

DIRECT BURIED TYPE DOUBLE SHEATED F. OPTIC CABLES A-DF(ZN) 2Y (SR) 2Y

General Information

- Loose tube designed.
- Installed direct buried and/or duct type installation for highly reliable industrial applications.
- Designed for outdoor applications to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 216
- High tensile strength design
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design also possible for water resistance in customer request
- Suitable for direct buried application
- Colored fiber for the quick identification
- UV resistance for the outer Sheath
- High fiber count to diameter ratio
- Fully complies with Telcordia GR-20 and TIA/EIA standards
- Customer design is available on request
- Colored fiber for the quick identification
- Ripcord for easy strip outer sheath

Applications

- Telecommunication applications
- Video applications
- Distribution
- Long Haul Communications
- Metropolitan Communication Systems

Type Code of Optical Cable

A-DF(ZN) 2Y (SR) 2Y mxnN LG
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows:
ROMCABLU < Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request. Thickness of sheath is nominal 1,1 mm (±b1 0,1) for inner and 1,8 (±b1 0,1) mm for outer sheath respectively.

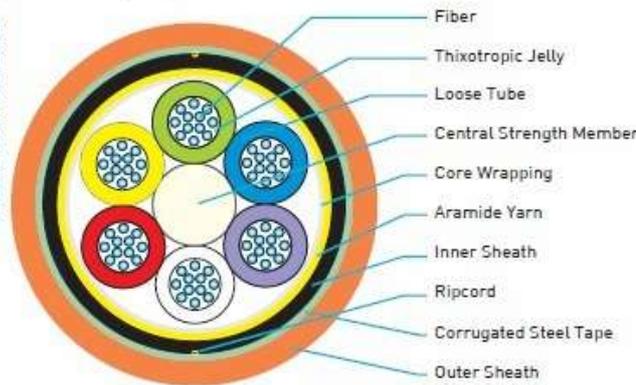
Packing

Shipment will be done with non-returnable wooden drums with protection.

ROMCABLU Cable Design Information

Fiber Type 5M 9/125 (G.652 d), 5M 9/125 (NZDSF) (G.655), 5M 9/125 (G.657), MM 50/125 OM2, MM 62,5/125 OM1, MM 50/125 OM3
Loose tube design
UV resistance Outer Sheath (LDPE-MDPE or HDPE)
Jelly Filled for Water resistance
Dry core design is also available on customer request
Dielectric Strength member (FRP)
Peripheral Strength Member is glass yarn or Aramid yarn (if necessary)

Cable Construction



Note: Drawing is not scaled

Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Direct Buried Corrugated Steel Tape Armored Double Sheathed Optical Cables	4	2	2	4	15,0	200	6
	6	2	3	3	15,0	200	6
	12	2	6	0	15,0	200	6
	24	4	6	0	15,0	200	6
	36	6	6	0	15,0	200	6
	48	8	6	0	15,0	200	6
	60	12	5	1	15,0	200	6
	72	12	6	0	15,0	200	6
	96	12	8	0	16,5	250	4
	144	12	12	0	19,0	320	4
192	12	16	2	20,0	370	4	
216	12	18	0	20,0	370	4	

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	4.000 N 2.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	5.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 m	No leakage

D: Outer Diameter of Cable

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Aerial Type Armored Optical Cables A-DF(ZN) 2Y (SR) T 2Y

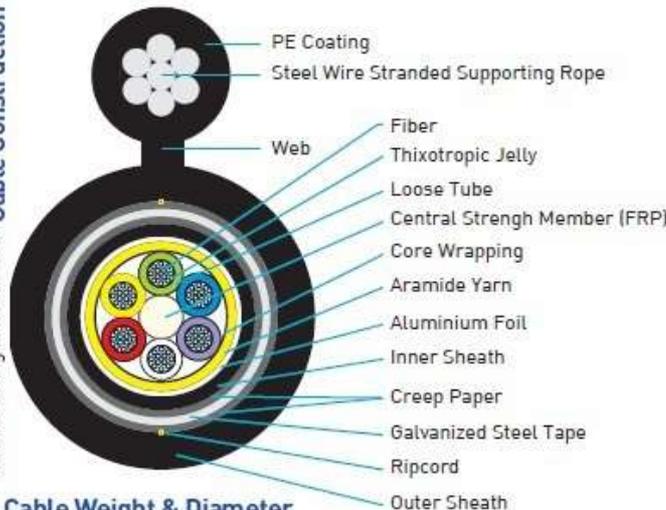
General Information

- Loose tube designed
- Applied to the poles with highly reliable and flexible and industrial applications.
- Designed for outside applications to protect optical fiber for the unexpected mechanical and environmental conditions.
- Suitable for the 60 meter span length
- Special design is required for more than 60 m span
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 216
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design also possible for water resistance in customer request
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- High fiber count to diameter ratio
- Suitable for aerial installation
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request
- Ripcord for easy strip outer sheath

