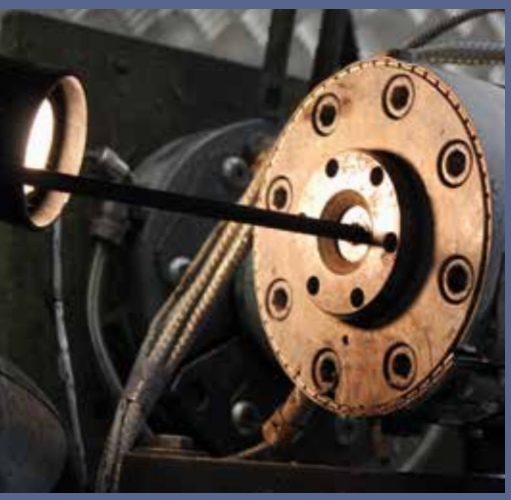
Draka

A Brand of Prysmian Group

STUDIO BROADCAST AND EVENT

IP MediaLine Product Catalogue

PRYSMIAN GROUP - #1 CABLE MAKER IN THE WORLD



Prysmian Group

Linking the Future

PRYSMIAN GROUP

Prysmian Group is world leader in the energy and telecom cable systems industry. We offer the widest range of services and know-how in the business, with almost 140 years of experience, sales exceeding €11 billion, and about 29,000 employees in over 50 countries and 112 plants.

Each year, the Group manufactures thousands of miles of underground and submarine cables and systems for power transmission and distribution, as well as medium and low voltage cables for the construction and infrastructure sectors.

We also produce a comprehensive range of optical fibres, copper cables and connectivity systems for voice, video and data transmission for the telecommunications sector.

In 2018, General Cable merged with Prysmian and became part of Prysmian Group. Prysmian is a public company, listed on the Italian Stock Exchange in the FTSE MIB index.

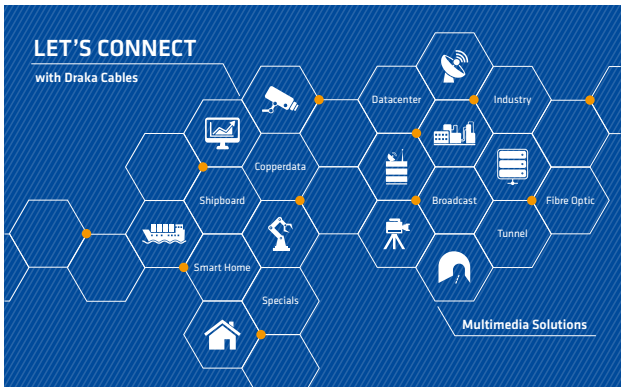
MULTIMEDIA SOLUTIONS

Society today demands the effective delivery of information at any time, anywhere. That's why Prysmian specialises in everything to do with cables for private communication networks. Supporting wholesalers, resellers and OEMs, our solutions are designed to meet both current and future demands, with absolute reliability and total flexibility.

Our Multimedia Solutions business area manufactures and sells optical, coaxial and copper cables.

From cables for TV and film studios, rail networks and underground long-distance communication to light signalling, track switching devices and mobile telecommunications, we innovate to create next-generation communication solutions, today.

Despite the extensive use of mobile phones today, the vast majority of applications are run on cabled infrastructures. Our Multimedia Solutions department develops, produces and sells copper and optical fibre cables that cover virtually every communications application in this field. Whatever your needs, whether you depend on network solutions to run your business, or whether you are a wholesaler, value-added reseller, or OEM, we can help you meet your current and future requirements. We offer greater bandwidths, longer-life solutions, absolute reliability and more.



INDEX

VIDEO CABLE 75 Ω

UHD VIDEO CABLE 75 Ω

CAMERA CABLES

AUDIO CABLES

COPPER DATA CABLES

FIBER CABLES

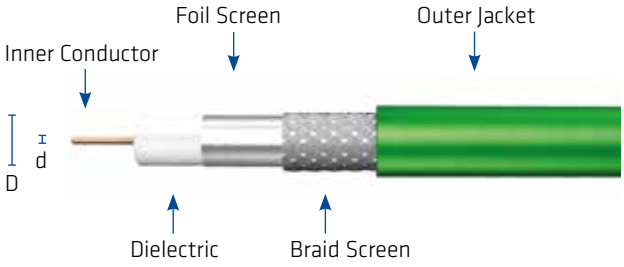
COAXIAL CABLE

Four main components
- Inner Conductor d
- Dielectric D
- Shield
- Outer Jacket

Characteristic Impedance (Z)
- 50 Ω for RF
- 75 Ω for Video and Community Antenna TV (CATV)

Foaming
- Chemical
- Physical

Skin Effect
- Current flows on the surface of the conductor at the high frequencies
- Reduces effective conductor area

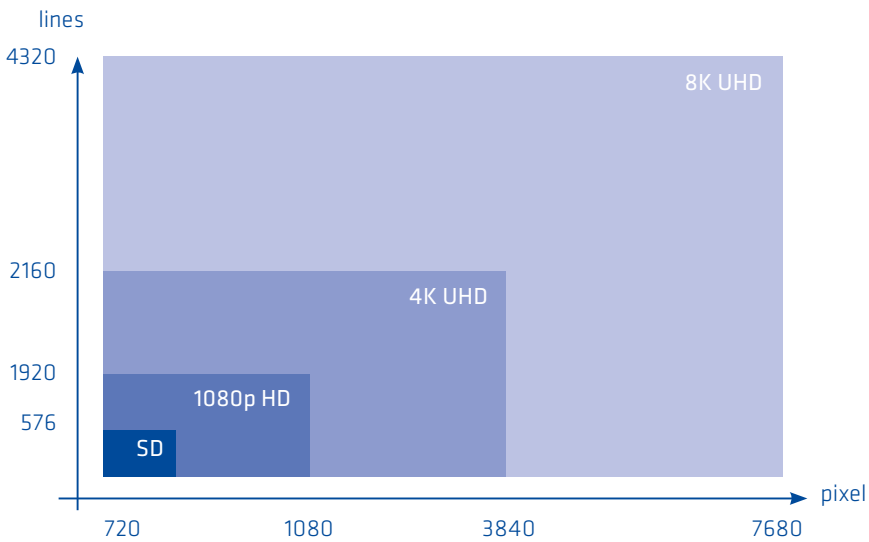


$$Z = \frac{60}{\sqrt{\varepsilon_r}} \ln \frac{D}{d}$$

Z = Characteristic Impendance
ε_r = Relative permittivity of the dieletric
D = Inner Diameter of the outer conductor, mm
d = Diameter of the inner conductor, mm

SIGNAL TYPES

Signal types			
720p	1080p	1080i	4K (2160p)
HD-SDI	HD-SDI	FULL HD	UHD
1280x720 pixel	1920x1080 pixel	1920x1080 pixel	3840x2160 pixel
SMPTE 292M (1.5G-SDI)	SMPTE 424M (3G-SDI)	SMPTE 292M (1.5G-SDI)	SMPTE ST 2082-1 (12G-SDI)
20 dB/100 m max.	20 dB/100 m max.	20 dB/100 m max.	40 dB/100 m max.



RESOLUTION 4K

3840 x 2160 progressive scan, the bit rate is 12Gb/s.
The high bandwidth of 12 Gb/s (4 times 3G /1080p) reduces the transmission length dramatically.

Three different 4K solutions for broadcast production are in discussion:

1. Single link (1x12Gb/s, ½ clock frequency = 6GHz)
2. Dual link (2x6Gb/s, ½ clock frequency = 3GHz)
3. Quad link (4x3Gb/s, ½ clock frequency =1.5GHz)

The dual link and quad link solutions will solve the issue with the high bandwidth for new installation. To know the 4K situation of an existing broadcast infrastructure, we have to look at the single solution.

MATRIX TO DETERMINE MAX. TRANSMISSION LENGTH

Draka Video Cables	**SDI/SDV** SMPTE 259M 270Mbit/s	**720p/1080i** SMPTE 292M 1.5Gbit/s	**1080p** SMPTE 424M 3Gbit/s	**Quad Link** SMPTE ST 2081 3Gbit/s	**Dual Link** SMPTE ST 2081 6Gbit/s	**Single Link** SMPTE ST 2081 12Gbit/s
Max. Attenuation	30dB	20dB	20dB	40dB	40dB	40dB
0.41/1.9AF	127	44	33	65	45	31
0.6/2.8AF	227	66	47	94	65	45
0.65/2.8AF C_{ca}	258	70	49	99	66	46
0.8/3.7AF	315	89	63	125	87	60
0.8L/3.7Dz	263	67	49	89*	58*	40*
1.0/4.8AF	386	109	75	151	104	70
RG6 C_{ca}	404	111	76	151	104	70
1.0L/4.8Dz	285	80	51	92*	61*	43*
1.2L/4.8Dz	323	94	63	113*	74*	50*
1.4/5.8AF UHD	566	154	103	205	140	95
1.4/6.6AF	566	154	105	211	144	96
RG11 C_{ca}	654	171	119	237	149	97
1.6/7.3AF	662	175	118	236	152	107
HD PRO 0.6/2.8 AF	258	70	51	99	66	46
HD PRO 0.8/3.7 AF	327	90	64	127	86	56
HD PRO 1.0/4.8 AF	424	115	80	160	107	71
UHD 50	258	74	50	102	72	49
UHD 100	487	127	91	182	129	87
UHD 150	744	210	144	288	197	141
1.2/5.0 UHD Flex	438	116	80	144*	98*	62*

*Patch/Flex cables with head room

The maximum transmission distances are based on the maximum loss at half frequeny mentioned in the corresponding specification. Today's devices use equalizers mainly designed for 20dB loss (see SMPTE 292M and SMPTE 424M).For the technical realization it is essential to check the equipment e.g. equalizers if they are suitable for the maximum values

INDEX VIDEO CABLE 75 Ω

1. VIDEO CABLES 75 Ω

In the Broadcast industry, the following cable constructions are used to transmit video content:

- Installation cables: coaxial 75 Ω, foam PE dielectric, foil and braid
- Patch cables: coaxial 75 Ω, foam PE dielectric, two braids

Standard Installation video cables portfolio:

- 041/1.9AF
- 0.6/2.8AF
- 0.65/2.8AF C_{ca} s1a d1 /Mini RG59
- 0.8/3.7AF
- 1.0/4.8AF
- RG6 C_{ca} s1a d1 (1.0/4.8AF)
- 1.4/6.6AF
- 1.6/7.3AF
- RG11 C_{ca} s1a d1 (1.6/7.3AF)
- UHD 50
- UHD 100

Video patch:

- 0.8L/3.7Dz
- 1.0/4.8Dz
- 1.2L/4.8Dz

Today's broadcasters´ infrastructure is designed for 720p, 1080i or even 1080p video content. The important question for broadcasters is what will be the future content and will it affect my infrastructure.
For example, the typical infrastructure of an outside broadcast truck is the coaxial cable 0.6/2.8AF. For a stadium it is the coaxial 1.4/6.6AF or 1.6/7.3AF.

Video content 1.5G:

The HD-SDI signal is defined by SMPTE292M. This content is like the SDI signal an uncompressed component signal, serial transmitted via one coaxial cable. The resolution of 1080i is 1080 lines x 1920 pixel. The resolution of 720p is of course 720 lines x1280 pixel and the bit rate is 1.485Gbit/s. Based on the SMPTE 292M specification a maximum transmission distance of an 0.6/2.8AF is 70m plus a headroom. Practical tests showed 90m.

Video content 3G:

The HD-SDI signal is defined by SMPTE424M. The resolution is 1080 lines x1920 pixel, the scan is progressive; the bit rate is 3Gbit/s. Identical to SMPTE292M, the maximum transmission length is specified at maximum 20dB attenuation at half clock frequency. Based on these key points, the maximum transmission distance of a 0.6/2.8AF network is 47m plus headroom, practical test 80m.

Looking at the next generation of possible video contents we would like to look at 4K.

