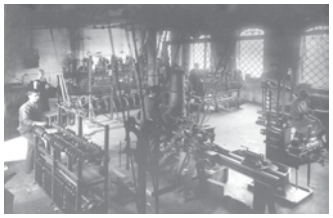
Ship and Offhsore

Approved cables for
ship- and offshoreindustry

NEK KABEL AS



OVER 100 YEARS OF EXPERIENCE

1913 - 2013

Since 1913, and with a legacy that spans over 100 years, NEK Kabel AS has been innovators in the design and manufacture of high performance wire and cable for demanding applications, mainly for communication.

NEK Kabel's extensive knowledge and experience in the offshore and marine industry translates into a clear understanding of international standards and specifications that guarantees superior electrical and mechanical properties. Oil and gas exploration and production have moved to harsher environments, which are colder, hotter, and deeper thus requiring a cable that can withstand exposure to chemicals, high temperatures and high pressures. As an important supplier of cabling solutions to the shipboard and offshore industry, we continue designing new products, and creating new solutions to meet tomorrow's market challenges.

NEK Kabel products has obtained certifications from the main classification bodies, like Det Norske Veritas and Germanischer Lloyd (DNV-GL) and American Bureau of Shipping (ABS), and fully compliant to International Electrotechnical Commission (IEC).

NEK Kabel's wide array of cabling solutions has been supplied to the world's top oil companies, international EPC operators, major shipyards, ship owners, process control & instrumentation automation companies, and many oil field equipment manufacturers, over 5 continents.

There is no other field of applications that require long-lasting, indestructible and highly resistant solutions than the offshore environment. Therefore at NEK Kabel, we strictly adhere to the industry's highest standards of quality and compliance.

Europe, UK and Americas
FSC Global Ltd
Contact sales department
Email: sales@fscglobal.com

KNOWLEDGE **RANGE** **EXPERIENCE**

Index

Category and RS

Coaxial 50ohm

Connectors for coaxial 50ohm

Coaxial 75ohm

Connectors for coaxial 75ohm

BUS cables

Fiber cables

SHF1 versus SHF2

The table below addresses only some main characteristics differences.
For complete information see IEC 60092-359

	SHF1	SHF2
Type of material	Halogen-free Thermoplastic	Halogen-free Elastomeric or thermosetting material
Some main characteristics		
Mechanical characteristics after immersion in hot oil (IEC 60811-2-1, clause 10)* * If oil resistance is required for a halogen-free compound, SHF2 compound is recomended	No requirements	100°C for 24 hours: - ±4O% maximum variation in tensile strength: - ±40% maximum variation in elongation at break
Hot set test (IEC 60811-2-1, clause 9)	No requirements	200°C, 15 min time under load with 20(N/mm²) mechanical stress: - 175% Maximum elongation under load - 25% Maximum permanent elongation after cooling
Pressure test at high temp. (IEC 60811-3-1, subclause 8.2)	80°C, 4-6 min under load depending on cable diameter: - 50% Maximum permissible deformation	No requirements
Heat shock test (IEC 60811-3-1, subclause 9.2)	150°C) 1hour duration	No requirements
Ozone resistance test IEC 60811-2-1, clause 8 (Alternative test method may be used in some countries for legal reasons)	No requirements	25±2°C for 24 h: - Max 0,025 to 0,030% ozone concentration (in volume)

LanMarin® Cat 5E

S/FTP Flexible
SHF1
DNV-GL

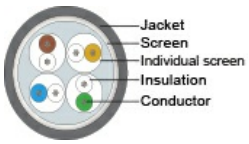
Application

LAN cable, designed for ship- and offshore applications. Fire retardant.

Construction

Conductor	0.22 [mm²] Stranded Plain Cu AWG 24 (7x0.20mm)
Insulation	Solid PE Ø=1,4 [mm]
No. of pairs	4
Colour code	IEC 60189-2
Individual Screen pairs	Al-/polyester tape
Overall Screen	Tinned Cu-braid
Jacket	Grey SHF1
Outer diam	7,7 [mm]
Weight	68 [kg/km]

Jacket marking
NEK Kabel (week/year) LanMarin Cat 5e S/FTP 4 PAIRS AWG24/7 - DNV-TK



Specifications

Operating temperature	-40 – +90 [°C]
Temperature @ installation	-15 – +50 [°C]
Characteristic impedance	100 ± 5 Ω
Conductor resistance	88 [Ω/km]
Insulation resistance	≥ 500 [MΩ x km]
Capacitance	52 [pF/m]
Min. bending radius	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 862
Design and testing standards	IEC 61156-6
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM D 2565 92A
Certification	DNV-GL
Part No.	1089606

LanMarin® Cat 5E MUD

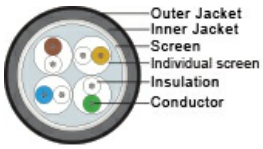
S/FTP Flexible
MUD Resistant Jacket, SHF2
UV Resistant
DNV-GL

Application

LAN cable designed for ship- and offshore applications.

Construction

Conductor	0.22 [mm²] Stranded Plain Cu AWG 24 (7x0.20mm)
Insulation	Solid PE 1,4 [mm]
No. of pairs	4
Colour code	IEC 60189-2
Individual Screen pairs	Al-/polyester tape
Overall Screen	Tinned Cu-braid
Inner jacket	SHF1 8.2 [mm]
Jacket	Black SHF2
Outer diam	10.2 [mm]
Weight	98 [kg/km]
Jacket marking NEK Kabel (week/year) LanMarin Cat 5e S/FTP 4 PAIRS AWG24/7 - MUD IEC 60332-3-22 DNV-TK Metermarking	



Specifications

Operating temperature	-40 - +90 [°C]
Temperature @ installation	-15 - +50 [°C]
Characteristic impedance	100±5 [Ω]
Conductor resistance	88 [Ω/km]
Insulation resistance	500 [MΩ x km]
Capacitance	43 [pF/km]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 862
Design and testing standards	DNV TAP 6-800 App.A;827.50-2 IEC 61156-5
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1-2
Fire retardant	IEC 60332-3-22 Cat.A
Ozone resistant	IEC 60811-2-1
Oil and fuel, hydrocarbons resistant	IEC 60811-2-1
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154
Certification	DNV-GL
Part No.	1089607

Attenuation for Cat 5E

Frequency (MHz)	Attenuation Max. (dB/100m)	NEXT (dB)	Return loss (dB/100m)
1	2	98.7	63,8
4	3.9	103.6	51,8
10	6.2	104.8	43,8
16	7.9	103.4	39,7
20	8.9	100	37,8
31.25	11.3	98.6	33,9
62.5	16.1	98.8	27,9
100	20.2	102	23,8

LanMarin® Cat 6 U/UTP

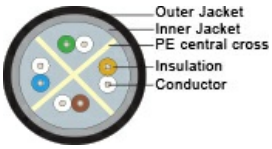
Double jacket, SHF1, UV
250 MHz
DNV-GL

Application

Tough double jacketed halogenfree unscreened LAN cable, designed for ship- and offshore applications, and other harsh environments. Indoor/outdoor use. Excellent mechanical and fire retardant properties.

Construction

Conductor	Solid Plain Cu 0.57 [mm] AWG23
Insulation	Cellular PE
No. of pairs	4 held by PE central cross
Colour code	IEC 60189-2
Inner jacket	SHF1 6.7 [mm]
Jacket	Black SHF1
Outer diam	8.1 [mm]
Weight	80 [kg/km]
Jacket marking NEK Kabel (week/year) LanMarin Cat 6 U/UTP SHF1 IEC60332-3-22 DNV-TK Lot meteric marking	



Specifications

Operating temperature	-20 – +90 [°C]
Caracteristic Impedance @ 1MHz	100±15 [Ω]
Insulation resistance	5000 [Ω x km]
Capacitance pair	49 [nF/m - v/1KHz]
Velocity factor	0,7
Min. bending radius	4 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 862
Design and testing standards	IEC 61156-5 IEC 60092-350
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Toxic gases max.	EN 50305 9.2
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL

LanMarin® CAT 6 F/UTP

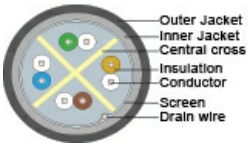
F/UTP
SHF1 UV resistant
DNV-GL

Application

Tough halogenfree screened LAN cable, designed for ship- and offshore applications, and other harsh environments. Indoor/outdoor use. Excellent mechanical and fire retardant properties.

Construction

Conductor	Plain Cu 0.57 [mm] AWG23/1
Drain wire	0.5 mm Tinned Cu
Insulation	Cellular PE
No. of pairs	4 pairs held by PE central cross
Colour code	IEC 60189-2
Overall Screen	Al-polyester tape
Inner jacket	SHF1 7.2 [mm]
Outer Jacket	Grey UV-resistant SHF1
Outer diam	8.6 [mm]
Weight	95 [kg/km]
Jacket marking NEK Kabel (week/year) LanMarin Cat 6-F/UTP 4 pairs AWG23/1 SHF1 DNV-TK lot Metric marking	



Specifications

Operating temperature	-40 – +90 [°C]
Impedance at 100MHz	100±5 [Ω]
Conductor resistance	<70 [Ω/km]
Insulation resistance	500 [MΩ x km]
Test voltage	2500 [V-DC x 2]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	DNV TAP 6-800 aPP.a;827.50-2 IEC 61156-5
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Toxic gases max.	EN 50305 9.2
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM D 2565 92A

Attenuation for Cat 6 U/UTP og Cat 6 F/UTP

Frequency (MHz)	Attenuation Max. (dB/100m)	NEXT (dB)	Return loss (dB/100m)
4	3.6	73.4	
10	5.6	66.1	
16	7.2	68	
20	8.1	59.5	29.6
31.25	10.2	61.5	31
62.5	14.4	61.3	35.4
100	18.3	48.1	29.8
155	23.1	49.3	27.2
200	26.6	42	25.8
250	29.6	41.3	23

LanMarin® CAT 6A S/FTP

SHF1 UV
S/FTP
DNV-GL

Application

LAN cable, designed for ship- and offshore applications. Fire retardant.

Construction

Conductor	Stranded Plain Cu AWG23/7
Insulation	Cellular PE 1.48 ± 0.02 [mm]
No. of pairs	4
Colour code	IEC 60189-2
Individual Screen pairs	Al-/polyester tape
Screen	Tinned Cu-braid 60 [% optical coverage]
Jacket	Grey SHF1
Outer diam	8,3 [mm]
Weight	80 [kg/km]

Specifications

Operating temperature	-40 – +80 [°C]
Conductor resistance	<70 [Ω/km]
Tensile strength	N
Insulation resistance	5 [GΩ x km @ 20°C]
Test voltage	500 [V-AC]
Tensile strength	140 [N]
Capacitance	45 [pF/m]
Velocity factor	0.79
Min. bending radius installed	4 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 862
Design and testing standards	IEC 61156-5 EN 50288-1
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-3-22 cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL

Part No.	1089687

Attenuation for Cat 6A S/FTP

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)	Return Loss (dB/100m)	NEXT (dB/100m)	PS-NEXT (dB/100m)	ELFEXT (dB(100m)
1	1.8	25	95		90
10	5.4	30	92		87
16	6.7	30	90		86
31	9.6	30	87		81
100	17.5	27	84		72
155	22.8	26	83		68
200	24.8	25	82		65
400	35.9	22	80		59
500	40.2	21	79		57

LanMarin® CAT 7 SSTP

S/FTP - Flexible
UV resistant, SHF1
DNV-GL, ABS

Application

High performance offshore LAN cable with flexible conductor, AWG23/7. Compliant with the category 7 standards, requiring bandwidths up to 600MHz. Foil screened pairs with an overall braid. Tested for high-frequency and transmission measurements for class F-link.

Construction

Conductor	0.28 [mm²] Stranded Plain Cu AWG23/7
Insulation	Cellular PE Ø=1.5 [mm]
No. of pairs	4
Colour code	IEC 60189-2
Individual Screen pairs	Al-/polyester tape
Overall Screen	Tinned Cu-braid
Jacket	Black SHF1
Outer diam	8±0.20 [mm]
Weight	97 [kg/km]
Jacket marking	NEK Kabel LanMarin-SSTP Flex 4x2x23AWG Cat. 7 LSZH-IEC60332-3-22

Specifications

Operating temperature	-40 to +80 [°C]
Characteristic impedance	100±5 [Ω @ 100 MHz]
Insulation resistance	≥ 500 [MΩ x km]
Test voltage	1 [kV]
Velocity factor	0,78
Min. bending radius	15 [x outer diam]
Min. bending radius flexible	20 [x outer diam]

Norms and Attenuation for Cat 7 SSTP

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-2
Design and testing standards	IEC 61156-5 EN 50288-4-2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22
Weather resistant	IEC 60502 EN ISO 11507
Oil and fuel, hydrocarbons resistant	IEC 60811
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL, ABS
Part No.	1089726

Also look for alternative jacket colours and arctic grade construction in Variants.

