САРАНСККАБЕЛЬ-ОПТИКА

GC «OPTIKENERGO»









PRODUCT CATALOG

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Saranskkabel-Optika, Ltd.

Saranskkabel-Optica, Ltd is one of the leading Russian manufacturer of fiber-optic cable. The company has been operating on the market since 2000. It is one of the industrial enterprises of Group of Companies «Optikenergo», which consists of 22 companies of various types of activity, including 5 factories.

The production of Saranskkabel-Optica, Ltd is located in Russia, in Saransk city. Four workshops of the company have total area of 15.000 m^2, equipped by 60 production lines. The potential volume of production is about 100 000 km of optical cable per year.

Saranskkabel-Optica, Ltd produces the whole range of fiber-optic cables, used in trunk and local telecommunication networks.

The company has a unique, more than 18 years experience in producing OPGW cables. It was the first who started producing OPGW in Russia. During this time, about 60.000 km of OPGW cables has been delivered to the country's most important energy facilities.

Another unique product for the power industry is an optical cable combined with self-supporting insulated wire, which has advantages and economic benefits. This is a hybrid cable, which allows both the transmission of electricity and data transmission.

Saranskkabel-Optica, Ltd also has leading position in production of non-insulated wires for power lines: AAC, ACSR.

In 2019, the company started manufacturing new products: copper symmetrical twisted pair cables for structured cabling systems and broadband access networks (LAN-cable). In 2020, production capacity was doubled. The company's equipment allows the manufacture of unshielded and shielded cable structures up to category 6A.

Another new import-substituting product is welded and extruded tubes made of aluminum and alloys for the production of refrigeration and heat exchange equipment for all categories of industry.

The quality of the products is ensured by the quality management system that meets the interstate standard GOST R ISO 9001-2015.

Sales markets are stretched from the western regions of the country to the Pacific Ocean. The company delivers its products to more than 75 regions of Russia, as well as to neighboring countries. Exports account for about 10% of sales.

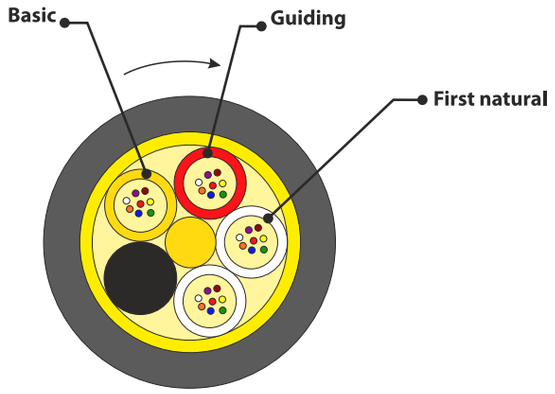
By the present, the company has manufactured and shipped to consumers more than 900,000 km of cable. Over 9,000,000 km of optical fiber have been processed. According to the results of 2024, Saranskkabel-Optica, Ltd is one of the three leaders in the production of fiber-optic cable in Russia.






COLOR CODES

№	Fiber color	Fibers number				
		4	8	12	16	24
1	Blue					
2	Orange					
3	Green					
4	Brown					
5	Grey					
6	White					
7	Red					
8	Black					
9	Yellow					
10	Violet					
11	Pink					
12	Aqua					
13	Blue with black ring					
14	Orange with black ring					
15	Green with black ring					
16	Brown with black ring					
17	Grey with black ring					
18	White with black ring					
19	Red with black ring					
20	Natural with black ring					
21	Yellow with black ring					
22	Violet with black ring					
23	Pink with black ring					
24	Aqua with black ring					



Yellow – **basic**.
Red – **guiding**.
Natural – clockwise from the red one.
If reguired by the customer the color codes can de changed.

Cables for main communication networks

FIBER-OPTIC CABLES FOR DIRECT BURIED INSTALLATION, ARMOURED BY GALVANIZED STEEL WIRES

Application:

Cables are designed for installation into grounds of 1-5 groups (depending on the cable design), in cable duct, tunnels, collectors, with high requirements for mechanical strength.

OKB cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Zink-coated steel wire armour
6. Protective jacket

Brief information about the cable

Number of fibers	2-32	34-48	50-80	82-96	98-144
Cable diameter, mm	11,8	13,0	13,7	14,7	17,3
Cable weight, kg / km	217	259	283	323	427
Tensile strength, kN	not less than 3,0 kN for laying in grounds of 1-3 groups; not less than7,0 kN for laying in grounds of 4-5 groups;				
Crushing strength, kN/100 mm	not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than7,0 kN/100 mm for laying in grounds of 4-5 groups;				

OKB-T cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Zink-coated steel wire armour
4. Protective jacket

Brief information about the cable

Number of fibers	2-16	18-24	26-36	38-48
Cable diameter, mm	8,7	10,2	11,2	11,4
Cable weight, kg / km	122	166	199	209
Tensile strength, kN	not less than 2.5 kN for laying in grounds of 1-3 groups; not less than 4,0 kN for laying in grounds of 4-5 groups;			
Crushing strength, kN/100 mm	not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than7,0 kN/100 mm for laying in grounds of 4-5 groups;			

FIBER-OPTIC CABLES FOR DIRECT BURIED INSTALLATION, ARMOURED BY FIBERGLASS RODS

Application:

OKP cable is designed for installation into grounds when the resistance to external electromagnetic influences is required.