Note: Drawing is not scaled



Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Aerial Armored Cables	4	2	2	4	19,0x31,0	520	2
	6	2	3	3	19,0x31,0	520	2
	12	2	6	0	19,0x31,0	520	2
	24	4	6	0	19,0x31,0	520	2
	36	6	6	0	19,0x31,0	540	2
	48	8	6	0	20,5x32,5	550	2
	60	12	5	1	20,5x32,5	550	2
	72	12	6	0	20,5x32,5	560	2
	96	12	8	0	22,5x34,5	590	2
	144	12	12	0	27,0x37,0	670	2
	192	12	12	2	27,0x37,0	670	2
	216	12	18	0	27,0x37,0	670	2

Note: Central Strength member is FRP (Fiber Reinforced Plastic), but steel wire is also available on customer request. Other delivery lengths is available

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Applications

- Telecommunication
- Video
- Long Haul Communication Systems
- Metropolitan Communication Systems

Type Code of Optical Cable

A-DF(ZN) 2Y (SR) T 2Y mxnN LG
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows:
ROMCABLU CABLE < Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request

Packing

Shipment will be done with non-returnable wooden drums with protection.

ROMCABLU ; Cable Design Information

Fiber Type: SM 9/125 (G.652 d), SM 9/125(G.655) , MM 62,5/125 - MM 50/125 Loose tube design
Aerial type optical cables are armored design
Galvanized steel wire and corrugated steel tape armored also available
UV resistance Outer Sheath (MDPE, HDPE)
Jelly Filled for Water resistance
Dry core design is also available on customer request
Dielectric Strength member (FRP)
Peripheral Strength Member is glass yarn or Aramid yarn (If necessary)

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	6.000 N 3.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	5.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 m	No leakage

Note: Special design for higher than given tensile load also available

ROMCABLU Aerial Type Armored Optical Cables A-DF(ZN) 2Y (SR) T 2Y

Direct Buried Type Single Sheathed FO Cables A-DF(ZN) 2Y

General Information

- Loose tube designed.
- Direct buried and/or duct type installation for highly reliable industrial applications.
- Designed for outside applications, also it's designed to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 216
- High tensile strength design
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design is also possible for water resistance in customer request
- Suitable for duct application
- Colored fiber for the quick identification
- UV resistance for the outer Sheath
- High fiber count to diameter ratio
- Fully complied with Telcordia GR-20 and TIA/EIA standards
- Colored fiber for the quick identification
- Ripcord for easy strip outer sheath

Applications

- Telecommunication applications
- Video applications
- Distribution
- Long Haul Communication and
- Metropolitan Communication Systems

Type Code of Optical Cable

A-DF(ZN) 2Y mxnN LG
Refer to the type code of the optical cable for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
ROMCABLU < Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black.

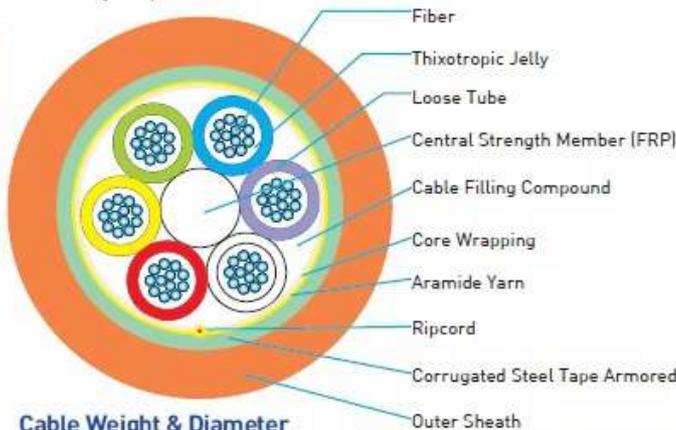
Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

Fiber Type: SM 9/125 /G.652 d), SM 9/125(NZDSF) (G.655), SM 9/125 (G.657) , MM 50/125 OM2 , MM 62,5/125 OM1 , MM 50/125 OM3
Loose tube design
UV resistance Outer Sheath (LDPE-MDPE or HDPE)
Jelly Filled for Water resistance
Dry core design is also available on customer request
Dielectric Strength member (FRP)
Peripheral Strength Member is glass yarn or Aramid yarn (if necessary)

