

The Construction Product Regulation

CPR Cables







More than 30 Years of experience in cables production.

- Wide production range of instrumental, power, thermocouples, telecommunications and fiber optics cables.
- Camuna Cavi has designed and produced more than 80.000 different articles.
- Camuna Cavi is listed in the vendor lists of the major EPC, Operators and End-Users.
- Integrated Management System for Quality, Environment and Energy in reference to:
 - UNI-EN ISO 9001:2015
 - UNI EN ISO 14001:2015
 - UNI EN ISO 50001:2011

Since July 1st 2017 Camuna cavi has concentrated its efforts in the study and production of products that comply with all the new rules and conditions that came into force with the new CPR (Construction Product Regulation).

Thanks also to the presence of an internal laboratory located in the production site, Camuna Cavi has developed its range of CPR cables.



Associato AIB
Sistema Confindustria

The Construction Product Regulation (CPR) is a European law came into force on 1st July 2017.

The CPR establishes the basic requirements and the harmonized essential characteristics that all products must guarantee to be permanently installed in civil engineering works (e.g. homes, industrial and commercial buildings, offices, hospitals, schools, subways, etc.).

Regardless of the voltage level or the conductor type (metal or optical fiber), all cables which are permanently installed in buildings, either for power supply or data transmission, shall be classified based on reaction to fire classes.

The main rules imposed by the CPR:

■ **CE Marking**

The CE marking is the mandatory declaration, issued by the manufacturer of a product regulated in the European Union, which demonstrates how the product complies with the safety requirements of the applicable directives.

■ **Declaration of Performance (DoP)**

Before placing a product on the market, the manufacturer must issue a declaration of performance which must include the identification of the constructor of the product, the intended use, the fire reaction performance of the cable, its essential characteristics, the identification number of the Notified Body, the date, stamp and signature of the manufacturer.

■ **Performance Consistency Assessment and Verification systems (AVCP)**

To certify a product having high performances, a certified third party needs to be involved to control and certify all the production and bureaucratic processes of manufacturer.

The AVCP system for cables are three and go from a level 1 +, which means that Notified Body will have to apply strict controls and inspections, to a system 4 completely at the expense of the manufacturer with much less severe checks.

Applicable fire reaction tests:

■ **EN 50399**

Common test methods for cables under fire conditions. Measurement of heat emission and smoke production on cables during the flame development test.

■ **IEC 60332-1-2**

Test for vertical flame propagation on a single insulated conductor or cable.

■ **EN 60754-2**

Determination of acidity (by measuring pH) and conductivity of gases.

■ **IEC 61034-2**

Measurement of the density of smoke emitted by cables burning under defined conditions. It determines CPR parameters S1b and S1a.

Classification Criteria:

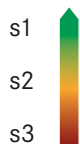
Cables have been classified into 7 classes of Reaction to Fire Aca, B1ca, B2ca, Cca, Dca, Eca, Fca identified by the subscript "ca" (cable) according to their decreasing performance.



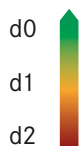
Each class has minimum thresholds for heat release and flame propagation.

In addition to this main classification, the European Authorities have also regulated the use of the following additional parameters:

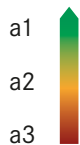
s = smoke density that goes from s1 to s3 with decreasing performance (applicable standard: IEC 61034-2)



d = dripping of glowing particles that goes from d0 to d2 with decreasing performance (applicable standard: EN 50399)



a = acidity of fumes that goes from a1 to a3 with decreasing performance (applicable standard: IEC 60754-2)



Most common CPR classes:

Class	Level of risk	Installation type	Installation places
B2ca- s1a, d1, a1	High	Places characterized by high density of crowding and difficulty of escape.	
Cca- s1b, d1, a1	Middle-high	Places characterized by high density of crowding and easy of escape.	
Cca- s3, d1, a3	Middle-low	Places characterized by low density of crowding and difficulty of escape.	
Eca	Low	Places characterized by low density of crowding and easy of escape.	




Declaration of Performance
 According to Annex III of Regulation (EU) no. 305/2011
Dichiarazione di Prestazione
 Accordo all'Allegato III del Regolamento (EU) n°: 305/2011

Document-no:
Documento N°: **CCE_DOP_190009**

1. Unique identification code of the product type:
Codice di identificazione unico del prodotto –
– Type/Tipo: **FG16XHOHM16FM16 600/1000V** 1

– Size/Formazione:

**2x2x1,5; 3x2x1,5; 4x2x1,5; 5x2x1,5; 6x2x1,5; 7x2x1,5; 8x2x1,5; 9x2x1,5; 10x2x1,5; 11x2x1,5; 12x2x1,5;
 2x3x1,5; 3x3x1,5; 4x3x1,5; 5x3x1,5; 6x3x1,5; 7x3x1,5; 8x3x1,5;** 2

2. Usage:
Usi Previsti:

Supply of electricity in buildings and other civil engineering works with the objective of limiting the generation and spread of fire and smoke.
 Fornitura di cavi elettrici in edifici e altre opere di ingegneria civile con l'obiettivo di limitare la generazione e la diffusione di fuoco e fumo. 3

3. Manufacturer:
Fabbrikante:

Camuna Cavi S.r.l.
Via General Treboldi, 128
25048 – Edolo (BS)
Italy 4

4. Mandatory:
Mandatorio:

5. System of assessment and verification of constancy of performance
Sistema di AVCP

System 1+ 5

6. Product certification body
Organismi notificati

No. 0051 (IMQ Istituto Italiano del marchio di qualità S.p.A.) 6

7. Declared Performance
Prestazione Dichiarata

Essential characteristics Caratteristiche essenziali	Performance Prestazione	Harmonized technical standard Norma armonizzata
Fire behaviour Reazione al Fuoco	7 C_{ca} –s1b,d1,a1	EN 50575:2014 + A1:2016 8
Hazardous substances Sostanze nocive	NPD	

8. The performance of the referred product in paragraphs 1 is in conformity with the declared performance in Section 7.
La prestazione del cavo descritto al paragrafo 1 è in conformità con quanto dichiarato al paragrafo 7.

This declaration of performance is issued under the general responsibilities listed in section 3. Manufacturer.
Questa dichiarazione di prestazione è fornita sotto totale responsabilità elencata nella sezione 3. Fabbrikante.

Signed for and in name of the manufacturer by:
Firmato a nome e per conto del fabbricante da:

Edolo, 09/07/2019 9

Camuna Cavi S.r.l.
Technical Manager
Head of Cable Development



Dott. Ing. Luigi Sterli 10

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- | | |
|---|---|
| 1 Essential construction characteristics | 6 Identification number of Notified Body |
| 2 Cross section range | 7 CPR Class |
| 3 Intended use / Type of installation | 8 Harmonized technical standard |
| 4 Manufacturer identification | 9 Date |
| 5 AVCP system level | 10 Recognized manufacturer signature |

Applicable standards

Cables manufactured according to

- **EN 50288-7**
Multi-element metallic cables used in analogue and digital communication and control. Sectional specification for instrumentation and control cables.
- **IEC 60502-1**
Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m = 1,2$ kV) up to 3 kV ($U_m = 3,6$ kV)
- **EU 305/11**
Regulation (EU) No 305/2011 - construction products
- **EN 50575**
Power, control and communication cables. Cables for general applications in construction works subject to reaction to fire requirements

Cables manufactured according to

- **EN 50399**
Common test methods for cables under fire conditions.
Heat release and smoke production measurement on cables during flame spread test.
Test apparatus, procedures, results.
- **IEC 60332-1-2**
Tests on electric and optical fibre cables under fire conditions.
Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame.
- **IEC 60331-1**
Tests for electric cables under fire conditions.
Circuit integrity Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm.
- **EC 60754-2**
Test on gases evolved during combustion of materials.
Part 2: Determination of acidity (by measuring pH) and conductivity of gases.
- **IEC 61034-2**
Measurement of smoke density of cables burning under defined conditions.
Part 2: Test procedure and requirements.
- **IEC 60331-25**
Tests for electric cables under fire conditions - Circuit integrity.
Part 25: Procedures and requirements - Optical fibre cables.

Additional Chemical tests based on

- **CEI 20-34/0**
Common test methods for insulating and sheathing materials of electric cables.
Part 0: Methods for general application.
- **IEC 60811-404**
Electric and optical fibre cables - Test methods for non-metallic materials.
Part 404: Miscellaneous tests - Mineral oil immersion tests for sheaths.

Legend

APPLICATION



Civil engineering buildings



Mechanical and
Plant Engineering



Oil & Gas



Rail



Airport



Harbor



School



Theater



Restaurant

PRODUCT CHARACTERISTICS



Suitable for outdoor use



Good chemical
resistance



Flame-retardant



Halogen-free



Fire-resistant



Mechanical resistance



Oil-resistant



UV-resistant



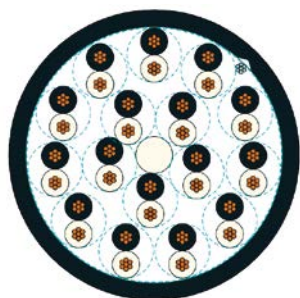
Rodent resistant

Please note:

The purpose of the icons is to provide you with a quick overview and a rough indication of the product features to which the corresponding information relates. You can find details of product characteristics in the “technical data” sections on the product pages.

