ETK Kablo

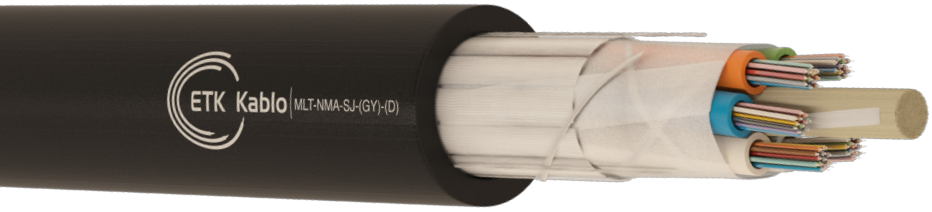
Fiber Optic Cables

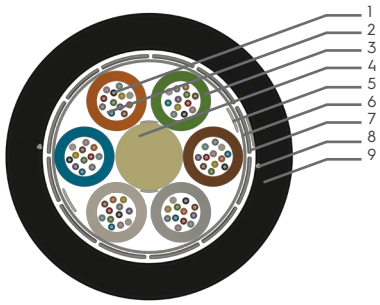
MLT-NMA-SJ-(GY12)-(D)

RoHS REACH CE

A-DQ(ZN)2Y

Multi loose tube, non-metallic armor fiber optic cable.





Application

· Fast and easy application due to its light construction.
· Suitable for pushing, blowing method.
· Problem-free use in power lines due to its non-metallic construction.
· Rodent protection.

Cable Construction

1 - Optical fiber core [1]
2 - Waterproof thixotropic jelly
3 - PBT Tube
4 - Non-metallic central strength member (FRP)
5 - Water-swellable yarn
6 - Core Wrapping (Water-swellable Tape)
7 - Non-metallic strength member (Glass yarn).
8 - Ripcord
9 - UV resistant polyethylene (HDPE) black outer jacket

Mechanical and Environmental Characteristics

	Test Standard	Specified Value	Acceptance Criteria
Maximum Installation Tension [2]	IEC 60794-1-2-E1	1.0 x W(N), min. 1200 N	Fiber strain ≤ 0.33%
Maximum Operation Tension	IEC 60794-1-2-E1	0.5 x W(N), min. 600 N	Δα ≤ 0.05 dB, No fiber strain
Crush Strength	IEC 60794-1-2-E3	3000 N / 100 mm, max. 15 min.	Δα ≤ 0.05 dB, No damage
Impact	IEC 60794-1-2-E4	10 Nm, 3 impacts, R= 300 mm	Δα ≤ 0.05 dB after the test
Torsion	IEC 60794-1-2-E7	1 m. 100N, +/- 180°, 10 cycles	Δα ≤ 0.05 dB, No damage
Repeated Bending	IEC 60794-1-2-E6	R=20x D, 100 N, 35 cycles	No damage
Bending Radius	IEC 60794-1-2-E11	R=20x D, 4 turns, 3 cycles	Δα ≤ 0.05 dB, No damage
Temperature Cycling	IEC 60794-1-2-F1	-20°C to +70°C	Δα ≤ 0.05 dB/km
Waterproofness	IEC 60794-1-2-F5B	Sample= 3 m, water column= 1 m	No water leakage in 24 hours.

Application

	Minimum Bending Radius
Operation	20 x cable Ø
Fixed	15 x cable Ø

	Temperature Range		
Storage	-40 to +70°C	Installation	-30 to +60°C
Transport	-40 to +70°C	Operating	-40°C to +70°C

Marking, Packing, Delivery Lengths

Marking	ETK Kablo <Date of Manufacture> <Fiber Count and Type> <Length Marking>
Packing	Wooden drum with protection
Delivery Lengths	2 km, 4 km ± %5 tolerance

Notes

[1] Optical fiber core could be applied as G.652.D, G.655, G.657.A1, G.657.A2, OM1, OM2, OM3, OM4 according to customer demand.
[2] Maximum tensile strength could be changed according to customer demand.
Manufacturing Standard: TS EN 60794-3-12

MLT-NMA-SJ-(GY12)-(D)