0.41/1.9AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI/SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Class E_{ca}
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca}
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca}

Construction	
Inner conductor	copper wire, bare, diameter 0.41 mm
Insulation	Foam-PE, diameter 1.9 mm
Outer conductor	Al-PET-Al foil + copper braid, tinned, diameter 2.5 mm
Sheath	FRNC or PVC, diameter 3.1 mm
Printing	DRAKA – 0.41/1.9 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	1.7	50 – 300	≥ 26
5	3.5	300 – 3000	≥ 22
10	4.9	3000 – 3500	≥ 18
100	20.4	3500 – 6000	≥ 15
200	26.4	6000 – 12000	≥ 15
750	45.2		
1000	49.5		
1500	61.5		
3000	88.1		
6000	127.7		
9000	156.0		
12000	199.5		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 0.41/1.9AF FRNC-C green	60013645	60013863
DR 0.41/1.9AF PVC green	60014855	60014855

0.6/2.8AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI/SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Class E_{ca}
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca}
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca}

Construction	
Inner conductor	solid copper wire, bare, diameter 0.6 mm
Insulation	Foam-PE, diameter 2.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 3.4 mm
Sheath	FRNC or PVC, diameter 4.5 mm, green RAL 6018
Printing	DRAKA – 0.6/2.8 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	2.7	50 – 300	≥ 26
5	4.1	300 – 3000	≥ 22
10	5.1	3000 – 3500	≥ 18
100	11.4	3500 – 6000	≥ 15
200	15.7	6000 – 12000	≥ 15
750	30.2		
1000	34.0		
1500	42.4		
3000	61.3		
6000	89.4		
9000	109.5		
12000	126.4		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 0.6/2.8AF FRNC-C blue	60011530	60012395
DR 0.6/2.8AF FRNC-C black	60011532	60012396
DR 0.6/2.8AF FRNC-C green	60011531	60014392
DR 0.6/2.8AF FRNC-C violet	60011529	60014398
DR 0.6/2.8AF FRNC-C yellow	60014401	60014401
DR 0.6/2.8AF FRNC-C turquoise	60014440	60014443
DR 0.6/2.8AF PVC green	60013995	60013997
DR 0.6/2.8AF PVC violet	60013998	60013998
DR 0.6/2.8AF PVC red	60014001	60014001

0.65/2.8AF C_{ca} s1a d1 /Mini RG59 Video Cable 75 Ω

C_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
LSHF-FR (FRNC-C) jacket	IEC60332-3-24, IEC60332-1, IEC 60754-1, IEC 61034-1, IEC 60754-2, Class C_{ca} s1d1a1

Construction	
Inner conductor	solid copper wire, bare, diameter 0.65 mm
Insulation	Foam-PE, diameter 2.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid diameter 3.4 mm + Al-PET foil longitudinal, bonded to the sheath
Sheath	FRNC, diameter 4.5 mm, green RAL 6018
Printing	DRAKA - 0.6/2.8 AF S – 75 Ω ± 1% + SMPTE 259M, SMPTE 292M, SMPTE 424M, 4K, 8K, <ww/yy> <batch number> <CE_Mark> Cca s1a d1 <meter> m

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	1.2	50 – 300	≥ 26
5	2.5	300 – 3000	≥ 22
10	3.5	3000 – 3500	≥ 18
100	10.0	3500 – 6000	≥ 15
200	14.1	6000 – 12000	≥ 15
750	27.7		
1000	33.2		
1500	39.6		
3000	60.9		
5000	78.9		
6000	84.1		
9000	105.4		
12000	122.8		

Product Code Table

Product Description	PG Reference Code	PG Part Number
0.65/2.8 C_{ca} s1a1d1 green	60014501	60086647

0.8/3.7AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Not for fixed installation in construction works
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca} s1 d1 a1
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca} s1 d1 a1

Construction	
Inner conductor	solid copper wire, bare, diameter 0.8 mm
Insulation	Foam-PE, diameter 3.7 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 4.5 mm
Sheath	FRNC, FRNC-C or PVC, diameter 5.9 mm, green RAL 6018
Printing	DRAKA – 0.8/3.7 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.9	50 – 300	≥ 26
5	1.9	300 – 3000	≥ 22
10	2.5	3000 – 3500	≥ 18
100	8.2	3500 – 6000	≥ 15
200	11.2	6000 – 12000	≥ 15
750	22.5		
1000	25.5		
1500	32.0		
3000	45.9		
6000	67.1		
9000	82.2		
12000	94.9		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 0.8/3.7AF FRNC-C blue	60011524	60011524
DR 0.8/3.7AF FRNC-C green	60011526	60011525
DR 0.8/3.7AF FRNC-C black	60014456	60014459
DR 0.8/3.7AF FRNC-C blue	60011524	60014463
DR 0.8/3.7AF FRNC-C violet	60011523	60014467
DR 0.8/3.7AF PVC blue	60011501	60021890
DR 0.8/3.7AF PVC yellow	--	60026072
DR 0.8/3.7AF PVC orange	60011500	60011500
DR 0.8/3.7AF PVC green	60011502	60013908
DR 0.8/3.7AF PVC violet	60009199	60013914
DR 0.8/3.7AF PVC black	60013915	60013918
DR 0.8/3.7AF PVC red	60013919	60013919

1.0/4.8AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Not for fixed installation in construction works
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca}
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca}

Construction	
Inner conductor	solid copper wire, bare, diameter 1.0 mm
Insulation	Foam-PE, diameter 4.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 5.6 mm
Sheath	FRNC, PVC, PUR diameter 7.0 mm ,green RAL 6018; blue RAL 5015; white RAL 9010
Printing	DRAKA - 1.0/4.8 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)			
Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.8	50 – 300	≥ 26
5	1.3	300 – 3000	≥ 22
10	2.0	3000 – 3500	≥ 18
100	6.7	3500 – 6000	≥ 15
200	9.2	6000 – 12000	≥ 15
750	18.4		
1500	26.5		
3000	38.3		
6000	56.8		
9000	69.6		
12000	80.3		

Product Code Table		
Product Description	PG Reference Code	PG Part Number
DR 1.0/4.8AF FRNC-C violet	60009613	60011557
DR 1.0/4.8AF FRNC-C blue	60011558	60011558
DR 1.0/4.8AF FRNC-C green	60009601	60014473
DR 1.0/4.8AF PVC green	60015161	60015162
DR 1.0/4.8AF PVC blue	60015163	60015163
DR 1.0/4.8AF PUR green	60014197	60014199
DR 1.0/4.8AF PUR blue	60014201	60014201

RG6 C_{ca} s1a d1 Video Cable 75 Ω

C_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
LSHF-FR (FRNC-C) jacket	IEC60332-3-24, IEC60332-1, IEC 60754-1, IEC 61034-1, IEC 60754-2, Class C_{ca} s1d1a1

Construction	
Inner conductor	bare copper wire, diameter 1.02 mm
Insulation	gas injected foam PE, diameter 4.45 mm
Outer conductor	Al-PET foil, longitudinal, bonded to the insulation under tinned copper braid, + Al-PET foil longitudinal, bonded to the sheath, diameter 5.5 mm
Sheath	FRNC-C, diameter 7.0 mm ± 0.3 mm green RAL 6018, black RAL 9005
Printing	**DRAKA** RG6 FRNC-C, SMPTE 259M, SMPTE 292M, SMPTE 424M, 4K, 8K, <ww/yy> <batch number> <CE_Mark> Cca s1a d1 <meter> m

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.8	50 – 300	≥ 26
5	1.3	300 – 3000	≥ 22
10	2.0	3000 – 3500	≥ 18
100	6.4	3500 – 6000	≥ 15
200	9.1	6000 – 12000	≥ 15
750	18.0		
1500	26.5		
3000	38.3		
6000	56.8		
9000	69.6		
12000	80.3		

Product Code Table

Product Description	PG Reference Code	PG Part Number
RG6 C_{ca} s1a1d1 green	60077007	60077007
RG6 C_{ca} s1a1d1 black	60077761	60077761

1.4/5.8AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Not for fixed installation in construction works
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca}
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca}

Construction	
Inner conductor	solid copper wire, bare, diameter 1.4 mm
Insulation	Foam-PE, diameter 5.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 6.4 mm
Sheath	FRNC, PVC, PUR diameter 7.7 mm, green RAL 6018, blue RAL 5015
Printing	DRAKA 1.4/5.8 AF - 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.5	50 – 300	≥ 26
5	1.0	300 – 3000	≥ 22
10	1.5	3000 – 3500	≥ 18
100	4.6	3500 – 6000	≥ 15
200	6.6	6000 – 12000	≥ 15
750	13.0		
1500	19.5		
3000	28.6		
6000	42.3		
9000	50.9		
12000	58.8		

Product Code Table

Product Description	PG Reference Code	PG Part Number
1.4/5.8 AF FRNC-C gn	90151059	

1.4/6.6AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Not for fixed installation in construction works
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca}
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca}

Construction	
Inner conductor	solid copper wire, bare, diameter 1.4 mm
Insulation	Foam-PE, diameter 6.4 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 7.2 mm
Sheath	FRNC, PVC, PUR diameter 9.2 mm, green RAL 6018, blue RAL 5015
Printing	DRAKA - 1.4/6.6 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.5	50 – 300	≥ 26
5	1.0	300 – 3000	≥ 22
10	1.5	3000 – 3500	≥ 18
100	4.6	3500 – 6000	≥ 15
200	6.6	6000 – 12000	≥ 15
750	13.0		
1500	19.0		
3000	27.7		
6000	41.6		
9000	50.9		
12000	58.8		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 1.4/6.6AF FRNC-C blue	60011591	60011591
DR 1.4/6.6AF FRNC-C green	60011592	60011592
DR 1.4/6.6AF PVC 75 green	60015166	60015166
DR 1.4/6.6AF PUR blue	60015167	60015167

1.6/7.3AF Video Cable 75 Ω

D_{ca} CPR

E_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
PVC	Not for fixed installation in construction works
FRNC	IEC 60332-1, IEC 60754, IEC 61034, Class E_{ca} s1 d1 a1
FRNC-C	additionally IEC 60332-3 -24, Class D_{ca} s1 d1 a1

Construction	
Inner conductor	solid copper wire, bare, diameter 1.6 mm
Insulation	Foam-PE, diameter 7.3 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 8.2 mm
Sheath	FRNC, diameter 10.3 mm, green RAL 6018
Printing	DRAKA - 1.6/7.3 AF – 75 Ω ± 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.4	50 – 300	≥ 26
5	0.9	300 – 3000	≥ 22
10	1.3	3000 – 3500	≥ 18
100	3.9	3500 – 6000	≥ 15
200	5.3	6000 – 12000	≥ 15
750	11.4		
1500	16.9		
3000	26.4		
6000	37.3		
9000	45.6		
12000	52.6		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 1.6/7.3AF PVC green	60015158	60015158
DR 1.6/7.3AF PUR green	60015160	60015160
DR 1.6/7.3AF PUR blue	60016762	60016762
DR 1.6/7.3AF FRNC-C green	60016763	60016765
DR 1.6/7.3AF FRNC-C black	60016768	60016769

RG11 C_{ca} s1a d1 Video Cable 75 Ω

C_{ca} CPR

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Flame resistance	
LSHF-FR (FRNC-C) jacket	IEC60332-3-24, IEC60332-1, IEC 60754-1, IEC 61034-1, IEC 60754-2, Class C_{ca} s1d1a1

Construction	
Inner conductor	bare copper wire, diameter 1.63 mm
Insulation	gas injected foam PE, diameter 7.15 mm
Outer conductor	Al-PET foil, longitudinal, bonded to the insulation under tinned copper braid, + Al-PET foil longitudinal, bonded to the sheath, diameter 8.1 mm
Sheath	FRNC-C, diameter 10.0 mm ± 0.3 mm green RAL 6018, black RAL 9005
Printing	DRAKA - RG11 FRNC-C, SMPTE 259M, SMPTE 292M, SMPTE 424M, 4K, 8K, <ww/yy> <batch number> <CE_Mark> Cca s1a d1 <meter> m

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.4	50 – 300	≥ 26
5	0.9	300 – 3000	≥ 22
10	1.3	3000 – 3500	≥ 18
100	4.0	3500 – 6000	≥ 15
200	5.8	6000 – 12000	≥ 15
750	11.7		
1500	16.9		
3000	26.4		
6000	41.3		
9000	49.8		
12000	56.3		

Product Code Table

Product Description	PG Reference Code	PG Part Number
RG11 C_{ca} s1a d1, green		

INDEX UHD VIDEO CABLE 75 Ω

2. UHD VIDEO CABLE 75 Ω

Draka coaxial cable for transmission of 4K signals
Coaxial cable goes 4K

There is currently a discussion on higher data rate on the market. 4K is playing an ever-increasing role in this. Currently, 4K transmissions in Quad Link (4 x 3 Gbit/s) are carried out for technical reasons. In practice, however, this proves to be uneconomical. Single-link transmission at 12 Gbit/s should be aimed for.

According to SMPTE ST 2082, the 4K format transmits video signals with a resolution of 3840 x 2160 pixels. Data transmission takes place with a rate of 12 Gbit/s. This corresponds to a half clock frequency of 6 GHz. The standard also provides for a maximum allowed attenuation of 40 dB. Draka has developed coaxial cables for 4K applications based on these specifications. For example, the new UHD series includes the UHD50 and UHD100.

In developing the new series, Draka has placed great emphasis on meeting the requirements of OB truck manufacturers, such as maintaining the outer cable diameters of 4.5 and 7 millimeters. Draka has achieved this through higher dielectric foaming and a silver-plated, size-optimized, inner conductor.

The quality of the components is of decisive importance in the technical implementation. To achieve maximum results, connectors and cables should be matched to each other. Tolerances must be kept as low as possible.

It should also be taken into account that different generations of equalizers are installed in the input board of the devices. These have a significant influence in determining the maximum achievable cable length.