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	FG16XHOHM16AM16 600/1000V 12
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	FTG16XHOHM16 600/1000V 14
	Fire resistant, individual and overall shielded, armored 600/1000V
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	Fire resistant, shielded, unarmored 600/1000V
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	Fire resistant, shielded, armored 600/1000V
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	UE4XHOHH2M16 300/300V 25
	Fire resistant, unitube, armored
	GOF - Cca 26
	Fire resistant, multitube, armored
	GOF - B2ca 27
	GOF - Cca 28



RE-2X(ST)H 300/500V

CU/XLPE/OS/LSZH

CPR Class: Dca – s2, d2, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-low level CPR classification
- Suitable for installation in civil engineering constructions with low density of people

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_190010

Technical data



Core identification code:

Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request



Insulation resistance:

1000 MOhm x km



Conductor stranding:

Class 2 IEC 60228

Nominal Voltage U₀/U:

300/500 V



Test voltage:

C/C 2000 Vac x 1 minute



Temperature range:

during operation: -30° to +70°C
during installation: -5° to +50°C



Minimum Bending Radius:

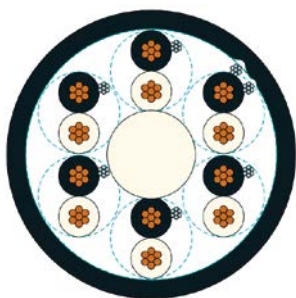
8 x Outer Diameter

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x0,75	6,3	19,2	68,2
2x2x0,75	9,4	33,6	118,9
4x2x0,75	11,1	62,4	156,3
6x2x0,75	13,2	91,2	218,0
8x2x0,75	15,0	120,0	279,6
10x2x0,75	17,2	148,8	367,8
12x2x0,75	17,8	177,6	387,9
14x2x0,75	18,7	206,4	426,0
16x2x0,75	19,9	235,2	483,3
18x2x0,75	21,0	264,0	538,4
20x2x0,75	22,4	292,8	612,3
22x2x0,75	23,7	321,6	690,8
24x2x0,75	25,1	350,4	774,8
2x1,5	7,5	33,6	101,2
2x2x1,5	11,5	62,4	185,4
4x2x1,5	13,5	120,0	250,0
6x2x1,5	16,5	177,6	366,9
8x2x1,5	18,6	235,2	470,6
10x2x1,5	21,3	292,8	606,5
12x2x1,5	22,2	350,4	667,3
14x2x1,5	23,4	408,0	736,1
16x2x1,5	24,9	465,6	836,1
18x2x1,5	26,3	523,2	935,8
20x2x1,5	28,0	580,8	1059,1
22x2x1,5	29,6	638,4	1177,6
24x2x1,5	31,3	696,0	1315,0
2x2,5	8,9	52,8	145,4
2x2x2,5	13,5	100,8	253,7
4x2x2,5	16,0	196,8	358,8
6x2x2,5	19,7	292,8	545,1
8x2x2,5	22,4	388,8	703,9
10x2x2,5	25,7	484,8	916,7
12x2x2,5	26,6	580,8	986,8
14x2x2,5	28,2	676,8	1107,6
16x2x2,5	30,0	772,8	1252,7

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3x0,75	6,7	26,4	79,0
2x3x0,75	10,3	48,0	156,7
4x3x0,75	12,3	91,2	222,1
5x3x0,75	13,4	112,8	266,0
6x3x0,75	14,9	134,4	323,7
8x3x0,75	16,9	177,6	388,2
10x3x0,75	19,4	220,8	483,1
12x3x0,75	20,0	264,0	555,7
14x3x0,75	21,1	307,2	631,1
16x3x0,75	22,5	350,4	719,6
18x3x0,75	23,8	393,6	808,0
20x3x0,75	25,3	436,8	900,0
22x3x0,75	26,7	480,0	979,5
24x3x0,75	28,3	523,2	1073,8
3x1,5	7,9	48,0	120,7
2x3x1,5	12,8	91,2	251,1
4x3x1,5	15,1	177,6	366,0
5x3x1,5	16,8	220,8	451,1
6x3x1,5	18,4	264,0	539,1
8x3x1,5	20,9	350,4	650,9
10x3x1,5	24,1	436,8	816,4
12x3x1,5	25,1	523,2	960,1
14x3x1,5	26,4	609,6	1094,9
16x3x1,5	28,1	696,0	1246,4
18x3x1,5	29,9	782,4	1406,8
20x3x1,5	31,6	868,8	1546,9
22x3x1,5	33,6	955,2	1705,4
24x3x1,5	35,6	1041,6	1881,0
3x2,5	9,5	76,8	175,3
2x3x2,5	15,2	148,8	365,4
4x3x2,5	18,1	292,8	541,8
5x3x2,5	20,1	364,8	666,1
6x3x2,5	22,2	436,8	809,0
8x3x2,5	25,3	580,8	987,4
10x3x2,5	29,0	724,8	1227,2
12x3x2,5	30,3	868,8	1444,3
14x3x2,5	31,9	1012,8	1651,4
16x3x2,5	33,9	1156,8	1879,0
18x3x2,5	36,1	1300,8	2128,9
20x3x2,5	38,4	1444,8	2363,4
22x3x2,5	40,7	1588,8	2601,1
24x3x2,5	42,8	1732,8	2819,9

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products, technical sheets including detailed constructions and performances are available upon request



RE-2X(ST)H 300/500V PIMF RE-2X(ST)H 300/500V TIMF

CU/XLPE/IS/OS/LSZH
CPR Class: Dca – s2, d2, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-low level CPR classification
- Suitable for installation in civil engineering constructions with low density of people

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_200002

Technical data

- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 2 IEC 60228
- **Nominal Voltage U₀/U:**
300/500 V
- **Test voltage:**
C/C 2000 Vac x 1 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
RE-2X(ST)H 300/500V Pimf			
2x2x0,75	10,2	43,2	149,7
4x2x0,75	12,1	81,6	209,7
5x2x0,75	13,3	100,8	250,8
6x2x0,75	14,7	120,0	305,2
8x2x0,75	16,7	158,4	352,2
10x2x0,75	19,2	196,8	438,3
12x2x0,75	19,8	235,2	502,0
14x2x0,75	20,8	273,6	568,7
16x2x0,75	22,2	312,0	648,3
18x2x0,75	23,5	350,4	728,0
20x2x0,75	25,0	388,8	810,8
22x2x0,75	26,4	427,2	881,6
24x2x0,75	28,0	465,6	966,9
2x2x1,5	13,2	72,0	243,7
4x2x1,5	15,7	139,2	342,4
5x2x1,5	17,5	172,8	421,4
6x2x1,5	19,3	206,4	512,6
8x2x1,5	22,0	273,6	587,4
10x2x1,5	25,2	340,8	735,7
12x2x1,5	26,1	408,0	846,5
14x2x1,5	27,7	475,2	976,2
16x2x1,5	29,3	542,4	1096,7
18x2x1,5	31,5	609,6	1268,6
20x2x1,5	33,1	676,8	1373,2
22x2x1,5	35,0	744,0	1511,0
24x2x1,5	37,0	811,2	1652,3
2x2x2,5	14,9	110,4	319,0
4x2x2,5	17,7	216,0	457,3
5x2x2,5	19,6	268,8	562,2
6x2x2,5	21,5	321,6	672,3
8x2x2,5	24,8	427,2	795,6
10x2x2,5	28,4	532,8	984,9
12x2x2,5	29,4	638,4	1141,8
14x2x2,5	31,1	744,0	1317,7
16x2x2,5	33,1	849,6	1497,7
18x2x2,5	35,0	955,2	1680,8
20x2x2,5	37,3	1060,8	1866,4
22x2x2,5	39,6	1166,4	2055,2
24x2x2,5	41,8	1272,0	2245,5

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
RE-2X(ST)H 300/500V Timf			
2x3x0,75	11,5	57,6	201,6
4x3x0,75	13,5	110,4	284,1
5x3x0,75	15,0	136,8	349,3
6x3x0,75	16,6	163,2	425,5
8x3x0,75	18,7	216,0	457,1
10x3x0,75	21,4	268,8	567,6
12x3x0,75	22,3	321,6	666,5
14x3x0,75	23,6	374,4	763,8
16x3x0,75	25,1	427,2	869,2
18x3x0,75	26,5	480,0	970,8
20x3x0,75	28,2	532,8	1076,6
22x3x0,75	30,0	585,6	1192,1
24x3x0,75	31,5	638,4	1288,1
2x3x1,5	15,0	100,8	337,4
4x3x1,5	17,8	196,8	492,6
5x3x1,5	19,7	244,8	606,3
6x3x1,5	21,6	292,8	724,9
8x3x1,5	24,9	388,8	811,2
10x3x1,5	28,5	484,8	1004,4
12x3x1,5	29,5	580,8	1165,1
14x3x1,5	31,2	676,8	1344,7
16x3x1,5	33,2	772,8	1528,0
18x3x1,5	35,3	868,8	1725,9
20x3x1,5	37,4	964,8	1904,9
22x3x1,5	39,7	1060,8	2089,4
24x3x1,5	42,0	1156,8	2291,7
2x3x2,5	16,8	158,4	444,0
4x3x2,5	20,0	312,0	658,8
5x3x2,5	22,2	388,8	810,3
6x3x2,5	24,6	465,6	840,6
8x3x2,5	27,9	619,2	1091,6
10x3x2,5	32,0	772,8	1355,5
12x3x2,5	33,4	926,4	1593,1
14x3x2,5	35,3	1080,0	1844,3
16x3x2,5	37,4	1233,6	2084,6
18x3x2,5	39,7	1387,2	2333,4
20x3x2,5	42,3	1540,8	2600,0
22x3x2,5	44,8	1694,4	2852,3
24x3x2,5	47,2	1848,0	3109,9