OKP cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Fiberglass rods armour
6. Protective jacket

Brief information about the cable

Number of fibers	2-32	34-48	50-96	98-144
Cable diameter, mm	12,2	12,9	17,2	19,7
Cable weight, kg / km	131	147	275	354
Tensile strength, kN	not less than 3,0 kN for laying in grounds of 1-3 groups; not less than7,0 kN for laying in grounds of 4-5 groups;			
Crushing strength, kN/100 mm	not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than7,0 kN/100 mm for laying in grounds of 4-5 groups;			

Operating requirements for cables in ground

Operating temperature range, °C	-60… +70
Temperature of installation, °C	Not lower -30*
Min. bending radius	Not less than 20 cable diameters
Life time	25 years
Warranty period	2 years after commissioning, no more than 2,5 years from delivery date

** In case of cables with FR sheath , the minimum installation temperature is not lower than -10 ° C. Cable weight with FR sheath is specified when ordering.*

FIBER-OPTIC CABLES FOR INSTALLATION IN CABLE DUCTS, ARMOURED BY CORRUGATED STEEL TAPE

Application:

Cables are designed for installation in cable duct, pipes, collectors, tunnels.

OKL cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Corrugated steel tape armour
6. Protective jacket

Brief information about the cable

Number of fibers	2-24	26-48	50-96	98-144
Cable diameter, mm	11,5	12,5	15,5	19,2
Cable weight, kg / km	126	148	215	309
Tensile strength, kN	not less than 1,5			
Crushing strength, kN/100 mm	not less than 3,0			

OKLm cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Corrugated steel tape armour
5. Protective jacket

Brief information about the cable

Number of fibers	2-32	34-48	50-80	82-96	98-144
Cable diameter, mm	10,1	11,0	11,8	12,5	15,5
Cable weight, kg / km	94	116	126	145	208
Tensile strength, kN	not less than 1,5				
Crushing strength, kN/100 mm	not less than 3,0				

FIBER-OPTIC CABLES INSTALLED BY BLOWING INTO PIPE

Application:

Cables are designed for blowing into protective pipe, which is used for underground laying.

OKG cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded PBT loose tubes filled with hydrophobic gel
4. Protective jacket

Brief information about the cable

Number of fibers	2-48	50-96	98-144
Cable diameter, mm	8,5	10,2	13,2
Cable weight, kg / km	59	85	137
Tensile strength, kN	from 1,0 up to 3,5		
Crushing strength, kN/100 mm	not less than 3,0		

OKM cable



1. Central strength member – fiberglass reinforced plastic rod
2. PE coating of rod
3. Optical fiber
4. SZ stranded PBT micro-loose tubes filled with hydrophobic gel
5. Protective jacket

Brief information about the cable

Number of fibers	2-72	74-96	98-144
Cable diameter, mm	6,7	7,9	10,1
Cable weight, kg / km	39,0	54,0	86,0
Tensile strength, kN	from 1,0		
Crushing strength, kN/100 mm	not less than 1,0		

Operating requirements for cables in ducts and pipe blower cables

Operating temperature range, °C	-60… +70
Temperature of installation, °C	Not lower -30**
Min. bending radius	Not less than 20 cable diameters
Life time	25 years
Warranty period	2 years after commissioning, no more than 2,5 years from the date of elivery

*** In case of cables with FR sheath , the minimum installation temperature is not lower than -10 ° C. Cable weight with FR sheath is specified when ordering.*

FIBER-OPTIC ADSS CABLES ARMOURED BY ARAMID YARNS

Application:

Cables are designed for aerial installation on communication line supports, the railway catenary, power transmission line towers, between buildings.

OKK cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Aramid yarns
6. Protective jacket

Brief information about the cable

Number of fibers	2-60	62-96	98-144
Cable diameter, mm	12,5	12,4	14,7
Cable weight, kg / km	122	123	168
Tensile strength, kN	from 3 up to 85		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile load of 7kN*

OKKM cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Aramid yarns
5. Protective jacket

Brief information about the cable

Number of fibers	2-60	62-96	98-144
Cable diameter, mm	11,4	11,5	13,5
Cable weight, kg / km	103	112	147
Tensile strength, kN	from 3 up to 15		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile load of 7kN*

FIBER-OPTIC ADSS CABLES ARMOURED BY GLASS YARNS

OKKS cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Fiberglass yarns
6. Protective jacket

Brief information about the cable

Number of fibers	2-60	62-96	98-144
Cable diameter, mm	12,8	13,0	15,1
Cable weight, kg / km	133	136	180
Tensile strength, kN	from 3 up to 15		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile load of 7kN*

OKKMS cable



1. Central strength member – fiberglass reinforced rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Fiberglass yarns
5. Protective jacket

Brief information about the cable

Number of fibers	2-60	62-96	98-144
Cable diameter, mm	11,5	11,7	13,5
Cable weight, kg / km	110	118	149
Tensile strength, kN	from 3 up to 12		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile load of 7kN*

Operating requirements for ADSS cables

Operating temperature range, ° C	-60… +70
Temperature of installation, ° C	Not lower -30
Min. bending radius	Not less than 20 cable diameters
Life time	25 years
Warranty period	2 years after commissioning, no more than 2.5 years from the date of delivery

FIBER-OPTIC 8-SHAPED AERIAL CABLES WITH AN EXTERNAL STRENGTH MEMBER

Application:

Cables are designed for suspension on overhead power lines, urban lighting pillars, between buildings.