UHD 50 Video Cable 75 Ω

E_{ca} CPR | UHD 4K | 1080p | 1080i | HDTV

Standards
Designed for 12Gbit/s, 4K (SMPTE 2082), UHD, also for Composite, Component, SDI, SDV, SDTI, HDTV (1080i, 720p, 1080p)

Flame resistance	
FRNC:	IEC 60332-1; IEC 60754-2; IEC 61034, CPR Class E_{ca}

Construction	
Inner conductor	Solid copper wire, silvered, diameter 0.7 mm
Insulation	Foam-PE, diameter 2.9 mm
Outer conductor	AL-PET-AL-foil under tinned copper braid
Sheath	PVC or FRNC, green RAL 6018, diameter 4.5mm
Printing	DRAKA ULTRA HD PRO 50 UHD SMPTE 292M, SMPTE 424M, 4K, 8K, 12G

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	2.4	50 – 300	≥ 26
5	2.2	300 – 3000	≥ 22
10	3.1	3000 – 3500	≥ 18
100	10.0	3500 – 6000	≥ 15
200	13.9	6000 – 12000	≥ 15
750	26.8		
1500	39.1		
3000	55.6		
6000	81.0		
9000	99.2		
12000	114.6		

Product Code Table

Product Description	PG Reference Code	PG Part Number
UHD50 FRNC	60055255	60055255

UHD 100 Video Cable 75 Ω

E_{ca} CPR | UHD 4K | 1080p | 1080i | HDTV

Standards
Designed for 12Gbit/s, 4K (SMPTE 2082), UHD, also for Composite, Component, SDI, SDV, SDTI, HDTV (1080i, 720p, 1080p)

Flame resistance	
FRNC:	IEC 60332-1; IEC 60754-2; IEC 61034, CPR Class E_{ca}

Construction	
Inner conductor	solid copper wire, silvered, diameter 1.2 mm
Insulation	Foam-PE, diameter 4.9 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 5.7 mm
Sheath	PVC or FRNC, green, RAL 6018, diameter 7.0 mm
Printing	DRAKA ULTRA HD PRO 100 UHD SMPTE 292M, SMPTE 424M, 4K, 8K,12G

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	1.8	50 – 300	≥ 26
5	1.1	300 – 3000	≥ 22
10	1.6	3000 – 3500	≥ 18
100	5.3	3500 – 6000	≥ 15
200	9.3	6000 – 12000	≥ 15
750	15.8		
1500	22.0		
3000	31.0		
6000	44.7		
9000	57.7		
12000	63.2		

Product Code Table

Product Description	PG Reference Code	PG Part Number
UHD100 FRNC	60055256	60055256

UHD 150 Video Cable 75 Ω for installation

E_{ca} CPR | UHD 4K | 1080p | 1080i | HDTV

Standards
Designed for 12Gbit/s, 4K (SMPTE 2082), UHD, also for Composite, Component, SDI, SDV, SDTI, HDTV (1080i, 720p, 1080p)

Flame resistance	
FRNC:	IEC 60332-1; IEC 60754-2; IEC 61034, CPR Class E_{ca}

Construction	
Inner conductor	stranded copper wires, silvered, diameter 7x0.75 mm
Insulation	Foam-PE, diameter 9.7 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid
Sheath	PVC or FRNC, green RAL 6018, diameter 12.7 mm
Printing	**DRAKA ULTRA HD PRO 150 UHD** SMPTE 292M, SMPTE 424M, 4K, 8K

Electrical data at 20°C (nominal)			
Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
750	9.5	50 – 300	≥ 26
1500	13.9	300 – 3000	≥ 22
2250	17.5	3000 – 3500	≥ 18
3000	20.3	3500 – 6000	≥ 15
6000	28.2		
9000	34.5		
10000	36.3		
12000	39.8		

Product Code Table		
Product Description	PG Reference Code	PG Part Number
ULTRA HD PRO 150 UHD FRNC		60081959
ULTRA HD PRO 150 UHD PVC		60082489

0.8L/3.7Dz Patch Video Cable 75 Ω

Standards

For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Construction

Inner conductor	stranded copper wire, diameter 0.8 mm
Insulation	Foam-PE, diameter 3.7 mm
Outer conductor	2xCu-braid, tinned 4.6 mm
Sheath	DMC FLEX PVC diameter 6.0 mm, black RAL 9005
Printing	DRAKA 0.8L/3.7Dz – 75 Ω +- 1%

Electrical data at 20°C (nominal)

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	1.0	50 – 300	≥ 26
10	2.9	300 – 3000	≥ 22
100	9.8	3000 – 3500	≥ 18
800	29.3	3500 - 6000	≥ 15
1000	33.2		
1500	40.9		
3000	60.7		
4000	70.1		
6000	85.9		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 0.8L/3.7Dz PVC/rubber	60014488	60014492

1.0L/4.8Dz Patch Video Cable 75 Ω

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Construction	
Inner conductor	stranded copper wire, diameter 1.0 mm
Insulation	Foam-PE, diameter 4.8 mm
Outer conductor	2xCu-braid, tinned
Sheath	DMC FLEX PVC diameter 7.0 mm, black RAL 9005
Printing	DRAKA HD PRO FLEX 1.0L/4.8Dz – 75 Ω +- 1%

Electrical data at 20°C (nominal)			
Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.9	50 – 300	≥ 26
10	2.0	300 – 3000	≥ 22
100	9.2	3000 – 3500	≥ 18
800	25.8	3500 – 6000	≥ 15
1000	32		
1500	39.2		
3000	59.1		
4000	68.2		
6000	83.4		

Product Code Table		
Product Description	PG Reference Code	PG Part Number
R 1.0L/4.8Dz PVC/rubber, black	60011389	60011389

1.2L/4.8Dz Patch Video Cable 75 Ω

Standards

For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV, 4K, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 2082)

Construction

Inner conductor	stranded copper wire, diameter 1.2 mm
Insulation	Foam-PE, diameter 4.8 mm
Outer conductor	2xCu-braid, tinned
Sheath	DMC FLEX PUR, PUR, diameter 7.2 mm, green RAL 6018
Printing	DRAKA 1.2L/4.8Dz – 75 Ω +- 1% - HDTV

Electrical data at 20°C

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.5	50 – 300	≥ 26
10	1.9	300 – 3000	≥ 22
100	8.0	3000 – 3500	≥ 18
800	22	3500 – 6000	≥ 15
1000	25.2		
1500	32		
3000	49		
6000	72.8		

Product Code Table

Product Description	PG Reference Code	PG Part Number
DR 1.2L/4.8DZ PUR rubber, green	60016740	60016741

HD PRO 0.6/2.8 AF

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV)

Flame resistance	
FRNC:	IEC 60332-1, IEC 60754-2, IEC 61034

Construction	
Inner conductor	solid copper wire, bare, diameter 0.6 mm
Insulation	Foam-PE, diameter 2.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 3.4 mm
Sheath	FRNC, diameter 4.5 mm, Anthracite
Printing	DRAKA HD PRO 0.6/2.8 AF - 75 Ω ± 1%

Electrical data at 20°C

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	1.2	50 – 300	≥ 26
3	1.9	300 – 3000	≥ 22
5	2.5	3000 – 3500	≥ 18
10	3.5	3500 – 5000	≥ 15
30	5.9		
100	10.0		
200	14.1		
300	17.8		
500	24.0		
800	29.7		
1000	33.2		
1500	39.6		
2250	50.2		
3000	60.9		
3500	65.8		
4000	69.8		
4500	74.2		
5000	78.9		

Product Code Table

Product Description	PG Reference Code	PG Part Number
HD PRO 0.6/2.8 AF	60016731	

HD PRO 1.0/4.8 AF

Standards
For analogue and digital video signals (Composite, Component, SDI, SDV, SDTI, HDTV)

Flame resistance	
FRNC:	IEC 60332-1, IEC 60754-2, IEC 61034

Construction	
Inner conductor	solid copper wire, bare, diameter 1.0 mm
Insulation	Foam-PE, diameter 4.8 mm
Outer conductor	Al-PET-Al-foil under tinned copper braid, diameter 5.6 mm
Sheath	FRNC, diameter 7.0 mm, Anthracite
Printing	DRAKA HD PRO 1.0/4.8 AF - 75 Ω ± 1%

Electrical data at 20°C

Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.8	50 – 300	≥ 26
3	1.3	300 – 3000	≥ 22
5	1.6	3000 – 3500	≥ 18
10	2.1	3500 – 5000	≥ 15
30	3.5		
100	6.2		
200	8.9		
300	11.3		
500	14.8		
800	18.5		
1000	20.7		
1500	24.9		
2250	31.7		
3000	37.3		
3500	41.5		
4000	47.2		
4500	51.2		
5000	55.1		

Product Code Table

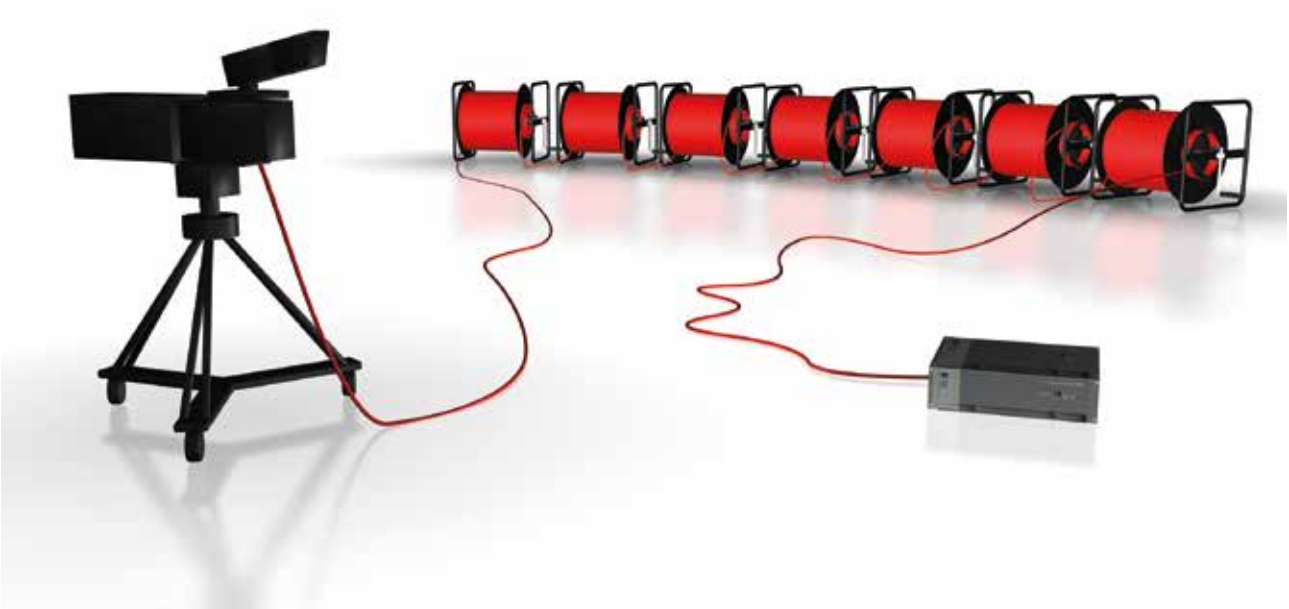
Product Description	PG Reference Code	PG Part Number
HD PRO 1.0/4.8 AF	1014490	

INDEX CAMERA CABLES

3. CAMERA CABLES

In the Broadcast industry, the following cable constructions are used to connect a camera to the camera control unit:

- Triax cables
- SMPTE311M Hybrid camera cables

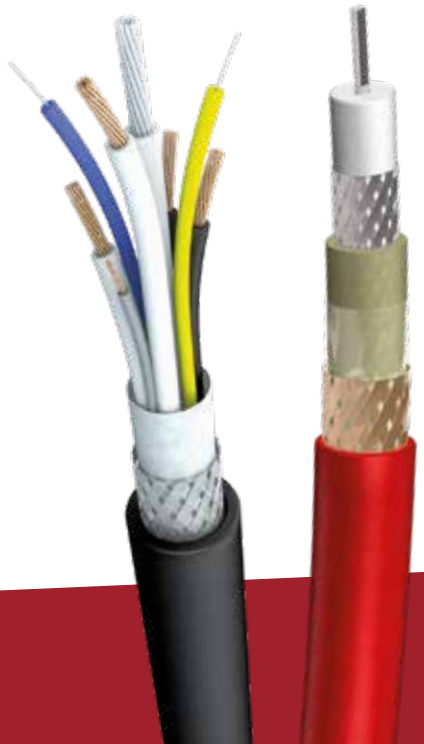


Standard Triax portfolio:

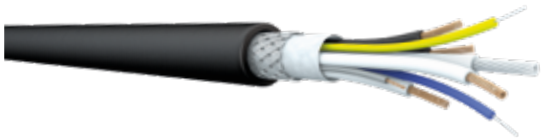
- Mobile use with permanent winding has been proofed robust in the different environments over decades.
- Simple and field mountable connector
- No cleaning of the optical lenses needed

SMPTE Hybrid Camera Cable according to SMPTE 311M:

- Camera cable for HDTV and super slow-motion application
- 2 buffered Single Mode fibres of type G.652.D2 or preferably G.657.A2/B2 BendBright-XS
- Outer jacket options: PU, TPE, LSZH
- Max. transmission using fibres is < 25KM
- Limitation to 2-4Km due to power supply
- Mobile use with permanent winding has been proofed
- Simple and field mountable connector



SMPTE311M Camera Cables



E_{ca} CPR

C_{ca} CPR

Application

This Hybrid HD Camera Cable 2SM 9/125 + 4 x AWG20 + 2 x AWG24 acc. to SMPTE 311M-Standard contains Single-Mode Optical Fibres, Auxiliary- and Signal Conductors. It is used in professional video productions for simultaneous transmission of energy, video, audio and control signals and is intended to interconnect Camera Units and Base Stations in conjunction with the Connector Interface Standard. It is suitable for all new digital camera systems of well-known manufacturers.