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products, technical sheets including detailed constructions and performances are available upon request



RE-2X(ST)HSWBH 300/500V

CU/XLPE/OS/LSZH/SWB/LSZH

CPR Class: Dca – s2, d2, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-low level CPR classification
- Suitable for installation in civil engineering constructions with low density of people

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_190011

Technical data

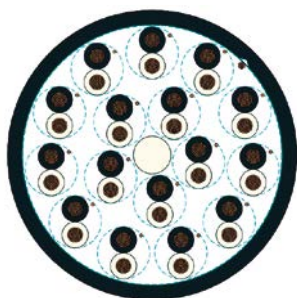
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 2 IEC 60228
- **Nominal Voltage U₀/U:**
300/500 V
- **Test voltage:**
C/C 2000 Vac x 1 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x0,75	10,1	19,2	171,2
2x2x0,75	13,3	33,6	275,7
4x2x0,75	15,1	62,4	331,3
5x2x0,75	16,3	76,8	391,5
6x2x0,75	17,4	91,2	433,2
8x2x0,75	19,4	120,0	526,9
10x2x0,75	21,6	148,8	629,7
12x2x0,75	22,2	177,6	685,0
14x2x0,75	23,3	206,4	763,5
16x2x0,75	24,5	235,2	845,0
18x2x0,75	25,6	264,0	917,8
20x2x0,75	27,2	292,8	1018,8
22x2x0,75	28,5	321,6	1109,6
24x2x0,75	29,9	350,4	1191,8
2x1,5	11,3	33,6	227,0
2x2x1,5	15,7	62,4	367,5
4x2x1,5	17,6	120,0	462,2
5x2x1,5	19,3	148,8	549,1
6x2x1,5	20,9	177,6	638,0
8x2x1,5	22,9	235,2	762,1
10x2x1,5	25,9	292,8	927,0
12x2x1,5	27,0	350,4	1054,4
14x2x1,5	28,2	408,0	1170,3
16x2x1,5	29,7	465,6	1302,6
18x2x1,5	31,3	523,2	1438,6
20x2x1,5	33,0	580,8	1584,2
22x2x1,5	34,8	638,4	1728,6
24x2x1,5	36,5	696,0	1860,2
2x2,5	12,9	52,8	287,5
2x2x2,5	17,9	100,8	477,3
4x2x2,5	20,4	196,8	624,3
5x2x2,5	22,2	244,8	732,0
6x2x2,5	24,3	292,8	868,3
8x2x2,5	27,2	388,8	1075,9
10x2x2,5	30,7	484,8	1318,1
12x2x2,5	31,6	580,8	1468,2
14x2x2,5	33,2	676,8	1648,1
16x2x2,5	35,6	772,8	1861,0
18x2x2,5	36,9	868,8	2032,8
20x2x2,5	39,2	964,8	2265,5
22x2x2,5	41,3	1060,8	2467,6
24x2x2,5	43,3	1156,8	2669,9

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3x0,75	10,5	26,4	186,0
2x3x0,75	14,3	48,0	323,7
4x3x0,75	16,5	91,2	429,1
5x3x0,75	17,6	112,8	482,1
6x3x0,75	19,3	134,4	576,2
8x3x0,75	21,3	177,6	671,4
10x3x0,75	24,0	220,8	822,1
12x3x0,75	24,6	264,0	902,1
14x3x0,75	25,9	307,2	998,1
16x3x0,75	27,3	350,4	1108,1
18x3x0,75	28,6	393,6	1217,3
20x3x0,75	30,1	436,8	1333,1
22x3x0,75	31,7	480,0	1451,7
24x3x0,75	33,3	523,2	1574,8
3x1,5	11,9	48,0	255,6
2x3x1,5	17,0	91,2	458,0
4x3x1,5	19,5	177,6	623,2
5x3x1,5	21,2	220,8	733,1
6x3x1,5	22,8	264,0	835,8
8x3x1,5	25,5	350,4	1005,2
10x3x1,5	28,9	436,8	1237,6
12x3x1,5	29,9	523,2	1389,7
14x3x1,5	31,4	609,6	1562,0
16x3x1,5	33,1	696,0	1748,9
18x3x1,5	35,1	782,4	1947,4
20x3x1,5	36,8	868,8	2116,5
22x3x1,5	39,0	955,2	2342,8
24x3x1,5	41,0	1041,6	2536,0
3x2,5	13,5	76,8	336,2
2x3x2,5	19,6	148,8	616,8
4x3x2,5	22,5	292,8	835,2
5x3x2,5	24,7	364,8	1010,0
6x3x2,5	27,0	436,8	1188,2
8x3x2,5	30,1	580,8	1420,5
10x3x2,5	34,0	724,8	1740,4
12x3x2,5	35,5	868,8	1995,3
14x3x2,5	37,1	1012,8	2224,7
16x3x2,5	39,3	1156,8	2516,3
18x3x2,5	41,7	1300,8	2814,3
20x3x2,5	44,0	1444,8	3088,2
22x3x2,5	46,5	1588,8	3391,0
24x3x2,5	48,6	1732,8	3648,3

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

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FG16XHOHM16 600/1000V

CU/HEPR/IS/OS/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210002

Technical data

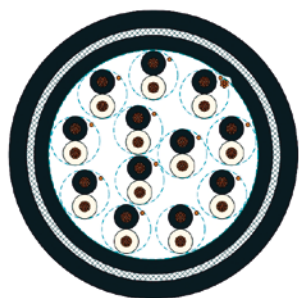
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	12,3	45,7	194,6
6x2x1	17,7	127,5	382,3
10x2x1	23,2	209,3	656,6
12x2x1	24,2	250,2	732,5
16x2x1	27,1	332,0	872,6
20x2x1	30,5	413,8	1101,9
24x2x1	34,0	495,6	1374,4
2x2x1,5	13,2	64,9	229,5
6x2x1,5	19,3	185,1	469,9
10x2x1,5	25,2	305,3	798,8
12x2x1,5	26,1	365,4	848,7
16x2x1,5	29,3	485,6	1056,5
20x2x1,5	33,1	605,8	1354,2
24x2x1,5	37,0	726,0	1691,1
2x2x2,5	15,2	103,3	312,8
6x2x2,5	22,2	300,3	649,0
10x2x2,5	29,0	497,3	1109,5
12x2x2,5	30,2	595,8	1200,0
16x2x2,5	33,9	792,8	1499,9
20x2x2,5	38,3	989,8	1915,9
24x2x2,5	42,7	1186,8	2387,2

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	13,9	64,9	267,6
6x3x1	20,0	185,1	548,2
10x3x1	26,2	305,3	935,2
12x3x1	27,3	365,4	1015,2
16x3x1	30,6	485,6	1270,3
20x3x1	34,4	605,8	1604,4
24x3x1	38,6	726,0	2017,7
2x3x1,5	15,0	93,7	319,0
6x3x1,5	21,8	271,5	680,0
10x3x1,5	28,5	449,3	1158,1
12x3x1,5	29,7	538,2	1263,0
16x3x1,5	33,2	716,0	1585,9
20x3x1,5	37,4	893,8	2002,0
24x3x1,5	42,0	1071,6	2511,4
2x3x2,5	17,2	151,3	436,0
6x3x2,5	25,1	444,3	949,7
10x3x2,5	32,9	737,3	1625,3
12x3x2,5	34,1	883,8	1761,0
16x3x2,5	38,4	1176,8	2242,6
20x3x2,5	43,7	1469,8	2948,1
24x3x2,5	48,2	1762,8	3510,7

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

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FG16XHOHM16AM16 600/1000V

CU/HEPR/IS/OS/LSZH/SWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210003

Technical data

- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	16,5	45,7	392,1
6x2x1	22,1	127,5	675,8
10x2x1	28,4	209,3	1106,3
12x2x1	29,4	250,2	1172,3
16x2x1	32,5	332,0	1413,6
20x2x1	36,1	413,8	1720,1
24x2x1	39,8	495,6	2076,6
2x2x1,5	17,4	64,9	439,5
6x2x1,5	23,9	185,1	791,8
10x2x1,5	30,6	305,3	1299,2
12x2x1,5	31,5	365,4	1383,2
16x2x1,5	34,9	485,6	1655,8
20x2x1,5	38,9	605,8	2041,4
24x2x1,5	43,0	726,0	2466,8
2x2x2,5	19,6	103,3	559,6
6x2x2,5	27,4	300,3	1084,8
10x2x2,5	34,6	497,3	1693,7
12x2x2,5	35,8	595,8	1818,0
16x2x2,5	39,7	792,8	2222,4
20x2x2,5	44,3	989,8	2721,0
24x2x2,5	49,1	1186,8	3320,5