OKT-P/P cable



1. Central strength member – fiberglass rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Protective jacket
5. FRP rod

Brief information about the cable

Number of fibers	2-48	50-96	98-144
Cable dimensions, mm	17,0×8,9	17,2×10,2	19,7×8,9
Cable weight, kg / km	107	141	192
Tensile strength, kN	from 3 up to 12		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile strength of 4kN*

OKT-P/S cable



1. Central strength member – fiberglass rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Protective jacket
5. Steel rope

Brief information about the cable

Number of fibers	2-48	50-96	98-144
Cable dimensions, mm	14,2×8,9	16,2×10,5	18,5×12,6
Cable weight, kg / km	101	136	186
Tensile strength, kN	from 3 up to 12,0		
Crushing strength, kN/100 mm	not less than 3,0		

** Details are given for the average permissible tensile strength of 4kN*

FIBER-OPTIC 8-SHAPED AERIAL CABLES WITH AN EXTERNAL STRENGTH MEMBER

Application:

Cables are designed for suspension on overhead power lines, urban lighting pillars, between buildings.

OKT-T/P cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Protective jacket
4. FRP rod

Brief information about the cable

Number of fibers	2-16	18-24	26-48
Cable dimensions, mm	13,2×6,5	13,8×8,0	16,8×8,8
Cable weight, kg / km	69	91,6	110,3
Tensile strength, kN	from 1,0 up to 9,0		
Crushing strength, kN/100 mm	from 2,0 up to 5,0		

** Details are given for the average permissible tensile strength of 4kN*

OKT-T/ST cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Protective jacket
4. Steel rope

Brief information about the cable

Number of fibers	2-8	10-16	18-24	26-48
Cable dimensions, mm	8,5×4,1	10,0×5,3	11,2×6,9	14,2×8,9
Cable weight, kg / km	47,5	60,6	73,2	94,8
Tensile strength, kN	from 1,0 up to 9,0			
Crushing strength, kN/100 mm	from 2,0 up to 5,0			

** Details are given for the average permissible tensile strength of 4kN*

OKBs cable

OKBs cable with HDPE jacket is designed for installation into grounds of 1-5 groups (depending on the cable design), in cable duct, tunnels, collectors, with high requirements for mechanical strength.

OKBs cable with FRHFLTx jacket is used in fire protection systems, as well as in other systems that must remain operative in a fire condition.



1.Optical fiber
2.Stainless steel loose tube filled with hydrophobic gel
3.Zink-coated steel wire armour
4.Protective jacket

Brief information about the cable

Number of fibers	2-24	26-36	38-48	50-96
Cable diameter, mm	10,0	10,4	10,8	12
Cable weight, kg / km	196	220	242	275
Tensile strength, kN	not less than 7,0			
Crushing strength, kN/100 mm	not less than 10,0			

OKLs cable

OKLs cable with HDPE jacket is designed for installation in cable duct, pipes, collectors, tunnels.

OKLs cable with FRHFLTx jacket is used in fire protection systems, as well as in other systems that must remain operative in a fire condition.



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Protective jacket

Brief information about the cable

Number of fibers	2-24	26-36	38-48	50-96
Cable diameter, mm	5,8	6,2	6,6	9,0
Cable weight, kg / km	38	43	48	97
Tensile strength, kN	not less than 1,5			
Crushing strength, kN/100 mm	not less than 8,0			

Operating requirements for fireproof cables

Operating temperature range, °C	-60… +70
Temperature of installation, °C	Not lower -30**
Min. bending radius	Not less than 25 cable diameters
Life time	25 years
Warranty period	2 years after commissioning, no more than 2,5 years from delivery date

*** In case of cables with FR sheath , the minimum installation temperature is not lower than -10 °C.*
Cable weight with FR sheath is specified when ordering.

Application:

OKV-RD-...US cable is designed for laying and operation inside buildings, for laying in trays, corridors, shafts in group laying in the presence of particularly high fire safety requirements.

OKV-RD



1 Tight-buffered optical fiber
2 Fiberglass yarns
3 Inner jacket
4 Protective jacket

Brief information about the cable

Number of fibers	1-24
Cable diameter, mm	9,5-15,2
Cable weight, kg / km	94-231
Tensile strength, kN	not less than 2,0
Crushing strength, kN/100 mm	not less than 0,5

Operating requirements for fireproof cables

Operating temperature range, ° C	-60… +70
Temperature of installation, ° C	Not lower -10...+50
Min. bending radius	Not less than 10 cable diameters
Life time	15 years

The cable is fireproof, retains its serviceability when exposed to flame at a temperature of not less than 750°C for 180 minutes.

The colors of fibers and buffers correspond to TIA-598-D.
By the customer's request the color scheme may be changed.



Equipment of companies
NEXTROM, FINLAND
NEXANS, SCHOLER, GERMANY
CECCO-BARTEL, USA
CABALLE, SPAIN
SMARTER, GOLDEN TECHNOLOGIES, CHINA



The production area is
more than **15,000 m^2**

more than 60
production lines

Cables for local communication networks

Riser-cables

Application:

Cables are designed for vertical laying inside buildings between floors. Cables are used to create communication lines between the common distribution box and a flat or another location inside the building.

OKV-R (Tight-buffered Riser cable)



1. Tight-buffered optical fiber (G.657A.)
2. Peripheral strength members –fiberglass rods
3. Protective jacket (HFLS)

Number of fibers	2-48
Cable diameter, mm	6,5-13,5
Cable weight, kg / km	38-157

OKV-RM (Riser cable with micro-tubes)



1. Micro-tubes with optical fibers (G.657A.)
2. Peripheral strength members – fiberglass rods
3. Protective jacket (HFLS)

Number of fibers	4-288
Cable diameter, mm	6,5-13,5
Cable weight, kg / km	31-149

Operating requirements for riser cables

Operating temperature range, °C	-60… +70
Temperature of installation, ° C	Not lower -10
Min. bending radius	Not less than 10 cable diameters
Tensile strength, kN	not less than 0,5
Crushing strength, kN/100 mm	not less than 0,8

Distribution-cables

Application:

Cables are designed for use in structured cable networks inside buildings (including vertical), cable routing organization.