Standards

SMPTE 311M

Flame resistance

FRNC jacket	IEC 60332-1, IEC 60754-2, IEC 61034, Class E_{ca} s1 d1 a1
FRNC-C jacket	IEC 60332-3-24, Class C_{ca} s1 d1 a1

Construction

Element 1: Auxiliary Conductors AWG20 (4 x 0.6 mm²)	
Conductor	tinned stranded copper wires, 19 x 0.20 mm, diameter 1.0 mm
Insulation	HDPE, diameter 1.5 mm (FRNC-C = LSOH)
Identification	2 x black, 2 x white
Element 2: Signal Conductors AWG24 (2 x 0.22 mm²)	
Conductor	tinned stranded copper wires, 7 x 0.20 mm, diameter 0.6 mm
Insulation	HDPE, diameter 1.1 mm (FRNC-C = LSOH)
Identification	1 x red, 1 x grey
Element 3: Fibre Optic Simplex Single Mode (2 x 9/125µ) (BBXS)	
Mode field diameter	at 1310 nm, diameter 9.5 µm ± 1 µm
Cladding diameter	diameter 125 µm ± 1 µm
Concentricity error	≤ 1 µm
Coating material	UV-cross-linked Acrylate, diameter 245 µm
Buffer material	Thermoplastic, diameter 0.9 µm ± 0.05 µm
Identification	1 x blue, 1x yellow
Strength Element	Aramid yarn
Sheath	1 x blue, 1x yellow, diameter 1.6 mm
Element 4: Strength Member AWG16 (1 x 1.22 mm²)	
Conductor	galvanized steel wires, diameter 1.6 mm
Insulation	HDPE, diameter 2.1 mm (FRNC-C = LSOH)
Identification	1 x white
Stranding	Core: 1x Element 4, diameter 2.1 mm Layer: 4x Element 1 + 2x Element 2 + 2x Element 3, diameter 5.2 mm Sequence according to the above drawing
Wrapping	1 x non-woven fabric tape, diameter 5.4 mm
Screen	Copper wire braid, tinned, diameter 5.9 mm
Sheath	PUR rubber, PUR or LSOH or FRNC-C (FRNC-C with additional Al-Pet foil) diameter 9.2 mm black, RAL 9005
Printing PUR rubber	DRAKA SMPTE 311 M Zero-Loss HD Cable Flex + batch no. + meter marking
PUR	DRAKA SMPTE 311 M Zero-Loss HD Cable + batch no. + meter marking
LSOH	DRAKA SMPTE 311 M Zero-Loss HD Cable FRNC + batch no. + meter marking CPR class E_{ca}
FRNC-C	DRAKA SMPTE 311 M Zero-Loss HD Cable FRNC-C + batch no. + meter marking CPR class C_{ca} s1a d1 a1

Mechanical properties at 20°C		
Temperature range PUR (FRNC)	during operation	- 40° C to + 70° C (-25°C to +70°C))
Temperature range FRNC-C	during operation	- 20°C to + 70° C
Max. humidity		95 %

Electrical properties at 20°C		
Auxiliary Conductors AWG20 (4 x 0.6 mm2)		
DC resistance	during operation	≤ 35.3 Ω/km
Loop resistance		≤ 70.6 Ω/km
Insulation resistance		≥ 10^4 MΩ*km
Test voltage		1750 VAC_{rms}
Operating voltage		≤ 300 VAC_{rms}
Signal Conductors AWG24 (2 x 0.22 mm2)		
DC resistance		≤ 97.5 Ω/km
Loop resistance		≤ 184 Ω/km
Insulation resistance		≥ 10^4 MΩ*km
Test voltage		1750 VAC_{rms}
Operating voltage		≤ 300 VAC_{rms}
Overall screen		
DC resistance		≤ 20 Ω/km

Optical properties at 20°C		
Fibre Optic Simplex Single Mode (2 x 9/125µ)		
Cut-off wavelength		1100 – 1350 nm
Attenuation	at 1310 nm	0.5 dB
Dispersion	at 1310 nm	3.5 ps/nm*km

C25: Properties of cabled BendBright-XS Patch Cord fibre; ITU G.557 A2 and G.657 B2

General and Application

Draka BendBright-XS single-mode fibre combines three attractive features: excellent low macro-bending sensitivity, Draka's revolutionary new ColorLock® XS coating and tight glass geometry. Together they create the ideal performance for all patch cord, interconnect & jumper applications.

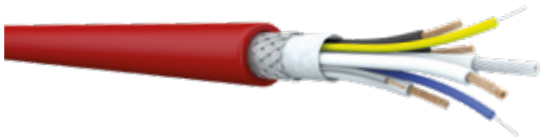
EC 60793-2-50 Category B6_a and B6_b
EN 60793-2-50: Class B6_a and B6_b
ITU Recommendation G.657.A2 and G.657.B2 (2009)
ITU Recommendation G.652 designations A, B, C and D

EN 50 173-1:2007, cat. OS2
ISO/IEC 11801:2002, cat. OS1
ISO/IEC 24702:2006 cat. OS2
and OS1 IEEE 802.3 – 2002 incl.

Product Code Table

Product Description	PG Reference Code	PG Part Number
SMPTE 311M PUR 9.2mm	60014967	60014967
SMPTE 311M PUR Gummi 9.2mm	60011474	60011474
SMPTE 311M LSOH/FRNC 9.2mm cpr E_{ca}	60014834	60014834
SMPTE 311M FRNC-C 9.2mm cpr C_{ca}	60049477	60049477
SMPTE 311M PUR 15mm	60056019	60056019
SMPTE 311M PUR 16mm	60028797	60028797

SMPTE311M $B2_{ca}$ Camera Cables



$B2_{ca}$ CPR

Application

This Hybrid HD Camera Cable 2SM 9/125 + 4 x AWG20 + 2 x AWG24 acc. to SMPTE 311M-Standard contains Single-Mode Optical Fibres, Auxiliary- and Signal Conductors. It is used in professional video productions for simultaneous transmission of energy, video, audio and control signals and is intended to interconnect Camera Units and Base Stations in conjunction with the Connector Interface Standard. It is suitable for all new digital camera systems of well-known manufacturers.

Standards

SMPTE 311M

Flame resistance

FRNC-C jacket	IEC 60332-3-24, Class $B2_{ca}$ s1 d1 a1

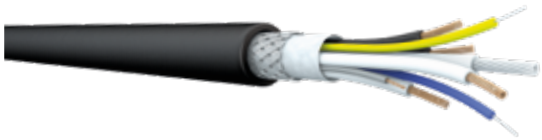
Construction

Element 1: Auxiliary Conductors AWG20 (4 x 0.6 mm²)	
Conductor	tinned stranded copper wires, 19 x 0.20 mm, diameter 1.0 mm
Insulation	HDPE, diameter 1.5 mm (FRNC-C = LSOH)
Identification	2 x black, 2 x white
Element 2: Signal Conductors AWG24 (2 x 0.22 mm²)	
Conductor	tinned stranded copper wires, 7 x 0.20 mm, diameter 0.6 mm
Insulation	HDPE, diameter 1.1 mm (FRNC-C = LSOH)
Identification	1 x red, 1 x grey
Element 3: Fibre Optic Simplex Single Mode (2 x 9/125µ) (BBXS)	
Mode field diameter	at 1310 nm, diameter 9.5 µm ± 1 µm
Cladding diameter	diameter 125 µm ± 1 µm
Concentricity error	≤ 1 µm
Coating material	UV-cross-linked Acrylate, diameter 245 µm
Buffer material	Thermoplastic, diameter 0.9 µm ± 0.05 µm
Identification	1 x blue, 1x yellow
Strength Element	Aramid yarn
Sheath	1 x blue, 1x yellow, diameter 1.6 mm
Element 4: Strength Member AWG16 (1 x 1.22 mm²)	
Conductor	galvanized steel wires, diameter 1.6 mm
Insulation	HDPE, diameter 2.1 mm (FRNC-C = LSOH)
Identification	1 x white

Product Code Table

Product Description	PG Reference Code	PG Part Number
SMPTE311M $B2_{ca}$ red	60071178	60071178

SMPTE311M Hybrid High Flex Camera Cable



Application

This Hybrid HD Camera Cable 2SM 9/125 + 4 x AWG20 + 2 x AWG24 acc. to SMPTE 311M-Standard contains Single-Mode Optical Fibres, Auxiliary- and Signal Conductors. It is used in professional video productions for simultaneous transmission of energy, video, audio and control signals and is intended to interconnect Camera Units and Base Stations in conjunction with the Connector Interface Standard. It is suitable for all new digital camera systems of well-known manufacturers.

Standards

SMPTE 311M

Construction

Element 1: Auxiliary Conductors AWG20 (4 x 0.6 mm²)	
Conductor	tinned stranded copper wires, 19 x 0.20 mm, diameter 1.0 mm
Insulation	HDPE, diameter 1.5 mm
Identification	2 x black, 2 x white
Element 2: Signal Conductors AWG24 (2 x 0.22 mm²)	
Conductor	tinned stranded copper wires, 7 x 0.20 mm, diameter 0.6 mm
Insulation	HDPE, diameter 1.1 mm
Identification	1 x red, 1 x grey
Element 3: Fibre Optic Simplex Single Mode (2 x 9/125µ) (BBXS)	
Mode field diameter	at 1310 nm, diameter 9.5 µm ± 1 µm
Cladding diameter	diameter 125 µm ± 1 µm
Concentricity error	≤ 1 µm
Coating material	UV-cross-linked Acrylate, diameter 245 µm
Buffer material	Thermoplastic, diameter 0.9 µm ± 0.05 µm
Identification	1 x blue, 1x yellow
Strength Element	Aramid yarn
Sheath	1 x blue, 1x yellow, diameter 1.6 mm
Element 4: Strength Member AWG16 (1 x 1.22 mm²)	
Conductor	galvanized steel wires, diameter 1.6 mm
Insulation	HDPE, diameter 2.1 mm
Identification	1 x white
Stranding	Core: 1x Element 4, diameter 2.1 mm Layer: 4x Element 1 + 2x Element 2 + 2x Element 3, diameter 5.2 mm Sequence according to the above drawing
Wrapping	1 x non-woven fabric tape, diameter 5.4 mm
Screen	Copper wire braid, tinned, diameter 5.9 mm
Sheath	PUR rubber, diameter 9.2 mm, black, RAL 9005
Printing PUR rubber	DRAKA SMPTE 311 M Hybrid High Flex Camera Cable

SMPTE 311M-HD-Hybrid-Camera Cable
Outer diameter 15mm

Application

This Hybrid HD Camera Cable 2SM 9/125 + 4 x AWG20 + 2 x AWG24 acc. to SMPTE 311M-Standard contains Single-Mode Optical Fibres, Auxiliary- and Signal Conductors. It is used in professional video productions for simultaneous transmission of energy, video, audio and control signals and is intended to interconnect Camera Units and Base Stations in conjunction with the Connector Interface Standard. It is suitable for all new digital camera systems of well-known manufacturers.

Standards

SMPTE 311M

Construction

Element 1: Auxiliary Conductors AWG20 (4 x 0.6 mm²)	
Conductor	tinned stranded copper wires, 19 x 0.20 mm, diameter 1.0 mm
Insulation	HDPE, diameter 1.5 mm
Identification	2 x black, 2 x white
Element 2: Signal Conductors AWG24 (2 x 0.22 mm²)	
Conductor	tinned stranded copper wires, 7 x 0.20 mm, diameter 0.6 mm
Insulation	HDPE, diameter 1.1 mm
Identification	1 x red, 1 x grey
Element 3: Fibre Optic Simplex Single Mode (2 x 9/125µ) (BBXS)	
Mode field diameter	at 1310 nm, diameter 9.5 µm ± 1 µm
Cladding diameter	diameter 125 µm ± 1 µm
Concentricity error	≤ 1 µm
Coating material	UV-cross-linked Acrylate, diameter 245 µm
Buffer material	Thermoplastic, diameter 0.9 µm ± 0.05 µm
Identification	1 x blue, 1x yellow
Element 4: Strength Member AWG16 (1 x 1.22 mm²)	
Conductor	galvanized steel wires, diameter 1.6 mm
Insulation	HDPE, diameter 2.1 mm
Identification	1 x white
Stranding	Core: 1x Element 4, diameter 2.1 mm Layer: 4x Element 1 + 2x Element 2 + 2x Element 3, diameter 5.2 mm Sequence according to the above drawing
Wrapping	1 x non-woven fabric tape, diameter 5.4 mm
Screen	Copper wire braid, tinned, diameter 5.9 mm
Sheath	PUR, diameter 9.2 mm, black, RAL 9005
	Chalk between the jackets at 9.2mm
	PUR Rubber, 15.0mm
Printing	DRAKA SMPTE 311M HD Cable 15mm + batch number + meter marking

Product Code Table

Product Description	PG Reference Code	PG Part Number
SMPTE 311M Hybrid Camera Cable 15mm	60056019	60056019

Triaxial Camera Cables

E_{ca} CPR

Application

Triaxial camera cables are used in professional studio applications for simultaneous transmission of energy and multiplex image signals between camera head and control system for SDI and HD-SD. They are available as different types optimized for use inside studios and outdoor application.

Flame resistance

PUR, PE	Not CPR relevant
FRNC	IEC 60332-1; IEC 60754-2; IEC 61034, CPR Class E_{ca} s1 d1 a1

Construction

Inner conductor	solid copper wire, silvered or stranded copper wires, silvered
Insulation	Foam-PE
1st outer conductor	copper braid, thick silvered
Insulation	PE
2nd outer conductor	copper braid, bare
Sheath	PVC, PUR (standard or reinforced type) or FRNC, red RAL 3000 altern. black or grey

Dimensions

		Triax 8	Triax 11, Triax 11/1	Triax 14
Inner conductor Stranded	copper wire, silvered copper wires, silvered	Ø 1.0 mm –	Ø 1.4 mm –	– Ø 2.2 mm
Insulation	foam-PE	Ø 4.5 mm	Ø 6.5 mm	Ø 9.7 mm
Inner screen	copper braid, silvered	Ø 5.1 mm	Ø 7.1 mm	Ø 10.5 mm
Insulation	PE	Ø 6.6 mm	Ø 8.6 mm	Ø 11.9 mm
Outer screen	copper braid, bare	Ø 7.2 mm	Ø 9.2 mm	Ø 12.7 mm
Sheath	red RAL 3000 reinforced	Ø 8.4 mm Ø 8.9 mm	Ø 10.9 mm Ø 12.2 mm	Ø 14.5 mm –
Sheath marking	(example: PVC sheath)	« DRAKA TRIAX 8 – Y HDTV » + batch no.	« DRAKA TRIAX 11 – Y HDTV » + batch no.	« DRAKA TRIAX 14 – Y HDTV » + batch no.