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	18,1	64,9	485,3
6x3x1	25,0	185,1	928,5
10x3x1	31,6	305,3	1447,0
12x3x1	32,7	365,4	1550,6
16x3x1	36,2	485,6	1889,9
20x3x1	40,2	605,8	2304,7
24x3x1	44,6	726,0	2809,8
2x3x1,5	19,4	93,7	561,0
6x3x1,5	27,0	271,5	1103,7
10x3x1,5	34,1	449,3	1726,7
12x3x1,5	35,3	538,2	1858,1
16x3x1,5	39,0	716,0	2268,0
20x3x1,5	43,4	893,8	2778,7
24x3x1,5	48,2	1071,6	3388,5
2x3x2,5	21,6	151,3	708,0
6x3x2,5	30,5	444,3	1445,5
10x3x2,5	38,7	737,3	2290,2
12x3x2,5	39,9	883,8	2452,4
16x3x2,5	44,4	1176,8	3040,6
20x3x2,5	49,8	1469,8	3789,0
24x3x2,5	55,0	1762,8	4587,7

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

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FG18XHOHM16AM16 600/1000V

CU/XLPO/IS/OS/LSZH/SWB/LSZH

CPR Class: B2ca – s1a, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- High level CPR classification
- Suitable for installation in bundles in constructions and civil engineering buildings with long evacuation times due to high crowd density.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210006

Technical data

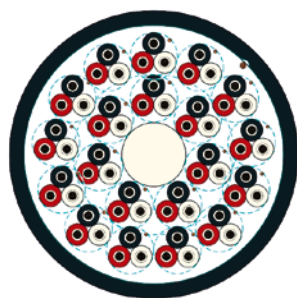
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	16,5	45,7	392,1
6x2x1	22,1	127,5	675,8
10x2x1	28,4	209,3	1106,3
12x2x1	29,4	250,2	1172,3
16x2x1	32,5	332,0	1413,6
20x2x1	36,1	413,8	1720,1
24x2x1	39,8	495,6	2076,6
2x2x1,5	17,4	64,9	439,5
6x2x1,5	23,9	185,1	791,8
10x2x1,5	30,6	305,3	1299,2
12x2x1,5	31,5	365,4	1383,2
16x2x1,5	34,9	485,6	1655,8
20x2x1,5	38,9	605,8	2041,4
24x2x1,5	43,0	726,0	2466,8
2x2x2,5	19,6	103,3	559,6
6x2x2,5	27,4	300,3	1084,8
10x2x2,5	34,6	497,3	1693,7
12x2x2,5	35,8	595,8	1818,0
16x2x2,5	39,7	792,8	2222,4
20x2x2,5	44,3	989,8	2721,0
24x2x2,5	49,1	1186,8	3320,5

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	18,1	64,9	485,3
6x3x1	25,0	185,1	928,5
10x3x1	31,6	305,3	1447,0
12x3x1	32,7	365,4	1550,6
16x3x1	36,2	485,6	1889,9
20x3x1	40,2	605,8	2304,7
24x3x1	44,6	726,0	2809,8
2x3x1,5	19,4	93,7	561,0
6x3x1,5	27,0	271,5	1103,7
10x3x1,5	34,1	449,3	1726,7
12x3x1,5	35,3	538,2	1858,1
16x3x1,5	39,0	716,0	2268,0
20x3x1,5	43,4	893,8	2778,7
24x3x1,5	48,2	1071,6	3388,5
2x3x2,5	21,6	151,3	708,0
6x3x2,5	30,5	444,3	1445,5
10x3x2,5	38,7	737,3	2290,2
12x3x2,5	39,9	883,8	2452,4
16x3x2,5	44,4	1176,8	3040,6
20x3x2,5	49,8	1469,8	3789,0
24x3x2,5	55,0	1762,8	4587,7

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

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FTG16XHOHM16 600/1000V

CU/MGT/HEPR/IS/OS/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220001

Technical data

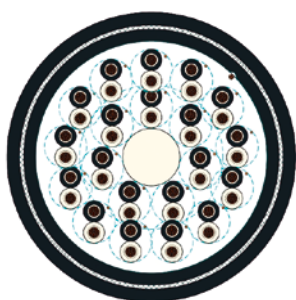
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	12,3	45,7	250,5
6x2x1	17,7	127,5	487,3
10x2x1	23,2	209,3	830,5
12x2x1	24,2	250,2	885,6
16x2x1	27,1	332,0	1107,8
20x2x1	30,5	413,8	1427,4
24x2x1	34,0	495,6	1785,5
2x2x1,5	13,2	64,9	289,0
6x2x1,5	19,3	185,1	583,9
10x2x1,5	25,2	305,3	1004,2
12x2x1,5	26,1	365,4	1073,5
16x2x1,5	29,3	485,6	1330,1
20x2x1,5	33,1	605,8	1710,2
24x2x1,5	37,0	726,0	2136,9
2x2x2,5	15,2	103,3	381,1
6x2x2,5	22,2	300,3	791,5
10x2x2,5	29,0	497,3	1359,0
12x2x2,5	30,2	595,8	1447,7
16x2x2,5	33,9	792,8	1822,8
20x2x2,5	38,3	989,8	2304,3
24x2x2,5	42,7	1186,8	2883,6

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	13,9	64,9	337,1
6x3x1	20,0	185,1	701,8
10x3x1	26,2	305,3	1217,4
12x3x1	27,3	365,4	1301,9
16x3x1	30,6	485,6	1650,6
20x3x1	34,4	605,8	2084,8
24x3x1	38,6	726,0	2622,0
2x3x1,5	15,0	93,7	401,7
6x3x1,5	21,8	271,5	845,3
10x3x1,5	28,5	449,3	1464,5
12x3x1,5	29,7	538,2	1568,2
16x3x1,5	33,2	716,0	1990,1
20x3x1,5	37,4	893,8	2513,7
24x3x1,5	42,0	1071,6	3135,2
2x3x2,5	17,2	151,3	533,2
6x3x2,5	25,1	444,3	1142,7
10x3x2,5	32,9	737,3	1975,0
12x3x2,5	34,1	883,8	2151,4
16x3x2,5	38,4	1176,8	2704,5
20x3x2,5	43,7	1469,8	3422,7
24x3x2,5	48,2	1762,8	4342,1

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products, technical sheets including detailed constructions and performances are available upon request



FTG16XHOHM16AM16 600/1000V

CU/MGT/HEPR/IS/OS/LSZH/SWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220002

Technical data

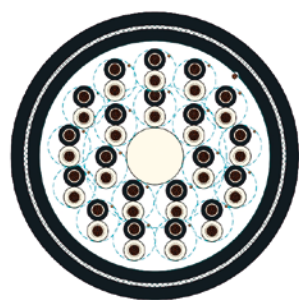
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	16,5	45,7	473,4
6x2x1	22,1	127,5	892,5
10x2x1	28,4	209,3	1369,6
12x2x1	29,4	250,2	1450,4
16x2x1	32,5	332,0	1744,2
20x2x1	36,1	413,8	2156,5
24x2x1	39,8	495,6	2608,0
2x2x1,5	17,4	64,9	534,8
6x2x1,5	23,9	185,1	1016,4
10x2x1,5	30,6	305,3	1585,9
12x2x1,5	31,5	365,4	1683,3
16x2x1,5	34,9	485,6	2030,6
20x2x1,5	38,9	605,8	2511,6
24x2x1,5	43,0	726,0	3039,9
2x2x2,5	19,6	103,3	653,9
6x2x2,5	27,4	300,3	1274,4
10x2x2,5	34,6	497,3	2030,0
12x2x2,5	35,8	595,8	2143,9
16x2x2,5	39,7	792,8	2631,5
20x2x2,5	44,3	989,8	3251,8
24x2x2,5	49,1	1186,8	3977,1

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	18,1	64,9	591,4
6x3x1	25,0	185,1	1148,9
10x3x1	31,6	305,3	1824,2
12x3x1	32,7	365,4	1930,5
16x3x1	36,2	485,6	2374,2
20x3x1	40,2	605,8	2933,2
24x3x1	44,6	726,0	3578,4
2x3x1,5	19,4	93,7	672,6
6x3x1,5	27,0	271,5	1322,0
10x3x1,5	34,1	449,3	2126,8
12x3x1,5	35,3	538,2	2259,3
16x3x1,5	39,0	716,0	2784,8
20x3x1,5	43,4	893,8	3443,9
24x3x1,5	48,2	1071,6	4102,7
2x3x2,5	21,6	151,3	846,3
6x3x2,5	30,5	444,3	1703,4
10x3x2,5	38,7	737,3	2732,7
12x3x2,5	39,9	883,8	2947,2
16x3x2,5	44,4	1176,8	3643,1
20x3x2,5	49,8	1469,8	4516,6
24x3x2,5	55,0	1762,8	5575,9

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FTG18XHOHM16AM16 600/1000V

CU/MGT/XLPO/IS/OS/LSZH/SWB/LSZH

CPR Class: B2ca – s1a, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- High level CPR classification
- Suitable for installation in bundles in constructions and civil engineering buildings with long evacuation times due to high crowd density.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220005