OKV-RD cable



1. Tight-buffered optical fiber
2. Aramid yarns
3. Protective jacket (HFLS)

Number of fibers	2-40
Cable diameter, mm	5,3-13,7
Cable weight, kg / km	23,2-158,1

OKV-RDM cable



1. Micro-tubes with optical fibers
2. Aramid yarns
3. Protective jacket

Number of fibers	2-288
Cable diameter, mm	5,3-13,7
Cable weight, kg / km	23,7-150,0

Operating requirements for distribution cables

Operating temperature range, °C	-60… +70
Temperature of installation, ° C	Not lower -10
Min. bending radius	Not less than 10 cable diameters
Tensile strength, kN	not less than 0,5
Crushing strength, kN/100 mm	not less than 0,5

Drop-cables

Application:

Cables are designed for in-door installation, for laying on exterior facades of buildings, in cable trays, cable ducts, for suspension on communication line supports, between buildings. It is used in networks, where the minimum diameter of cable must provide reliable protection against mechanical and climatic influences.

OKV-RDB cable



1. Tight-buffered optical fiber
2. PBT loose tube with water blocking yarns..
3. Aramid yarns
4. Protective jacket (HFLS)

Brief information about the cable

Number of fibers	1
Cable diameter, mm	5,0
Cable weight, kg / km	30,0
Operating temperature range, °C	-60… +70
Temperature of installation, ° C	Not lower -10
Min. bending radius	Not less than 10 cable diameters
Tensile strength, kN	not less than 0,05
Crushing strength, kN/100 mm	not less than 2,0

OKPA – P(S) cable



1. Optical fiber
2. Strength member – FRP rod/ steel wire
3. Protective jacket (HFLS)

Brief information about the cable

Number of fibers	1-4
Cable dimensions, mm	3,0 ± 2,0
Cable weight, kg / km	from 10,0
Operating temperature range, °C	-60… +70
Temperature of installation, ° C	Not lower -10
Min. bending radius	Not less than 10 cable diameters
Tensile strength, kN	From 0,1 (S), from 0,05 (P)
Crushing strength, kN/100 mm	From 0,5

OKPA-P(S)/P cable



1. Optical fiber
2. Strength member – steel wire/fiberglass rod
3. FRP rod
4. Protective jacket

OKPA- P(S)/S cable



1. Optical fiber
2. Strength member – steel wire/FRP rod
3. Steel wire
4. Protective jacket

Brief information about the cable OKPA- P(S)/P(S)

Number of fibers	1-4	
	OKPA-…./P	OKPA-…./S
Cable dimensions, mm	3,0×2,0	3,0×2,0
Cable weight, kg / km	from 10	from 10
Tensile strength, kN	from 0,3	from 0,35
Crushing strength, kN/100 mm	from 0,5	

OKPK cable



1. Optical fiber
2. PBT micro loose tube, filled with hydrophobic gel
3. Strength member– FRP rod
4. Protective jacket

Brief information about the cable

Number of fibers	1-2	1-8	1-16	1-24
Cable dimensions, mm	4,4×2,0	6,8×3,2	8,8×4,0	10,6×5,1
Cable weight, kg / km	9,9	26,1	38,5	56,8
Tensile strength, kN	0,6	1,4	2,2	2,8
Crushing strength, kN/100 mm	not less 3,0			

Operation parameters for drop cables

Operating temperature range, °C	-60… +70
Installation temperature, ° C	-30**…+50
Min. bending radius	not less than 10 diameters

*** in case of using a cable with HFFR sheath, the minimum installation temperature is not lower than -10 °C*

Subscriber cables

Application:

Cables are designed for installation inside buildings, directly to the subscriber. Cables are used to make connecting optical cords.

OKV-S (Simplex)



OKV-D (Duplex)



1. Tight-buffered optical fiber
2. Aramid yarns
3. Protective jacket (HFLS)

Number of fibers	1	2
Cable diameter, mm	2,85	2,85×6,0
Cable weight, kg / km	6,5	13,5
Operating temperature range, °C	-60… +70	
Temperature of installation, ° C	Not lower -10	
Min. bending radius	Not less than 10 cable diameters	
Tensile strength, kN	Not less than 0,1	Not less than 0,2
Crushing strength, kN/100 mm	not less than 0,5	

Application:

Unshielded Twisted Pair (UTP) for local area network cable (LAN) is intended for operation in structured cabling systems and in broadband access networks in the frequency range up to 100 MHz with an operating voltage of not more than 145 V.