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
3.220.1.6.1.1900.0.0002	SM G.652.D	2	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1900.1.0004	SM G.652.D	4	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1900.0.0004	SM G.652.D	4	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1900.1.0006	SM G.652.D	6	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1900.0.0006	SM G.652.D	6	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1900.1.0008	SM G.652.D	8	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1900.2.0008	SM G.652.D	8	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1900.0.0008	SM G.652.D	8	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1900.1.0012	SM G.652.D	12	1	5	2.25	2.2	10.9	79
3.220.1.6.1.1900.3.0012	SM G.652.D	12	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1900.2.0012	SM G.652.D	12	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1900.0.0012	SM G.652.D	12	6	0	2.05	2.2	10.5	81
3.220.1.6.1.1900.1.0016	SM G.652.D	16	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1900.0.0016	SM G.652.D	16	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1900.0.0020	SM G.652.D	20	5	1	2.05	2.2	10.5	79
3.220.1.6.1.1900.1.0024	SM G.652.D	24	2	4	2.25	2.2	10.9	80
3.220.1.6.1.1900.3.0024	SM G.652.D	24	3	3	2.05	2.2	10.5	77
3.220.1.6.1.1900.2.0024	SM G.652.D	24	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1900.0.0024	SM G.652.D	24	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1900.0.0032	SM G.652.D	32	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1900.1.0036	SM G.652.D	36	3	3	2.25	2.2	10.9	81
3.220.1.6.1.1900.0.0036	SM G.652.D	36	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1900.1.0048	SM G.652.D	48	4	2	2.25	2.2	10.9	82
3.220.1.6.1.1900.0.0048	SM G.652.D	48	6	0	2.05	2.2	10.5	79
3.220.1.6.1.1900.0.0060	SM G.652.D	60	5	1	2.25	2.5	11.2	87
3.220.1.6.1.1900.0.0064	SM G.652.D	64	8	0	2.05	2.7	12.3	107
3.220.1.6.1.1900.0.0072	SM G.652.D	72	6	0	2.25	2.5	11.2	89
3.220.1.6.1.1900.0.0096	SM G.652.D	96	8	0	2.25	2.7	12.7	114
3.220.1.6.1.1900.0.0120	SM G.652.D	120	10	0	2.25	2.7	14.1	140
3.220.1.6.1.1900.0.0144	SM G.652.D	144	12	0	2.25	2.7	15.7	172
3.220.1.6.1.1900.0.0192	SM G.652.D	192	16	2	2.25	2.7	16.1	166
3.220.1.6.1.1900.0.0216	SM G.652.D	216	18	0	2.25	2.7	16.1	168

MLT-NMA-SJ-(GY12)-(D)

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
3.220.1.6.1.1625.0.0002	OM1	2	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1625.1.0004	OM1	4	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1625.0.0004	OM1	4	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1625.1.0006	OM1	6	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1625.0.0006	OM1	6	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1625.1.0008	OM1	8	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1625.2.0008	OM1	8	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1625.0.0008	OM1	8	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1625.1.0012	OM1	12	1	5	2.25	2.2	10.9	79
3.220.1.6.1.1625.3.0012	OM1	12	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1625.2.0012	OM1	12	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1625.0.0012	OM1	12	6	0	2.05	2.2	10.5	81
3.220.1.6.1.1625.1.0016	OM1	16	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1625.0.0016	OM1	16	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1625.0.0020	OM1	20	5	1	2.05	2.2	10.5	79
3.220.1.6.1.1625.1.0024	OM1	24	2	4	2.25	2.2	10.9	80
3.220.1.6.1.1625.3.0024	OM1	24	3	3	2.05	2.2	10.5	77
3.220.1.6.1.1625.2.0024	OM1	24	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1625.0.0024	OM1	24	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1625.0.0032	OM1	32	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1625.1.0036	OM1	36	3	3	2.25	2.2	10.9	81
3.220.1.6.1.1625.0.0036	OM1	36	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1625.1.0048	OM1	48	4	2	2.25	2.2	10.9	82
3.220.1.6.1.1625.0.0048	OM1	48	6	0	2.05	2.2	10.5	79
3.220.1.6.1.1625.0.0060	OM1	60	5	1	2.25	2.5	11.2	87
3.220.1.6.1.1625.0.0064	OM1	64	8	0	2.05	2.7	12.3	107
3.220.1.6.1.1625.0.0072	OM1	72	6	0	2.25	2.5	11.2	89
3.220.1.6.1.1625.0.0096	OM1	96	8	0	2.25	2.7	12.7	114
3.220.1.6.1.1625.0.0120	OM1	120	10	0	2.25	2.7	14.1	140
3.220.1.6.1.1625.0.0144	OM1	144	12	0	2.25	2.7	15.7	172
3.220.1.6.1.1625.0.0192	OM1	192	16	2	2.25	2.7	16.1	166
3.220.1.6.1.1625.0.0216	OM1	216	18	0	2.25	2.7	16.1	168