Technical data

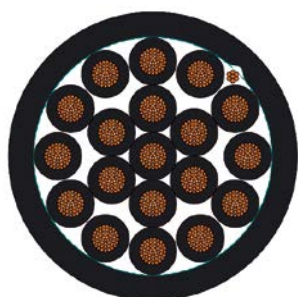
- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x2x1	16,5	45,7	473,4
6x2x1	22,1	127,5	892,5
10x2x1	28,4	209,3	1369,6
12x2x1	29,4	250,2	1450,4
16x2x1	32,5	332,0	1744,2
20x2x1	36,1	413,8	2156,5
24x2x1	39,8	495,6	2608,0
2x2x1,5	17,4	64,9	534,8
6x2x1,5	23,9	185,1	1016,4
10x2x1,5	30,6	305,3	1585,9
12x2x1,5	31,5	365,4	1683,3
16x2x1,5	34,9	485,6	2030,6
20x2x1,5	38,9	605,8	2511,6
24x2x1,5	43,0	726,0	3039,9
2x2x2,5	19,6	103,3	653,9
6x2x2,5	27,4	300,3	1274,4
10x2x2,5	34,6	497,3	2030,0
12x2x2,5	35,8	595,8	2143,9
16x2x2,5	39,7	792,8	2631,5
20x2x2,5	44,3	989,8	3251,8
24x2x2,5	49,1	1186,8	3977,1

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x3x1	18,1	64,9	591,4
6x3x1	25,0	185,1	1148,9
10x3x1	31,6	305,3	1824,2
12x3x1	32,7	365,4	1930,5
16x3x1	36,2	485,6	2374,2
20x3x1	40,2	605,8	2933,2
24x3x1	44,6	726,0	3578,4
2x3x1,5	19,4	93,7	672,6
6x3x1,5	27,0	271,5	1322,0
10x3x1,5	34,1	449,3	2126,8
12x3x1,5	35,3	538,2	2259,3
16x3x1,5	39,0	716,0	2784,8
20x3x1,5	43,4	893,8	3443,9
24x3x1,5	48,2	1071,6	4102,7
2x3x2,5	21,6	151,3	846,3
6x3x2,5	30,5	444,3	1703,4
10x3x2,5	38,7	737,3	2732,7
12x3x2,5	39,9	883,8	2947,2
16x3x2,5	44,4	1176,8	3643,1
20x3x2,5	49,8	1469,8	4516,6
24x3x2,5	55,0	1762,8	5575,9

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FG16OHM16 600/1000V

CU/HEPR/OS/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210004

Technical data

- **Core identification code:**
Black numbered
Other colors code available on request
- **Insulation resistance:**
5000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage Uo/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2 x 1	9,2	24,0	128,8
3 x 1	9,6	33,6	144,9
4 x 1	10,3	43,2	169,3
5 x 1	11,1	52,8	196,3
7 x 1	11,9	72,0	232,4
10 x 1	14,6	100,8	345,6
12 x 1	15,1	120,0	373,1
14 x 1	15,8	139,2	411,2
16 x 1	16,6	158,4	456,8
19 x 1	17,4	187,2	511,1
20 x 1	18,3	196,8	559,0
24 x 1	20,1	235,2	674,9
25 x 1	20,1	244,8	679,9
27 x 1	20,5	264,0	712,9
30 x 1	21,2	292,8	767,6
37 x 1	22,9	360,0	901,0
2 x 1,5	9,7	33,6	147,4
3 x 1,5	10,2	48,0	168,4
4 x 1,5	10,9	62,4	198,2
5 x 1,5	11,8	76,8	232,2
7 x 1,5	12,7	105,6	277,1
10 x 1,5	15,7	148,8	416,1
12 x 1,5	16,2	177,6	452,0
14 x 1,5	16,9	206,4	500,7

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16 x 1,5	17,8	235,2	556,6
19 x 1,5	18,7	278,4	625,7
20 x 1,5	19,7	292,8	686,3
24 x 1,5	21,7	350,4	828,5
25 x 1,5	21,7	364,8	836,2
27 x 1,5	22,1	393,6	878,1
30 x 1,5	22,9	436,8	948,3
37 x 1,5	24,7	537,6	1128,6
2 x 2,5	10,7	52,8	187,0
3 x 2,5	11,2	76,8	217,1
4 x 2,5	12,2	100,8	260,0
5 x 2,5	13,1	124,8	306,8
7 x 2,5	14,2	172,8	373,4
10 x 2,5	17,7	244,8	564,5
12 x 2,5	18,2	292,8	618,8
14 x 2,5	19,1	340,8	691,5
16 x 2,5	20,1	388,8	771,8
19 x 2,5	21,2	460,8	873,5
20 x 2,5	22,3	484,8	954,7
24 x 2,5	24,7	580,8	1166,9
25 x 2,5	24,7	604,8	1180,5
27 x 2,5	25,3	652,8	1242,7
30 x 2,5	26,2	724,8	1346,3
37 x 2,5	28,4	892,8	1616,7

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Control cables



FG16OHM16AM16 600/1000V

CU/HEPR/OS/LSZH/SWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded Annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned copper drain wire
- **Inner sheath**
LSZH
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210005

Technical data

- **Core identification code:**
Pairs: black & white numbered
Triads: black, white, red numbered
Other colors code available on request
- **Insulation resistance:**
5000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage U₀/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Number cores and mm² per conductor	Approx. Outer Diameter (mm)	Copper index (kg/km)	Approx. Weight (kg/km)
2 x 1	12,4	24,0	258,7
3 x 1	12,8	33,6	280,9
4 x 1	13,5	43,2	314,7
5 x 1	14,3	52,8	351,7
7 x 1	15,1	72,0	399,0
10 x 1	17,8	100,8	545,3
12 x 1	18,3	120,0	579,3
14 x 1	19,0	139,2	626,4
16 x 1	19,8	158,4	682,1
19 x 1	20,6	187,2	747,5
20 x 1	21,5	196,8	805,4
24 x 1	23,3	235,2	943,3
25 x 1	23,3	244,8	949,2
27 x 1	23,7	264,0	987,2
30 x 1	24,4	292,8	1051,2
37 x 1	26,1	360,0	1205,4
2 x 1,5	12,9	33,6	283,9
3 x 1,5	13,4	48,0	311,7
4 x 1,5	14,1	62,4	351,7
5 x 1,5	15,0	76,8	396,6
7 x 1,5	15,9	105,6	453,9
10 x 1,5	18,9	148,8	628,6
12 x 1,5	19,4	177,6	671,8
14 x 1,5	20,1	206,4	730,4

Number cores and mm² per conductor	Approx. Outer Diameter (mm)	Copper index (kg/km)	Approx. Weight (kg/km)
16 x 1,5	20,1	235,2	769,9
19 x 1,5	21,9	278,4	878,5
20 x 1,5	22,9	292,8	949,7
24 x 1,5	24,9	350,4	1114,9
25 x 1,5	24,9	364,8	1123,8
27 x 1,5	25,7	393,6	1225,0
30 x 1,5	26,5	436,8	1307,2
37 x 1,5	28,5	537,6	1532,5
2 x 2,5	13,9	52,8	336,1
3 x 2,5	14,4	76,8	374,2
4 x 2,5	15,4	100,8	429,0
5 x 2,5	16,3	124,8	488,3
7 x 2,5	17,4	172,8	569,4
10 x 2,5	20,9	244,8	801,5
12 x 2,5	21,4	292,8	864,3
14 x 2,5	22,3	340,8	948,6
16 x 2,5	23,3	388,8	1041,5
19 x 2,5	24,4	460,8	1157,4
20 x 2,5	25,9	484,8	1304,2
24 x 2,5	28,5	580,8	1566,1
25 x 2,5	28,5	604,8	1581,2
27 x 2,5	29,1	652,8	1652,2
30 x 2,5	30,0	724,8	1770,3
37 x 2,5	32,2	892,8	2077,8



FG18OHM16AM16 600/1000V

CU/XLPO/OS/LSZH/SWB/LSZH

CPR Class: B2ca – s1a, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- High level CPR classification
- Suitable for installation in bundles in constructions and civil engineering buildings with long evacuation times due to high crowd density.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210007

Technical data

- **Core identification code:**
Black numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage Uo/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3 x 1	12,8	33,6	280,9
4 x 1	13,5	43,2	314,7
5 x 1	14,3	52,8	351,7
7 x 1	15,1	72,0	399,0
10 x 1	17,8	100,8	545,3
12 x 1	18,3	120,0	579,3
14 x 1	19,0	139,2	626,4
16 x 1	19,8	158,4	682,1
19 x 1	20,6	187,2	747,5
20 x 1	21,5	196,8	805,4
24 x 1	23,3	235,2	943,3
25 x 1	23,3	244,8	949,2
27 x 1	23,7	264,0	987,2
30 x 1	24,4	292,8	1051,2
37 x 1	26,1	360,0	1205,4
2 x 1,5	12,9	33,6	283,9
3 x 1,5	13,4	48,0	311,7
4 x 1,5	14,1	62,4	351,7
5 x 1,5	15,0	76,8	396,6
7 x 1,5	15,9	105,6	453,9
10 x 1,5	18,9	148,8	628,6
12 x 1,5	19,4	177,6	671,8
14 x 1,5	20,1	206,4	730,4