Symmetrical paired twisted copper cable for indoor installation
U/UTP cat.5e PVC 2x2x0,51 Premium Indoor 500m
U/UTP cat.5e PVC 4x2x0,51 Premium Indoor 305m



1 Annealed copper conductor 0,51 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
*3 Outer sheath: PVC**

Brief information about the cable

Number of pairs	2	4
Nominal overall diameter, mm	4,45(±0,1)	5,15(±0,1)
Total mass of cable, kg/km	20,06	34,97
Copper conductor diameter, mm	0,51 mm (24 AWG)	

Symmetrical paired twisted copper cable for outdoor installation
U/UTP cat.5e PE 2x2x0,51 Premium Outdoor 500m
U/UTP cat.5e PE 4x2x0,51 Premium Outdoor 305m



1 Annealed copper conductor 0.51 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
3 Polyethylene terephthalate (PET) tape
4 Outer sheath: PE (Polyethylene)

Brief information about the cable

Number of pairs	2	4
Nominal overall diameter, mm	4,45(±0,1)	5,15(±0,1)
Total mass of cable, kg/km	16,22	27,50
Copper conductor diameter, mm	0,51 mm (24 AWG)	

** Outer shell options: PVC, PVC нг(А)-LS, PVC LS LTx нг(А)-LSLTx, ZH нг(А)-HF*
*** It is possible to manufacture a cable with a diameter of a conductive core up to 0,52 mm*

It is possible to manufacture a cable with a power element in the form of a steel rope

Application:

Shielded Twisted Pair (F/UTP) with Polyethylene sheath designed for indoor laying and operation in structured cabling systems according to international standard ISO / IEC 11801 and broadband access networks in the frequency range up to 100 MHz at operating voltages not exceeding 75 V.

Symmetrical paired twisted copper cable for indoor installation
F/UTP cat.5e PVC 2x2x0,51 Premium Indoor 500m
F/UTP cat.5e PVC 4x2x0,51 Premium Indoor 305m



1. Annealed copper conductor 0.51 mm diameter (24 AWG)
2. Polyethylene insulation with individual color marking of each insulated core
3. Polyethylene terephthalate (PET) tape
4. Alumoflex tape and tinned copper conductor
*5. Outer sheath: PVC**

Brief information about the cable

Number of pairs	2	4
Nominal overall diameter, mm	5,55(±0,1)	6,20(±0,1)
Total mass of cable, kg/km	28,30	39,41
Copper conductor diameter, mm	0,51 mm (24 AWG)	

Symmetrical paired twisted copper cable for outdoor installation
F/UTP cat.5e PE 2x2x0,51 Premium Outdoor 500m
F/UTP cat.5e PE 4x2x0,51 Premium Outdoor 305m



1. Annealed copper conductor 0.51 mm diameter (24 AWG)
2. Polyethylene insulation with individual color marking of each insulated core
3. Polyethylene terephthalate (PET) tape
4. Alumoflex tape and tinned copper conductor
5. Outer sheath: PE (Polyethylene)

Brief information about the cable

Number of pairs	2	4
Nominal overall diameter, mm	5,55(±0,1)	6,30(±0,1)
Total mass of cable, kg/km	22,54	33,43
Copper conductor diameter, mm	0,51 mm (24 AWG)	

** Outer shell options: PVC, PVC нг(A)-LS, PVC LS LTx нг(A)-LSLTx, ZH нг(A)-HF*
*** It is possible to manufacture a cable with a diameter of a conductive core up to 0,52 mm*

It is possible to manufacture a cable with a power element in the form of a steel rope

Application:

Symmetrical communication cables are designed for operation in structured cabling systems according to the international standard ISO/IEC 11801 and in broadband access networks in the frequency range up to 250 MHz at operating voltage not more than 75 V.

Symmetrical paired twisted copper cable for indoor installation
UTP cat.6 PVC 4x2x0,54 Premium Indoor 305m



1 Annealed copper conductor 0,54 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
3 Cross-shaped separator
*4 Outer sheath: PVC**

Brief information about the cable

Number of pairs	4
Nominal overall diameter, mm	6,0
Total mass of cable, kg/km	40,91
Copper conductor diameter, mm	0,54 mm (24 AWG)

Symmetrical paired twisted copper cable for outdoor installation
UTP cat.6 PE 25x2x0,54 Premium Outdoor 305m



1 Annealed copper conductor 0,51 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
3 Cross-shaped separator
4. PET (polyethylene terephthalate) tape
5 Outer sheath: PE (polyethylene)

Brief information about the cable

Number of pairs	4
Nominal overall diameter, mm	6,0
Total mass of cable, kg/km	33,59
Copper conductor diameter, mm	0,54 mm (24 AWG)

** Outer shell options: PVC, PVC нг(A)-LS, PVC LS LTx нг(A)-LSLTx, ZH нг(A)-HF*

CABLES FOR STRUCTURED CABLING SYSTEMS (LAN-CABLE)

Application:

Symmetrical communication cables are intended for indoor installation. Construction of trunk and horizontal subsystems of structured cable systems (SCS) of category 5e in conditions of insignificant electromagnetic interference. Transmission of signals 1 Gbit/sec at a frequency of up to 100 MHz.

Symmetrical paired twisted copper cable for indoor installation U/UTP cat.5e PVC 25x2x0,51 Premium Indoor



1 Annealed copper conductor 0,51 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
3 Identification thread
4 Polyethylene terephthalate (PET) tape
*5 Outer sheath: PVC**

Brief information about the cable

Number of pairs	25
Nominal overall diameter, mm	12,0(±0,2)
Total mass of cable, kg/km	167
Copper conductor diameter, mm	0,515 (±0,005) mm (24 AWG)

Symmetrical paired twisted copper cable for outdoor installation F/UTP cat.5e PE 25x2x0,51 Premium Outdoor



1 Annealed copper conductor 0,51 mm diameter (24 AWG)
2 Polyethylene insulation with individual color marking of each insulated core
3 Identification thread
4 Polyethylene terephthalate (PET) tape
5 Alumoflex tape and tinned copper conductor
6 Outer sheath: PE (Polyethylene)

Brief information about the cable

Number of pairs	25
Nominal overall diameter, mm	12,8(±0,2)
Total mass of cable, kg/km	160
Copper conductor diameter, mm	0,515 (±0,005) mm (24 AWG)

** Outer shell options: PVC, PVC нг(A)-LS, PVC LS LTx нг(A)-LSLTx, ZH нг(A)-HF*

Fiber-optic microcables for urban networks

Application:

Cables are designed for laying inside buildings, in cable trays, channels, for suspension on the pillars of communication lines, poles of urban lighting, between buildings.