Cable Construction



Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Direct Buried Type Single Sheathed Fiber Optic Cables	4	2	2	4	12,5	160	4
	6	2	3	3	12,5	160	4
	12	2	6	0	12,5	160	4
	24	4	6	0	12,5	160	4
	36	6	6	0	12,5	160	4
	48	8	6	0	12,5	160	4
	60	12	5	1	12,5	160	4
	72	12	6	0	12,5	160	4
	96	12	8	0	13,5	200	4
	144	12	12	0	16,0	275	4
192	12	16	2	20,0	420	4	
216	12	18	0	20,0	420	4	

Note: Central Strength member is FRP (Fiber Reinforced Plastic), but steel wire is also available on customer request.

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	3.000 N 1.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	4.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 m	No leakage

D: Outer Diameter of Cable

ROMCABLU Direct Buried Type Single Sheathed FO Cables

Aerial (ADSS) Type Optical Cables A-DF 2Y (ZN) 2Y

General Information

- Loose tube designed all dielectric self-supported (ADSS)
- Applied to the toughest environmental and electrical conditions.
- Designed for extra high voltage transmission lines without interruption of services
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 192
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design also possible for water resistance in customer request
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- Perfect aerodynamic performance
- All dielectric construction allows installation and maintenance on energized circuits
- High fiber count to diameter ratio
- Suitable for aerial installation
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request
- Ripcord for easy strip outer sheath

Applications

- Telecommunication
- Video
- Long Haul Communication Systems
- Metropolitan Communication Systems

Type Code of Optical Cable

A-DF 2Y (ZN) 2Y mxnN LG
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows:
ROMCABLU < Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

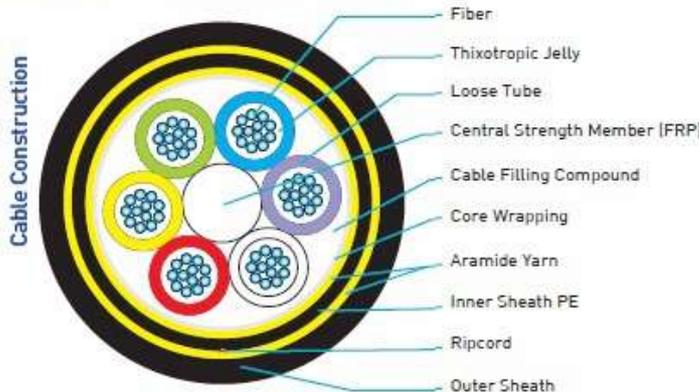
Inner / Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Another color can be applied per customer request

Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655), MM 62,5/125 – MM 50/125 Loose tube design
UV resistance Outer Sheath (MDPE, HDPE)
Jelly Filled for Water resistance
Dry core design is also available on customer request
Dielectric Strength member (FRP)
Peripheral Strength Member is Aramid yarn



Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
ADSS Optical Cables	4	2	2	4	14,5	160	6
	6	2	3	3	14,5	160	6
	10	2	5	1	14,5	160	6
	12	2	6	0	14,5	160	6
	24	4	6	0	14,5	160	6
	36	6	6	0	14,5	160	6
	48	8	6	0	14,5	160	6
	60	12	5	1	14,5	160	6
	72	12	6	0	14,5	160	6
	96	12	8	0	16,5	210	4
	144	12	12	0	20,0	330	4
192	16	12	2	22,5	450	4	

(*) Other delivery length is available

Mechanical & Environmental Characteristics

Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	14.000 N 7.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	4.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage
Span Length (m)	Max.	150

Note: Special design for higher than given tensile load also available

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

ROMCABLU Aerial (ADSS) Type Optical Cables

Duct type single Sheathed FO Cables A-DF(ZN) 2Y

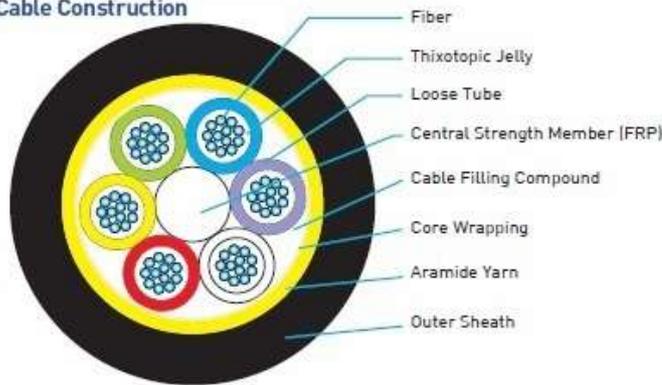
General Information

- Loose tube designed.
- Duct type installation for highly reliable industrial applications.
- Applicable for outdoor and indoor applications, also it's designed to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 216
- High tensile strength design
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design is also possible for water resistance in customer request
- Suitable for duct applications
- Colored fiber for the quick identification
- UV resistance for the outer Sheath
- High fiber count to diameter ratio
- Fully complied with Telcordia GR-20 and TIA/EIA standards
- Custom designs are available on request