Product Code Table

Product Description	PG Reference Code	PG Part Number
Triax 8 PVC red	60011499	60011499
Triax 8 PVC black	60011499	60014209
Triax 8 PUR red		60014203
Triax 8 PUR black		60014205
Triax 8 FRNC red	60014554	60014554
Triax 8 red FRNC reinforced	60014211	60014211
Triax 11 PVC red	60014214	60014214
Triax 11 PVC black	60014218	60014218
Triax 11 PE black	60014219	60014219
Triax 11 PUR red	60014222	60014222
Triax 11 PUR black	60014224	60014224
Triax 11/1 PUR reinforced red	60014245	60014245
Triax 11 FRNC red	60009614	6009614
Triax 14 PVC red	60011506	60011506
Triax 14 PE	60014238	60014238
Triax 14 FRNC red	60013643	60013643
Triax 14 PUR red	60014244	60014244

Triax11

Standards	Flame resistance
IEC 61034, IEC 60754-1	IEC 60332-3-24, IEC 60332-1-2, CPR class: C_{ca} s1 d1 a1

Construction	
Inner conductor	solid copper wire, silvered or stranded copper wires, silvered
Insulation	Foam-PE
1st outer conductor	copper braid, thick silvered
Insulation	PE
2nd outer conductor	copper braid, bare
Sheath	FRNC, red RAL 3000 or black or grey

Dimensions		
		Triax 11 $B2_{ca}$
Inner conductor	copper wire, silvered	Ø 1.4 mm
Insulation	FRNC	Ø 6.5 mm
Inner screen	copper braid, silvered	Ø 7.1 mm
Insulation	PE	Ø 8.5 mm
PET-Al foil		Ø 8.7 mm
Outer screen	copper braid, tinned	Ø 9.3 mm
Sheath	FRNC, red RAL 3000	Ø 11.0 mm
Sheath marking		"DRAKA TRIAX 11 – HDTV FRNC-C C ca s1a d1 <CE_Mark> + batch no.+ meter marking

Electrical data at 20°C			
Attenuation (dB/100m)		Return loss (dB)	
Frequency (MHz)		Frequency (MHz)	
1	0.5	1 – 100	> 26
5	1.1	100 – 300	> 26
10	1.6	300 – 850	> 23
20	2.3	850 – 3000	> 20
40	3.3		
50	3.7		
60	4.1		
100	5.4		
300	10.3		

Product Code Table		
Product Description	PG Reference Code	PG Part Number
Triax 11C_{ca} s1 d1 a1red	60089222	60089222

Triflex Camera Cable

Application

Triaxial camera cables are used in professional studio applications for simultaneous transmission of energy and multiplex image signals between camera head and control system. They are available as different types optimized for use inside studios and outdoor application.

Construction

Inner conductor	stranded copper wires, silvered
Insulation	Foam-PE, natural coloured
1st outer conductor	copper braid, silvered
Insulation	thermoplastic elastomer, natural coloured
2nd outer conductor	copper braid, bare
Sheath	PVC-special, altern. PU, altern. PU-special, red, RAL 3000, altern. black RAL 9005

Dimensions

		Triflex 8, Triflex 8/1	Triflex 11
Inner conductor	stranded copper wire, silvered	Ø 1.0 mm	Ø 1.4 mm
Insulation	foam-PE	Ø 4.5 mm	Ø 6.5 mm
Inner screen	copper braid, silvered	Ø 5.1 mm	Ø 7.1 mm
Insulation	thermoplastic elastomer	Ø 6.6 mm	Ø 8.6 mm
Outer screen	copper braid, bare	Ø 7.2 mm	Ø 9.2 mm
Sheath	red RAL 3000 reinforced	Ø 8.4 mm Ø 8.9 mm	Ø 10.9 mm –
Sheath marking	example PU	DRAKA TRIFLEX 8 - 11Y HDTV	DRAKA TRIFLEX 11 - 11Y HDTV

Product Code Table

Product Description	PG Reference Code	PG Part Number
Triflex 8 Special PVC	60014250	
Triflex 8 PU	60014267	
Triflex 8/1 Flex PU	60014270	
Triflex 11 Special PVC	60014257	
Triflex 11 PU	60014276	

INDEX AUDIO CABLES

4. AUDIO CABLES

In the Broadcast industry, the following cable constructions are used to transmit audio content:

- Microphone cables: stranded copper wires AWG 24/7
- Mobile Audio cables for Stage and outside Broadcast application
- for inside use / application in a studio, TV station and stadium

Microphone cables portfolio:
- Micro 22
- XLR PRO FLEX

More designes on request or in the Music Industry (MI) catalogue

Mobile Audio cables:
- AC10 SP 24/7 nxP
  (High Flex Multicore audio cable with a stranded innerconductor)
- AC10 SS 24/7 nxP
  (Flex Multicore audio cable with a stranded innerconductor)
- Digitalsound
  (Multicore audio cable with a stranded innerconductor and PU jacket)

Installation Audio cables:
- AC10 SS 26/7 nxP
  (Multicore audio cable with a stranded innerconductor for studio environment)
- AC10/SS 23/1 nxP
  (Multicore audio cable with a solid innerconductor for long distances, mainly for stadium environment)

Microphone Cable Micro 22

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.
Not for fixed installation in construction works.

Construction	
Conductor	stranded copper wires, bare 28x0.10 mm, diameter 0.61 mm
Insulation	PVC, diameter 1.2 mm ± 0.05 mm
Core colour	blue, red
Pair stranding	2 cores and two cotton fillers
Pair screen	spiraled copper wires, bare, diameter 2.6 mm
Sheath	PVC/rubber, diameter 6.0 mm ± 0.2 mm, matt black RAL 9005, red RAL 3000 or blue RAL 5013
Printing	DRAKA MICRO 22 + batch number + meter marking

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 30° C to + 70° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 90 Ω/km
Mutual capacitance (1 kHz, reference value)	core/core	135 pF/m
	core/screen	230 pF/m
Insulation resistance	20 °C ± 5 °C, 500 VDC	≥ 200 MΩxkm
Test voltage AC (50 Hz; 1min)	core/core	0.5 kV_{rms}
	core/screen	1.0 kV_{rms}

Product Code Table		
Product Description	PG Reference Code	PG Part Number
DR MICRO 22 PVC rubber, black	60010081	60010081

Microphone Cable Micro 22 FRNC

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.
Not for fixed installation in construction works.

Construction	
Conductor	stranded copper wires, bare 28x0.10 mm, diameter 0.61 mm
Insulation	PE, diameter 1.2 mm ± 0.05 mm
Core colour	blue, red
Pair stranding	2 cores and two cotton fillers
Pair screen	Double spiraled copper wires, bare, diameter 2.6 mm
Sheath	FRNC, diameter 5.8 mm ± 0.2 mm, matt black RAL 9005
Printing	DRAKA MICRO 22 FRNC + batch number + meter marking

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 20° C to + 70° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 90 Ω/km
Mutual capacitance (1 kHz, reference value)	core/core	135 pF/m
	core/screen	230 pF/m
Insulation resistance	20 °C ± 5 °C, 500 VDC	≥ 200 MΩxkm
Test voltage AC (50 Hz; 1min)	core/core	0.5 kV_{rms}
	core/screen	1.0 kV_{rms}

Product Code Table		
Product Description	PG Reference Code	PG Part Number
DR MICRO 22 FRNC, black	60052851	60052851

Microphone Cable XLR PRO FLEX FRNC

Application
Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals.

Construction	
Conductor	stranded copper wires, bare, diameter 0.60 mm
Insulation	Foam-PE + skin-layer, diameter 1.5 mm
Core colour	a – core: white; b – core: blue
Pair stranding	two cores twisted to the bundle + cotton filler, diameter 3.0 mm
Pair screen	spiralled wires, CU bare, diameter 3.2 mm
Sheath	FRNC, diameter 6.5 mm ± 0.2 mm, black RAL 9005
Printing	DRAKA - XLR PRO FLEX analogue / digital – 110 Ω FRNC

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	during operation	- 20° C to + 70° C
	during installation	- 5° C to + 50° C

Product Code Table		
Product Description	PG Reference Code	PG Part Number
XLR PRO FLEX , PVC rubber, black	60014859	60014859

Microphone Cable XLR PRO FLEX

Application	Standards
Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals.	AES/EBU and analogue Audio

Construction	
Conductor	stranded copper wires, bare, diameter 0.60 mm
Insulation	Foam-PE + skin-layer, diameter 1.5 mm
Core colour	a – core: white; b – core: blue
Pair stranding	two cores twisted to the bundle + cotton filler, diameter 3.0 mm
Pair screen	spiralled wires, CU bare, diameter 3.2 mm
Sheath	DMC FLEX PVC, diameter 6.5 mm ± 0.2 mm, black RAL 9005
Printing	DRAKA - XLR PRO FLEX analogue / digital – 110 Ω

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	during operation	- 30° C to + 70° C
	during installation	- 5° C to + 50° C

Product Code Table		
Product Description	PG Reference Code	PG Part Number
XLR PRO FLEX , PVC rubber, black	60014961	60014961

Multicore Audio Cable AC10 SP24/7 x pairs

Mobile use

Application	Standards
Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals. Not for fixed installation in construction works	acc. To AES/EBU-Recommendation

Construction	
Inner conductor	stranded copper wires, bare, diameter 0.60 mm (AWG24/7) (cross section 0.22 mm²)
Insulation	Foam-skin-PE , diameter 1.40 mm
Pair stranding	two cores twisted to the pair
Pair identification	a – core: white, b – core: blue (the above colours in regular intervals)
Pair screen	One layer of spiraled bare copper wires, + stranded copper drain wires, diameter 3.0 mm
Pair insulation	PVC, diameter 3.8 mm
Identification	black, RAL 9005 with number printing
Cable lay up	n pairs twisted in layers
Sheath	PVC/rubber blue RAL 5013
Printing	DRAKA – AC10 SP 24/7 nxP AES/EBU – 110 Ω + batch number + meter marking

Product Code Table

Product Description	Product Code	PG Part Number
AC10 SP 24/7 2P PVC	1001992	
AC10 SP 24/7 4P PVC	1001994	
AC10 SP 24/7 8P PVC	1001996	
AC10 SP 24/7 10P PVC	1001998	
AC10 SP 24/7 12P PVC	1001999	
AC10 SP 24/7 16P PVC	1002001	

Multicore Audio Cable AC10 SS24/7 x pairs

Mobile use

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals. Not for fixed installation in construction works

Standards

acc. To AES/EBU-Recommendation

Construction

Inner conductor	stranded copper wires, bare, diameter 0.60 mm (AWG24/7) (cross section 0.22 mm²)
Insulation	Foam-skin-PE , diameter 1.40 mm
Pair stranding	two cores twisted to the pair
Pair identification	a – core: white, b – core: blue (the above colours in regular intervals)
Pair screen	Al-PET-foil, Aluminum inside, + stranded copper drain wires, tinned, diameter 3.0 mm
Pair insulation	PVC, diameter 3.6 mm
Identification	black, RAL 9005 with number printing
Cable lay up	n pairs twisted in layers
Overall screen	Al-PET-foil + stranded copper drain wires, tinned
Sheath	PVC/rubber, blue RAL 5013
Printing	DRAKA – AC10 SS 24/7 nxP AES/EBU – 110 Ω + batch number + meter marking

Product Code Table

Product Description	Product Code	PG Part Number
AC10 SS 24/7 2P PVC	60044801	60044801
AC10 SS 24/7 4P PVC	60044802	60044802
AC10 SS 24/7 8P PVC	60026179	60026179
AC10 SS 24/7 10P PVC	60014828	60014828
AC10 SS 24/7 12P PVC	60044803	60044803
AC10 SS 24/7 16P PVC	60010353	60010353
AC10 SS 24/7 24P PVC		
AC10 SS 24/7 32P PVC		

Multicore Audio Cable AC10 SS26/7 x pairs

For Installation

D_{ca} CPR

E_{ca} CPR

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals. Not for fixed installation in construction works

Standards

CPR Class D_{ca}

Construction

Conductor	stranded copper wires, bare ø 0.48 mm (cross section 0.14 mm²) øAWG26/7 mm
Insulation	Foam-skin-PE , diameter 1.2 mm
Pair stranding	two cores twisted to the pair
Pair identification	a – core: white, b – core: blue (the above colours in regular intervals)
Pair screen	Al-PET-foil, Aluminum inside ø 2.5 mm + stranded copper drain wires, tinned
Pair insulation of 1 pair cable	PET-foil
Pair sheath of the Multi pair cables	FRNC, flame retardant
Colour and identification	grey RAL 7001 with number printing
Cable lay up	n pairs twisted in layers
Overall screen	Al–PET-foil + copper braid, tinned
Sheath	FRNC-C, grey RAL 7001
Sheath marking	**DRAKA** MULTIMEDIA CABLE - GERMANY – AC10 SS 26/7 nP AES/EBU - 110 Ω

Product Code Table

Product Description	PG Reference Code	PG Part Number
AC10 SS 26/7 8P FRNC-C	60010079	60010079
AC10 SS 26/7 2P FRNC-C	60011555	60011555
AC10 SS 26/7 4P FRNC-C	60011556	60011556
AC10 SS 26/7 1P FRNC-C	60011576	60011576
AC10 SS 26/7 6P FRNC-C	60013624	60013624
AC10 SS 26/7 10P FRNC-C	60013628	60013628
AC10 SS 26/7 12P FRNC-C	60013631	60013631
AC10 SS 26/7 16P FRNC C	60013635	60013635
AC10 SS 26/7 24P FRNC-C	60013674	60013674

Multicore Audio Cable AC10 SS23/1 x pairs

For Installation

D_{ca} CPR

E_{ca} CPR

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals.

