Base-T, IEEE 802.5 16 MB, ISDN, TPDDI, ATM Power over Ethernet (PoE) / PoE+. These cables are used in data communication networks with 250 MHz bandwith capacity. These cables are Halogen Free, Non Corrosive and Flame retardant, thanks to the HFFR Compound that has been used on their construction.

Cable Construction

- 23 AWG Bare Copper (Nom. 0,52 mm)
- PE Insulation
- Separator PE
- HFFR* TS EN 50290-2-27
- Ø 5,60 mm ± 0,2 mm

Technical Properties

| | |
|---|-----------------|
| Cable Weight | 38 kg/km |
| Copper Weight | 17,3 kg/km |
| Min. Bending radius during draw in | 50 mm |
| Min. Bending radius permanently installed | 25 mm |
| Max. Tensile Strength | 90 N |
| Min. Crush Resistance | 1000 N/10 cm |
| Min. Impact | 10 Impacts |
| Installation Temperature | 0°C ... +50°C |
| Operating Temperature | -20°C ... +70°C |
| Packing | 305 / 500 m |

Electrical Properties

| | |
|----------------------------|---------------|
| Max. Conductor Resistance | <9.5 Ω / km |
| Max. Resistance Unbalance | < 2% |
| Min. Insulation Resistance | 5000 MΩ x m |
| Mutual Capacitance | <60 pF / m |
| Capacitance Unbalance | 1600 pF / km |
| Impedance at 100 MHz | 100 ± 5 Ω |
| Velocity of Propagation | 66 % |
| Delay Skew | 45 ns / 100 m |
| Test Voltage | 1000 V |
| Operating Voltage | 125 V |

at 20 °C

| |
|------------------------------|
| EIA/TIA-568-C.2 |
| ISO/IEC 11801 2nd ed |
| IEC 61156-5 |
| EN 50173-1 |
| EN 50288-6-1 |
| Euro Class |
| D _{ca} , s2, d2, a1 |
| Flame Retardancy |
| EN 60332-1-2 |
| Corrosive Gases Test |
| TS EN 60754-2 |
| Smoke Density |
| EN 61034-2 |

Elektriske Data (Nominal) Electrical Data

@ 20 °C

| Frekvens Frequency (MHz) | Dæmpning Attenuation (dB/100 m) | NEXT (dB) | PS - NEXT (dB) | ACRF (dB/100 m) | PS-ACRF (dB/100 m) | Refleksionsdæmpning Return Loss (dB) |
|--------------------------|---------------------------------|-----------|----------------|-----------------|--------------------|--------------------------------------|
| 1 | 2.1 | 75 | 72 | 68 | 65 | 34 |
| 4 | 3.8 | 66 | 63 | 56 | 53 | 23 |
| 10 | 6 | 60 | 57 | 48 | 45 | 25 |
| 100 | 19.9 | 45 | 42 | 28 | 25 | 15 |
| 200 | 29.1 | 41 | 38 | 22 | 19 | 13 |
| 250 | 33 | 39 | 36 | 20 | 17 | 12 |