Cable Construction



Applications

- Telecommunication applications
- Video applications
- Distribution
- Long Haul Communication and
- Metropolitan Communication Systems

Type Code of Optical Cable

A-DF(ZN) 2Y mxnN LG
Refer to the type code of the optical cable for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows:
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black.

Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

- Fiber Type: SM 9/125 - SM 9/125(NZDSF) MM 62,5/125 - MM 50/125
- Loose tube design
- UV resistance Outer Sheath (MDPE or HDPE)
- Jelly Filled for water resistance
- Dry core design is also available on customer request
- Dielectric Strength member (FRP)
- Peripheral Strength Member is glass yarn or Aramid yarn (if necessary)

Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Loose Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Duct Type Single Sheathed Optical Cables	4	2	2	4	11,0	100	6
	6	2	3	3	11,0	100	6
	12	2	6	0	11,0	100	6
	24	4	6	0	11,0	100	6
	36	6	6	0	11,0	100	6
	48	8	6	0	11,0	100	6
	60	12	5	1	11,0	100	6
	72	12	6	0	11,0	100	6
	96	12	8	0	12,5	140	4
	144	12	12	0	15,5	195	4
	192	12	16	2	15,5	210	4
216	12	18	0	15,5	210	4	

Note: Central Strength member is FRP (Fiber Reinforced Plastic), but steel wire also available on customer request.

(*) Other delivery length is available

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Mechanical & Environmental Characteristics

Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	2.000 N 1.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	:20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	:2.000 N -----
Impact Resistance IEC-60794-1-2-E4	----- -----	:50 N -----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2-F5	24 hour, 1 meter	No leakage

D: Outer Diameter of Cable

Galvanized Steel Tape Armored Fiber Optic Cables

General Information

A-DF(ZN) 2Y (B) 2Y

- Direct buried and/or duct type installation with highly reliable and industrial applications.
- Designed for outside application and also it's designed to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

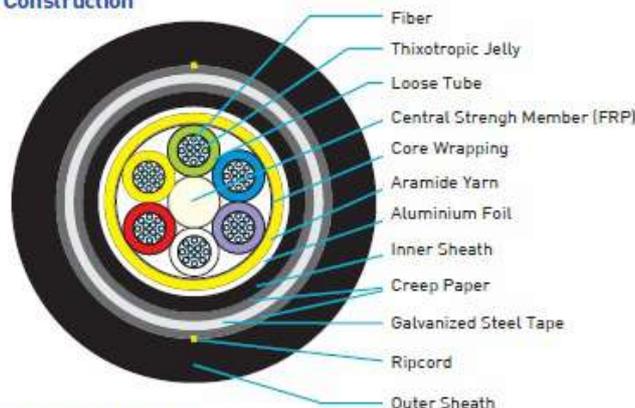
Features and Benefits

- Fiber counts up to 192
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Dry core design also possible for water resistance in customer request
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- High fiber count to diameter ratio,
- Suitable for aerial installation,
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request
- Ripcord for easy strip outer sheath

Applications

- Telecommunication
- Video
- Long Haul Communication Systems
- Metropolitan Communication Systems

Cable Construction



Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Galvanized Steel Tape Armored Direct Buried Type Optical Cables	4	2	2	4	18,0	350	4
	6	2	3	3	18,0	350	4
	12	2	6	0	18,0	350	4
	24	4	6	0	18,0	350	4
	36	6	6	0	18,0	350	4
	48	8	6	0	18,0	50	4
	60	12	5	1	18,0	350	2
	72	12	6	0	18,0	350	2
	96	12	8	0	20,5	400	2
	144	12	12	0	22,5	510	2
192	12	16	2	23,5	530	2	

Note: Central Strength member is FRP (Fiber Reinforced Plastic), but steel wire also available on customer request.

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Type Code of Optical Cable

A-DF(ZN) 2Y (B) 2Y mxnN LG
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;

Romcablu < Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request. Thickness of sheath is nominal 1,1 mm ($\pm 0,1$) for inner and 1,8 ($\pm 0,1$) mm for outer sheath respectively.

Packing

Shipment will be done with non-returnable wooden drums with protection.