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16 x 1,5	20,1	235,2	769,9
19 x 1,5	21,9	278,4	878,5
20 x 1,5	22,9	292,8	949,7
24 x 1,5	24,9	350,4	1114,9
25 x 1,5	24,9	364,8	1123,8
27 x 1,5	25,7	393,6	1225,0
30 x 1,5	26,5	436,8	1307,2
37 x 1,5	28,5	537,6	1532,5
2 x 2,5	13,9	52,8	336,1
3 x 2,5	14,4	76,8	374,2
4 x 2,5	15,4	100,8	429,0
5 x 2,5	16,3	124,8	488,3
7 x 2,5	17,4	172,8	569,4
10 x 2,5	20,9	244,8	801,5
12 x 2,5	21,4	292,8	864,3
14 x 2,5	22,3	340,8	948,6
16 x 2,5	23,3	388,8	1041,5
19 x 2,5	24,4	460,8	1157,4
20 x 2,5	25,9	484,8	1304,2
24 x 2,5	28,5	580,8	1566,1
25 x 2,5	28,5	604,8	1581,2
27 x 2,5	29,1	652,8	1652,2
30 x 2,5	30,0	724,8	1770,3
37 x 2,5	32,2	892,8	2077,8

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Photographs are not to scale and do not represent detailed images of the respective products, technical sheets including detailed constructions and performances are available upon request

Fire resistant control cables



FTG16OHM16 600/1000V

CU/MGT/HEPR/OS/LSZH

CPR Class: Cca – s1b, d1, a1



Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220003

Technical data

- **Core identification code:**
Black numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage Uo/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
8 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2 x 1	9,2	24,0	155,1
3 x 1	9,6	33,6	175,1
4 x 1	10,3	43,2	206,0
5 x 1	11,1	52,8	240,2
7 x 1	11,9	72,0	284,6
10 x 1	14,6	100,8	431,9
12 x 1	15,1	120,0	466,3
14 x 1	15,8	139,2	514,8
16 x 1	16,6	158,4	571,6
19 x 1	17,4	187,2	642,2
20 x 1	18,3	196,8	705,4
24 x 1	20,1	235,2	854,2
25 x 1	20,1	244,8	859,7
27 x 1	20,5	264,0	900,7
30 x 1	21,2	292,8	981,2
37 x 1	22,9	360,0	1151,7
2 x 1,5	9,7	33,6	175,5
3 x 1,5	10,2	48,0	200,3
4 x 1,5	10,9	62,4	237,6
5 x 1,5	11,8	76,8	279,1
7 x 1,5	12,7	105,6	334,8
10 x 1,5	15,7	148,8	508,8
12 x 1,5	16,2	177,6	552,6
14 x 1,5	16,9	206,4	614,2

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16 x 1,5	17,8	235,2	683,9
19 x 1,5	18,7	278,4	769,2
20 x 1,5	19,7	292,8	844,3
24 x 1,5	21,7	350,4	1034,4
25 x 1,5	21,7	364,8	1042,9
27 x 1,5	22,1	393,6	1094,4
30 x 1,5	22,9	436,8	1182,2
37 x 1,5	24,7	537,6	1414,0
2 x 2,5	10,7	52,8	218,6
3 x 2,5	11,2	76,8	253,8
4 x 2,5	12,2	100,8	303,9
5 x 2,5	13,1	124,8	361,0
7 x 2,5	14,2	172,8	438,4
10 x 2,5	17,7	244,8	672,5
12 x 2,5	18,2	292,8	736,1
14 x 2,5	19,1	340,8	820,5
16 x 2,5	20,1	388,8	917,7
19 x 2,5	21,2	460,8	1037,8
20 x 2,5	22,3	484,8	1147,8
24 x 2,5	24,7	580,8	1399,6
25 x 2,5	24,7	604,8	1414,3
27 x 2,5	25,3	652,8	1503,8
30 x 2,5	26,2	724,8	1627,8
37 x 2,5	28,4	892,8	1944,7

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products, technical sheets including detailed constructions and performances are available upon request



FTG16OHM16AM16 600/1000V

CU/MGT/HEPR/OS/LSZH/SWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
Special halogen-free compound
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220004

Technical data

- **Core identification code:**
Black numbered
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 5 IEC 60228
- **Nominal Voltage Uo/U:**
600/1000 V
- **Test voltage:**
C/C 3500 Vac x 5 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2 x 1	12,4	24,0	280,5
3 x 1	12,8	33,6	307,1
4 x 1	13,5	43,2	347,7
5 x 1	14,3	52,8	392,2
7 x 1	15,1	72,0	448,5
10 x 1	17,8	100,8	629,3
12 x 1	18,3	120,0	670,8
14 x 1	19,0	139,2	728,7
16 x 1	19,8	158,4	795,8
19 x 1	20,6	187,2	878,2
20 x 1	21,5	196,8	951,0
24 x 1	23,3	235,2	1121,1
25 x 1	23,3	244,8	1127,9
27 x 1	23,7	264,0	1174,8
30 x 1	24,4	292,8	1265,4
37 x 1	26,1	360,0	1473,3
2 x 1,5	12,9	33,6	306,7
3 x 1,5	13,4	48,0	338,7
4 x 1,5	14,1	62,4	386,5
5 x 1,5	15,0	76,8	439,0
7 x 1,5	15,9	105,6	507,6
10 x 1,5	18,9	148,8	717,4
12 x 1,5	19,4	177,6	768,9
14 x 1,5	20,1	206,4	840,7

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16 x 1,5	20,1	235,2	921,6
19 x 1,5	21,9	278,4	1019,4
20 x 1,5	22,9	292,8	1104,8
24 x 1,5	24,9	350,4	1317,8
25 x 1,5	24,9	364,8	1327,7
27 x 1,5	25,7	393,6	1401,0
30 x 1,5	26,5	436,8	1499,7
37 x 1,5	28,5	537,6	1757,6
2 x 2,5	13,9	52,8	360,8
3 x 2,5	14,4	76,8	404,4
4 x 2,5	15,4	100,8	466,4
5 x 2,5	16,3	124,8	536,1
7 x 2,5	17,4	172,8	628,2
10 x 2,5	20,9	244,8	902,2
12 x 2,5	21,4	292,8	974,9
14 x 2,5	22,3	340,8	1070,9
16 x 2,5	23,3	388,8	1180,7
19 x 2,5	24,4	460,8	1315,2
20 x 2,5	25,9	484,8	1451,8
24 x 2,5	28,5	580,8	1746,6
25 x 2,5	28,5	604,8	1763,3
27 x 2,5	29,1	652,8	1845,7
30 x 2,5	30,0	724,8	2016,4
37 x 2,5	32,2	892,8	2365,1

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Fire resistant control cables



FTG18OHM16AM16 600/1000V

CU/MGT/XLPO/OS/LSZH/SWB/LSZH

CPR Class: B2ca – s1a, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper + Mica glass tape
- **Insulation**
Cross-linked copolymer
- **Overall Screen**
Aluminum/PET + tinned Copper drain wire
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- High level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399
EN 50200/IEC 60331-1

DoP Number

- CCE_DOP_220006

Technical data

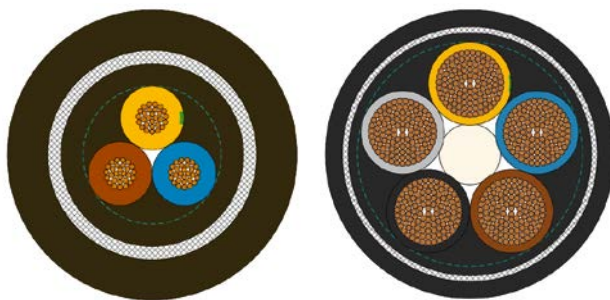
- Core identification code:**
Black numbered
Other colors code available on request
- Insulation resistance:**
1000 MOhm x km
- Conductor stranding:**
Class 5 IEC 60228
- Nominal Voltage U₀/U:**
600/1000 V
- Test voltage:**
C/C 3500 Vac x 5 minute
- Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2 x 1	12,4	24,0	280,5
3 x 1	12,8	33,6	307,1
4 x 1	13,5	43,2	347,7
5 x 1	14,3	52,8	392,2
7 x 1	15,1	72,0	448,5
10 x 1	17,8	100,8	629,3
12 x 1	18,3	120,0	670,8
14 x 1	19,0	139,2	728,7
16 x 1	19,8	158,4	795,8
19 x 1	20,6	187,2	878,2
20 x 1	21,5	196,8	951,0
24 x 1	23,3	235,2	1121,1
25 x 1	23,3	244,8	1127,9
27 x 1	23,7	264,0	1174,8
30 x 1	24,4	292,8	1265,4
37 x 1	26,1	360,0	1473,3
2 x 1,5	12,9	33,6	306,7
3 x 1,5	13,4	48,0	338,7
4 x 1,5	14,1	62,4	386,5
5 x 1,5	15,0	76,8	439,0
7 x 1,5	15,9	105,6	507,6
10 x 1,5	18,9	148,8	717,4
12 x 1,5	19,4	177,6	768,9
14 x 1,5	20,1	206,4	840,7

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16 x 1,5	20,1	235,2	921,6
19 x 1,5	21,9	278,4	1019,4
20 x 1,5	22,9	292,8	1104,8
24 x 1,5	24,9	350,4	1317,8
25 x 1,5	24,9	364,8	1327,7
27 x 1,5	25,7	393,6	1401,0
30 x 1,5	26,5	436,8	1499,7
37 x 1,5	28,5	537,6	1757,6
2 x 2,5	13,9	52,8	360,8
3 x 2,5	14,4	76,8	404,4
4 x 2,5	15,4	100,8	466,4
5 x 2,5	16,3	124,8	536,1
7 x 2,5	17,4	172,8	628,2
10 x 2,5	20,9	244,8	902,2
12 x 2,5	21,4	292,8	974,9
14 x 2,5	22,3	340,8	1070,9
16 x 2,5	23,3	388,8	1180,7
19 x 2,5	24,4	460,8	1315,2
20 x 2,5	25,9	484,8	1451,8
24 x 2,5	28,5	580,8	1746,6
25 x 2,5	28,5	604,8	1763,3
27 x 2,5	29,1	652,8	1845,7
30 x 2,5	30,0	724,8	2016,4
37 x 2,5	32,2	892,8	2365,1