RoHS ✓ CE

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)	Return Loss (dB/100m)	NEXT (dB/100m)
1	2,2	35	100
4	3,8	31	100
10	5,9	38	95
16	7,4	32	90
20	8,4	32	90
34,25	10,5	31	90
62,5	15,3	27	85
100	18,1	34	82
155	23,2	28	80
200	26,6	25	77
300	33,3	23	71
600	50,1	21	67

LanMarin® CAT 7 SSTP MUD

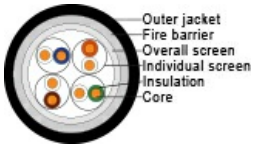
UV resistant
SHF2
DNV-GL, ABS

Application

LAN cable designed and tested for ship- and offshore applications. In-door/out-door installation. Resistant to chemicals, MUD, UV radiation an harsh weather conditions. Flame retardant. An extra inner sheath provides additional fire protection. Tested for class F-link high frequencies transmission.

Construction

Conductor	0.28 [mm²] Stranded Plain Cu AWG23/7
Insulation	Cellular PE Ø=1,55 [mm]
No. of pairs	4
Colour code	IEC 60189-2
Individual Screen pairs	Al-/polyester tape
Fire resistant barrier	Fire barriere tape
Overall Screen	Tinned Cu-braid
Jacket	Black SHF2
Outer diam	10±0.2 [mm]
Weight	120 [kg/km]



Specifications

Operating temperature	-40 to +80 [°C]
Characteristic impedance	100 ± 5 [Ω]
Insulation resistance	≥ 500 [MΩ x km]
Test voltage	1 [kV-1min.]
Min. bending radius installed	31 [mm]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-2
Design and testing standards	DNV TAP 6-800 App.A;827.50-2 IEC 61156-5 EN 50288-4-2 IEC 60092-350
Fire retardant	IEC 60332-3-22 Cat.A
Weather resistant	IEC 60502
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154 ASTM D 4587 ASTM D 2565 92A
Certification	DNV-GL, ABS

Part No.	1089699

Attenuation for Cat 7 SSTP MUD

Frequency (MHz)	Attenuation Max.(acc.EN) (dB/100m)	NEXT (dB/100m)	ACR (dB/100m)
1	2,2	100	35
4	3,8	100	31
10	5,9	95	38
16	7,4	90	32
20	8,4	90	32
31,25	10,5	90	31
62,5	15,3	85	27
100	18,1	82	34
155	23,2	80	28
200	26,6	77	25
300	33,3	71	23
600	50,1	67	21

RS 422 Marine ARM

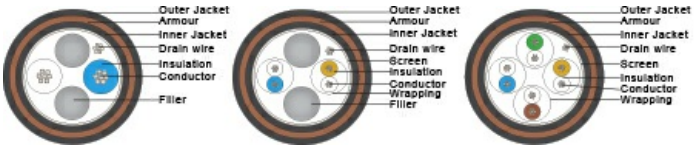
SHF1
100Ω
1, 2 and 4 pairs
DVN-GL

Application

4 pairs armoured marine cable for monitoring oil wells and linking POS terminals, to alarm systems, motion control and HVAC controls. Extend capability transceivers offer data rates up to 100 Mbps and up to 256 nodes, as well as 2500 VRMS isolation and fault protection up to ± 60 V Installations up to 1200m.

Construction

Conductor	0.22 [mm²] Stranded Tinned Cu AWG 24 (7x0.20mm)
Insulation	Low density PE
No. of pairs	1, 2 or 4
Colour code	IEC 60189-2
Screen	> 80% [% optical coverage]
Overall Screen	Al-polyester tape
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Outer Jacket	Halogen free compound SHF1
Outer diam	See table [mm]
Weight	See table [kg/km]
Jacket marking NEK Kabel date RS422SHF1 ARMOURED MARINE CABLE 24 AWG 100 OHM IEC 60332-3-22 CAT A - TK	



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	100 ± 15 [Ω]
Operating voltage	100 [V]
Conductor resistance	>90 [Ω/km]
Test voltage	2000 [V-DC]
Insulation resistance drainwire - conductor	≥ 10 [MΩ x km]
Attenuation	28 dB/km

Norms for RS 422

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	Work area wiring IEC 61156-6
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Weather resistant	ASTM G 154, ASTM D 4587, EN ISO 11507
Ozone resistant	DIN VDE 0472 part 805 B
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL

Part No.	1 pair; 1089603 2 pairs; 1089604 4 pairs; 1089605

RoHS CE

Number of pairs	Diam. inner jacket [mm]	Diam. outer jacket [mm]	Weight app. [kg/km]	Part no.
1 x 2 x AWG24	5,0	8,8	140	1089603
2 x 2 x AWG24	6,6	10,5	170	1089604
4 x 2 x AWG24	7,0	11,0	200	1089605

RS 485 Marine ARM

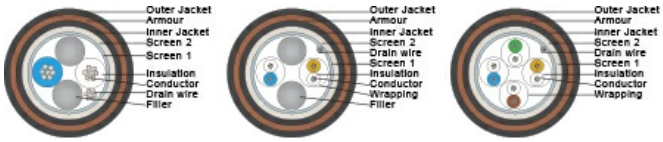
Flexible 1, 2 or 4 pairs
SHF1
120Ω
DNV-GL

Application

Armoured marine cable for monitoring oil wells and linking POS terminals, to alarm systems, motion control and HVAC controls. Extended capability transceivers offer data rates up to 100Mbps and up to 256 nodes, as well as 2500 VRMS isolation and fault protection up to ± 60V. Installations up to 1200 m.

Construction

Conductor	0.22 [mm²] Stranded Tinned Cu AWG 24 (7x0.20mm)
Insulation	Cellular PE
No. of pairs	1, 2 or 4
Colour code	IEC 60189-2
Screen	Cu-braid 85 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF1
Outer diam	See table [mm]
Weight	See table [kg/km]
Jacket marking	Date RS485 LSZH ARMOURED MARINE CABLE 120ohm IEC 60332-3-22



Specifications

Operating temperature	-40 to +70 [°C]
Caracteristic Impedance @ 1MHz	120±15 [Ω]
Operating voltage	100 [V]
Conductor resistance	<90 [Ω/km]
Insulation resistance	≥ 1 [GΩ x km]
Test voltage	2000 [V-DC 1min.]
Capacitance	42 [pF/m]
Min. bending radius	10 [x outer diam]
Part No.	See table

Norms for RS 485 ARM

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2 862
Design and testing standards	Work area wiring IEC IEC 61156-6
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL

RoHS CE

Number of pairs	Diam. inner jacket [mm]	Diam. outer jacket [mm]	Weight app. [kg/km]	Part no.
1 x 2 x AWG24	5,8	9,5	160	1032395
2 x 2 x AWG24	7,3	11,2	190	1032396
4 x 2 x AWG24	8,0	12,0	230	1032397

RS 485 Marine ARM MUD

Flexible 1, 2 or 4 pairs
SHF2
120Ω
DNV-GL

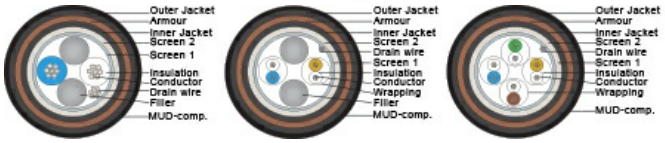
Application

Armoured marine cable for monotoring oil wells and linking PSA terminals to alarm systems, motion control and HVAC controls. Extended capability transceivers offer data rates up to 100 Mbps and up to 256 nodes, as well as 2,500 VNMS isolation and fault protection up to ±60 V. Installations up to 1,200 m.

Construction

Conductor	0.22 [mm²] Stranded Tinned Cu AWG 24 (7x0.20mm)
Drain wire	0.22 mm² Tinned Cu
Insulation	Cellular PE
No. of pairs	1, 2 or 4
Colour code	IEC 60189-2
Screen	Cu-braid 85 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black Halogenfree and MUD resistant thermoset compound
Outer diam	See table [mm]
Weight	See table [kg/km]

Jacket marking
NEK Kabel date RS485 ARMOURED MARINE CABLE 24 AWG 120 OHM IEC 60332-3-22 CAT A-TK



Specifications

Operating temperature	-40 – +70 [°C]
Caracteristic Impedance @ 1MHz	120 ± 15 [Ω]
Operating voltage	100 [V]
Conductor resistance	<90 [Ω/km]
Insulation resistance	>1 [GΩ x km]
Test voltage	2 [kV]
Capacitance	42 [pF/km]
Min. bending radius	10 [x outer diam]

Norms for RS 485 ARM MUD

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	Work area wiring IEC 61156-6
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154
Certification	DNV-GL

Number of pairs	Diam. inner jacket [mm]	Diam. outer jacket [mm]	Weight app. [kg/km]
1	5.8	10.5	200
2	7.3	12.2	230
4	8.0	13.0	270

RG 58CU Marine SHF1

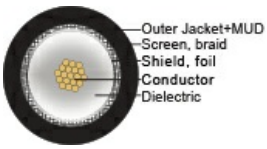
50 Ω
SHF1
DNV-GL, ABS

Application

Low smoke and halogen free coaxial cable for data transmission. The cable can also be used as antenna cable for mobile phones. Also available MUD-resistant version is for offshore use.

Construction

Conductor	Extra flexible tinned Cu 19 x 0.18 [mm]
Dielectricum	Low density PE ø=2,95±0,10 [mm]
Screen	Al-polyester-Al tape
Screen	Tinned Cu-braid 93 [% coverage] 144 x 0,1 [mm]
Jacket	Black SHF1
Outer diam	5,00±0,10 [mm]
Weight	42 [kg/km]



Specifications

Operating temperature	-40 - +70
Characteristic impedance	50 ± 2 [Ω]
Braid Resistance	14 [Ω/km]
Conductor resistance	36,5 [Ω/km]
Capacitance	100 [pF/m]
Velocity factor	0,66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, IEC 60754-2
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22

Part No.	1092436

RG 58CU Marine MUD

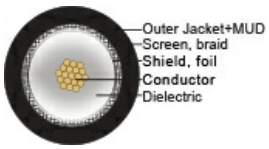
50Ω
SHF2 MUD resistant jacket
DNV-GL, ABS

Application

Coaxial cable for ship- and offshore applications. Electrical data in compliance with MIL C-17/F.

Construction

Conductor	Extra flexible Tinned Cu 19 x 0.18 [mm]
Dielectricum	Low density PE 2.95 ± 0.10 [mm]
Screen	Al-polyester-Al tape
Screen	Tinned Cu-braid 93 [% optical coverage]
Jacket	Black SHF2
Outer diam	7± 0.15 [mm]
Weight	53 [kg/km]



Specifications

Operating temperature	-40 – + 70 [°C]
Characteristic impedance	50 ± 2 Ω
Braid Resistance	14 [Ω/km]
Conductor resistance	36.5 [Ω/km]
Test voltage	4 [kV]
Capacitance	100 [pF/m]
Velocity factor	0.66
Attenuation	See table RG 58 C/U Marine, Prod.no. 1092436
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2 NES 713
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-2
MUD resistant	NEK TS 606
Certification	DNV-GL
Part No.	1092438

RG 58CU Marine ARM

50Ω
Al-tape + Cu braid
Galvanised steel wire armour
SHF1
DNV-GL

Application

Coaxial communications cable for ship- and offshore use. Electrical data in compliance with MIL C-17

Construction

Conductor	Extra flexible 19 x 0,18 [mm]
Dielectricum	Low density PE 2.95 ± 0.10 [mm]
Screen	Al-polyester-Al tape
Screen	Tinned Cu 93 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	SHF1
Outer diam	7.5±0,20 [mm]

Specifications

Operating temperature	-40 – 70 [°C]
Characteristic impedance	50 ± 2 [Ω]
Braid Resistance	14 [Ω/km]
Conductor resistance	36.5 [Ω/km]
Capacitance	100 [pF/m]
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL, ABS

Part No.	1092437

Tables for RG 58 CU Marine

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
5	3,0
10	4,0
50	9,4
100	13,0
200	18,6
300	23,3
500	31,2
600	34,7
800	41,0
1000	46,8
1350	56,6
1500	60,6
1750	66,9
2150	76,9
2250	78,4
2500	83,5
2750	86,5
3000	89,5

Structural return loss dB

MHz	dB
30 - 300	> 28
300 - 600	> 27
600 - 1000	> 25
1000 - 2000	> 20
2000 - 3000	> 18

Screening effectiveness IEC 61196-1

MHz	dB
100 - 900	> 90
900 - 2000	> 80
2000 - 3000	> 70

RG 213 U Marine

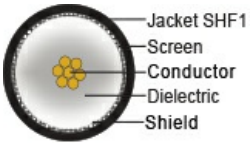
50Ω
Flexible, SHF1
DNV-GL, ABS

Application

Coaxial cable for ship- and offshore environments. VHF/UHF equipment. Electrical specifications in compliance with MIL C-17/F

Construction

Conductor	Stranded Plain Cu 7 x 0.75 [mm]
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% coverage]
Jacket	Black SHF1
Outer diam	10.3 ± 0.18 [mm]
Weight	167 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50 ± 2 Ω
Braid Resistance	4.4 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	100 [pF/m]
Velocity factor	0.66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-2
Certification	DNV-GL, ABS

Part No.	1092440

RG 213 U Marine MUD

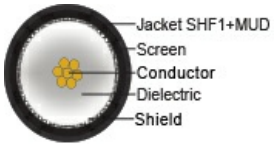
50Ω
Flexible
SHF2, MUD resistant jacket
DNV-GL, ABS

Application

Coaxial cable for ship- and offshore environments. VHF/UHF equipment. Electrical specifications in compliance with MIL C-17/F.