Romcablu Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655 - NZDSF), MM 62,5/125 - 50/125

Loose tube design

Galvanized steel wire and corrugated steel tape armored also available

UV resistance Outer Sheath (MDPE, HDPE)

LSZH or HFFR Sheathing also possible in indoor applications

Jelly Filled for Water resistance

Dry core design is also available on customer request

Dielectric Strength member (FRP)

Peripheral Strength Member is glass yarn or Aramid yarn (If necessary)

Mechanical & Environmental Characteristics

Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	4.000 N 3.000 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	5.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage

Under Water Type (Submarine) Steel Wire Armored FO Cables

General Information

A-DF(ZN) 2Y SWA 2Y SWA 2Y

These type optical cables are installed for underwater / submarine, Lake and River Crossing type installation with highly reliable and industrial applications. These types of cables are designed for outside application and also it's designed to protect optical fiber for the unexpected extra high mechanical and environmental conditions. Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 144
- Fibers per loose tube 1-12
- Gel filled cable core for the water resistance
- Its design for water resistance in customer request
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- High fiber count to diameter ratio,
- Suitable for underwater installation,
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request
- Ripcord for easy strip outer sheath

Applications

- Telecommunication applications
- Video applications
- Data applications
- CATV Transmission
- Local Area Networks applications

Type Code of Optical Cable

A-DF(ZN) 2Y SWA 2Y SWA 2Y mxnN LG
Refer to the type code of the optical cables for the description of the cable code.

Optical Characteristics

Refer to the fiber data sheet

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request. Thickness of sheath is nominal 1,5 mm (±0,1) for inner and 2,5 (±0,1) mm for outer sheaths respectively.

Packing

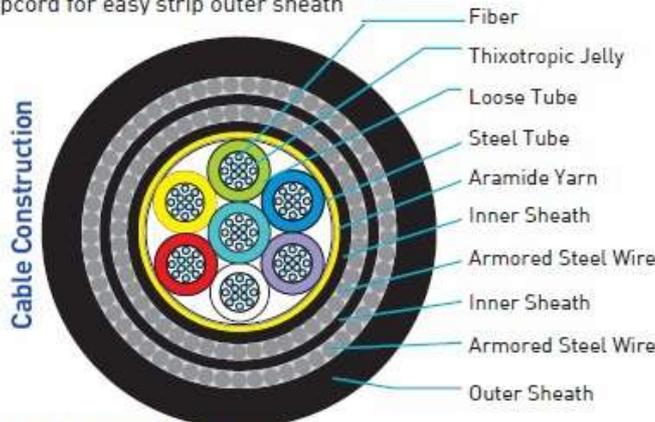
Shipment will be done with non-returnable wooden-steel drums with protection.

Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655 - NZDSF), MM 62,5/125 - 50/125 Loose tube design
UV resistance Outer Sheath (MDPE,HDPE)
LSZH or HFFR Sheathing also possible in indoor applications Jelly Filled for Water resistance
Dry core design is also available on customer request
Dielectric Strength member (FRP) Peripheral Strength Member is glass yarn or Aramide yarn (If necessary)

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	80 KN 160 KN
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	15xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	10. KN ----
Impact Resistance IEC-60794-1-2-E4	----- -----	300 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage



Cable Weight & Diameter

Item	Number of Fiber	Fiber Per Tube	Number of Tube	Number of Dummy Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Double Steel Wire Armored Underwater Type Optical Cables	4	2	2	4	29	1.800	12
	6	2	3	3	29	1.800	12
	12	2	6	0	29	1.800	12
	24	4	6	0	29	1.800	12
	36	6	6	0	29	1.800	12
	48	8	6	0	29	1.800	12
	60	12	5	1	29	1.800	12
	72	12	6	0	29	1.800	12
	96	12	8	0	33	2.750	6
144	12	12	0	36	3.150	6	

Note: Central Strength member is FRP (Fiber Reinforced Plastic), but steel wire also available on customer request.

Note: Special design for higher than given tensile load are also available
D: Outer Diameter of Cable

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink
Tubes	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Under Water Type (Submarine) Steel Wire Armored FO Cables

Central Tube Armored Single Sheathed Optical Cables

General Information

- Indoor / Outdoor type installation
- Designed to protect optical fiber for the unexpected mechanical and environmental conditions
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

A-DQ (BN) (SR) 2Y

Features and Benefits

- Fiber counts up to 12
- Light weight
- High tensile strength design
- Dry core design
- Small diameter
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request

Applications

- Building interconnection
- Campus and Local Area Network

Type Code of Optical Cable

A-DQ (BN) (SR) 2Y mxn ...'85...'85...'85..N CT
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request