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FG16OM16AM16 600/1000V

CU/HEPR/LSZH/SWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210008

Technical data

 **Core identification code as per HD 308:**
1: black
2: brown, blue
3: blue, brown, black (yellow/green);
4: brown, black, grey, blue (yellow/green);
5: blue, brown, black, grey, black (yellow/green)
Other colors code available on request

 **Conductor stranding:**
Class 5 IEC 60228

 **Nominal Voltage U₀/U:**
600/1000 V

 **Test voltage:**
C/C 3500 Vac x 5 minute

 **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C

 **Minimum Bending Radius:**
10 x Outer Diameter

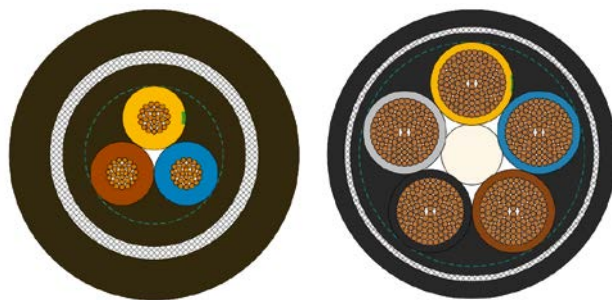
Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x1,5	12,8	28,8	258,48
2x2,5	13,8	48	308,53
2x4	14,82	76,8	368,25
2x6	16,4	115,2	462,48
2x10	18,4	192	614,17
2x16	21	307,2	832,02
2x25	23,4	480	1095,21
2x35	25,7	672	1381,01
2x50	30,4	960	1913,7
2x70	35	1344	2599,78
2x95	39,6	1824	3393,44
2x120	41,2	2304	3896,96
2x150	46	2880	4886,19
3x1,5	13,28	43,2	284,98
3x2,5	14,36	72	345,74
3x4	22,14	115,2	419,74
3x6	17,17	172,8	535,58
3x10	19,33	288	727,77
3x16	22,14	460,8	1003,85
3x25	24,73	720	1346,73
3x35	27,21	1008	1721,16
3x50	32,87	1440	2446,09
3x70	37,78	2016	3379,27
3x95	42,3	2736	4311,51
3x120	44,41	3456	5051,37
3x150	49,34	4320	6319,39
3x185	56,19	5328	7884,47
3x240	63,76	6912	10219,57
4x1,5	14,06	57,6	323,73
4x2,5	15,27	96	398,3
4x4	16,5	153,6	490,09
4x6	18,42	230,4	633,83
4x10	20,84	384	875,43

Cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4x16	23,98	614,4	1222,64
4x25	26,89	960	1660,25
4x35	29,87	1344	2155,06
4x50	36,51	1920	3141,88
4x70	41,03	2688	4193,49
4x95	47,15	3648	5504,1
4x120	48,85	4608	6383,94
4x150	54,33	5760	8005,42
4x185	62,1	7104	10012,51
4x240	70,54	9216	13003,73
3x35+1x25	29,29	1248	2017,14
3x50+1x25	34,4	1680	2664,03
3x70+1x35	39,24	2352	3644,67
3x95+1x50	45	3216	4816,74
3x120+1x70	47,5	4128	5797,18
3x150+1x95	52,93	5232	7306,38
3x185+1x95	59,11	6240	8695,42
3x240+1x150	67,44	8352	11538,23
5x1,5	14,9	72	366,43
5x2,5	16,25	120	456,01
5x4	17,63	192	567,4
5x6	19,76	288	740,62
5x10	22,46	480	1035,19
5x16	25,97	768	1459,86
5x25	29,41	1200	2012,94
5x35	33,11	1680	2655,77
5x50	40,19	2400	3839,99
5x70	45,92	3360	5217,52
5x95	51,72	4560	6716,37
5x120	53,81	5760	7837,42
5x150	60,28	7200	9900,39
5x185	68,44	8880	12301,07
5x240	78,4	11520	16115,94

Unless specified, the shown product values are nominal. Detailed values (e.g. tolerances) are available upon request.

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Power cables



FG18OM16AM16 600/1000V

CU/XLPO/LSZH/SWB/LSZH

CPR Class: B2ca – s1a, d1, a1

Design

- **Conductor**
Stranded annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Armour**
Galvanized steel wire braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical resistant
- Oil resistant

Type of Application

- High level CPR classification
- Suitable for installation in bundles in constructions and civil engineering buildings with long evacuation times due to high crowd density.

Norm references and Approvals

- **Constructive standard**
IEC 60502-1
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_220007

Technical data

 **Core identification code as per HD 308:**
1: black
2: brown, blue
3: blue, brown, black (yellow/green);
4: brown, black, grey, blue (yellow/green);
5: blue, brown, black, grey, black (yellow/green)
Other colors code available on request

 **Conductor stranding:**
Class 5 IEC 60228

 **Nominal Voltage U₀/U:**
600/1000 V

 **Test voltage:**
C/C 3500 Vac x 5 minute

 **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C

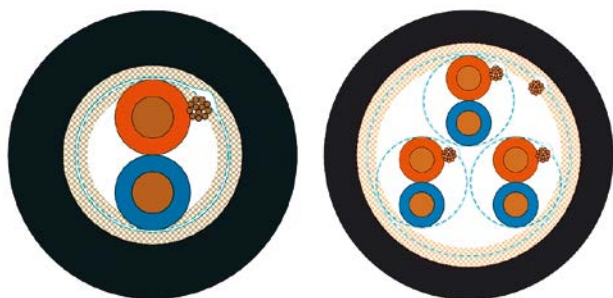
 **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2x1,5	12,8	28,8	258,48
2x2,5	13,8	48	308,53
2x4	14,82	76,8	368,25
2x6	16,4	115,2	462,48
2x10	18,4	192	614,17
2x16	21	307,2	832,02
2x25	23,4	480	1095,21
2x35	25,7	672	1381,01
2x50	30,4	960	1913,7
2x70	35	1344	2599,78
2x95	39,6	1824	3393,44
2x120	41,2	2304	3896,96
2x150	46	2880	4886,19
3x1,5	13,28	43,2	284,98
3x2,5	14,36	72	345,74
3x4	22,14	115,2	419,74
3x6	17,17	172,8	535,58
3x10	19,33	288	727,77
3x16	22,14	460,8	1003,85
3x25	24,73	720	1346,73
3x35	27,21	1008	1721,16
3x50	32,87	1440	2446,09
3x70	37,78	2016	3379,27
3x95	42,3	2736	4311,51
3x120	44,41	3456	5051,37
3x150	49,34	4320	6319,39
3x185	56,19	5328	7884,47
3x240	63,76	6912	10219,57
4x1,5	14,06	57,6	323,73
4x2,5	15,27	96	398,3
4x4	16,5	153,6	490,09
4x6	18,42	230,4	633,83
4x10	20,84	384	875,43

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4x16	23,98	614,4	1222,64
4x25	26,89	960	1660,25
4x35	29,87	1344	2155,06
4x50	36,51	1920	3141,88
4x70	41,03	2688	4193,49
4x95	47,15	3648	5504,1
4x120	48,85	4608	6383,94
4x150	54,33	5760	8005,42
4x185	62,1	7104	10012,51
4x240	70,54	9216	13003,73
3x35+1x25	29,29	1248	2017,14
3x50+1x25	34,4	1680	2664,03
3x70+1x35	39,24	2352	3644,67
3x95+1x50	45	3216	4816,74
3x120+1x70	47,5	4128	5797,18
3x150+1x95	52,93	5232	7306,38
3x185+1x95	59,11	6240	8695,42
3x240+1x150	67,44	8352	11538,23
5x1,5	14,9	72	366,43
5x2,5	16,25	120	456,01
5x4	17,63	192	567,4
5x6	19,76	288	740,62
5x10	22,46	480	1035,19
5x16	25,97	768	1459,86
5x25	29,41	1200	2012,94
5x35	33,11	1680	2655,77
5x50	40,19	2400	3839,99
5x70	45,92	3360	5217,52
5x95	51,72	4560	6716,37
5x120	53,81	5760	7837,42
5x150	60,28	7200	9900,39
5x185	68,44	8880	12301,07
5x240	78,4	11520	16115,94

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UE4OHH2M16 300/300V

CU/XLPE/OS/TCWB/LSZH

CPR Class: Cca – s1b, d1, a1

UE4XHOHH2M16 300/300V

CU/XLPE/IS/OS/TCWB/LSZH

CPR Class: Cca – s1b, d1, a1

Design

- **Conductor**
Solid annealed or tinned Copper
- **Insulation**
Cross-linked copolymer
- **Individual Screen**
Aluminum/PET + tinned Copper drain wire
- **Overall Screen**
PET/Aluminum + tinned Copper drain wire
- **Braid Screen**
Tinned Copper Wire Braid
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- UV-resistant
- Hydrocarbon and Chemical res.
- Oil resistant

Type of Application

- Middle-high level CPR classification
- Suitable for installation in constructions and civil engineering buildings with high concentration of people.