Standards

Basing upon ARD-Specification and acc. to AES/EBU-Recommendation.
FRNC-C, IEC 60332-3-24, CPR class: D_{ca}

Construction

Conductor	solid copper wire, bare ø = 0.56 mm (cross section 0.26 mm²)
Insulation	Foam-skin-PE , diameter 1.4 mm
Pair stranding	two cores twisted to the pair
Pair identification	a – core: white, b – core: blue (the above colours in regular intervals)
Pair screen	Al-PET-foil, Aluminium outside ø 2.9 mm + solid copper drain wire, tinned
Pair insulation of the one pair cable	PET-foil
Overall screen of the one pair cable	copper braid, tinned
Pair sheath of the multi-pair cables	halogen free, flame retardant copolymere
Colour and identification	grey RAL 7001 with number printing
Sheath	LSOH, FRNC, grey RAL 7001
Sheath marking	DRAKA – AC10 SS 23/1 nP AES/EBU - 110 Ω meter marking + batch number

Product Code Table

Product Description	PG Reference Code	PG Part Number
AC10 SS 23/1 1P FRNC-C		60013604
AC10 SS 23/1 2P FRNC-C		60013616
AC10 SS 23/1 4P FRNC-C		60013618
AC10 SS 23/1 8P FRNC-C		60013602
AC10 SS 23/1 10P FRNC-C		60013613
AC10 SS 23/1 12P FRNC-C		60013614

Speaker 1.5mm², Lif-YY 2 x 1.5 mm²

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.

Construction	
Conductor	stranded copper wires, bare, diameter 1.6 mm
Insulation	PVC, diameter 2.4 mm
Core colour	black, red
Stranding	2 cores twisted to the pair, diameter 4.8 mm
Sheath	PVC/rubber, diameter 6.2 ± 0.2 mm, matt black RAL 9005
Printing	DRAKA – Speaker 2x1.5 + meter marking + batch number

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 30° C to + 70° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 13 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	2 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table

Product Description	Product Code	PG Reference Code	PG Part Number
Speaker 2 x 1.5mm²	1002085		60014992

Speaker 2.5mm², Lif-YY 2 x 2.5 mm²

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals.

Flame resistance

PVC: not for fixed installation in construction works

Construction

Conductor	stranded copper wires, bare, diameter 2.05 mm
Insulation	PVC, diameter 3.05 mm
Core colour	2 cores: black, red 4 cores: black, red, blue, white 6 cores: black, red, blue, white, yellow, brown 8 cores: black, red, blue, white, yellow, brown, green, black
Stranding	n cores twisted to the bundle
Sheath	PVC/rubber, matt black RAL 9005
Printing	DRAKA – Speaker nx2.5 + batch number + meter marking

Mechanical properties at 20°C

Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 30° C to + 70° C

Electrical properties at 20°C

DC resistance	20°C	≤ 8 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	2 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table

Product Description	Product Code	PG Reference Code	PG Part Number
DR Speaker 2x2.5	1002087	60014994	60014994
DR Speaker 4x2.5	1002089	60014996	60014996

Speaker 1.5, Lif-HH nx1.5 mm² FRNC-C

Application
Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.

Flame resistance	
IEC	60332-3-24
FRNC	FRNC-C
CPR class	D_{ca}

Construction	
Conductor	stranded copper wires, bare, diameter 1.6 mm
Insulation	LSHF-FR, diameter 2.4 mm
Core colour	black, red
Stranding	2 cores twisted to the pair, diameter 4.8 mm
Sheath	FRNC_C, diameter 6.2 ± 0.2 mm, matt black RAL 9005
Printing	DRAKA – Speaker nx1.5 FRNC <factory code/batch no./date-time> + meter marking MADE IN GERMANY

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 20° C to + 60° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 13 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	4 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table		
Product Description	Standard delivery length m	Product Code
Speaker 2x1.5mm² FRNC-C	500	60073567
Speaker 2x1.5mm² FRNC-C	200	60073566
Speaker 2x1.5mm² FRNC-C	100	60073565

Speaker 2.5, Lif-HH nx2.5 mm² FRNC-C

Application
Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.

Flame resistance	
IEC	60332-3-24
FRNC	FRNC-C
CPR class	D_{ca}

Construction	
Conductor	stranded copper wires, bare, diameter 2.05 mm
Insulation	LSHF-FR, diameter 3.05 mm
Core colour	2 cores: black, red
Stranding	2 cores twisted to the bundle
Sheath	FRNC matt black, RAL 9005
Printing	DRAKA – Speaker 2 x 2.5 FRNC-C <factory code/batch no./date-time> + meter marking + MADE IN GERMANY

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 20° C to + 60° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 08 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	2 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table			
Product Description	Standard delivery length m	Outer diameter mm	Product Code
Speaker 2x2.5mm² FRNC-C	500	8.1	60073570
Speaker 4x2.5mm² FRNC-C	500	11.5	

Speaker 4.0, Lif-2HH 2x4.0 mm² FRNC-C

Application
Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.

Flame resistance	
IEC	60332-3-24
FRNC	FRNC-C
CPR class	D_{ca}

Construction	
Conductor	stranded copper wires, bare, diameter 2.65 mm
Insulation	LSHF-FR, diameter 3.85 mm
Core colour	2 cores: black, red
Stranding	2 cores twisted to the bundle
Sheath	FRNC-C, matt black, RAL 9005
Printing	DRAKA – Speaker 2 x 4.0 FRNC-C <factory code/batch no. /date-time> + meter marking + MADE IN GERMANY

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 20° C to + 60° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 4.9 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	4 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table			
Product Description	Standard delivery length m	Outer diameter mm	Product Code
Speaker 2x4.0mm² FRNC-C	500	9.1	60073573
Speaker 4x4.0mm² FRNC-C	500	12.0	

Speaker 6.0, Lif-2HH 2x6.0 mm² FRNC-C

D_{ca} CPR

Application
Audio cables are used in professional broadcasting systems for the transmission of analogue audio signals.

Flame resistance	
IEC	60332-3-24
FRNC	FRNC-C
CPR class	D_{ca}

PUR jacket: no flame resistance

Construction	
Conductor	stranded copper wires, bare, diameter 3.2 mm
Insulation FRNC	LSHF-FR, diameter 4.9 mm
Insulation PUR	PE, diameter 4.9 mm
Core colour	2 cores: black, red
Stranding	2 cores twisted to the bundle
Sheath	FRNC-C, matt black, RAL 9005
Printing FRNC-C	DRAKA – Speaker n x 6.0 FRNC-C <factory code/batch no. /date-time> + meter marking + MADE IN GERMANY
Printing PUR	DRAKA – Speaker n x 6.0 PUR <factory code/batch no. /date-time> + meter marking + MADE IN GERMANY

Mechanical properties at 20°C		
Minimum bending radius	without load	4 x D (D= outer diameter)
	with load	8 x D (D= outer diameter)
Temperature range	mobile use	- 5° C to + 50° C
	fixed operation	- 20° C to + 60° C

Electrical properties at 20°C		
DC resistance	20°C	≤ 4.9 Ω/km
Insulation resistance	20 °C ± 5 °C. 500 V_{DC}	≥ 200 MΩxkm
Test voltage	core/core: AC (50 Hz; 1min)	4 kV_{rms}
Operating voltage		50/75 $V_{AC/DC}$

Product Code Table			
Product Description	Standard delivery length m	Outer diameter mm	Product Code
Speaker 4x6.0mm² FRNC-C	500	14.2	60066374
Speaker 4x6.0mm² PUR	500	12.0	
Speaker 6x6.0mm² FRNC-C	500	17.7	90151121
Speaker 8x6.0mm² FRNC-C	500	22.6	90151122

INDEX COPPER DATA CABLES

5. COPPER DATA CABLES

- Installation cables:
- CU- Patch cables for Outdoor applications
- CU-Patch cables for Inhouse applications

Standard Installation cables :
- MII S23, Media Install Indoor 10Gig
- MII SS23, Media Install Indoor, 10Gig
- MIS 23, Media Install Synchron, Indoor 10Gig

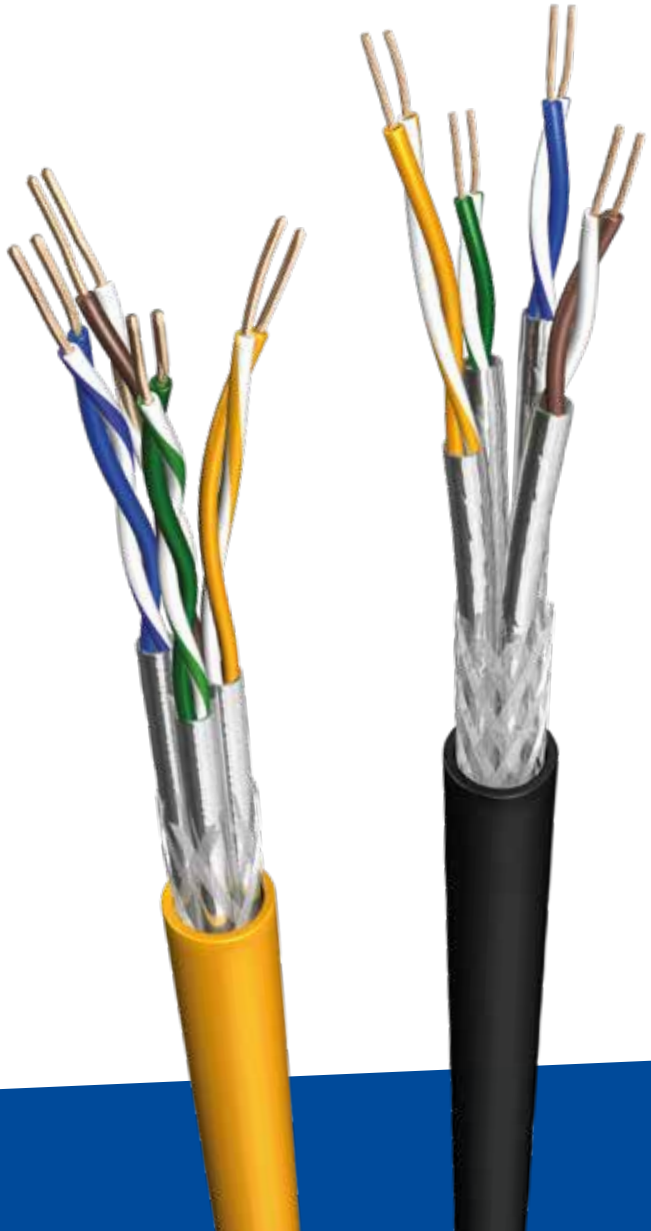
CU- Patch cables for Outdoor applications:
- MFO 26, Media Flex Outdoor, 10Gig
- MFO 24, Media Flex Outdoor, 10Gig
- MFO 23, Media Flex Outdoor, 10Gig

CU- Patch cables for Inhouse applications:
- MFI 26, Media Flex OIndoor, 10Gig

Transmission length of MFO 23

Interface/Protocol	Transmission length [m]
AES50	120
HD base T	110
MADI HD	120
Riedel RockNet	140
AES 3 - 2003 (48kHz, 96kHz)	240

AVB (Audio Video Bridging) :
Describes a number of standards of the Audio/Video Bridging Task Group (IEEE 802.1) for synchronized streaming of Video- and Audio content via a data network.



Media Install Indoor 10G MII S23

PoE+ HDTV UHD 4K E_{ca} CPR

Application

Primary (Campus), Secondary (Riser), Tertiary (Horizontal)
IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; 10GBase-T
IEEE 802.5 16 MB; ISDN; TPDDI; ATM
Power over Ethernet (PoE) / PoE+

Standards

EN 50173-1; EN 50288-4-1; ISO/IEC 11801; IEC 61156-5;
IEEE 802.3at

Flame resistance

LSHF (LSOH)	IEC 60332-1; IEC 60754-2; IEC 61034; Class E_{ca}

Construction

Conductor	bare copper wire, Ø 0.56 mm (AWG 23)
Insulation	Foamskin PE, Ø 1.38 mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PiMF) to the core
Screen	copper braid, tinned
Sheath	LSHF, orange
Printing	DRAKA MII S23 MEDIA INSTALL INDOOR batch number + meter marking

Electrical properties at 20°C± 5°C

Loop resistance		154 Ω/km
Resistance unbalance		≤ 2%
Insulation resistance	(500 V)	≥ 2000 MΩ*km
Mutual capacitance	at 800 Hz	Nom. 43 nF/km
Capacitance unbalance	(pair/ground)	≤ 1500 pF/km
Mean characteristic impedance	100 MHz	100 ± 5 Ω
Nominal velocity of propagation		ca. 79 %
Propagation delay		≤ 427 ns/100m
Delay skew		≤ 12 ns/100m
Test voltage	(DC, 1 min) core/core and core/screen	1000 V
Transfer impedance	bei 1 MHz bei 10 MHz bei 30 MHz	≤ 12 mΩ /m ≤ 10 mΩ /m ≤ 30 mΩ /m
Coupling attenuation		≥ 80 dB

Product Code Table

Product Description	PG Reference Code	PG Part Number
Cat.7 S/FTP AWG23/1	60075863	60075863

Media Install Indoor 10G MII SS23

UHD 4K | HDTV | E_{ca} CPR | D_{ca} CPR | HDBT | PoE+

Application

Primary (Campus), Secondary (Riser), Tertiary (Horizontal)
IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; 10GBase-T
IEEE 802.5 16 MB; ISDN; TPDDI; ATM
Power over Ethernet (PoE) / PoE+