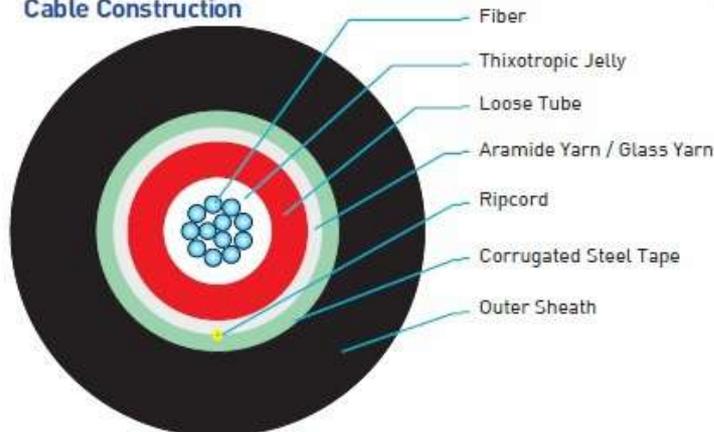
Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655) , MM 62,5/125 – MM 50/125
Central tube design (Single Loose Tube, SLT)
UV resistance Outer Sheath
LSZH or HFFR Sheathing also possible for indoor applications
Peripheral Strength Member is Glass yarn or Aramid yarn is also possible per customer requests.

Cable Construction



Central Tube Armored Single Sheathed Optical Cables

Cable Weight & Diameter

Item	Number of Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Indoor/Outdoor Central Tube Cables	2	9,5	85	2
	4	9,5	85	2
	6	9,5	85	2
	8	9,5	85	2
	10	9,5	85	2
	12	9,5	85	2

Mechanical & Environmental Characteristics

Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	800 N 500 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	1.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Central Tube Armored double Sheathed Optical Cables

General Information

A-DQ (BN) 2Y (SR) 2Y

- Applied to outdoor and directly buried installation
- Designed for outdoor and direct buried type application and also to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 12
- Light weight
- High tensile strength design
- Dry core design
- Small diameter
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request

Applications

- Building interconnection
- Campus and Local Area Network

Type Code of Optical Cable

A-DQ (BN) 2Y (SR) 2Y mxnN CT
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request applied in customer request

Packing

Shipment will be done with non-returnable wooden drums with protection.

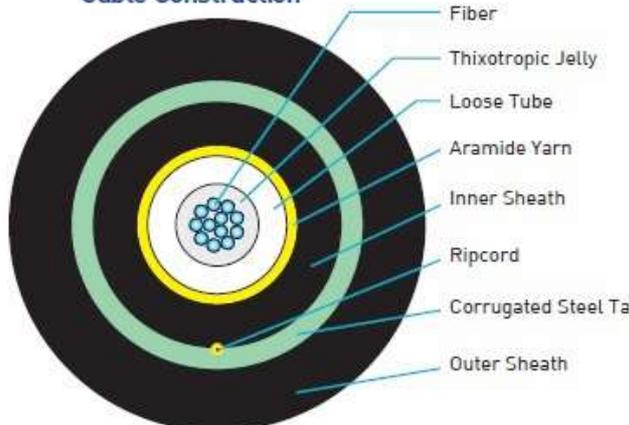
Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655), MM 62,5/125 - MM 50/125
Central tube design (Single Loose Tube, SLT)
UV resistance Outer Sheath
LSZH or HFFR Sheathing is also possible for indoor applications
Peripheral Strength Member is Glass yarn or Aramid yarn is also possible per customer requests.

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	1.000 N 600 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	1.000 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage

Cable Construction



Cable Weight & Diameter

Item	Number of Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Central Tube Armored Double Sheathed Optical Cables	2	10,5	110	2
	4	10,5	110	2
	6	10,5	110	2
	8	10,5	110	2
	10	10,5	110	2
	12	10,5	110	2

(*) Other delivery length is available

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Central Tube Armored Double Sheathed Optical Cables

Central Tube Unarmored Optical Cables

General Information

- Indoor/Outdoor type installation
- Designed for indoor/outdoor application to protect optical fiber for the unexpected mechanical and environmental conditions.
- Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

Features and Benefits

- Fiber counts up to 12
- Lightweight
- High tensile strength design
- Dry core design
- Small diameter
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request

Applications

- Building interconnection
- Campus and Local Area network

A-DQ (BN) 2Y

Type Code of Optical Cable

A-DQ (BN) 2Y mxnN CT
Refer to the type code of the optical cables for the description of the cable code.