Construction

Conductor	Stranded Plain Cu 7 x 0.75 [mm]
Dielectricum	LDPE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% coverage]
Jacket	Black SHF1
Outer Jacket	Black SHF2
Outer diam	12.80 ± 0.18 [mm]
Weight	182 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50 ± 2 Ω
Braid Resistance	4.4 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5.5
Capacitance	100 [pF/m]
Velocity factor	0.66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24
Smoke emission	IEC 61034-2
MUD resistant	NEK TS 606
Certification	DNV-GL, ABS
Part No.	1092442

RG 213 U Marine ARM

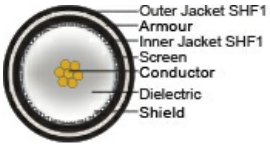
50Ω
Flexible, SHF1
DNV-GL, ABS

Application

Armoured coaxial cable for ship- and offshore applications. VHF/UHF equipment. Electrical specifications in compliance wiht MIL C-17/F. The steel braid meets EU EMC requirements. Identical to RG 215 U.

Construction

Conductor	Stranded Plain Cu 7 x 0.75 [mm]
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid 144 x 0.24 mm
Armour alt.2	Tinned Cu-braid 144 x 0.24 mm
Armour alt.3	Bronze wire braid 144 x 0.24 mm
Jacket	Black SHF1
Outer diam	13.50 ± 0.20 [mm]
Weight	295 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50 ± 2 Ω
Braid Resistance	4.4 [Ω/km]
Conductor resistance	8 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	100 [pF/m]
Velocity factor	0.66
Min. bending radius	5
Min. bending radius flexible	10

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Part No.	1092441 (GSWB)

RG 213 U Marine ARM MUD

50Ω
Flexible, SHF2
DNV-GL, ABS

Application

Armoured coaxial cable for ship- and offshore applications. VHF/UHF equipment. Electrical specifications in compliance with MIL C-17/F. The steel braid meets EU EMC requirements. Identical with RG 215 U.

Construction

Conductor	Stranded Plain Cu
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid 144 x 0.24 mm
Armour alt.2	Tinned Cu-braid 144 x 0.24 mm
Armour alt.3	Bronze wire braid 144 x 0.24 mm
Jacket	Black SHF2
Outer diam	17.0 ± 0.2 [mm]
Weight	360 [kg/km]
Jacket marking	NEK Kabel - RG213U Marine SHF2 ARMOURED-DNV-IEC60332-3-24

Part No.	1092443 (GSWB)

Specifications

Operating temperature	-40 – +70
Characteristic impedance	50 ± 2 Ω
Braid Resistance	4.4 [Ω/km]
Conductor resistance	8 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	100 [pF/m]
Velocity factor	0.66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606

Tables for RG 213

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
5	1.1
10	1.5
50	3.8
100	5.5
200	8
300	10.1
500	13.2
800	17.5
1000	20
1500	25.3
2150	31.5
2500	34.7
2750	36.7
3000	38.3

Structural return loss

MHz	dB
30 –300	>31
300 – 600	>28
600 – 1000	>20
1000 – 2000	>24
2000 – 3000	>22

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 214 U Marine

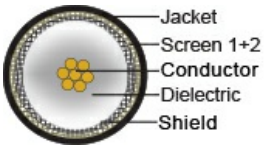
Trippelshielded
50Ω
SHF1
DNV-GL, ABS

Application

Coaxial cable for ship and other marine environments for VHF/UHF equipment. MIL 17-C/75.

Construction

Conductor	Stranded Silvercoated Cu 7 x 0,75 [mm]
Dielectricum	Low density PE 7,25 ± 0,18 [mm]
Screen	Al-polyester-Al tape
Screen	Silvercoated Cu braid 94 [% optical coverage]
Screen 2	Silvercoated Cu braid 98 [% optical coverage]
Jacket	Black SHF1
Outer diam	10.8 ± 0.18 [mm]
Weight	206 [kg/km]
Jacket marking	NEK Kabel date RG214U Marine



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50±2 [Ω]
Braid Resistance	4.2 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	100 [pF/m]
Min. bending radius	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-2
Certification	DNV-GL, ABS

Part No.	1092444

RG 214 U Marine MUD

50 Ω
MUD resistant jacket, SHF2
DNV-GL, ABS

Application

Coaxial cable for ship and other marine environments for VHF/UHF. Electrical data in compliance with MIL C-17//75

Construction

Conductor	Stranded Silvercoated Cu 7 x 0.75 [mm]
Dielectricum	Low density PE 7.25 ± 0.75 [mm]
Screen	Al-polyester-Al tape
Screen	Silvercoated Cu braid 94 [% optical coverage]
Screen 2	Silvercoated Cu braid 98 [% optical coverage]
Jacket	Black SHF1
Outer Jacket	Black SHF2
Outer diam	12.9 ± 0,2 [mm]
Weight	229 [kg/km]
Jacket marking	NEK Kabel date RG214U Marine-MUD NEK 606

Specifications

Operating temperature	-40 - +70 [°C]
Braid Resistance	4.2 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5,5 [kV]
Capacitance	100 [pF/m]
Impedance	50±2 [Ω]
Min. bending radius	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-2
MUD resistant	NEK TS 606
Certification	DNV-GL
Part No.	1092446

RG 214 U Marine ARM

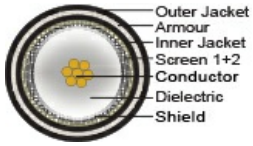
50Ω
Armoured, SHF1
DNV-GL, ABS

Application

Coaxial cable for ship and other marine environments for VHF/UHF equipment. Electrical data in compliance with MIL C-17/F, EMC protective. Replaces RG 215 and have better values.

Construction

Conductor	Stranded Plain Cu 7 x 0,75 [mm]
Dielectricum	Low density PE 7,25 ± 0,18 [mm]
Screen	Al-polyester-Al tape
Screen	Silvercoated Cu braid 94 [% optical coverage]
Screen 2	Silvercoated Cu braid 98 [% optical coverage]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF1
Outer diam	13.5 [mm]
Weight	323.8 [kg/km]



Specifications

Operating temperature	-40 - +70 [°C]
Characteristic impedance	50±2 [Ω]
Braid Resistance	4.2 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5,5 [kV]
Capacitance	100 [pF/m]
Min. bending radius flexible	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL. ABS
Part No.	1092445 (Steel wire armour) 1092462 (Tinned Cu wire armour)

RG 214 U Marine ARM MUD

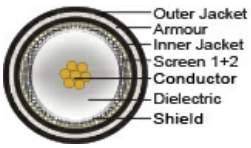
50Ω
Armoured, SHF2

Application

Coaxial cable for ship- and other marine environments for VHF/UHF equipment. Electrical data in compliance with MIL C-17/F. EMC protected.

Construction

Conductor	Stranded Plain Cu 7 x 0.75 [mm]
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Silvercoated Cu braid 96 [% optical coverage]
Screen 2	Silvercoated Cu braid 98 [% optical coverage]
Inner jacket	SHF1 10.00 ± 0.18 [mm]
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF2
Outer diam	17.0 ± 0.2 [mm]
Weight	399 [kg/km]
Jacket marking	NEK Kabel date RG214U Marine SHF1 ARMOURED DNV



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50 ± 2 Ω
Braid Resistance	4.2 [Ω/km]
Conductor resistance	6 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	100 [pF/m]
Velocity factor	0.66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2 NES 713
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606
Part No.	1092447

Tables for RG 214

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
5	1.1
10	1.5
100	5.4
300	9.9
500	12.9
800	17.2
1000	19.8
1500	24.8
2150	30.9
2500	34.0
3000	37.6
5500	55

Structural return loss

MHz	dB
30 – 300	>31
300 – 600	>28
600 – 1000	>27
100 – 2000	>24
2000 – 3000	>22

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 215 Marine LSZH

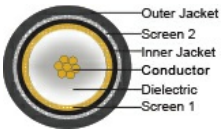
LSZH
50 Ohm

Application

Coaxial cable for HF and communications equipment. Can be used in ship and offshore installations.

Construction

Conductor	Stranded Plain Cu 7 x 0.75 [mm]
Dielectricum	gas injected PE
Screen	Cu-braid 97 [% optical coverage] 192 x 0.18 [mm]
Inner jacket	LSZH compound Ø=10,3±0,18 [mm]
Armour	Galvanised steel wire braid 85% [optical cover] 144x0.24 [mm]
Outer Jacket	Ø=13,3±0,30 [mm]
Weight	284 [kg/km]



Specifications

Operating temperature	-40 - +70
Characteristic impedance	50±2 [Ω]
Braid Resistance	4 [Ω/km]
Conductor resistance	6 [Ω/km]
Capacitance	100 [pF/m]
Velocity factor	0,66
Attenuation	See table
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
5	1,2
50	4,3
100	6,4
300	11,5
500	15,3
800	20,4
1000	23,2
1500	30,4
2150	38,9
2500	42,7
3000	48,9

RF 400

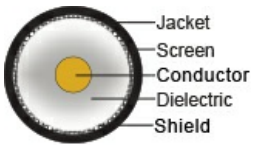
Low loss flexible feeder cable
50Ω
SHF1, UV

Application

Replaces RG-8/9913 as short run antenna feeder or jumper assemblies. Connects RF receiver systems with antenna systems in ships, buildin tunnels and other underground installations. This product has better bending and handling properties, compared with cables with corrugated sheaths.

Construction

Conductor	Solid Plain Cu 2.70 ± 0.03 [mm]
Dielectricum	Cellular PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Tinned Cu-braid 70 [% optical coverage]
Jacket	Black SHF1
Outer diam	10.3 ± 0.2 [mm]
Weight	145 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	50 ± 3 [Ω]
Braid Resistance	7.5 [Ω/km]
Test Voltage	8.5 [kV AC]
Conductor resistance	3.2 [Ω/km]
Insulation resistance	5 [GΩ x km]
Frequency	Max 6000 MHz
Tensile strength	170 [N]
Capacitance	80 [pF/m]
Velocity factor	0,84
Min. bending radius	25.4 [mm]
Min. bending radius flexible	101.6 [mm]

Part No.	1092361

Norms and tables for RF 400

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22
Smoke emission	IEC 61034-1, -2

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
30	2.2
50	2.9
150	5.0
220	6.1
450	8.9
900	12.8
1500	16.8
1800	18.6
2000	19.6
2500	22.2
5800	35.5

Structural return loss

MHz	dB
30 – 300	< 29
300 –600	< 26
600 – 1000	< 24
1000 – 2000	< 19
2000 – 3000	< 18

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 –2000	>80
2000 – 3000	>70

RF LLF 1/2” 50 Hiflex

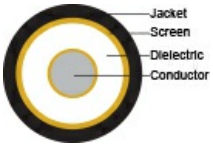
Feeder cable
Jumper cable
50Ω
SHF1, UV
DNV-GL, ABS

Application

Low loss highly flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phoı antennas to distribution systems inside ships, tunnels, buildings and underground areas wher RF signals normally cannot be received. The hig flexible design makes the product the best solution for installations which requires small bending radius. RF LLF 1/2" Hiflex is the best choice, used as jumper cable. The combination of extra flexibility and low loss makes RF LLF 1/2" Hiflex the natural choice for most applications in RF networks.

Construction

Conductor	Corrugated copper tube 3.55 ± 0.04 [mm]
Dielectricum	Cellular PE 9.0 ± 0.20 [mm]
Screen	Helical corrugated Cu-tape 12.00 ± 0.25
Jacket	Black or grey SHF1
Outer diam	13.70 ± 0.20 [mm]
Weight	190 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Temperature @ installation	-20 – +50 [°C]
Recommended clamp spacing	1 [m]
Peak RF voltage	1.4 [kV]
Characteristic impedance	50 ± 2 Ω
Peak power rating	19,0 [kW]
Braid Resistance	3.70 [Ω/km]
Return Loss	23.1 [dB]
Conductor resistance	2.97 [Ω/km]
Max. load at installation	800 [N/mm²]
Insulation resistance	10 [GΩ x km]
Capacitance	82 [pF/m]
Min. bending radius	17 [mm]
Min. bending radius flexible	50 [mm]

NEK offers connectors for RF LLF 1/2": Male, Part No. 65435N and Female, Part No. 65436N

Norms and tables for RF LLF 1/2” 50 Hiflex

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034
UV-resistant	ASTM G 154
Certification	DNV-GL, ABS
Part No.	1028854-black, 1028856-grey

RoHS √

Frequency (MHz)	Nominal attenuation (dB/100m) max 105%	Power rating (kW)
30	1,70	4,8
100	3,18	2,6
150	4.08	2.1
400	6.60	1,2
450	7.20	1.2
500	7.32	1.1
600	8.10	0.99
700	8.75	0.91
800	9.50	0.85
900	11.00	0.77
960	10.55	0.77
1000	10.80	0.75
1200	11.90	0.68
1400	13.0	0.62
1600	14.0	0.58
1800	15.5	0.54
2000	16.5	0.51
2200	17.5	0.48
2400	18.3	0.46
2700	19.6	0.44
3000	21.0	0.40
3400	22.5	0.37
4000	24.0	0.34
5800	33.0	0.27

RF LLF 1/2” 50 Hiflex MUD

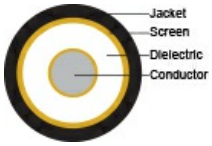
Feeder Cable
Jumper Cable
50Ω
SHF2, UV, MUD
DNV-GL

Application

Low loss highly flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas wher RF signals normally cannot be received. The highly flexible design makes the product the best solution for installations which requires small bending radius. RF LLF 1/2" Hiflex MUD is the best choice, used as jumper cable in areas exposed to chemicals. The combination of extra flexibility and low loss makes RF LLF 1/2" Hiflex the natural choice for most applications in RF networks.