OKGS-T/P cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Fiberglass yarns
4. Strength member – FRP rod
5. Protective jacket

Brief information about the cable

Number of fibers	2-8	10-16	18-24	26-48
Cable diameter, mm	5,6	6,2	6,5	8,0
Cable weight, kg / km	24,2	30,3	34,0	51,6
Tensile strength, kN	from 1,0			
Crushing strength, kN/100 mm	not less than 3,0			

OKG-T/S (P) cables



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire/FRP rod
4. Protective jacket

Brief information about the cable OKG-T/S

Number of fibers	2-8	10-16	18-24	26-48
Cable diameter, mm	5,0	6,0	6,4	7,8
Cable weight, kg / km	30,5	39,6	43,5	60,0
Tensile strength, kN	from 1,0			
Crushing strength, kN/100 mm	from 3,0			

Brief information about the cable OKG-T/P

Number of fibers	2-8	10-16	18-24	26-48
Cable diameter, mm	4,6	5,8	6,2	7,4
Cable weight, kg / km	18,2	28,6	32,3	46,1
Tensile strength, kN	from 0,5			
Crushing strength, kN/100 mm	not less than 3,0			

Application:

Cables are designed for laying inside buildings, in cable trays, channels, for suspension on the pillars of communication lines, poles of urban lighting, between buildings.

OKTM-T/S cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire/rope
4. Protective jacket

Brief information about the cable

Number of fibers	2-8	10-16	18-24
Cable dimensions, mm	6,0×3,8	6,7×4,4	8,1×5,8
Cable weight, kg / km	32,9	36,6	48,7
Tensile strength, kN	from 0,5		
Crushing strength, kN/100 mm	not less than 3,0		

OKT-T/S cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire
4. Protective jacket

Brief information about the cable

Number of fibers	2-16	18-24	26-48
Cable dimensions, mm	9,0×5,3	10,0×6,9	13,8×8,5
Cable weight, kg / km	51,0	61,0	90,1
Tensile strength, kN	from 1,0		
Crushing strength, kN/100 mm	not less than 3,0		

CABLES FOR INSTALLATION IN CABLE DUCTS, TUBES, TUNNELS

Application:

Cables are designed for laying in cable ducts, pipes, collectors, tunnels, into grounds of 1-3 groups.

OKL-T cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Corrugated steel tape armour
4. Protective jacket

Brief information about the cable

Number of fibers	2-16	18-36	38-48
Cable diameter, mm	8,0	9,9	11,0
Cable weight, kg / km	65,0	94,0	115,0
Tensile strength, kN	from 1,0		
Crushing strength, kN/100 mm	not less than 0,5		

OKL-T/S cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Corrugated steel tape armour
4. Strength member – steel wire
5. Protective jacket

Brief information about the cable

Number of fibers	2-16	18-36	38-48
Cable diameter, mm	8,5	10,5	11,6
Cable weight, kg / km	87,0	120,0	141,0
Tensile strength, kN	from 1,0		
Crushing strength, kN/100 mm	not less than 0,5		

FIBER-OPTIC MICRO-CABLES FOR URBAN NETWORKS

OKB-T cable



1.Optical fiber
2.PBT loose tube filled with hydrophobic gel
3.Zink-coated steel wire armour
4.Protective jacket

Brief information about the cable

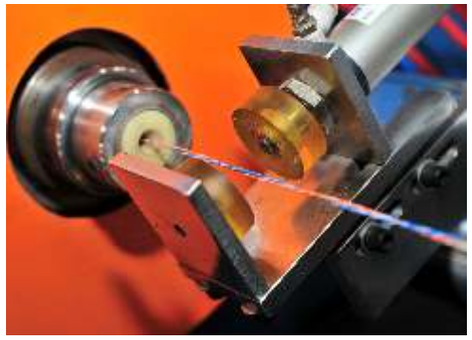
Number of fibers	2-8	10-24	26-36	38-48
Cable diameter, mm	6,8	8,4	9,4	10,0
Cable weight, kg / km	83,0	129,0	160,0	180,0
Tensile strength, kN	from 2,7			
Crushing strength, kN/100 mm	not less than 3,0			

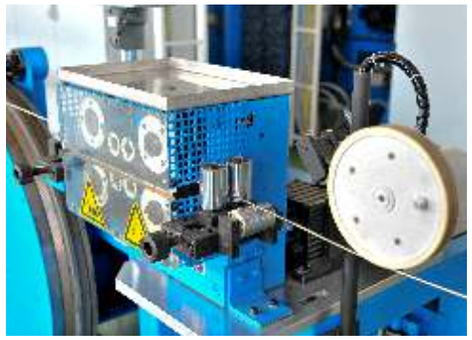
Operation parameters for fiber-optic micro-cables

Operating temperature range, °C	-40… +60
Installation temperature, °C	-30*…+50
Min. bending radius	not less than 20 diameters

** in case of using a cable with FR sheath, the minimum installation temperature is not lower than -10 °C*

PRODUCTION OF SARANSKKABEL-OPTIKA, LTD








Power and communication cables

OPGW cables

Application:

Cables are designed to organize an optical communication line on the supports of power lines 35 kV and above and to protect power lines from direct lightning strikes.