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner / Outer sheath materials are MDPE-HDPE-LDPE and outer sheath color is black. Other color can be applied in customer request

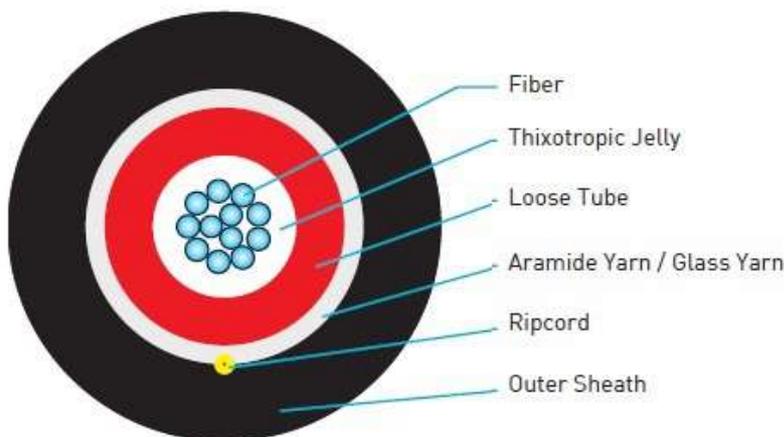
Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

Fiber Type 5M 9/125 (G.652 d), 5M 9/125(G.655), MM 62,5/125 - MM 50/125
Central tube design (Single Loose Tube, SLT)
UV resistance Outer Sheath
LSZH or HFFR Sheathing also possible in indoor applications
Peripheral Strength Member is Glass yarn or Aramid yarn also possible in customer requests.

Cable Construction



Central Tube Unarmored Optical Cables

Cable Weight & Diameter

Item	Number of Tube	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Outdoor Central Tube Cables	2	8,0	60	4
	4	8,0	60	4
	6	8,0	60	4
	8	8,0	60	4
	10	8,0	60	4
	12	8,0	60	4

(*) Other delivery length is available

Mechanical & Environmental Characteristics Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	1.000 N 600 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	500 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Tight Tube Non-Metallic optical Cables

General Information

J-VQ (BN) H (SR) 2Y

Indoor/Outdoor type tight coated type optical cables are applied to indoor/outdoor installation. These types of cables are designed for indoor/outdoor application and also to protect optical fiber for the unexpected mechanical, environmental and rodent protection conditions. Qualification and acceptance testing are performed to assure the optical cable's performance and durability in several environments.

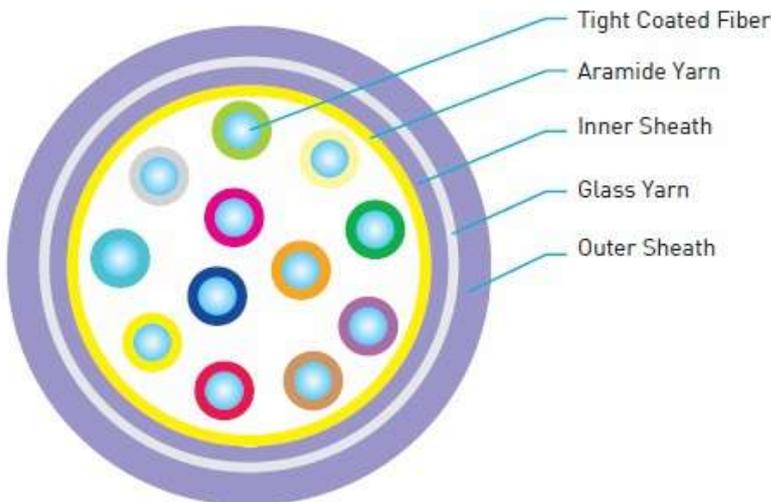
Features and Benefits

- Fiber counts up to 12
- Light weight
- High tensile strength design
- Completely dry core design
- Small diameter
- Colored fiber for the quick identification
- UV resistance for the outer sheath
- Fully complies with international standards, TIA/EIA
- Customer designs are available on request

Applications

- Building interconnection
- Campus and Local Area Network

Cable Construction



Type Code of Optical Cable

J-VQ (BN) H (SR) 2Y mxnN
Refer to the type code of the optical cables for the description of the cable code.

Optical Characteristics

Refer to the fiber data sheet

Length Marking On The Cable

The outer sheath will be marked in one meter intervals as follows;
< Year of manufacturing >
< number and type of fiber >
< length marking in meter >

Color of Sheath and Material

Inner/ Outer sheath materials are HFFR-MDPE-HDPE and outer sheath color is black. Other color can be applied in customer request

Packing

Shipment will be done with non-returnable wooden drums with protection.