Construction

Conductor	Corrugated copper tube 3.55 ± 0.04 [mm]
Dielectricum	Cellular PE 9.0 ± 0.25 [mm]
Screen	Helical corrugated Cu-tape
Jacket	Black SHF2 Halogenfree and MUD resistant thermoset compound
Outer diam	14.9 ± 0,2 [mm]
Weight	210 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Temperature @ installation	-20 – +50 [°C]
Recommended clamp spacing	1 [m]
Peak RF voltage	1.4 [kV]
Characteristic impedance	50 ± 2 Ω
Peak power rating	19 [kW]
Braid Resistance	3.7 [Ω/km]
Return Loss	23 [dB]
Conductor resistance	3 [Ω/km]
Max. load at installation	800 [N/mm²]
Insulation resistance	10 [GΩ x km]
Capacitance	82
Min. bending radius	17
Min. bending radius flexible	50

Norms and tables for RF LLF 1/2” 50 Hiflex MUD

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-24 Cat.C
Weather resistant	IEC 60502
Smoke emission	IEC 61034
MUD resistant	NEK TS 606
Part No.	1092482

Attenuation and Power rating

Frequency [MHz]	Nominal attenuation [dB/100m] max. 105%	Power rating [kW]
30	1.7	4.8
100	3.18	2.6
150	4.08	2.1
400	6.60	1.2
450	7.20	1.2
500	7.32	1.1
600	8.10	0.99
700	8.75	0.91
800	9.50	0.85
900	11.00	0.77
960	10.55	0.77
1000	10.80	0.75
1200	11.90	0.68
1400	13.0	0.62
1600	14.0	0.58
1800	15.5	0.54
2000	16.5	0.51
2200	17.5	0.48
2400	18.3	0.46
2700	19.6	0.44
3000	21.0	0.40
3400	22.5	0.37
4000	24.0	0.34
5800	33.0	0.27

RF LLF 1/2” 50

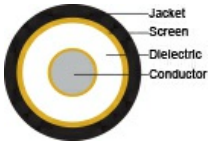
Feeder cable
50Ω
SHF1, UV
DNV-GL

Application

Low loss flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas where RF signals normally cannot be received.

Construction

Conductor	Copper coated Al wire 4.80 ± 0.05 [mm]
Dielectricum	Cellular PE 12.10 ± 0.30 [mm]
Screen	Corrugated Cu tube 13.90 ± 0.25 [mm]
Jacket	Black or grey SHF1
Outer diam	16,40 ± 0,40 [mm]
Weight	250 [kg/km]
Jacket marking	NEK Kabel, RF LLF 1/2" 50 Date, batch number and meter marked



Specifications

Operating temperature	-40 – +70 [°C]
Inductance	0.19 [µH/m]
Screen resistance	<2.85 [Ω/km]
Peak RF voltage	1.8 [kV]
Characteristic impedance	50 ± 2 Ω
Peak power rating	31.8 [kW]
Conductor resistance	<1.60 [Ω/km]
Insulation resistance	10 [GΩ x km]
Capacitance	76 [pF/m]
Velocity factor	0.88
Max. power	31.8 [kW]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-24 Cat.C + IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Part No.	1028850-black, 1028857-grey

RF LLF 1/2” 50 MUD

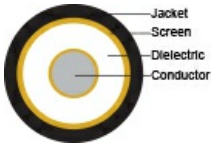
Feeder cable
50Ω
SHF2, MUD
DNV-GL

Application

Low loss feeder cable. designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas where RF signals normally cannot be received. Chemical resistant SHF2 jacket.

Construction

Conductor	Copper coated Al wire 4.80 ± 0.05 [mm]
Dielectricum	Cellular PE 12.1 ± 0.3 [mm]
Screen	Corrugated Cu tube 13.90 ±0.25 [mm]
Jacket	Black SHF2
Outer diam	18.0 ± 0.2 [mm]
Weight	270 [kg/km]
Jacket marking	RF LLF 1/2" MUD NEK Kabel, date, metermarked.



Specifications

Operating temperature	-40 – +70 [°C]
Inductance	0.19 [µH/m]
Screen resistance	<2.4 [Ω/km]
Peak RF voltage	1.8 [kV]
Characteristic impedance	50 ± 2 Ω
Peak power rating	32 [kW]
Conductor resistance	<1.6 [Ω/km]
Insulation resistance	10 [GΩ x km]
Capacitance	76 [pF/m]
Velocity factor	0,88
Part No.	1092481

Norms and tables for RF LLF 1/2” 50 MUD

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-3-22 cat.A
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154

Attenuation and Power rating

Frequency [MHz]	Nominal attenuation [dB/100m] max. 105%	Power rating [kW]
30	1.66	6.9
50	2.01	5.3
88	2.51	4.0
100	2.65	3.7
200	3.58	2.6
300	4.31	2.1
400	4.93	1.8
450	5.1	1.7
500	5.49	1.6
700	6.48	1.3
800	7.10	1.3
900	7.30	1.25
1000	7.78	1.1
1400	9.24	0.9
1800	10.90	0.78
2000	11.50	0.76
2400	12.90	0.66
3000	14.50	0.58
3400	15.50	0.54
6000	21.5	0.39
8000	27.0	0.31

RF LLF 7/8” 50 Hiflex

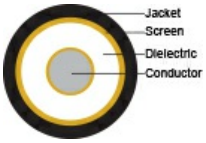
Feeder cable
Jumper cable
50Ω
SHF1, UV
DNV-GL

Application

Low loss highly flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas wher RF signals normally cannot be received. The highly flexible design makes the product the best solution for installations which requires small bending radius. The combination of extra flexibility and low loss makes this product the natural choice for most applications in RF networks. Attenuation values, nominal (max. 105%)

Construction

Conductor	Helical Corrugated copper tube 9.40 ± 0.20 [mm]
Dielectricum	Cellular PE 22.20 ± 0.30 [mm]
Screen	Corrugated Cu tube 24.90 ± 0.30
Jacket	Black SHF1
Outer diam	27.50 ± 0.20 [mm]
Weight	430 [kg/km]
Jacket marking	NEK Kabel RF LLF 7/8" Hiflex



Specifications

Operating temperature	-40 to +70 [°C]
Temperature flexible	-20 [°C]
Screen resistance	1,3 [Ω/km]
Recommended clamp spacing	1 [m]
Peak RF voltage	2,8 [kV]
Characteristic impedance	50 ± 2 Ω
Conductor resistance	2.5 [Ω/km]
Capacitance	74 [pF/m]
Velocity factor	0,88
Min. bending radius	90 [mm]
Min. bending radius flexible	120 [mm]

Part No.	1028855

Norms and tables for RF LLF 7/8” 50 Hiflex

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359) SHF1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034
UV-resistant	ASTM G 154
Certification	DNV-GL

Attenuation and Power rating

Frequency [MHz]	Nominal attenuation [dB/100m] max. 105%	Power rating [kW]
10	<0,37	24
30	<0,63	14
50	<0,86	11
174	<1,64	5,6
200	<1,8	5,2
500	<2,89	3,2
800	<3,72	2,5
900	<4.00	2,3
960	<4,11	2,2
1600	<5,47	1,7
1800	<6,00	1,6
2000	<6,38	1,5
2200	<6,56	1,4
2400	<7,10	1,3
2600	<7,23	1,3
2800	<7,55	1,2
3000	<7,87	1,2
3400	<8,48	1,1
4000	<9,32	0,98
5000	<10,95	0,86

RF LLF 7/8” 50 Hiflex MUD

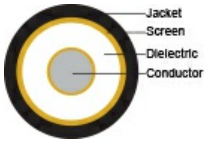
Feeder cable
Jumper cable
50Ω
SHF2, MUD, UV
DNV-GL

Application

Low loss highly flexible feeder cable designed for use in areas exposed for chemical fluids. The cable carries broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, offshore platforms, tunnels, buildings and underground areas where RF signals normally cannot be received. The highly flexible design makes the product the best solution for installations wich requires small bending radius. The combination of extra flexibility and low loss makes this product the natural choice for most applications in RF networks. Attenuation values are nominal (max 105%).

Construction

Conductor	Helical Corrugated copper tube 9.4 ± 0.20 [mm]
Dielectricum	Cellular PE 22.20 ± 0.30 [mm]
Screen	Corrugated Cu-tube 24.90 ± 0.30
Jacket	Black SHF2 Halogenfree and MUD resistant thermoset compound
Outer diam	29.5 ± 0.2 [mm]
Weight	450 [kg/km]



Specifications

Operating temperature	-40 – + 70 [°C]
Temperature flexible	-20 [°C]
Screen resistance	1.3 [Ω/km]
Recommended clamp spacing	1 [m]
Peak RF voltage	2.8 [kV]
Characteristic impedance	50 ± 2 [Ω]
Conductor resistance	2.5 [Ω/km]
Capacitance	74 [pF/m]
Velocity factor	0,88
Min. bending radius	90 [mm]
Min. bending radius flexible	120 [mm]

RoHS √

Part No.	1092485

Norms and tables for RF LLF 7/8” 50 Hiflex MUD

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154
Certification	DNV-GL

Attenuation and Power rating

Frequency [MHz]	Nominal attenuation [dB/100m] max. 105%	Power rating [kW]
10	0.37	24
30	0.63	14
50	0.86	11
174	1.64	5.6
200	2.8	5.2
300	2.89	3.2
800	3.72	2.5
900	4.00	2.3
960	4.11	2.2
1600	5.47	1.7
1800	6.00	1.6
2000	6.38	1.5
2200	6.56	1.4
2400	7.10	1.3
2600	7.23	1.3
2800	7.55	1.2
3000	7.87	1.2
3400	8.48	1.1
4000	9.32	0.98
5000	10.95	0.86

RF LLF 7/8” 50 SHF1

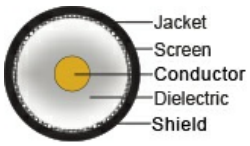
Feeder cable
50Ω
SHF1, UV
DNV-GL

Application

Low loss flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices, mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas where RF signals normally cannot be received.

Construction

Conductor	Cu-tube 9.45 ± 0.10 [mm]
Dielectricum	Cellular PE 23.20 ± 0.30 [mm]
Screen	Corrugated Cu tube 25.40 ± 0.30 [mm]
Jacket	Black or grey SHF1 UV-resistant
Outer diam	28.5 ± 0.40 [mm]
Weight	450 [kg/km]
Jacket marking	NEK Kabel, RF LLF 7/8" 50 Date, batch number and meter marked



Specifications

Operating temperature	-40 – +70 [°C]
Screen resistance	<1.6 [Ω/km]
Recommended clamp spacing	1 [m]
Peak RF voltage	3.3 [kV]
Peak power rating	92.0 [kW]
Characteristic impedance	50 ± 2 [Ω]
Conductor resistance	1.30 [Ω/km]
Frequency	Max 5,000 MHz
Capacitance	74.2 [pF/m]
Velocity factor	0.88
Min. bending radius	150 [mm]
Min. bending radius flexible	275 [mm]

Part No.	1028851-black, 1028858-grey

RF LLF 7/8” 50 MUD

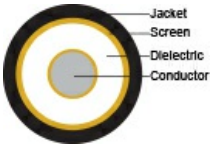
Feeder cable
50Ω
SHF2, MUD
DNV-GL

Application

Low loss flexible feeder cable designed for broadband transmission from sources like radio antennas, radars, GPS devices and mobile phone antennas to distribution systems inside ships, tunnels, buildings and underground areas where RF signals normally cannot be received.

Construction

Conductor	Cu-tube 9.45 ± 0.10 [mm]
Dielectricum	Cellular PE 23.20 ± 0.30 [mm]
Screen	Corrugated Cu tube 25.40 ± 0.30 [mm]
Jacket	Black SHF2
Outer diam	30 [mm]
Weight	470 [kg/km]
Jacket marking	NEK Kabel RF LLF 7/8" MUD



Specifications

Operating temperature	-40 – +70 [°C]
Screen resistance	1.28 [Ω/km]
Recommended clamp spacing	1 [m]
Peak RF voltage	3.3 [kV]
Peak power rating	92 [kW]
Characteristic impedance	50 ± 2 [Ω]
Conductor resistance	1.3 [Ω/km]
Frequency	Max 5,000 MHz
Capacitance	74.2 [pF/m]
Velocity factor	0,88
Min. bending radius flexible	275 [mm]
Min. bending radius installed	150 [mm]

Part No.	1092483

Norms and tables for RF LLF 17/8” 50 MUD

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154
Certification	DNV-GL

Attenuation and Power rating

Frequency [MHz]	Nominal attenuation [dB/100m] max. 105%	Power rating [kW]
50	0,70	11,0
88	1,00	8,5
100	1,12	8,0
200	1,50	5,6
300	1,90	4,5
450	2,40	3,6
500	2,50	3,4
700	2,95	2,8
800	3,00	2,6
900	3,40	2,5
1000	3,70	2,3
1400	4,45	1,9
1800	5,09	1,7
2000	5,20	1,6
2400	5,90	1,4
3000	6,90	1,2
3400	7,93	1,2
4000	8,50	1,0
5000	9,26	0,9

Male and Female for RG 213

UHF N-Male for RG 213

J213

50Ω

Application:

Straight N Male connector for RG 213 coaxial cables.

