

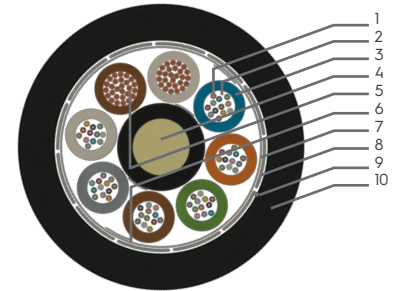
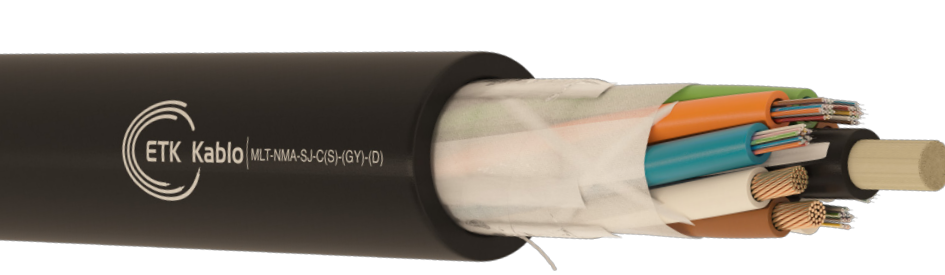
# Fiber Optic Cables

## MLT-NMA-SJ-C(S)-(GY)-(D)

A-DQ(ZN)2Y Composite (Stranded Copper)

Multi loose tube, non-metallic armor, stranded copper composite cable.

RoHS REACH CE



### Application

- Fast and easy application due to its light construction.
- Suitable for pushing, blowing method.
- In CCTV applications with mobile video camera.
- Rodent protection.
- In central network systems.
- In signalization systems.

### Cable Construction

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

### Mechanical and Environmental Characteristics

|   | Test Standard     | Specified Value                | Acceptance Criteria           |
|---|-------------------|--------------------------------|-------------------------------|
| Maximum Installation Tension <sup>2</sup> | IEC 60794-1-2-E1  | 1.5 x W(N), min. 2700 N        | Fiber strain ≤ 0.33%          |
| Maximum Operation Tension                 | IEC 60794-1-2-E1  | 0.5 x W(N), min. 900 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 |           | Temperature Range |              |                |
|-----------|------------------------|-----------|-------------------|--------------|----------------|
| Operation | 20 x cable Ø           | Storage   | -40 to +70°C      | Installation | -30 to +60°C   |
| Fixed     | 15 x cable Ø           | 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

<sup>1</sup> 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.

<sup>2</sup> Maximum tensile strength could be changed according to customer demand.

Manufacturing Standard: TS EN 60794-3-12

### MLT-NMA-SJ-S2x1.5C-(GY15)(D)

| Part Number             | Core Type  | Fiber Count | Tube Count | Filler Count | Tube Diameter (mm) | FRP Diameter (mm) | Cable Diameter (mm) | Cable Weight (kg/km) |
|-------------------------|------------|-------------|------------|--------------|--------------------|-------------------|---------------------|----------------------|
| 3.282.2.6.1.0900.0.0002 | SM G.652.D | 2           | 1          | 5            | 2.25               | 2.5               | 11.6                | 113                  |
| 3.282.2.6.1.0900.1.0004 | SM G.652.D | 4           | 1          | 5            | 2.25               | 2.5               | 11.6                | 113                  |
| 3.282.2.6.1.0900.1.0006 | SM G.652.D | 6           | 1          | 5            | 2.25               | 2.5               | 11.6                | 113                  |
| 3.282.2.6.1.0900.1.0008 | SM G.652.D | 8           | 1          | 5            | 2.25               | 2.5               | 11.6                | 113                  |
| 3.282.2.6.1.0900.1.0012 | SM G.652.D | 12          | 1          | 5            | 2.25               | 2.5               | 11.6                | 112                  |
| 3.282.2.6.1.0900.1.0016 | SM G.652.D | 16          | 2          | 4            | 2.25               | 2.5               | 11.6                | 114                  |
| 3.282.2.6.1.0900.1.0024 | SM G.652.D | 24          | 2          | 4            | 2.25               | 2.5               | 11.6                | 113                  |
| 3.282.2.6.1.0900.3.0024 | SM G.652.D | 24          | 3          | 3            | 2.25               | 2.5               | 11.6                | 116                  |
| 3.282.2.6.1.0900.1.0036 | SM G.652.D | 36          | 3          | 3            | 2.25               | 2.5               | 11.6                | 114                  |
| 3.282.2.6.1.0900.1.0048 | SM G.652.D | 48          | 4          | 2            | 2.25               | 2.5               | 11.6                | 116                  |
| 3.282.2.6.1.0900.0.0060 | SM G.652.D | 60          | 5          | 1            | 2.25               | 2.5               | 13.0                | 138                  |
| 3.282.2.6.1.0900.0.0072 | SM G.652.D | 72          | 6          | 0            | 2.25               | 2.7               | 13.0                | 140                  |

### MLT-NMA-SJ-S2x2.5C-(GY15)(D)

| Part Number             | Core Type  | Fiber Count | Tube Count | Filler Count | Tube Diameter (mm) | FRP Diameter (mm) | Cable Diameter (mm) | Cable Weight (kg/km) |
|-------------------------|------------|-------------|------------|--------------|--------------------|-------------------|---------------------|----------------------|
| 3.288.2.6.1.0900.0.0002 | SM G.652.D | 2           | 1          | 5            | 2.25               | 2.5               | 11.6                | 135                  |
| 3.288.2.6.1.0900.1.0004 | SM G.652.D | 4           | 1          | 5            | 2.25               | 2.5               | 11.6                | 135                  |
| 3.288.2.6.1.0900.1.0006 | SM G.652.D | 6           | 1          | 5            | 2.25               | 2.5               | 11.6                | 135                  |
| 3.288.2.6.1.0900.1.0008 | SM G.652.D | 8           | 1          | 5            | 2.25               | 2.5               | 11.6                | 135                  |
| 3.288.2.6.1.0900.1.0012 | SM G.652.D | 12          | 1          | 5            | 2.25               | 2.5               | 11.6                | 134                  |
| 3.288.2.6.1.0900.1.0016 | SM G.652.D | 16          | 2          | 4            | 2.25               | 2.5               | 11.6                | 137                  |
| 3.288.2.6.1.0900.1.0024 | SM G.652.D | 24          | 2          | 4            | 2.25               | 2.5               | 11.6                | 135                  |
| 3.288.2.6.1.0900.3.0024 | SM G.652.D | 24          | 3          | 3            | 2.25               | 2.5               | 11.6                | 138                  |
| 3.288.2.6.1.0900.1.0036 | SM G.652.D | 36          | 3          | 3            | 2.25               | 2.5               | 11.6                | 136                  |
| 3.288.2.6.1.0900.1.0048 | SM G.652.D | 48          | 4          | 2            | 2.25               | 2.5               | 11.6                | 138                  |
| 3.288.2.6.1.0900.0.0060 | SM G.652.D | 60          | 5          | 1            | 2.25               | 2.7               | 13.0                | 160                  |
| 3.288.2.6.1.0900.0.0072 | SM G.652.D | 72          | 6          | 0            | 2.25               | 2.7               | 13.0                | 161                  |