Cable Design Information

Fiber Type SM 9/125 (G.652 d), SM 9/125(G.655), MM 62,5/125 – MM 50/125- MM 50/125 OM3
Tight coated design UV resistance Outer Sheath LSZH or HFFR for inner sheath LSZH or HFFR Sheathing also possible in indoor applications Peripheral Strength Member is Glass yarn or Aramide yarn also possible in customer requests.

Cable Weight & Diameter

Item	Number of Fiber	Nom Outer Diameter mm	Nom Cable Weight Kg/km	Reel Length Km*
Tight Coated Optical Cables	2	9,5	110	4
	4	9,5	110	4
	6	10,5	120	4
	8	11,0	135	4
	10	12,0	140	4
	12	12,5	150	4

Other delivery length is available

Mechanical & Environmental Characteristics

Parameters

Tensile Strength IEC 60794-1-2-E1	Max Opr.	1.000 N 600 N
Bending Radius(mm) IEC 60794-1-2-E11	Dynamic Static	20xD 10xD
Crush Resistance IEC 60794-1-2-E3	----- -----	500 N ----
Impact Resistance IEC-60794-1-2-E4	----- -----	50 N ----
Operation Temperature IEC 60794-1-2-F1	Installing Operating	-30 +60 (°C) -40 +80 (°C)
Water Penetration IEC 60794-1-2 F5	24 hour, 1 meter	No leakage

Identification of Optical Fiber and Loose Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	Blue	Orange	Green	Red	Yellow	Violet	Brown	Black	White	Grey	Turquoise	Pink

Tight Tube Non-Metallic Optical Cables

Technical Specification of Optical Fiber

SINGLE MODE FIBER (G.652.d)

1. Optical Specifications

Specifications	Tolerance	Unit	Specified Value	
			1310 nm	1550 nm
Attenuation	Max.	dB/km	†0.35	†0.21
Mode Field Diameter	±0.5	µm	9.2	10.3
Chromatic Dispersion	Max.	ps/(nm*km)	†3.5	†17
Cladding Diameter	±2	µm	125	-
Core / Cladding Concentricity Error	-	µm	1	-
Zero Dispersion Wavelength	-	Attenuation	1300-1324	-
Cladding Non Circularity	Max.	%	†2	-
Coating Diameter	±15	µm	250	-
Cut off Wavelength	Max.	µm	1150-1270	-

2. Mechanical Specifications

Specifications	Unit	Specified Value
Proof Test	N	8.4
Proof Test Strain	%	1.00
Storage Temperature	°C	-40†K†80
Installation Temperature	°C	0†K†50

Note: 1310 nm; 1285 † λ † 1330 nm
1550 nm; 1525 † λ † 1575 nm

MULTI MODE FIBERS (62.5/125 - 50/125)

1. Optical Specifications

Specifications	Unit	Specified Value (62.5/125)		Specified Value (50/125)	
		850 nm	1300 nm	850 nm	1300 nm
Attenuation Max.	dB/km	3.0	0.7	2.5	0.7
Bandwidth Min.	MHz. km	160	300	500	500

2. Mechanical Specifications

Specifications	Unit	Specified Value (62.5/125)	Specified Value (50/125)
Core Diameter	µm	62.5±3	50±2.5
Cladding Diameter	µm	125±2	125±2
Coating Diameter	µm	245±10	245±10
Core Non Circularity (Max)	%	6	6
Core to Cladding Concentricity	µm	1.5	1.5
Cladding Non Circularity (Max)	%	2	2



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Type Codes of Fiber Optic Cables

A-BCDEFG HxI...JKLMN

Type Codes for Optical Cables DIN / VDE

Code	Explanation of the Code
A	Outdoor Cable
B	Armoring
(BN)	Glass Yarn Non-metallic armoring
D	Loose Buffer Tube
E	Single Mode Fiber
F	Filling Compound in the cable Core
FR	Cable with the improved burning behavior
G	Multi mode Fiber
H	Halogen free jacket
J	Indoor Cable
K	Slotted Core
(L)	Laminated Aluminum Sheath
LG	Stranded in Layers
CT	Central Tube construction
S	Metallic Elements in core
Q	Dry Swellable material in the cable core
(SR)	Armoring by laminated corrugated longitudinal overlapped steel tape
(SG)	Armoring by laminated smooth longitudinal overlapped steel tape
Y	Jacket or protective cover of Polyvinyl chloride (PVC)
2Y	Jacket or protective cover of Polyethylene(PE)
4Y	Jacket or protective cover of Polyamide(PA)
(ZN)	Non-Metallic anti buckling and strength member
(ZM)	Non-Metallic anti buckling and strength member in the Jacket