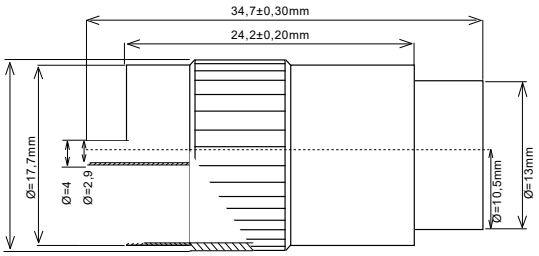
Specifications:

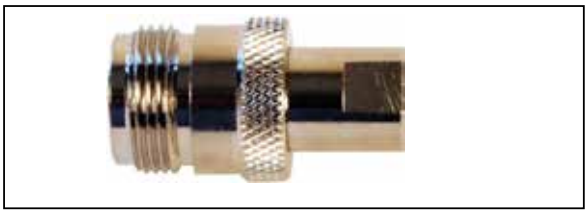
Temperature range:	-40 to +85	[°C]
Insulation resistanse:	≥ 5000	[MΩ]
Frequency range DC:	≈ 300	[MHz]
Impedance:	50	[Ω]
Voltage:	750	[V max]
Testvoltage	2000	[V max]
Durability:	≥ 500	[Cycles]

Prod.no: 65452

Construction:

Center contact:	Brass bar (Cu/Ep Ni)
Body:	Brass bar (Cu/Ep Ni)
Socket:	Beryllium (Cu/Ep Au)
Insulator:	PTFE
Crimping suite:	Copper alloy (Cu/Ep Ni)





N-Female for RG 213

N-C-K213

IP67

50Ω

Application:

Straight N Female connector for RG 213 coaxial cables. Waterproof acc. to. IP67.

Specifications:

Temperature range:	-40 to +125	[°C]
Insulation resistanse:	≥ 5000	[MΩ]
Frequency range DC:	≈ 3	[GHz]
Impedance:	50	[Ω]
VSWR:	≤ 1,15	
Voltage:	1000	[V max]
Testvoltage:	1500	[V max]
Durability:	≥ 500	[Cycles]

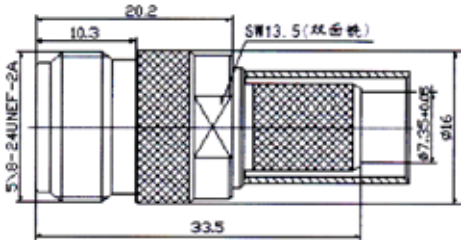
Norms:

Salt spray test:	Neutral salt spray 48H
	IP67

Prod.no: 65456

Construction:

Body:	Brass bar (Cu/Ep Ni)
Socket:	Bronze line (Cu/Ep Au)
Insulation:	PTFE
Outer conductor:	Brass bar (Cu/Ep Ni)
Crimping sleeve:	Red copper (Cu/Ep Ni)



Male and Female for RG 214

N-Male for RG 214

N-C-J214
IP67
50 Ω

Application:

Straight N Male connector for RG 214 coaxial cables. Waterproof acc. to. IP67.

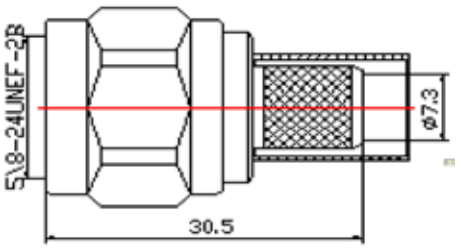
Specifications:

Temperature installed:	-40 to +125	[°C]
Working voltage:	max. 1000	[V]
Withstand voltage:	max. 2500	[V]
Frequency range DC:	6	[GHz]
Impedance:	50	[Ω]
Insulation recitance:	≥5000	[MΩ]
Voltage Standing Wave Ratio:	≤1,20	
Waterproof acc. to:	IP67	

Prod.no: 65450

Construction:

Body:	Brass bar
Senter pin:	Brass bar
Insulation:	PFA/PTFE
Thread sleeve:	Brass bar
Snap ring:	Bronze wire
O-ring:	Siliastic



UHF-connector for RG 214

UHF-C-J214
IP67
50 Ω

Application:

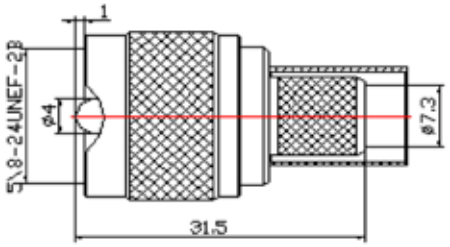
UHF-connector for RG 214 coaxial cables. Waterproof acc. to. IP67.

Specifications:

Temperature installed:	-40 to +85	[°C]
Working voltage:	max. 1000	[V]
Withstand voltage:	max. 3500	[V]
Frequency range DC:	2	[GHz]
Impedance:	50±5	[Ω]
Insulation recitance:	≥5000	[MΩ]
Voltage Standing Wave Ratio:	≤1,30	
Waterproof acc. to:	IP67	

Construction:

Body:	Brass bar
Senter pin:	Brass bar
Insulation:	PFA/PTFE
Connecting sleeve:	Brass bar
Snap ring:	Bronze wire



Male and Female for RF LLF 1/2”

N-Male - Marine for RF LLF 1/2” -DNV

IP67

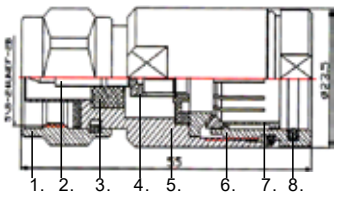
N-J1/2 - 24M

Application:

Clamp Male-connector for marine application. Waterproof acc. to. IP 67 Fitting the RF LLF 1/2” 50 -marine, can be used with our DNV-certified cable.

Construction:

1. Brass-shell (Cu/Ep.CuSnZn)
2. Center conductor, brass bar (Cu/Ep.Ag)
3. Insulator, PTFE
4. Bushing, brass bar (Cu/Ep.Ag)
5. Nut thread, brass bar (Cu/Ep.CuSnZn)
6. Connecting sleeve, brass bar (Cu/Ep.CuSnZn)
7. Snap ring, bronze wire
8. Waterproof O-ring (silastic 6141)



Specifications:

Impedance:	50	[Ω]
Temperature range	- 40 til +125	[°C]
Frequency:	DC ≈ 3	[GHz]
Insulationrecistance:	≥ 5000	[MΩ]
VSWR:	≤ 1,1	[@ 3GHz]
Voltage max.:	1000	[V]
Maxload:	2500	[V]
Dielectric withsanding voltage:	2000	[V]
Durability:	≥ 500	[cycles]

Product no: 65402

N-Female for RF LLF 1/2” Hiflex

IP67

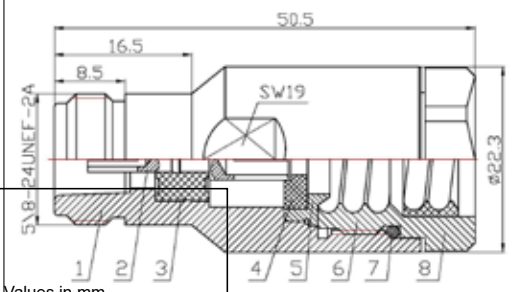
N-K1\S2

Application:

Clamp Male-connector for outdoor use. Waterproof acc. to. IP 67 Fitting the RF LLF 1/2” 50 Hiflex- cables.

Construction:

1. Brass-shell (Cu/Ep.CuSnZn)
2. Contact bronze wire (Cu/Ep.Ag)
3. Insulator PTFE
4. Insulator PTFE
5. Lining of brass (Cu/Ep.Ag)
6. Threaded sleeve of brass (Cu/Ep.CuSnZn)
7. Waterproof O-ring (silastic 6141)
8. Waterproof O-ring (silastic 6141)



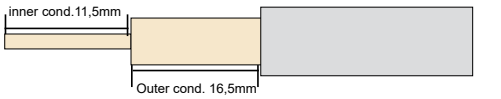
Values in mm

Specifications:

Impedance:	50	[Ω]
Temperature range:	- 40 til +125	[°C]
Frequency:	DC opp til 3	[GHz]
Insulationrecistance:	≥ 5000	[MΩ]
VSWR:	≤ 1,25	
Voltage max.:	1000	[V]
Maxload:	2500	[V]
IM3:	≤ 160	[dBc]
Durability:	≥ 500	[cycles]
	IP67	

Product no: 65436

Dimensions by stripping the cable:



Male and Female for RF LLF 7/8”

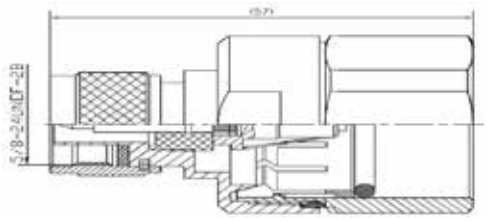
N-Male for RF LLF 7/8”

N-J7/8
IP67
50Ω

Application:
Straight N Male connector for 7/8” LowLoss feeder cables. Connector acc. IP67. (Can reach IP68 when the other end is connected to the cable with shrinkable external tube).

Construction:

Center contact:	Bronze
Outer contact:	Brass
Body:	Brass
Insulation:	PFA/PTFE
Coupling nut:	Brass



Specifications:

Temperature range:	-40 to +85	[°C]
Insulation resistanse:	≥ 5000	[MΩ]
Frequency range DC:	≈ 3	[GHz]
Impedance:	50	[Ω]
VSWR 0.3 - 2.5:	≤1.12	
VSWR 2.5 - 3:	≤1.15	
Intermodulation (2x20W):	≥150	[dBc]

Prod.no: 65437

N-Male for RF LLF 7/8” Hiflex

N-K7/8S
IP67
50Ω

Construction:

Center contact:	Bronze
Outer contact:	Brass
Body:	Brass
Insulation:	PFA/PTFE
Coupling nut:	Brass

Application:
Straight N Male connector for flexible 7/8” LowLoss feeder cables. Connector acc. IP67. (Can reach IP68 when the other end is connected to the cable with shrinkable external tube).

Specifications:

Temperature range:	-40 to +85	[°C]
Insulation resistanse:	≥ 5000	[MΩ]
Frequency range DC:	≈ 3	[GHz]
Impedance:	50	[Ω]
VSWR 0.3 - 2.5:	≤1.12	
VSWR 2.5 - 3:	≤1.15	
Intermodulation (2x20W):	≥150	[dBc]

Prod.no: 65439

RG 59 B/U Marine

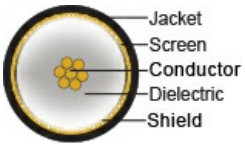
75 Ω Flexible
SHF1
DNV-GL

Application

Type RG 59 for ship- and offshore applications. Communication and video signals. Stranded conductor is used for better protection against vibrations and cold bend.

Construction

Conductor	Stranded Plain Cu 7 x 0,20 [mm]
Dielectricum	Low density PE 3.7 ± 0.10 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 91 [% optical coverage]
Jacket	Black SHF1
Outer diam	6.20 ± 0.20 [mm]
Weight	51.4 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	75 ± 3 [Ω]
Braid Resistance	10 [Ω/km]
Conductor resistance	82 [Ω/km]
Test voltage	5 [kV]
Capacitance	67 [pF/m]
Velocity factor	0,66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Part No.	1092218

Norms and tables for RG 59 BU Marine

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Toxic gases max.	IEC 60092-359
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
50	7,0
100	10,1
200	14,0
400	20,2
800	30,3
1000	34,8

Structural return loss dB

MHz	dB
30 - 300	> 30
300 - 600	> 25
600 - 1000	> 22
1000 - 2000	> 20
2000 - 3000	> 16

Screening effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 59 Marine Flex ARM

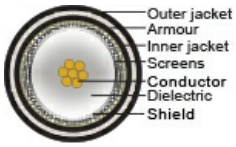
75Ω Flexible
Steel wire armour
SHF1
DNV-GL

Application

RG 59 type, with flexible conductor for ship- and offshore communication and video signals. Stranded conductor protecting against vibrations.

Construction

Conductor	Flexible Plain Cu 7 x 0,25 [mm]
Dielectricum	Low density PE 3.7 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 92 [% optical coverage]
Inner jacket	SHF1 6.2 ± 0.2 [mm]
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF1
Outer diam	9.4 ± 0.2 [mm]
Weight	136 [kg/km]
Jacket marking	NEK Kabel-RG59 Flex Marine SHF1 Armoured DNV-IEC60332-3-24



Specifications

Operating temperature	-40 – +75 [°C]
Characteristic impedance	75 ± 3 [Ω]
Braid Resistance	10 [Ω/km]
Conductor resistance	82 [Ω/km]
Test voltage	5 [kV]
Capacitance	67 [pF/m]
Velocity factor	66%
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Part No.	1092226 (GSWB)

Norms and tables for RG 59 BU Marine Flex ARM

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-2
Sheathing material	IEC 60092-360 (359)
Flame retardant	1672
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
50	7,0
100	10,1
200	14,0
400	20,2
800	30,3
1000	34,8

Structural return loss dB

MHz	dB
30 – 300	>30
300 – 600	>25
600 – 1000	>22
1000 – 2000	>20
2000 – 3000	>16

Screening effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 6 A/U Marine

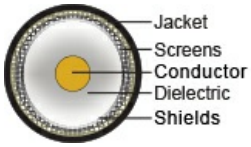
75Ω
Super-screened,
SHF1
DNV-GL, ABS

Application

Robust long life coaxial cable designed for ship- and offshore environments. Electrical data in compliance with MIL C-17. The Aluminum tape, together with one copper braided screen and one silver coated copper braided screen, provides super-screening effectiveness.
RG 6 A/U Marine cannot be replaced by any other Type RG 6 products.