MLT-NMA-SJ-(GY12)-(D)

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
3.220.1.6.1.1502.0.0002	OM2	2	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1502.1.0004	OM2	4	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1502.0.0004	OM2	4	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1502.1.0006	OM2	6	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1502.0.0006	OM2	6	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1502.1.0008	OM2	8	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1502.2.0008	OM2	8	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1502.0.0008	OM2	8	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1502.1.0012	OM2	12	1	5	2.25	2.2	10.9	79
3.220.1.6.1.1502.3.0012	OM2	12	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1502.2.0012	OM2	12	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1502.0.0012	OM2	12	6	0	2.05	2.2	10.5	81
3.220.1.6.1.1502.1.0016	OM2	16	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1502.0.0016	OM2	16	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1502.0.0020	OM2	20	5	1	2.05	2.2	10.5	79
3.220.1.6.1.1502.1.0024	OM2	24	2	4	2.25	2.2	10.9	80
3.220.1.6.1.1502.3.0024	OM2	24	3	3	2.05	2.2	10.5	77
3.220.1.6.1.1502.2.0024	OM2	24	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1502.0.0024	OM2	24	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1502.0.0032	OM2	32	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1502.1.0036	OM2	36	3	3	2.25	2.2	10.9	81
3.220.1.6.1.1502.0.0036	OM2	36	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1502.1.0048	OM2	48	4	2	2.25	2.2	10.9	82
3.220.1.6.1.1502.0.0048	OM2	48	6	0	2.05	2.2	10.5	79
3.220.1.6.1.1502.0.0060	OM2	60	5	1	2.25	2.5	11.2	87
3.220.1.6.1.1502.0.0064	OM2	64	8	0	2.05	2.7	12.3	107
3.220.1.6.1.1502.0.0072	OM2	72	6	0	2.25	2.5	11.2	89
3.220.1.6.1.1502.0.0096	OM2	96	8	0	2.25	2.7	12.7	114
3.220.1.6.1.1502.0.0120	OM2	120	10	0	2.25	2.7	14.1	140
3.220.1.6.1.1502.0.0144	OM2	144	12	0	2.25	2.7	15.7	172
3.220.1.6.1.1502.0.0192	OM2	192	16	2	2.25	2.7	16.1	166
3.220.1.6.1.1502.0.0216	OM2	216	18	0	2.25	2.7	16.1	168

MLT-NMA-SJ-(GY12)-(D)