Norm references and Approvals

- **Constructive standard**
EN 50288-7
- **CPR**
EU 305/11
EN 50575
- **Hydrocarbon & Oil**
CEI 20-34/0
IEC 60811-404
- **Determination of acidity**
IEC 60754-2
- **Low Smoke Emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-2
EN 50399

DoP Number

- CCE_DOP_210001

Technical data

- **Core identification code:**
Pairs: orange & blue
Other colors code available on request
- **Insulation resistance:**
1000 MOhm x km
- **Conductor stranding:**
Class 1 IEC 60228
- **Nominal Voltage Uo/U:**
300/300 V
- **Test voltage:**
C/C 1000 Vac x 1 minute
- **Temperature range:**
during operation: -30° to +70°C
during installation: -5° to +50°C
- **Minimum Bending Radius:**
10 x Outer Diameter

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UE4OHH2M16 300/300V			
2x0,9	6,9	34,1	77,2

Cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UE4XHOHH2M16 300/300V			
3x2x0,9	10,7	98,47	184,6

Fibre Optic



GOF

Metallic Armoured Unitube
CPR Class: Cca - s1a, d0, a1

Design

- **Fibre Optics**
- **Central Tube**
- **Streight members**
Fiberglass Reinforcements (WB)
- **Ripcord**
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Metallic Armour**
Corrugated steel armor
- **Ripcord**
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- Sunlight resistant
- Watertight
- Moisture protected
- Special colour code upon request
(EIA/TIA 598)

Type of Application

- Middle-high level CPR classification
- Indoor/Outdoor

Norm references and Approvals

- **Reference standard**
Single Mode: ITU-T G.652.D
Multi-Mode: G651.1
- **Determination of acidity**
IEC 60754-2
- **Smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-3
IEC 60331-25

DoP Number

- DOP01255

Technical data

-  **Dimensions:**
Primary coated fiber: 250µm
Cable: see table
-  **Core identification code:**
Pairs: orange & blue
Other colors code available on request
- Fibre type:**
GOF – Glass Fiber
-  **Optical fibre type**
Core material: glass
Cladding material: glass
-  **Temperature range:**
during operation: -30° to +70°C
during installation: -10° to +50°C
-  **Minimum Bending Radius:**
Occasional Flex: 15 x Outer Diameter
Fixed Installation: 20 x Outer Diameter
-  **Permissible tensile force:**
Max. tensile load during installation (N): 3200
Max. crush (N/10cm): 2000

Number of fibers	Outer diameter (mm)	Weight (kg/km)	Fibres Type
Multimode MM50			
2	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
4	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
6	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
8	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
12	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
16	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
24	10,0 ± 0,5	131	50/125µm (OM2 / OM3 / OM4 / OM5)
Single mode SM			
2	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
4	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
6	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
8	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
12	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
16	10,0 ± 0,5	131	9/125µm (OS1 / OS2)
24	10,0 ± 0,5	131	9/125µm (OS1 / OS2)

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GOF

Metallic Armored Multitube
CPR Class: B2ca - s1a, d0, a1

Design

- **Central Element (GRP)**
- **Fibres Optic**
- **Loose Tube**
- **Streight members**
Reinforce fiberglass Reinforcements (WB)
- **Ripcord**
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Metallic Armour**
Corrugated steel armor
- **Ripcord**
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- Sunlight resistant
- Watertight
- Moisture protected
- Special colour code upon request
(EIA/TIA 598)

Type of Application

- High level CPR classification
- Indoor/Outdoor

Norm references and Approvals

- **Reference standard**
Single Mode: ITU-T G.652.D
Multi-Mode: G651.1
- **Determination of acidity**
IEC 60754-2
- **Smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-3
IEC 60331-25

DoP Number

- DOP01256

Technical data

- **Dimensions:**
Primary coated fiber: 250µm
Cable: see table
- **Core identification code:**
Red - Green - Blue - Yellow - Grey
Violet - Brown - Orange - White - Pink - Black - Turquoise.
- **Tube identification code:**
Red - Green - Natural - ... - Natural.
Passive tubes black color.
- **Fibre type:**
GOF - Glass Fiber
- **Optical fibre type**
Core material: glass
Cladding material: glass
- **Temperature range:**
during operation: -30° to +70°C
during installation: -10° to +50°C
- **Minimum Bending Radius:**
Occasional Flex: 15 x Outer Diameter
Fixed Installation: 20 x Outer Diameter
- **Permissible tensile force:**
Max. tensile load during installation (N): 1800
Max. crush (N/10cm): 3000

Number of fibers	Fibers per tube	Total/Active tubes	Outer diameter (mm)	Weight (kg/km)	Fibres Type
Multimode MM50					
1-12	12	6 / 1	14	218	50/125µm (OM2 / OM3 / OM4 / OM5)
16	8	6 / 2	14	218	50/125µm (OM2 / OM3 / OM4 / OM5)
24	12	6 / 2	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
32	8	6 / 4	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
36	12	6 / 3	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
48	12	6 / 4	14	220	50/125µm (OM2 / OM3 / OM4 / OM5)
72	12	6 / 6	14	222	50/125µm (OM2 / OM3 / OM4 / OM5)
Single mode SM					
1-12	12	6 / 1	14	218	9/125µm (OS1 / OS2)
16	8	6 / 2	14	218	9/125µm (OS1 / OS2)
24	12	6 / 2	14	219	9/125µm (OS1 / OS2)
32	8	6 / 4	14	219	9/125µm (OS1 / OS2)
36	12	6 / 3	14	219	9/125µm (OS1 / OS2)
48	12	6 / 4	14	220	9/125µm (OS1 / OS2)
72	12	6 / 6	14	222	9/125µm (OS1 / OS2)

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Fibre Optic



GOF

Metallic Armoured Multitube
CPR Class: Cca - s1a, d2, a1

Design

- **Central Element (GRP)**
- **Fibres Optic**
- **Loose Tube**
- **Strenght members**
Reinforce Reinforcements (WB)
- **Ripcord**
- **Inner sheath**
LSZH (low smoke zero halogen)
- **Metallic Armour**
Corrugated steel armor
- **Ripcord**
- **Outer sheath**
LSZH (low smoke zero halogen)
- **Colour**
Upon request

Special Features

- Sunlight resistant
- Watertight
- Moisture protected
- Special colour code upon request (EIA/TIA 598)

Type of Application

- Middle-high level CPR classification
- Indoor/Outdoor

Norm references and Approvals

- **Reference standard**
Single Mode: ITU-T G.652.D
Multi-Mode: G651.1
- **Determination of acidity**
IEC 60754-2
- **Smoke emission**
IEC 61034-2
- **Fire behavior**
IEC 60332-1-3
IEC 60331-25

DoP Number

- DOP01254

Technical data

-  **Dimensions:**
Primary coated fiber: 250µm
Cable: see table
-  **Core identification code:**
Red - Green - Blue - Yellow - Grey
Violet - Brown - Orange - White - Pink - Black - Turquoise.
Other colors code available on request
-  **Tube identification code:**
Red - Green - Natural - ... - Natural.
Passive tubes black color.
-  **Fibre type:**
GOF - Glass Fiber
-  **Optical fibre type**
Core material: glass
Cladding material: glass
-  **Temperature range:**
during operation: -30° to +70°C
during installation: -10° to +50°C
-  **Minimum Bending Radius:**
Occasional Flex: 15 x Outer Diameter
Fixed Installation: 20 x Outer Diameter
-  **Permissible tensile force:**
Max. tensile load during installation (N): 1800
Max. crush (N/10cm): 3000

Number of fibers	Fibers per tube	Total/Active tubes	Outer diameter (mm)	Weight (kg/km)	Fibres Type
Multimode MM50					
1-12	12	6 / 1	14	218	50/125µm (OM2 / OM3 / OM4 / OM5)
16	8	6 / 2	14	218	50/125µm (OM2 / OM3 / OM4 / OM5)
24	12	6 / 2	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
32	8	6 / 4	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
36	12	6 / 3	14	219	50/125µm (OM2 / OM3 / OM4 / OM5)
48	12	6 / 4	14	220	50/125µm (OM2 / OM3 / OM4 / OM5)
64	8	8 / 8	14	250	50/125µm (OM2 / OM3 / OM4 / OM5)
72	12	6 / 6	14	222	50/125µm (OM2 / OM3 / OM4 / OM5)
96	12	8 / 8	15,5	252	50/125µm (OM2 / OM3 / OM4 / OM5)
144	12	12 / 12	18	348	50/125µm (OM2 / OM3 / OM4 / OM5)
Single mode SM					
1-12	12	6 / 1	14	218	9/125µm (OS1 / OS2)
16	8	6 / 2	14	218	9/125µm (OS1 / OS2)
24	12	6 / 2	14	219	9/125µm (OS1 / OS2)
32	8	6 / 4	14	219	9/125µm (OS1 / OS2)
36	12	6 / 3	14	219	9/125µm (OS1 / OS2)
48	12	6 / 4	14	220	9/125µm (OS1 / OS2)
64	8	8 / 8	14	250	9/125µm (OS1 / OS2)
72	12	6 / 6	14	222	9/125µm (OS1 / OS2)
96	12	8 / 8	15,5	252	9/125µm (OS1 / OS2)
144	12	12 / 12	18	348	9/125µm (OS1 / OS2)

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