Construction

Conductor	Copperweld 0.72 ± 0.025 [mm]
Dielectricum	PE 4.70 ± 0.10 [mm]
Screen	Al-polyester-Al tape
Screen	Silvercoated Cu braid 96 [% optical coverage]
Screen 2	Cu- braid 96 [% optical coverage]
Jacket	Black SHF1
Outer diam	8.5 ± 0.1 [mm]
Weight	115 [kg/km]
Jacket marking	NEK Kabel - mm/yyy - RG 6 AU Marine SHF1 - DNV approval no - lot no- m



Specifications

Operating temperature	-40 – 70 [°C]
Characteristic impedance	75 ± 3 [Ω]
Braid Resistance	5 [Ω/km]
Conductor resistance	<97 [Ω/km]
Test voltage	6 [kV]
Capacitance	67 [pF/m]
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3 IEC 60092-350 IEC 60096 - 4
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL, ABS

Tables for RG 6 A/U Marine

Part No.	1092448

Use BNC crimp LSD 53938C.
Can not be used with F-connectors.

RoHS CE

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
5	1,8
10	2,3
50	5,7
100	8,1
200	11,7
300	14,5
500	19,0
600	21,0
800	24,6
1000	27,7
1350	32,6
1500	34,6
1750	38,7
2150	44,1
2250	44,5
2500	46,6
2750	49,3
3000	53,4

RG 6 A/U Marine MUD

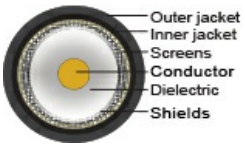
75Ω
Super-screened
SHF2, MUD resistant sheath
DNV-GL

Application

Robust long life coaxial cable designed for ship- and offshore environments. Electrical data in compliance with MIL C-17. The aluminum tape, together with one copper braided screen and one silver coated copper braided screen, provides super-screening effectiveness.
RG 6 A/U Marine cannot be replaced by other Type RG 6 products.

Construction

Conductor	Copperweld 0.720 ± 0.025 [mm]
Dielectricum	PE 4.7 ± 0.1 [mm]
Screen	Al-polyester-Al tape
Screen	Silvercoated Cu braid 96 [% optical coverage]
Screen 2	Cu- braid 96% [% optical coverage]
Jacket	Black SHF2
Outer diam	10.5 [mm]
Weight	135 [kg/km]
Jacket marking	NEK Kabel , date, type, DNV approval



Specifications

Operating temperature	-40 – +70 [°C]
Characteristic impedance	75 ± 3 [Ω]
Braid Resistance	5 [Ω/km]
Conductor resistance	<97 [Ω/km]
Insulation resistance	>10 [GΩ x km]
Test voltage	6 [kV]
Capacitance	67 [pF/m]
Velocity factor	0,66
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10

Norms and tables for RG 6 AU Marine ARM

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3 IEC 60096 - 4
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-2
MUD resistant	NEK TS 606
Certification	DNV-GL

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
5	1.8
10	2.3
50	5.7
100	8.1
300	14.5
500	19.0
800	24.6
1000	27.7
1500	34.6
1750	38.7
2500	46.6
3000	53.4

MHz	dB
30 – 300	>28
300 – 600	>24
600 – 1000	>22
1000 – 2000	>18
2000 – 3000	>15

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 11 A/U Marine

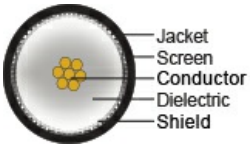
75 Ω
SHF1
DNV-GL, ABS

Application

Coaxial cable designed for ship- and offshore applications. Data and video signals transmission. Electrical data in compliance with MIL C-17F.

Construction

Conductor	Stranded Tinned Cu 7 x 0.40 [mm]
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% optical coverage]
Jacket	Black SHF1
Outer diam	10.3 ± 0.18 [mm]
Weight	150 [kg/km]



Specifications

Operating temperature	-40 – 70 [°C]
Characteristic impedance	75 ± 3 Ω
Braid Resistance	4.4 [Ω/km]
Test Voltage	5.5 [kV]
Conductor resistance	20.5 [Ω/km]
Capacitance	67 [pF/km]
Velocity factor	0.67
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-2
Certification	DNV-GL, ABS

Norms and tables for RG 11 AU Marine

Part No.	1092456

Alternative designs, armoured, MUD resistant, in any combination.

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
5	1.1
10	1.3
50	4.2
100	6.1
300	11.8
500	16
800	21.4
1000	24.3
1500	31
1750	36
2150	40.2
2500	42.4
3000	49

Structural return loss

MHz	dB
30 – 300	>30
300 – 600	>27
600 – 1000	>25
1000 – 2000	>22
2000 – 3000	>20

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 11 A/U Marine MUD

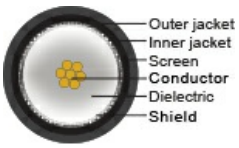
75Ω
SHF2
DNV-GL

Application

Coaxial cable designed for use in harsh environments like ship- and offshore applications. Data and video transmission. Electrical data in compliance with MIL C-17F.

Construction

Conductor	Stranded Tinned Cu 7 x 0.40 [mm]
Dielectricum	Low density PE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 96 [% optical coverage]
Jacket	Black SHF2
Outer diam	12.80 ± 0.18 [mm]
Weight	165 [kg/km]
Jacket marking	NEK Kabel date-RG11AU Marine SHF2 DNV m



Specifications

Operating temperature	-40 – 70 [°C]
Characteristic impedance	75 ± 3 Ω
Braid Resistance	4.4 [Ω/km]
Conductor resistance	20.5 [Ω/km]
Capacitance	67 [pF/m]
Velocity factor	0.67
Min. bending radius	5 [x outer diam]
Min. bending radius flexible	10 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-2
MUD resistant	NEK TS 606
Certification	DNV-GL

Norms and tables for RG 11 AU Marine MUD

Part No.	1092458

RG 11 A/U is also available in armoured design (equals RG 12)

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
5	1.1
10	1.3
50	4.2
100	6.1
300	11.8
500	16.0
800	21.4
1000	24.3
1500	31.0
1750	36.0
2150	40.2
2500	42.4
3000	49.0

Structural return loss

MHz	dB
30 – 300	>30
300 – 600	>27
600 – 1000	>25
1000 – 2000	>22
2000 – 3000	>20

Screen effectiveness IEC 61196-1

MHz	dB
100 – 900	>90
900 – 2000	>80
2000 – 3000	>70

RG 11 A/U Marine ARM

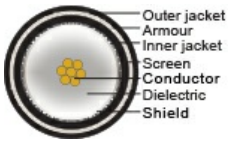
75Ω, PE solid
Al tape + Cu braided screen
+ armour steel wire braid, Equal to RG 12
SHF1
DNV-GL, ABS

Application

Coaxial cable for data- and video use, suitable for installation on board of ship and other marine environments. Electrical data in compliance with MIL C-17/F. Steel wire braid armour meets requirements of EMC directive. The cable design equals RG 12, but with slightly improved electrical data.

Construction

Conductor	Stranded Tinned Cu 7 x 0,40 [mm]
Dielectricum	PE 7,25 ± 0,18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 97% [% optical coverage] 192 x 0,18 [mm]
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black or grey SHF1
Outer diam	13.50 ± 0.20 [mm]
Weight	277 [kg/km]
Jacket marking	RG 11 AU Marine SHF1 Armoured DNV IEC 60332-3-22



Specifications

Operating temperature	-30 – 70 [°C]
Braid Resistance	4.4 [Ω/km]
Conductor resistance	22.5 [Ω/km]
Test voltage	5.5 [kV]
Capacitance	67 [pF/m]
Min. bending radius	5
Min. bending radius flexible	10 [x outer diam]

Part No.	1092457-Black, 1092499-Grey

Norms and tables for RG 11 AU Marine ARM

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Smoke emission	IEC 61034-1, -2
Certification	DNV-GL, ABS

Tips Alternative product with MUD resistant jacket, part number 1092459

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
5	1,1
10	1,3
50	4,2
100	6,1
200	9,2
300	11,8
500	16,0
600	17,9
800	21,4
1000	24,3
1350	29,1
1500	31,0
1750	35,0
2150	40,2
2250	40,5
2500	42,4
2750	45,0
3000	49,0

RG 11 A/U Marine ARM MUD

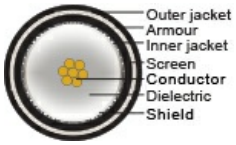
75Ω Equal to RG 12
SHF2

Application

Coaxial cable for data- and video use, designed for installation on board of ship and other marine environments.Steel wire braid armour meets requirements of EMC directive. Electrical data in compliance with MIL C-17/F. The design equals RG 12, with slightly better electrical data.

Construction

Conductor	Stranded 7 x 0,40 [mm]
Dielectricum	LDPE 7.25 ± 0.18 [mm]
Screen	Al-polyester-Al tape
Screen	Cu-braid 97 [% optical coverage] 192 x 0,18 [mm]
Inner jacket	SHF1 10.30 ± 0.18 [mm]
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF2
Outer diam	17.00 ± 0.18 [mm]
Weight	352 [kg/km]
Jacket marking	NEK Kabel Date RG11AU Marine SHF2 Armoured



Specifications

Operating temperature	-40 – 70 [°C]
Braid Resistance	4.4 [Ω/km]
Conductor resistance	20.5 [Ω/km]
Capacitance	67 [pF/m]
Min. bending radius	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Design and testing standards	IEC 60096-0-1 Ed 3
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-24 Cat.C
Smoke emission	IEC 61034-1, -2
MUD resistant	NEK TS 606
Part No.	1092459

Norms and tables for RG 11 AU Marine ARM MUD

Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)
5	1,1
10	1,3
50	4,2
100	6,1
200	9,2
300	11,8
500	16,0
600	17,9
800	21,4
1000	24,3
1350	29,1
1500	31,0
1750	35,0
2150	40,2
2250	40,5
2500	42,4
2750	45,0
3000	49,0

Structural return loss dB

MHz	dB
30 - 300	> 30
300 - 600	> 27
600 - 1000	> 25
1000 - 2000	> 22
2000 - 3000	> 20

Screening effectiveness IEC 61196-1

MHz	dB
100 - 900	> 90
900 - 2000	> 80
2000 - 3000	> 70

SAT 22 ITV

RG 59 B/U + 2 x 0.75mm²

LSZH and UV resistant

75 Ω

Application

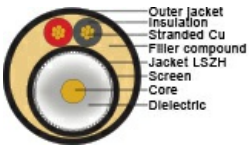
Composite ITV cable for camera signal and control transmission. SAT 22 is designed for use in ship and offshore or other applications where strict norms for fire safety is required. It is a compact and tight jacketed cable, for easy handling and installation.

RG 59 B/U

Conductor	Copperweld 0.58 [mm]
Dielectric	PE Ø=3,7 [mm]
Screen	Cu-braid > 90% [% optical cover]
Jacket	Black LSZH compound

Multi cable

Conductor	Stranded Cu 2 x 0.75 [mm²]
Insulation	PE
Color	Red and black
Overall jacket	Black LSZH compound
Outer diam.	10 [mm]



Specifications

Operating temperature	-30 – +80 [°C]
Temperature @ installation	0 to +50 [°C]

Specifications Coax Cable

DC-resistance centre conductor	155 Ω/km
DC-resistance screen	10,1 Ω/km
Impedance	75 [Ω]
Capacitance @ 800Hz	67 pF/m
Attenuation	see table
Velocity factor	0,66
Part No.	1092421

Norms and tables for SAT 22 ITV

Multi cable

Multi cable	2 x 0.75 [mm²]
Rated voltage	250 [V-max]
Test voltage	1200 [V]
Loop resistance	26 [Ω/km]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754
Flame retardant	IEC 60332-1
Smoke emission	IEC 61034

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
10	3,6
50	7,7
100	11,0
200	13,9
400	23,1
800	34,2
1000	38,9

SAT 21 ITV

RG 59 B/U + 2 x 1.5mm²
LSZH and UV resistant
75Ω

Application

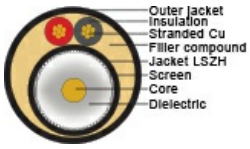
Composite ITV cable for camera signal and control transmission. SAT 21 is designed for use in ship and offshore applications, but is also used where strict norms for fire and safety is required. It is a compact and tight jacketed cable, for easy handling and installation.