Standards

EN 50173-1; EN 50288-4-1; ISO/IEC 11801; IEC 61156-5;
IEEE 802.3af

Flame resistance

LSHF (LSOH)	IEC 60332-1; IEC 60332-3-24; IEC 60754-2; IEC 61034; EN 50399 Class D_{ca}

Construction

Conductor	bare copper wire, Ø 0.56 mm (AWG 23/1)
Insulation	Foamskin PE, Ø 1.38 mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PiMF) to the core
Screen	copper braid, tinned
Sheath	LSHF-FR, orange
Printing	DRAKA MII SS23 MEDIA INSTALL INDOOR 10Gig batch number + metermarking

Electrical properties at 20°C± 5°C

Loop resistance		150 Ω/km
Resistance unbalance		≤ 2%
Insulation resistance	(500 V)	≥ 2000 MΩ*km
Mutual capacitance	at 800 Hz	Nom. 43 nF/km
Capacitance unbalance	(pair/ground)	≤ 1500 pF/km
Mean characteristic impedance	100 MHz	100 ± 5 Ω
Nominal velocity of propagation		ca. 79 %
Propagation delay		≤ 425 ns/100m
Delay skew		≤ 9 ns/100m
Test voltage	(DC, 1 min) core/core and core/screen	1000 V
Transfer impedance	bei 1 MHz bei 10 MHz bei 30 MHz	≤ 5 mΩ /m ≤ 5 mΩ /m ≤ 10 mΩ /m
Coupling attenuation		≥ 85 dB

Product Code Table

Product Description	PG Reference Code	PG Part Number
Cat.7 S/FTP AWG23/1		60059472

Media Install Synchron MIS 23

HDTV | UHD 4K | SYNCHRON | E_{ca} CPR

Application

Primär (Campus), Sekundär (Riser), Tertiär (Horizontal)
IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T;
IEEE 802.5 16 MB; ISDN; FDDI; ATM

Standards

EIA/TIA 568B; ISO/IEC 11801 2nd ed.;
IEC 61156-5; EN 50173

Flame resistance

FRNC	IEC 60332-1; IEC 60754-2; IEC 61034; Class E_{ca}

Construction

Conductor	Bare copper wire Ø 0,56 mm (AWG 23)
Insulation	Foam-Skin Pe, Ø 1,35 mm
Twisting	2 cores to the pairs
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PiMF) to the core
Screen	Copper braid tinned (ca. 65 % coverage)
Sheath	FRNC, orange
Printing	DRAKA MIS 23 MEDIA INSTALL SYNCHRON batch numer + meter marking

Mechanical properties at 20°C

Bending radius	without load	≥ 40 mm
	with load	≥ 80 mm
Temperature range	During operation	-20°C to + 60°C
	During installation	0°C to + 50°C

Electrical properties at 20°C± 5°C

Loop resistance	Ω /km		≤ 150	
Resistance unbalance	%		≤ 2	
Mutual capacitance at 800 Hz	nF/km		nom. 43	
Capacitance unbalance (pair/ ground)	pF/km		≤ 1500	
Characteristic impedance (1-100) MHz (100 - 250) MHz (250 - 600) MHz	Ω		(100 ± 15) (100 ± 18) (100 ± 25)	
Nominal velocity of propagation	%		Ca. 79	
Propagation delay	ns/100m		≤ 427	
Delay skew	ns/100m		≤ ± 2	
Test voltage (DC, 1 min) Core/core and core/screen	V		1000	
Transfer impedance (mΩ /m)	1 MHz	10 MHz	30 MHz	100 MHz
	5	5	10	20

Product Code Table

Product Description	PG Reference Code	PG Part Number
Cat.7 S/FTP AWG23/1		1018490

Media Flex Outdoor 10G MFO 26

PoE+ HDTV UHD 4K

Application

Data connecting cable for studio application
Suitable for Video Ethernet; IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; IEEE 802.5 16 MB; ISDN; FDDI; ATM ,10GBase-T
Suitable for outside use, not suitable for laying directly in the ground
Not for fixed installation for construction works

Standards

EIA/TIA 568B;
ISO/IEC 11801 2nd ed.; IEC 61156-6
EN 50173; EN 50288-4-2

Construction

Inner conductor	Stranded copper wire, bare, 0,14 mm²
Insulation	Foam-Skin PE, Ø 1,05mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PimF) to the core
Screen	Copper braid tinned Ø 5,1 mm
Wrapping	Polyester web
Sheath	DMC FLEX PUR, black, RAL 9005
Printing	DRAKA MFO 26 MEDIA FLEX OUTDOOR 10Gig batch number + meter marking

Mechanical properties at 20°C

Bending radius	without load	8 x D
	with load	4 x D
Temperature range	During operation	-40°C to + 70°C
	During installation	0°C to + 50°C

Electrical properties at 20°C± 5°C

Characteristic impedance	@ 100 MHz	≤ 150
Loop resistance	max.	≤ 2
Resistance unbalance	max.	nom. 43
Propagation delay		≤ 1500
Delay skew	max.	(100 ± 15) (100 ± 18) (100 ± 25)
Transfer Impedance	1 MHz 10 MHz	25 mΩ /m 25 mΩ /m
Nominal velocity of propagation		0.75 c
Mutual capacitance	nominal	43 nF/km
Capacitance unbalance	max.	700 pF/km

Product Code Table

Product Description	PG Reference Code	PG Part Number
CAT 7 S/FTP AWG26		60058148

Media Flex Outdoor 10G MFO 23

PoE+ HDTV UHD 4K

Application

Data connecting cable for studio application
Suitable for Video Ethernet; IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; IEEE 802.5 16 MB; ISDN; FDDI; ATM ,10GBase-T
Suitable for outside use, not suitable for laying directly in the ground
Not for fixed installation for construction works

Standards

EIA/TIA 568B;
ISO/IEC 11801 2nd ed.; IEC 61156-6
EN 50173; EN 50288-4-2

Construction

Inner conductor	Stranded copper wire, bare, (AWG23/7), Ø 0,64mm
Insulation	Foam-Skin PE, Ø 1.6mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PimF) to the core
Screen	Copper braid tinned
Wrapping	Polyester web
Sheath	DMC FLEX PUR, black, RAL 9005, Ø 9.3 mm
Printing	DRAKA MFO 23 MEDIA FLEX OUTDOOR 10Gig batch number + meter marking

Mechanical properties at 20°C

Bending radius	without load	8 x D
	with load	4 x D
Temperature range	During operation	-40°C to + 80°C
	During installation	-5°C to + 50°C

Electrical properties at 20°C± 5°C

Characteristic impedance	@ 100 MHz	100 ± 5 Ω
Loop resistance	max.	138Ω/km
Resistance unbalance	max.	2%
Propagation delay		450 ns/100m
Delay skew	max.	10 ns/100m
Transfer Impedance	1 MHz 10 MHz 30 MHz 100 MHz	≤ 5 mΩ /m ≤ 5 mΩ /m ≤ 10 mΩ /m ≤ 20 mΩ /m
Nominal velocity of propagation		0.75 c
Mutual capacitance	nominal	45 nF/km

Product Code Table

Product Description	PG Reference Code	PG Part Number
CAT 7 S/FTP AWG23		60058147

Media Flex Indoor 10G MFI 26

PoE+ HDTV UHD 4K E_{ca} CPR

Application

Work area and patch cord cable
IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; 10GBase-T
IEEE 802.5 16 MB; ISDN; TPDDI; ATM

Standards

EN 50173-1; EN 50288-4-2
ISO/IEC 11801; IEC 61156-6

Flame resistance

LSHF (FRNC)	IEC 60332-1; IEC 60754-2; IEC 61034; Class E_{ca}

Construction

Conductor	Stranded bare copper wire Ø 0.48 mm (AWG 26/7)
Insulation	Foam Skin Polypropylen, Ø 1.00 mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs (PiMF) to the core
Screen	Copper braid, tinned Ø 5.1mm
Sheath	LSHF, grey Ø 6.4mm
Printing	DRAKA MFI 26 MEDIA FLEX INDOOR 10Gig S/FTP Patch 4P IEC 61156-6 LSHF
	<factory code/batch no./ date-time> meter > m

Mechanical properties at 20°C

Bending radius	without load	8 x D
	with load	4 x D
Temperature range	During operation	-20°C to + 60°C
	During installation	0°C to + 50°C

Electrical properties at 20°C± 5°C

Loop resistance		≤ 250 Ω/km
Resistance unbalance		≤ 3%
Insulation resistance	(500 V)	≥ 2000 MΩ*km
Mutual capacitance	at 800 Hz	Nom. 43 nF/km
Capacitance unbalance	Max.	700 pF/km
Mean characteristic impedance	100 MHz	100 ± 5 Ω
Nominal velocity of propagation		0.75 c
Propagation delay		≤ 460 ns/100m
Delay skew		≤ 10 ns/100m
Test voltage	(DC, 1 min) core/core and core/screen	1000 V
Transfer impedance	at 1 MHz at 10 MHz	25 mΩ/m 25 mΩ/m

Product Code Table

Product Description	PG Reference Code	PG Part Number
Cat 7 S/FTP AWG26		

Digital Control Cable 2 x 0.22mm² $B2_{ca}$

$B2_{ca}$ CPR

Application	Standards
Control cables are used in professional broadcasting systems for digital signals, like AES/EBU audio	AES/EBU; IEC 60332-3-24 Cpr class: $B2_{ca}$

Construction		
Conductor	stranded copper wires, tinned, AWG24/7, (cross section 0.22 mm²),	Ø 0.6 mm
Insulation	Foam Skin PE	Ø 1.2 mm
Twisting	2 cores to the pair	Ø 2.4 mm
Pair colour	white, blue	
Pair screen	Al-PET-foil, Aluminum inside + stranded copper drain wires, tinned	
Overall screen	Copper braid, tinned	
Sheath	FRNC-C, black, RAL 9005	Ø 6.0 mm
Printing	DRAKA Digital control cable FRNC-C AES/EBU - 110 Ω B2ca s1a d1 a1 <CE> batch number + meter marking	

Mechanical properties at 20°C		
Bending radius	without load	≥ 4 x D (D= outer diameter)
	with load	≥ 8 x D (D= outer diameter)
Temperature range	During operation	-20°C to + 60°C
	During installation	-5°C to + 50°C

Electrical properties at 20°C± 5°C		
Loop resistance		≤ 175 Ω/km
Insulation resistance	500 V	≥ 2000 MΩ*km
Mutual capacitance	800 Hz	nom. 45 nF/km
Velocity ratio		ca .78%
Test voltage	(DC. 1 min) core/core and core/screen	1000 V
Characteristic impedance	6 MHz	110 Ω ± 10 %

Product Code Table		
Product Description	PG Reference Code	PG Part Number
Control pair 0.22² FRNC-C $B2_{ca}$	60084106	

DMX + 3x2.5mm²

Construction		
Element 1: DMX Data pair		
Conductor	stranded bare copper wire, diameter 7 x 0.25 mm (cross section 0.35 mm²)	Ø 0.75 mm
Insulation	Foam-Skin PE, wall thickness 0.71 mm	Ø 1.8 ± 0.1 mm
Twisting	2 cores + 2 x PP-fillers twisted to the pair	Ø 3.6 mm
Core identification	1x white, 1x green	
Overall screen	1 x PET-Al-foil + tinned stranded drain wires 19 x 0,15 mm + tinned copper braid optical coverage ³ 65%	
Foil	1 x PET-foil under sheath	Ø 5.1 mm
Sheath	PVC, black, RAL 9005	Ø 6.5 mm
Element 2: 3 x 2.5mm²		
Conductor	stranded bare copper wire, (cross section 2.5 mm²)	Ø 2.0 mm
Insulation	PVC	Ø 3.4 mm
Twisting	3 cores twisted	Ø 7.3 mm
Core identification	1x brown, blue, 1x green/yellow	
Sheath	PVC, black, RAL 9005	Ø 9.0 mm
Cable lay up		
Stranding	Element 1 and Element 2 twisted with fillers according drawing	
Wrapping	Polyester Web	
Sheath	PVC rubber, black, RAL 9005	Ø 18.5 mm
Printing	DRAKA DMX + 3x2.5mm²	

Mechanical properties at 20°C		
Bending radius		10 x D
Temperature range	During operation	-20°C to + 70°C
	During installation	0°C to + 50°C

Electrical properties DMX Data pair at 20°C± 5°C	
Conductor resistance (at 20 ± 5 °C)	≤ 54.5 Ω/km
Characteristic impedance at 1 MHz	120 Ω ± 10%
Insulation resistance (at 20 ± 5 °C and 500 V)	≥ 10 GΩxkm
Test voltage (AC, 1 min) Core/core and core/screen	1.2 kV

Electrical properties 3x2.5mm² at 20°C± 5°C	
Conductor resistance (at 20 ± 5 °C)	≤ 7.9 Ω/km
Insulation resistance (at 20 ± 5 °C and 500 V)	≥ 10 GΩxkm
Test voltage (AC, 1 min) Core/core and core/screen	1.2 kV

Product Code Table		
Product Description	PG Reference Code	PG Part Number
DMX + 2x2.5mm²	90150964	

DMX 234 AES/EBU (2x 0.34mm²) FRNC

D_{ca} CPR

Application

Audio cables are used in professional broadcasting systems for the transmission of analogue and digital audio signals.