OKGT-c cable (OPWG with central optical steel tube)



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the cable

Number of fibers	2-24	26-48	50-96
Cable diameter, mm	from 8,2	from 8,8	from 9,8
Cable weight, kg / km	from 200	from 250	from 300
Tensile strength, kN	from 13 to 500		
Crushing strength, kN/100 mm	not less than 10,0		

References, to be specified at the time of placing the order

OKGT-c cable (OPWG with central optical steel tube with aluminium jacket)

Recommended for suspension in areas with increased corrosivity



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Aluminium jacket of steel loose tube
4. Stranded aluminium clad steel wires and/or aluminium alloy wires

Brief information about the cable

Number of fibers	2-24	26-48
Cable diameter, mm	from 9,2	from 10,6
Cable weight, kg / km	from 200	from 250
Tensile strength, kN	from 13 to 500	
Crushing strength, kN/100 mm	not less than 10,0	

References, to be specified at the time of placing the order

OKGT-s cable (OPWG with steel optical tubes in lay)



1. Aluminium clad steel wire
2. Optical fiber
3. Stainless steel loose tube filled with hydrophobic gel
4. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the cable

Number of fibers	2-48	50-96	98-144	146-192
Cable diameter, mm	11,9-30,0	13,1-30,0	13,1-30,0	16,3-30,0
Cable weight, kg / km	from 350	from 400	from 500	from 650
Tensile strength, kN	from 25,0 to 500			
Crushing strength, kN/100 mm	not less than 10,0			

References, to be specified at the time of placing the order

GT (overhead ground wire)

Application:

Ground wire is used for suspension on the supports of power lines to protect the line from lightning overvoltage.



1. Aluminium clad steel wire
2. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the wire

Cable diameter, mm	from 7,6 up to 30,0
Cable weight, kg / km	from 250 up to 3 600
Tensile strength, kN	from 25,0 to 500
Crushing strength, kN/100 mm	not less than 10,0

** References, to be specified at the time of placing the order*

Operating requirements for OPGW cables

Operating temperature range, °C	-60… +70
Temperature of installation, °C	Not lower -30
Min. bending radius	Not less than 20 cable diameters
Life time	50 years
Warranty period	5 years after commissioning, no more than 5,5 years from the date of elivery

Self-supporting insulated wires combined with optical cables

Application:

The product is designed for transmission and distribution of electrical energy on overhead lines and providing optical fiber communication.

Advantages:

- simultaneous transmission of electricity and high-quality communication
- the possibility of branching the electrical part without damaging the optical part
- use of standard tension and supporting fittings
- aesthetics of urban power lines
- reduction of load on supports
- reduction of installation and operating costs

SIP 3 with FOC for networks on voltage 10,0-35,0 kV (SIP-3/O)



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Web
5. Protective jacket
6. Conductive core

Brief information about the cable

Rated current conductor cross-section, mm²	Number of wires in the conductive core, pcs	Tensile strength of the core of the wire, kN, not less than
38	7	10,3
50	7	14,2
70	7	20,6
95	19	27,9
120	19	35,2
150	19	43,4

SIP 2 with FOC (SIP-2/O) for networks on voltage 0.4-1.0 kV



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Corrugated steel tape armour
5. Protective jacket
6. Zero core
7. Current-conducting core

Brief information about the cable

Rated current conductor cross-section, mm²	Tensile strength of the core of the wire, kN, not less than
3×16+1×25	7,4
3×25+1×35	10,3
3×35+1×50	14,2
3×50+1×70	20,6
3×70+1×95	27,9

Fiber-optic cable for winding on power conducting wires

Application:

The cable is intended for winding on a ground wire or phase conductors of existing overhead lines with a voltage of 35-110 kV and above

OKNN cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – FRP rod
4. Protective jacket

Brief information about the cable

Number of fibers	2-24
Cable diameter, mm	3,4x 5,2
Cable weight, kg / km	Not more than 17,5
Tensile strength, kN	0,3
Operating temperature range, ° C	-60… +70
Temperature of installation, ° C	Not lower -30
Min. bending radius	Not less than 20 cable diameters

Wire A — GOST 839-2019



Wire twisting is performed on equipment with wire preformation, which provides tight twisting and eliminates the possibility of self-braiding of wires.
A large fleet of twisting equipment.
Receivers of the line are equipped with automatic distributors that provide uniform in-line layout of the wire on the drum.

1. Aluminum wire
2. Stranded aluminum wires

Brief information about Wire A

Wire diameter, mm	from 5,1 to 41,2
Section, mm^2	from 15,9 to 1000

Operating requirements for Wire A

Temperature range of operation, °C	not more than + 90
Lifetime	45 years
Guarantee exploitation	4 years after commissioning

Wire AS — GOST 839-2019



Wire twisting is performed on equipment with wire preformation, which provides tight twisting and eliminates the possibility of self-braiding of wires.
A large fleet of twisting equipment.
Receivers of the line are equipped with automatic distributors that provide uniform in-line layout of the wire on the drum.