RG 59 B/U

Conductor	Copperweld 0,58 [mm]
Dielectric	PE Ø=3,7 [mm]
Screen	> 90 [% optical cover]
Jacket	Black LSZH compound

Multi cable

Multicore	2x1.5 [mm²]
Conductor	1.5 [mm²]
Insulation	LSZH Compound
Color	Red and black
Overall jacket	Black LSZH-compound
Outer diam.	10,5 [mm]



Specifications

Operating temperature	-30 – +80 [°C]
Temperature @ installation	0 – +40 [°C]

Specifications Coax Cable

DC-resistance centre conductor	155 Ω/km
DC-resistance screen	10,1 Ω/km
Impedance	75 [Ω]
Capacitance @ 800Hz	67 pF/m
Attenuation	see table
Velocity factor	0,66

Norms and tables for SAT 22 ITV

Multi cable

Multi cable	2 x 1.5 [mm²]
Rated voltage	250 [V-max]
Test voltage	500 [V]
Loop resistance	≥ 14 [Ω/km]
Part No.	1092409

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
10	3.6
50	7.7
100	11.0
200	15.9
400	23.1
800	34.2
1000	38.9

Male for RG 59 og F-konnektor for RG 11

N-Male for RG 59

N-C-75J59
IP67
75Ω

Application:

Straight N Male connector for RG 59 coaxial cables. Waterproof acc. to. IP 67

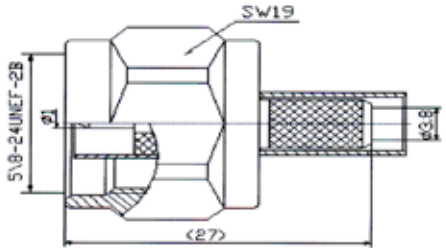
Temperature range:	-40 to +125	[°C]
Insulation resistanse:	≥ 5000	[MΩ]
Frequency range DC:	≈ 2,5	[GHz]
Impedance:	75	[Ω]
VSWR at 2,5GHz:	≤1,15	
Voltage:	1000	[V max]
Testvoltage	1500	[V max]
Durability:	≥ 500	[Cycles]
Waterproof acc. to:	IP67	

Norms:

Salt spray test:	Neutral salt spray 96H
Waterproof:	IP 68

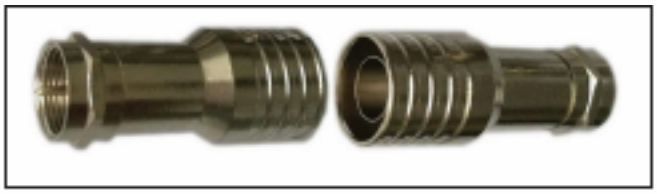
Construction:

Center contact:	Brass bar (Cu/Ep Ag)
Body:	Brass bar (Cu/Ep Cu Sn Zn)
Insulation:	PFA/PTFE
Connectingsleeve:	Brass bar (Cu/Ep Cu Sn Zn)
Snap ring:	Bronze wire
O-ring:	Silastic
Crimping sleeve:	Red copper (Cu/Ep Ni)
Heat shrikable tube:	Black PE



Prod.no: 65453

RoHS ✓



F-Connector for RG 11

IP67
75 Ω

Bruksområde:

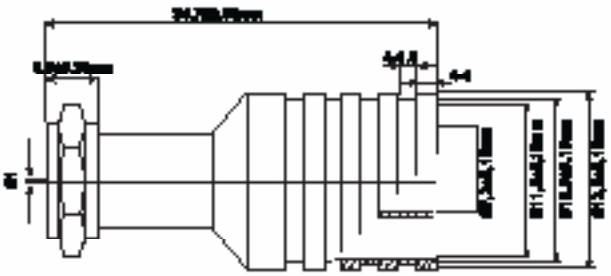
F connector for RG 11 coaxial cables. Waterproof acc.to IP67.

Specifications:

Temperature range:	-40 to +80	[°C]
Insulation resistanse:	≥ 1000	[MΩ]
Frequency range DC:	≈ 1	[GHz]
Impedance:	75	[Ω]
Withstand voltage:	900	[V max]
Durability:	≥ 500	[Cycles]
Waterproof acc.to:	IP67	

Construction:

Center contact:	Brass bar (Cu/Ep Ni)
Body:	Brass bar (Cu/Ep Ni)
Nut:	Brass bar (Cu/Ep Ni)
Spring:	Phosphor bronze (CuP/Ep Ni)
Rivet:	Brass bar (CuP/Ep Ni)



RoHS ✓

Prod.no: 65458

CAN Bus Marin 1 pair

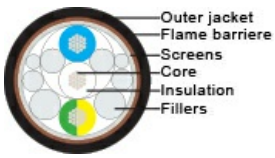
SHF2
Flexible
0,75 mm²
DNV-GL, ABS

Application

Designed for CAN bus systems. For use in ship- and offshore environments.

Construction

Conductor	Flexible Plain Cu 0.75mm² (24 x 0.20 mm)
Protective conductor	Stranded tinned Cu 0.75 [mm²] Insulation polyolefin Y/G
Insulation	Foamskin PE 2,95 [mm]
No. of pairs	1
Individual Screen pairs	Al-/polyester tape 100% [coverage]
Screen	Tinned Cu-braid 80 [% optical coverage]
Fire resistant barrier	Fire barriere tape
Jacket	Black or purple SHF2
Outer diam	11.5 [mm]
Weight	180 [kg/km]
Jacket marking	NEK CANBUS MARIN1 x 2 x 0.75 mm² SHF2 DNV-GL M Y m-marking



Specifications

Operating temperature	-40 – +90 [°C]
Caracteristic Impedance @ 1MHz	120 [Ω]
Operating voltage	100 [V]
Conductor resistance	<26 [Ω/km]
Insulation resistance	≥ 1 [GΩ x km]
Test voltage	1500 [V-AC]
Capacitance	40 [pF/m] at 800 - 1000 Hz
Attenuation	@1 MHz: 13.2 dB/km
Min. bending radius flexible	20 [x outer diam]
Min. bending radius installed	10 [x outer diam]

Norms and tables for CAN Bus Marin 1 pair

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2 NES 713
Design and testing standards	IEC 61156-5
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1-2
Fire retardant	IEC 60332-3-22 Cat.A
Ozone resistant	DIN VDE 0472 part 805B
Smoke emission	IEC 61034-1, -2
Field bus specifications	IEC 61158-2 ed. 1
Certification	DNV-GL, ABS

Part No.	1 pair black: 1087380 1 pair purple 1091044

RoHS CE

Also available 2pairs: Part no. 2 pair black: 1087381 and purple: 1091046
Also available with MUD resistant jacket, acc. to NEK TS 606,
One pair: Part no. 1087382
Two pairs: Part no. 1087383

CAN Bus Marin 2 pairs

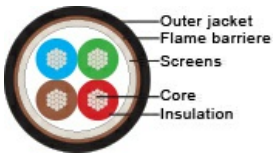
SHF2
Flexible
0.75 mm²
DNV-GL, ABS

Application

Network bus cable, designed for CAN bus systems. For use in ship- and offshore environments to connect control devices to main computer.

Construction

Conductor	Flexible Plain Cu 0.75mm² (24 x 0.20 mm)
Insulation	Foamskin PE 2.4 [mm]
No. of pairs	2
Colour code	1. green-blue, 2. red-brown
Screen	LSZH thermoplastic compound
Screen	Al-polyester-Al-tape
Screen 2	Tinned Cu braid 85 [% optical coverage]
Fire resistant barrier	Flame barriere tape
Jacket	Black or purple SHF2
Outer diam	10.5 [mm]
Weight	170 [kg/km]
Jacket marking	NEK CANBUS MARIN 2 x 2 x 0.75 mm² SHF2 M/Y, metric marking



Specifications

Operating temperature	-40 – +90 [°C]
Capacitance betw. conductors	1 MHz: 13.2 dB/km (pF/100m)
Caracteristic Impedance @ 1MHz	120 ± 18 [Ω]
Operating voltage	100 [V]
Test Voltage	1.5 [kV AC]
Conductor resistance	<26 [Ω/km]
Insulation resistance	1 [GΩ x km]
Test voltage	1.5 [kV-AC]
Capacitance	40 [pF/m]
Min. bending radius flexible	20 [x outer diam]
Min. bending radius installed	10 [x outer diam]

Norms and tables for CAN Bus Marin 2 pairs

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2 EN 50305 9.2
Design and testing standards	IEC 61156-5
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Fire retardant	IEC 60332-3-22 Cat.A
Ozone resistant	DIN VDE 0472 part 805B
Smoke emission	IEC 61034-1, -2
Field bus specifications	IEC 61158-2 ed. 1
Certification	DNV-GL, ABS

Part No.	2 pairs black: 1087381 2 pairs purple: 1091044

RoHS CE

Canbus Marin is available with MUD resistant jacket.
Part no. 1 pair: 1087382, 2 pairs: 1087383

Profibus DP Marin

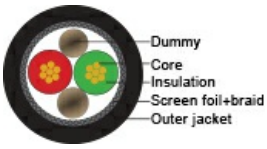
LSZH SHF2
Flexible Type A, 2x0,35 mm²
UV
DNV-GL, ABS

Application

Profibus data cable for communication systems and closed loop marine control systems.

Construction

Conductor	Stranded Plain Cu AWG22 (0.35mm²)
Insulation	Foamskin PE 2.75 [mm]
No. of pairs	1
Screen	Al-polyester-Al tape
Screen 2	Tinned Cu braid 60 [% optical coverage]
Jacket	Black SHF2
Outer diam	8.6 [mm]
Weight	95 [kg/km]
Jacket marking NEK KABEL - PROFIBUS DP MARIN 1X0,35mm² SHF2- 100V-LSOH, DNV-GL, ABS	



Specifications

Operating temperature	-40 – +90 [°C]
Loop resistance screen-conductor	0.11 [Ω/m]
Loop Resistance / Inductance Ratio	<15 (nom. 8.5) [µH/Ω]
Inductance	0.9 [µH/m]
Characteristic impedance	3 - 20 MHz
Conductor resistance	<55 [Ω/km]
Insulation resistance	≥ 1 [GΩ x km]
Test voltage	1000 [kV-DC 1 min.]
Capacitance	<30 (nom. 28) [pF/m] at 800 - 1000 Hz
Min. bending radius	20 [x outer diam]

Norms and tables for Profibus DP Marin

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Toxic gases max.	EN 50305 9.2
Fire retardant	IEC 60332-3-22
Ozone resistant	DIN VDE 0472 part 805 B 1483
Smoke emission	IEC 61034-1, -2
Field bus specifications	IEC 61158-2 ed. 1
UV-resistant	ASTM G 154
Certification	DNV-GL, ABS
Part No.	1091038

Tips This product is also available with MUD resistant jacket, Part.no. 1091039
or armoured, Part.no. 1087370
or armoured with MUD resistant jacket, Part.no. 1091035

RoHS CE

Attenuation nominal, max 105%

Frequency MHz	Attenuation dB/100m
16	<4.5
4	<2.2
0,038	<0.5
0.0096	<0.3

QFCI

4, 8 , 12, 24 or 48 fibers Armoured
Loose tube, jelly filled
Fire resistant, SHF1, F1
DNV-GL, ABS

Application

Fiberoptical cable for the oil- and offshore industry and other harsh environments. The cable has excellent communication properties and is tested to be operative in at least 90 min. at 1,000°C which means that it can maintain vital communication in case of a fire situation. The fibers are protected in jelly filled loose tubes stranded around a central strength member to ensure optimum performance and long life. Each fiber and loose tube is color coded for easy identification during splicing and termination.

Construction

Fibers	Loose tube jelly filled MM 62.5 and 50, SM 9
Loose tube diam.	2.2 [mm]
Inner jacket	SHF1 10.1 [mm]
Tensile strength support	Centre steel wire
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF1
Outer diam	13.5 [mm]
Weight	260 [kg/km]
Jacket marking	NEK Kabel QFCI FIBER OPTIC CABLE IEC 60331-25 SHF1

Specifications

Operating temperature	-40 – +70 [°C]
Temperature @ installation	-10 to +60 [°C]
Tensile strength installed	500 [N]
Crush test	3000 [N/10cm]
Impact	30 [J]
Torsion	±1 [turn/m]
Min. bending radius	15
Min. bending radius flexible	20 [x outer diam]

Norms and tables for QFCI

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-22 Cat.A
Fire resistant	IEC 60331-25 ,90 min. 1,000°C
Weather resistant	IEC 60794-1-22-F1
Ozone resistant	IEC 60811-2-1
Oil and fuel, hydrocarbons resistant	IEC 60811-2-1
Smoke emission	IEC 61034-1, -2 EN 50268-2
UV-resistant	ASTM G 154
Certification	DNV-GL, ABS

Tips Also available with SHF2 jacket or SHF2 MUD.
Alternatively with copper or bronze armour.

Table Fiber

Number of fibers	Number of fibers per tube	Number of fibers and tubes	Weight [kg/km]	Part no.
4 - 9/125	2	2 + 4	260	1042410
8 - 9/125	4	2 + 4	260	1042411
12 - 9/125	4	3 + 3	260	1042412
24 - 9/125	6	4 + 2	260	1042413
48 - 9/125	12	4 + 2	260	1042414
4 - 62.5/125	2	2 + 4	260	1042415
8 - 62.5/125	4	2 + 4	260	1042416
12 - 62.5/125	4	3 + 3	260	1042417
24 - 62.5/125	6	4 + 2	260	1042418
48 - 62.5/125	12	4 + 2	260	1042419
4 - 50/125 OM3	2	2 + 4	260	1042420
8 - 50/125 OM3	4	2 + 4	260	1042421
12 - 50/125 OM3	4	3 + 3	260	1042422
24 - 50/125 OM3	6	4 + 2	260	1042423
48 - 50/125 OM3	12	4 + 2	260	1042424
4 - 50/125 OM2	2	2 + 4	260	1091195
8 - 50/125 OM2	4	2 + 4	260	1091196
12 - 50/125 OM2	4	3 + 3	260	1091197
24 - 50/125 OM2	6	4 + 2	260	1091198
12 - 9/125	6	3 + 3	260	1091091
24 - 9/125	6	4 + 2	260	1091092
48 - 9/125	12	4 + 2	260	1091093

QFCU (QFCI MUD)

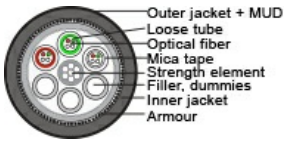
Armoured SHF2
NEK 606, F5, QFCB
Loose tube, jelly filled
DNV-GL

Application

Fiberoptical cable for use in vital communication and emergency systems, which needs to be operational during a fire situation. The fibers are protected in jelly filled loose tubes stranded around a central strength member to ensure high performance and long endurance. Individual colours for each fiber. 62.5, 50 and 9 µm fibers.