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
3.220.1.6.1.1503.0.0002	OM3	2	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1503.1.0004	OM3	4	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1503.0.0004	OM3	4	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1503.1.0006	OM3	6	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1503.0.0006	OM3	6	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1503.1.0008	OM3	8	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1503.2.0008	OM3	8	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1503.0.0008	OM3	8	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1503.1.0012	OM3	12	1	5	2.25	2.2	10.9	79
3.220.1.6.1.1503.3.0012	OM3	12	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1503.2.0012	OM3	12	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1503.0.0012	OM3	12	6	0	2.05	2.2	10.5	81
3.220.1.6.1.1503.1.0016	OM3	16	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1503.0.0016	OM3	16	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1503.0.0020	OM3	20	5	1	2.05	2.2	10.5	79
3.220.1.6.1.1503.1.0024	OM3	24	2	4	2.25	2.2	10.9	80
3.220.1.6.1.1503.3.0024	OM3	24	3	3	2.05	2.2	10.5	77
3.220.1.6.1.1503.2.0024	OM3	24	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1503.0.0024	OM3	24	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1503.0.0032	OM3	32	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1503.1.0036	OM3	36	3	3	2.25	2.2	10.9	81
3.220.1.6.1.1503.0.0036	OM3	36	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1503.1.0048	OM3	48	4	2	2.25	2.2	10.9	82
3.220.1.6.1.1503.0.0048	OM3	48	6	0	2.05	2.2	10.5	79
3.220.1.6.1.1503.0.0060	OM3	60	5	1	2.25	2.5	11.2	87
3.220.1.6.1.1503.0.0064	OM3	64	8	0	2.05	2.7	12.3	107
3.220.1.6.1.1503.0.0072	OM3	72	6	0	2.25	2.5	11.2	89
3.220.1.6.1.1503.0.0096	OM3	96	8	0	2.25	2.7	12.7	114
3.220.1.6.1.1503.0.0120	OM3	120	10	0	2.25	2.7	14.1	140
3.220.1.6.1.1503.0.0144	OM3	144	12	0	2.25	2.7	15.7	172
3.220.1.6.1.1503.0.0192	OM3	192	16	2	2.25	2.7	16.1	166
3.220.1.6.1.1503.0.0216	OM3	216	18	0	2.25	2.7	16.1	168

MLT-NMA-SJ-(GY12)-(D)

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
3.220.1.6.1.1504.0.0002	OM4	2	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1504.1.0004	OM4	4	1	5	2.05	2.2	10.5	77
3.220.1.6.1.1504.0.0004	OM4	4	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1504.1.0006	OM4	6	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1504.0.0006	OM4	6	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1504.1.0008	OM4	8	1	5	2.05	2.2	10.5	76
3.220.1.6.1.1504.2.0008	OM4	8	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1504.0.0008	OM4	8	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1504.1.0012	OM4	12	1	5	2.25	2.2	10.9	79
3.220.1.6.1.1504.3.0012	OM4	12	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1504.2.0012	OM4	12	3	3	2.05	2.2	10.5	78
3.220.1.6.1.1504.0.0012	OM4	12	6	0	2.05	2.2	10.5	81
3.220.1.6.1.1504.1.0016	OM4	16	2	4	2.05	2.2	10.5	77
3.220.1.6.1.1504.0.0016	OM4	16	4	2	2.05	2.2	10.5	79
3.220.1.6.1.1504.0.0020	OM4	20	5	1	2.05	2.2	10.5	79
3.220.1.6.1.1504.1.0024	OM4	24	2	4	2.25	2.2	10.9	80
3.220.1.6.1.1504.3.0024	OM4	24	3	3	2.05	2.2	10.5	77
3.220.1.6.1.1504.2.0024	OM4	24	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1504.0.0024	OM4	24	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1504.0.0032	OM4	32	4	2	2.05	2.2	10.5	78
3.220.1.6.1.1504.1.0036	OM4	36	3	3	2.25	2.2	10.9	81
3.220.1.6.1.1504.0.0036	OM4	36	6	0	2.05	2.2	10.5	80
3.220.1.6.1.1504.1.0048	OM4	48	4	2	2.25	2.2	10.9	82
3.220.1.6.1.1504.0.0048	OM4	48	6	0	2.05	2.2	10.5	79
3.220.1.6.1.1504.0.0060	OM4	60	5	1	2.25	2.5	11.2	87
3.220.1.6.1.1504.0.0064	OM4	64	8	0	2.05	2.7	12.3	107
3.220.1.6.1.1504.0.0072	OM4	72	6	0	2.25	2.5	11.2	89
3.220.1.6.1.1504.0.0096	OM4	96	8	0	2.25	2.7	12.7	114
3.220.1.6.1.1504.0.0120	OM4	120	10	0	2.25	2.7	14.1	140
3.220.1.6.1.1504.0.0144	OM4	144	12	0	2.25	2.7	15.7	172
3.220.1.6.1.1504.0.0192	OM4	192	16	2	2.25	2.7	16.1	166
3.220.1.6.1.1504.0.0216	OM4	216	18	0	2.25	2.7	16.1	168