1. Steel wire
2. Stranded steel wires
3. Stranded aluminum wires

Brief information about Wire AS

Wire diameter, mm	from 5,6 to 47,88
Section, mm^2	from 16,0/2,7 to 1250/101,8

Operating requirements for Wire AS

Temperature range of operation, °C	not more than + 90
Lifetime	45 years
Guarantee exploitation	4 years after commissioning

Aluminium tubes

ALUMINIUM ROUND TUBES FOR GENERAL TECHNICAL APPLICATION

Application:

Aluminum tubes marks AD0, AD00 (EN AW 1050A, EN AW 1070A) for general technical application in manufacture of mechanical engineering products. Tubes are used for circulation of coolant, air, inert gas and in systems of inert gas supply:

– in refrigeration evaporators;
– in air conditioning systems;
– in of gas stoves;
– in heat exchange equipment.



Tubes are supplied in coils with an orderly winding. One coil is one whole tube.
Coil dimensions and packaging are made in agreement with the customer.

- Coils are filled with dry compressed air or dry nitrogen.
- Tube ends are sealed.
- Packing provides protection from external influences, harmful effects of acid and alkaline vapors, other aggressive media and mechanical damag

Brief information about Aluminium round tubes

Outer diameter of a tube, mm	from 6,0 to 12,7
Wall thickness, mm	from 0,75 to 1,2
Aluminum grade	AD0, AD00 (EN AW 1050A, EN AW 1070A)

Operating requirements for Aluminium round tubes

Tubes are designed for operation at temperature range	- 80 ° C… + 120 °C
Lifetime	not lesss than 10 years
The bays are filled with compressed air or inert gas with a dew point	up to - 60 °C

ALUMINIUM CHARGE AIR COOLER TUBES AND RADIATOR TUBES

Application:

Welded flat-oval tubes for general technical applications in the production of mechanical engineering products.
Designed for cooling liquid or air circulation:
- in the production of automotive radiators;
- in charge air coolers.



Tubes are supplied in coils with an orderly winding. One coil is one whole tube.
Coil dimensions and packaging are made in agreement with the customer.

- Coils are filled with dry compressed air or dry nitrogen.
- Tube ends are sealed.
- Packing provides protection from external influences, harmful effects of acid and alkaline vapors, other aggressive media and mechanical damage.

Brief information about Welded flat-oval tubes

Width, mm	from 19,0 to 62,0
Height, mm	from 1,8 to 8,0
Length, mm	min 180 / max 2000
Wall thickness, mm	from 0,32 to 0,5

Mechanical properties of Welded flat-oval tubes

Temporary tensile strength in tension, MPa	from 145 to 235
Length at load 50% of maximum, %	from 2 to 7
Hydraulic fracturing pressure, kgs/cm ^{2}	from 25 to 110

Operating requirements for Welded flat-oval tubes

Operating temperature, ºC	
for units with liquid filling	from - 60 to + 130
for units filled with air	from - 60 to + 270
general technical application	from -60 to + 130

Aluminium-clad steel wire

Application:

Aluminum-Clad Steel Wire is used in products that require high corrosion resistance, such as CRGW (corrosion resistant ground wire) OPGW (optical ground wire) and others.

Wire mark : 20 SA, 40SA



1. Steel wire
2. Aluminium sheath

Brief information about Aluminium round tubes

Operational requirements	Wire mark	
	20 SA	40 SA
Minimum tensile strength	1070 MPa	680 MPa
Minimum voltage at 1% elongation	1000 MPa	500 MPa
Relative elongation	1,5%	1,5%
Minimum thickness of aluminum	8%	25%
Resistivity, not much than	0,08480 Om mm^2	0,04310 Om mm^2

«Saranskkabel-Optika», Ltd produces Aluminum-Clad steel wire of following diameters:

20 SA	40 SA
2,1 mm; 2,2 mm; 2,25 mm; 2,3 mm; 2,6 mm; 2,7 mm; 2,8 mm; 2,9 mm; 3,0 mm; 3,1 mm; 3,25 mm; 3,3 mm; 4,1 mm	3,48 mm; 4,21 mm; 4,87 mm

Cladding – is the method of applying a thin protective layer of aluminum on the surface of the steel wire, when due to a large compressive force occurs cold metal weld. The main feature of this method is the interdiffusion of molecules of two metals without heating to a depth of 5 microns. Diffusion occurs at high pressure inside a chamber where extruding aluminum is fed plastic heated to a temperature of 400C. Aluminum is heated only by the friction and the characteristic deformation.

Subsequently, the resulting product is subjected to sizing or drawn with the total reduction up to 95%. Steels, during drawing, acquires mechanical strength up to 1400 MPa in the finished product.

MATERIALS AND PRODUCTS FOR CABLE MANUFACTURES

Stainless steel tube

Application:

The tube is made of corrosion-resistant, austenitic stainless steel grade AISI 304 (DIN 1.4301) and is characterised by resistance to all aggressive liquids and gases.



Outer tube diameter	from 1,5mm to 5,8mm
Inner tube diameter	from 1,1mm to 5,2mm
Tube weight, kg	from 6,5 to 41,3
Wall thickness, mm	0,2

Steel tube with optical fibers

Application:

Product is used in production of OPGW cables, fireproof cables and also in monitoring systems.



1. Optical fiber
2. Steel tube filled with hydrophobic gel

Maximal number of fibers in tubes used in fiber-optic cable production

Tube diameter (mm)	Thickness of the wall (mm)	Max. number of fibers	
		SMF	MMF
2,8	0,2	24	16
3,2	0,2	36	24
3,6	0,2	48	36
4,4	0,2	48	48
5,6	0,3	96	72

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Welcome to cooperation!

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For notes