Construction

Fibers	Loose tube jelly filled MM 62.5 and 50, SM 9
Loose tube diam.	2.2 [mm] Mica tape on each loose tube
Inner jacket	SHF1
Tensile strength support	Centre steel wire
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Jacket	Black SHF2
Outer diam	16,5 [mm]
Weight	350 [kg/km]



Specifications

Operating temperature	-40 – +70 [°C]
Temperature @ installation	-10 to +60 [°C]
Tensile strength installed	500 [N]
Crush test	3000 [N/10cm]
Impact	30 [J]
Torsion	±1 [turn/m]
Min. bending radius	15 [x outer diam]
Min. bending radius flexible	20 [x outer diam]

Norms and tables for QFCU (QFCI MUD)

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-3-22 cat.A 1670
Fire resistant	IEC 60331-25
Ozone resistant	IEC 60811-2-1
Smoke emission	IEC 61034-1, -2
Chemical resistance	EC 60811-2-1 (Mineral oils)
MUD resistant	NEK TS 606
UV-resistant	ASTM G 154
Certification	DNV-GL

RoHS ✓ CE

Table Fiber

Number of fibers	Number of fibers per tube	Number of fibers and tubes	Weight [kg/km]	Part no.
4 - 62,5/125	2	2 + 4	325	1091114
8 - 62,5/125	4	2 + 4	325	1091115
12 - 62,5/125	4	3 + 3	325	1091116
24 - 62,5/125	6	4 + 2	325	1091117
48 - 62,5/125	12	4 + 2	325	1091126
4 - 50/125 OM3	2	2 + 4	325	1091125
8 - 50/125 OM3	4	2 + 4	325	1091118
12 - 50/125 OM3	4	3 + 3	325	1091119
24 - 50/125 OM3	6	4 + 2	325	1091124
48 - 50/125 OM3	12	4 + 2	325	1091146
4 - 50/125 OM2	2	2 + 4	325	1042464
8 - 50/125 OM2	4	2 + 4	325	1042465
12 - 50/125 OM2	4	3 + 3	325	1042466
24 - 50/125	6	4 + 2	325	1042467
48 - 50/125	12	4 + 2	325	1091150
4 - 9/125	2	2 + 4	325	1091147
8 - 9/125	4	2 + 4	325	1091191
12 - 9/125	4	3 + 3	325	1091192
24 - 9/125	6	4 + 2	325	1091193
48 - 9/125	12	4 + 2	325	1091194

QFAI UNI

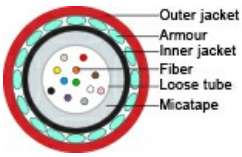
Fire resistant
4 – 24 optical fibres, loose tube
Nonmetallic, SHF1
DNV-GL, ABS

Application

A robust fibre cable suited for harsh ship- and offshore environment. It has no metal content, which leaves it immune to electric and electromagnetic shockwaves. For LAN and WAN installations as well as telecommunication and data transmission on board. UV resistant and rodent protected, SHF1 outer jacket. Fire resistant; operational for 90 min. if exposed to fire.

Construction

Fibers	Loose tube Jelly filled PBTP tube 2,8 mm up to 12 fibres 3,5 mm above 12 fibres
Colour code	Up to 24 individual coloured fibres
Fire resistant barrier	Mica tape
Inner jacket	SHF1
Armour	Glass yarn
Jacket	Red SHF1
Outer diam	≤ 12 fibres, 7,5 [mm] > 12 fibres, 8,5 [mm]
Weight	≤ 12 fibres, 60 [kg/km] > 12 fibres, 70 [kg/km]



Specifications

Operating temperature	-40 – 70 [°C]
Temperature @ installation	-5 – +50 [°C]
Tensile strength	2,500 [N] IEC 60794-1-2 E1
Crush test	3,000 [N/10cm] IEC 60794-1-2 E3
Impact	10 [J]
Min. bending radius	10 [x outer diam] IEC 60794-1-2 E11A
Min. bending radius flexible	15 [x outer diam]

Norms for QFAI UNI

Norms

Halogenfree, max content corrosive and toxic gases	<0.3% when measured according to IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1-2 IEC 60332-3-22 cat.A
Fire resistant	IEC 60331-25
Smoke emission	IEC 61034-1, -2
Test and material	Circuit integrity test IEC 60331-11 / IEC 60331-25 (750°C, 90 min.) max change of attenuation 2,0 dB Circuit integrity test EN 50200 (842°C, 90 min.) max change of attenuation 2,0 dB Fire load: 1,03 MJ/m
UV-resistant	ASTM G 154 IEC 60068-2-5
Certification	DNV-GL, ABS

RoHS √

Tips Specifications and properties for available fibre types can be found at nek-sealine.com under Multimode or Singlemode optical fibres.

AICI

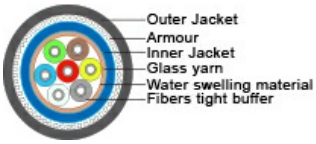
Tight buffered optical cable, 9/125 - 50/125 - 62.5/125, OM3
Steel wire braid armour
UV resistant
DNV-GL, ABS

Application

Optical fiber cable for industry environments. The cable is suitable for both indoor and outdoor use. Continuos submergence in water is not recommended. Strength elements of glass yarn around the cable core allow easy installation of long lengths. The 0,9mm tight buffer is easy to strip allowing fast and reliable splicing and connector mounting. Each fibre is color coded for easy identification. Outer jacket is marked to show fibre type and cable type.

Construction

Fibers	4, 8, 12 or 24
Colour code	Individually coloured fibers
Bedding	Glass yarn
Inner jacket	SHF1
Armour alt.1	Galvanised steel wire braid
Armour alt.2	Tinned Cu-braid
Armour alt.3	Bronze wire braid
Outer Jacket	UV-resistant SHF1



Specifications

Operating temperature	-40 – +70 [°C]
Temperature @ installation	-10 to +70 [°C]
Crush test	2000 [N/10cm]
Impact	1 impacts, 25J
Min. bending radius	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Fire retardant	IEC 60332-3-22 Cat.A
Oil and fuel, hydrocarbons resistant	IEC 60811-2-1
UV-resistant	ASTM G 154
Certification	DNV-GL, ABS

Tables for AICI

Dimensions fibercable

Number of fibers	Outer diam. (mm)	Weight (kg/km)	Tensile strength (N) (at installation/in operation)
4	8.5	105	700/250
8	9.4	125	800/350
12	10.3	145	1,200/500
24	12.1	185	1,700/750

AIAI

Tight buffered fiber optic cable with strong glass yarn shield
Non metallic, waterproof
Up to 24 fibers

Application

This product is absolutely immune against electromagnetic or electrical disturbances in its environment. It is also mechanically strong and waterproof. It is ideal for communication and data transmission in harsh environments as shipboard- and offshore installations close to electrical machinery and power lines.

Construction

Fibers	Tight buffer 0.9 mm
Inner jacket	SHF1
Tensile strength support	Glassfibre yarn
Jacket	Black SHF1
Outer diam	12 fibre 6.7mm, 24 fibre 8.5 [mm]
Weight	115 / 160 [kg/km]

Specifications

Operating temperature	-30 – 70 [°C]
Water tightness	No water penetration
Tensile strength installed	2000 [N]
Attenuation	See separate table for fibres
Impact	20 [J]
Min. bending radius	10 [x outer diam]
Min. bending radius flexible	15 [x outer diam]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1, -2
Sheathing material	IEC 60092-360 (359)
Flame retardant	IEC 60332-1
Smoke emission	IEC 61034-1, -2
UV-resistant	ASTM G 154
Certification	DNV-GL

RoHS √

Data for fiber

Fiber data

Properties	MM 62.5 OM1	MM 50 OM2	MM 50 OM3	MM 50 OM4
Core Diameter	62.5 ± 2.5 µm	50 ± 2.5 µm	50 ± 2.5 µm	50 ± 2.5 µm
Core non-circularity	< 5%	< 5%	< 5%	< 5%
Cladding diameter	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 1.0 µm
Coating diameter	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm
Cladding non-circularity	<0.7%	<0.7%	<0.7%	<0.7%
Core/Cladding concentricity error	<1 µm	<1 µm	<1 µm	<1 µm
Coating/cladding concentricity error	<10 µm	<6 µm	<6 µm	<6 µm
Numerical Aperture	0.275 ± 0.015 µm	0.200 ± 0.015 µm	0.200 ± 0.015 µm	0.200 ± 0.015 µm
Attenuation @ 850 nm	<3.50 db/km	<2.89 dB/km	<2.89 dB/km	<2.89 dB/km
Attenuation @1300 nm	<1.00 dB/km	<0.80 dB/km	<0.80 dB/km	<0.80 dB/km
Bandwidth @ 850 nm	>200 MHz*km	>500 MHz*km	>1500 MHz*km	>3500 MHz*km
Bandwidth @ 1300 nm	>500 MHz*km	>500 MHz*km	>500 MHz*km	>500 MHz*km
Effective Modal Bandwidth (EMB)@ 850 nm			>2000 MHz*km	>4700 MHz*km
Fibre capacity 10GBase-SR	33 m	83 m	300 m	550 m
Fibre cap. 40GBase-SR4/100Base-RS10	274 m	600 m	1000 m	1100 m
Fibre cap. 40GBase-SR4/100Base-RS10			140 m	170 m
Proof test	>100kpsi	>100kpsi	>100kpsi	>100kpsi

Data for fiber continues

Properties	SMR ITU-T G652D	SMR ITU-T G657A	SMR ITU-T G657B	SMR NZD ITU-T G655.E
Mode field Diameter @ 1310 nm	9,0±0,4 µm	9,2±0,4µm	8,9±0,4 µm	-
Mode field Diameter @ 1550 nm	10,1±0,5µm	10,1±0,5µm	9,9±0,5µm	9,2±0,5µm
Cladding diameter	125±0,7µm	125±0,7µm	125±0,7µm	125±1,0µm
Coating diameter	242±7 µm	242±7 µm	242±7 µm	242±7 µm
Cladding non-circularity	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %
Core/Cladding concentricity error	≤ 0,5 µm	≤ 0,5 µm	≤ 0,5 µm	≤ 0,5 µm
Coating/cladding concentricity error	≤ 12 µm	≤ 12 µm	≤ 12 µm	≤ 12 µm
Cable Cut off wavelength	≤ 1260 nm	≤ 1260 nm	≤ 1260 nm	≤ 1300 nm
Zero dispersion wavelength (λ0)	1300-1322 µm	1300-1322 µm	1300-1324 µm-	≤ 1440 nm
Dispersion slope (S0) @ (λ0)	≤ 0,090 ps/(nm² * km)	≤ 0,090 ps/(nm² * km)	≤ 0,092 ps/(nm² * km)	-
Chromatic dispersion @ 1285 – 1330 nm	≤ 3,5 ps/(nm * km)	≤ 3,5 ps/(nm * km)		
Chromatic dispersion @ 1550 nm	≤ 18 ps /(nm * km)	≤ 18 ps /(nm * km)	-	-
Chromatic dispersion @ 1625 nm	≤ 22 ps/(nm * km)	≤ 22 ps/(nm * km)	-	-
Chromatic dispersion @ 1530 – 1565 nm	-	-	-	5,5 ÷ 10 ps/(nm * km)
Chromatic dispersion @ 1565 – 1625 nm	-	-	-	7,5 ÷ 13,8 ps/(nm * km)
PMD @ 1550 nm	≤ 0,1 ps/√ km	≤ 0,1 ps/√ km	≤ 0,1 ps/√ km	≤ 0,2 ps/√ km
Attenuation @ 1310 nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,40 dB/km
Attenuation @ 1383nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 1,00 dB/km
Attenuation @ 1550 nm	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km
Attenuation @ 1625 nm	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km
Attenuation with bending:				
Mandreal Radius 15mm @1550 10 turns	-	≤ 0,25 dB	≤ 0,03 dB	-
Mandreal Radius 15mm @1625 10 turns	-	≤ 1,0 dB	≤ 1,0 dB	-
Mandreal Radius 10mm @1550 1 turn	-	≤ 0,75 dB	≤ 0,1 dB	-
Mandreal Radius 10mm @1625 1 turn	-	≤ 1,5 dB	≤ 0,2 dB	-
Mandreal Radius 7,5mm @1550 1 turn	-	-	≤ 0,5dB	-
Mandreal Radius 7,5mm @1625 1 turn	-	-	≤ 01,0dB	-
Proof test	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi

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