Standards

DMX cable for light control
CPR class: D_{ca}; IEC60332-1

Construction

Conductor	Stranded copper wires, bare, diameter 0.75 mm (AWG22, 0.34mm², 7 x 0.25mm)
Insulation	Foam-PE, diameter 1.8 mm
Identification	a – core: red; b – core: black
Stranding	two cores twisted to the bundle + 7x0.25 drain wire, bare, diameter 3.6 m
Screen	Al-PET foil
Sheath	LSOH, diameter 6.0 mm ± 0.1 mm, grey
Printing	DRAKA – DMX 234 LSOH AES/EBU batch number and metermarking

Mechanical properties at 20°C

Bending radius	without load	≥ 4 x D (D= outer diameter)
	with load	≥ 8 x D (D= outer diameter)
Temperature range	During operation	-30°C to + 70°C
	During installation	-5°C to + 50°C

Electrical properties at 20°C± 5°C

Loop resistance		≤ 55 Ω/km
Conductor resistance		≤ 110 Ω/km
Insulation resistance	500 V	≥ 2000 MΩ*km
Mutual capacitance	800 Hz	nom. 60 nF/km
Velocity ratio		ca .67%
Capacitance conductor/shield		130pF
Test voltage	(DC. 1 min) core/core and core/screen	1000 V
Characteristic Impedanc		110Ω

Product Code Table

Product Description	PG Reference Code	PG Part Number
DMX 234 1x2x0.34 mm²		

DMX 434 FRNC or PVC

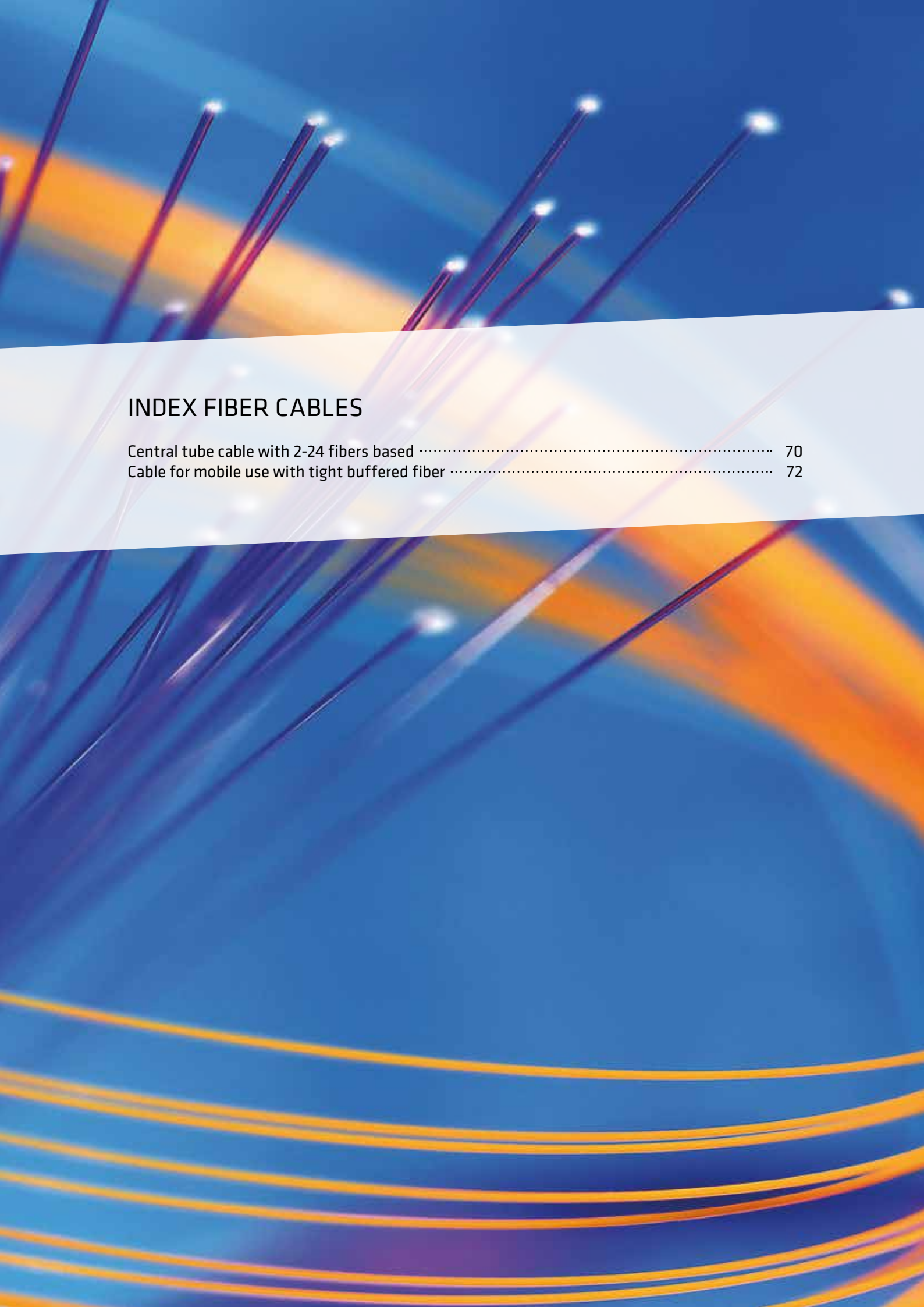
Application
DMX cable for light control

Construction	
Conductor	Stranded copper wires, bare, diameter 0.75 mm (AWG22, 0.34mm², 7 x 0.25mm)
Insulation	Foam-PE, diameter 1.8 mm
Identification	a – core: red; b – core: white; c – core: blue; d – core: black
Stranding	four cores twisted to the bundle, diameter 3.6 mm
Screen	Al-PET foil under a tinned copper braid+ 7x0.25 drain wire, tinned
Sheath	PVC, diameter 6.5 mm ± 0.2 mm, black, RAL 9005
Printing	DRAKA – DMX 434 AES/EBU batch number and metermarking

Mechanical properties at 20°C		
Bending radius	without load	≥ 4 x D (D= outer diameter)
	with load	≥ 8 x D (D= outer diameter)
Temperature range	During operation	-20°C to + 70°C
	During installation	-5°C to + 50°C

Electrical properties at 20°C± 5°C		
Loop resistance		≤ 55 Ω/km
Conductor resistance		≤ 110 Ω/km
Insulation resistance	500 V	≥ 2000 MΩ*km
Mutual capacitance	800 Hz	nom. 60 nF/km
Velocity ratio		ca .67%
Capacitance conductor/shield		130pF
Test voltage	(DC. 1 min) core/core and core/screen	1000 V
Characteristic Impedanc		110Ω

Product Code Table		
Product Description	PG Reference Code	PG Part Number
DMX 434 2x2x0.34 mm²		



INDEX FIBER CABLES

6. FIBER CABLES

- Installation cables:
  The cable is water-blocked and well suited for installation in ducts and on trays indoor and limited outdoor use in ducts

Standard Fiber Installation cables:

High bit Media Transport over IP Networks SMPTE ST 2110
The broadcast signal is transmitted serially, line by line, frame by frame. Each line and each picture has sync pulses (V and H). In addition, the audio channels and auxiliary data are transmitted. The actual video signal is uncompressed in 4: 2.2 / 10bit. The networks have been designed as coaxial cable in 75 ohms for years.

The **SMPTE ST 2110** is a standard of the Society of Motion Picture and Television Engineers (SMPTE). This specifies the transmission of uncompressed digital broadcast signals (video stream) over an IP network in real time. Each record (video, audio, data) is synchronized with each other without affecting the records. They can be routed and edited separately, as well as metadata such as timecode, subtitles and teletext assigned to the records.

The application: The pioneers of media transport of native HD signal over long distances were the hosts of big events, like for big football turnaments, Olympic and wintersport events.

The **IP MediaLine Fiber Cable** Series based on **SMPTE 2110** is designed for installation in the studio, stadiums and event of the broadcast sector.

IP MediaLine Fiber on SMPTE 2110
Central tube cable with 2-24 fibers based

C_{ca} CPR | D_{ca} CPR | E_{ca} CPR

Application and installation

This cable can be used to send digital video over an IP network, fiber to business and fiber to the building drop connections as well as fiber to the home drop and access connections. SMPTE 2110 is a standard from the Society of Motion Picture and Television Engineers (SMPTE) that describes how to send digital video over an IP network.

Non-metallic unitube cable is with gel-filled tubes and water-blocked design.
With its FireRes® sheathing this cable is ideal for indoor installations.
It is CPR Class Cca cable with very high flame retardant performance.
It has glass yarn dielectric armouring for rodent resistance.
The cable is water-blocked and well suited for installation in ducts and on trays indoor and limited outdoor use in ducts.
It is equally suited for installation in ducts and on trays.
It has a degree of rodent protection.

Standards

ISO 11801-1, EN 50173-1:2011, IEC 60794-1

Flame resistance

LSHF-FR (FRNC)	IEC 60332-1-2(single vertical wire test), IEC 60332-3-24, IEC 60754-1(no halogens), IEC 60754-2(No acid), IEC 61034-2 (no dense);
EN 50399	CPR class C_{ca} s1-d1-a1, class D_{ca} s1 d1 a1, class E_{ca} s1 d1 a1

Construction

Loose tube	Ø2.8 mm gel-filled loose tube with 2 – 24 fibers			
Fiber colour code	1	Red	13	Red w/mark every 70mm
	2	Green	14	Green w/mark every 70mm
	3	Blue	15	Blue w/mark every 70mm
	4	Yellow	16	Yellow w/mark every 70mm
	5	White	17	White w/mark every 70mm
	6	Grey	18	Grey w/mark every 70mm
	7	Brown	19	Brown w/mark every 70mm
	8	Violet	20	Violet w/mark every 70mm
	9	Turquoise	21	Turquoise w/mark every 70mm
	10	Black	22	White w/mark every 35mm
	11	Orange	23	Orange w/mark every 70mm
	12	Pink	24	Pink w/mark every 70mm
Strength member	Water-blocking Glass yarns			
Sheath	2.0 mm (colour see product description) FireRes® sheath, UV stabilised, IEC 50290-2-27			
Sheath marking	Draka IP MediaLine Fiber Cca s1 d1 a1 3.0 kN SMPTE2022 <Fibre count> <Mode field diameter> /125 CT <Factory code> <Batch Number><Meter mark> <Transmission Class> <CE>			
For example 8E9/125	Draka IP MediaLine Fiber Cca s1 d1 a1 3.0 kN 8E9/125 CT SMPTE 2022 <factory code> <batch number> <meter marking> <Transmission Class> <CE>			

Physical properties		
Attribute	IEC 60794-1-21/22 Method	Limits
Nominal outer diameter	-	2 - 24 fibers: 9.4 mm
Nominal weight	-	2 - 24 fibers: 110 kg/km
Maximum installation tensile strength	E1	3000 N (fiber strain ≤ 0.6%)
Permanent tensile strength	E1	1000 N (fiber strain ≤ 0.2%)
Compressive strength (crush)	E3	2000 N / 100 mm
Impact	E4	20 J
Torsion	E7	5 cycles ± 1 turn
Kink	E10	The cables do not form a kink when a loop is drawn together to a diameter of 100 mm
Min. bending radius, unloaded (permanent)	E11	R = 94 mm
Min. bending radius, loaded (installation)	-	R = 188 mm
Temperature range	F1	Storage: -30°C to +60°C Installation: -30°C to +40°C Operation: -30°C to +60°C
Water penetration	F5B	No water on free end

Product Codes					
Product Code	DoP Number*	Product Description	Fibre Count	Fibre Type	Fibre Data Sheet
60090487		4E/9125 CT LSHF 3kN blue	4	BendBright XS G.657 A2 and B2	C24
60090490		8E/9125 CT LSHF 3kN black	8	BendBright XS G.657 A2 and B2	C24
60090496		12E/9125 CT LSHF 3kN grey	12	BendBright XS G.657 A2 and B2	C24
60090507		24E/9125 CT LSHF 3kN violet	24	BendBright XS G.657 A2 and B2	C24
		4G62.5/125 CT LSHF 3kN yellow	4	MaxCap-OM1	C02
		8G62.5/125 CT LSHF 3kN orange	8	MaxCap-OM1	C02
		12G62.5/125 CT LSHF 3kN red	12	MaxCap-OM1	C02
		4G50/125 CT LSHF 3kN yellow	4	MaxCap-BB-OM2	C34

IP MediaLine Fiber on SMPTE 2110
Cable for mobile use with tight buffered fiber

Construction		
Fiber Type		9/125 µm Single mode, BendBright XS (BBXS) Tight buffer, PBT
Fiber core diameter		9 µm
Cladding diameter		125 ± 0.4 µm
Primary Coating diameter		242 ± 5 µm
Secondary buffer diameter		900 µm
Identification		Colored fibers: 1 x red, 1 x blue, 1 x yellow, 1 x green
Cable lay up	4 elements	(0+4) 4 fibers twisted to a bundle
	12 elements	(3+9) 12fibers twisted to a bundle
Strength member		Aramid yarn
Wrapping		Polyester Web
Sheath		PUR HFFR, black matt, RAL 9005
	4 elements	diameter 6.0mm
	12 elements	diameter 6.5mm
Printing MFC E4-LV5		DRAKA Mobile Fiber cable MFC E4-LV5 OUTDOOR batch number + meter
Printing MFC E12-LV5		DRAKA Mobile Fiber cable MFC E12-LV5 OUTDOOR batch number + mete

Product Codes

Product Code	Type	Brand name	Outer diameter	Weight Kg/km	Fibre typ	Tensile force
60082205	4 x 9/125 PUR	MFC E4-LV5	6.0	29	BBXS	400
60082204	8 x 9/125 PUR	MFC E8-LV5	6.5	35	BBXS	700
60082203	12 x 9/125 PUR	MFC E12-LV5	6.5	42	BBXS	1000

NEXT GENERATION

High Bitrate

– We don't care

Draka

A Brand of Prysmian Group

FUTURE-ORIENTED
CABELING SOLUTIONS

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