

# OUTDOOR – Duct – Minicable

## MICROMODULE STRUCTURE FIBRE-OPTIC CABLES

### DESCRIPTION AND APPLICATION

Outdoor ultra-compact fibre optic cables with polyethylene sheath and fibre glass reinforcements embedded in the sheath. Designed for duct installation (by blowing) on small sized conduits. These cables are designed for every kind of communication networks.

### CONSTRUCTION

- Micromodules:** easy strippable tube with 12 fibres.
- Core:** SZ stranded micromodules without any central strength element.
- Longitudinal water tightness:** WB yarns or tapes to avoid water propagation.
- Strength elements:** reinforcement elements embedded in the outer sheath.
- Outer jacket:** High density polyethylene (HDPE), UV resistant.
  - Sheath marking:
    - Year of manufacturing / CABLESCOM / Cable type / Number of fibres / Length markings.
    - Other sheath markings available upon request.

*Optical fibre characteristics: See Annexes – Optical fibre characteristics.*



TABLE 1: MICROMODULE COLOUR CODE

|  | Cable Mod12 | Tube   |         |          |           |          |          |           |         |          |               |             |         |
|--|-------------|--------|---------|----------|-----------|----------|----------|-----------|---------|----------|---------------|-------------|---------|
|  |             | 1      | 2       | 3        | 4         | 5        | 6        | 7         | 8       | 9        | 10            | 11          | 12      |
|  | 12          | Red    |         |          |           |          |          |           |         |          |               |             |         |
|  | 24          | Red    | Blue    |          |           |          |          |           |         |          |               |             |         |
|  | 36          | Red    | Blue    | Green    |           |          |          |           |         |          |               |             |         |
|  | 48          | Red    | Blue    | Green    | Yellow    |          |          |           |         |          |               |             |         |
|  | 72          | Red    | Blue    | Green    | Yellow    | Violet   | White    |           |         |          |               |             |         |
|  | 96          | Red    | Blue    | Green    | Yellow    | Violet   | White    | Orange    | Grey    |          |               |             |         |
|  | 144         | Red    | Blue    | Green    | Yellow    | Violet   | White    | Orange    | Grey    | Brown    | Black         | Turquoise   | Pink    |
|  | 192         | Red *  | Blue *  | Green *  | Yellow *  | Violet*  | White *  | Orange *  | Grey *  | Brown *  | Light green * | Turquoise*  | Pink *  |
|  |             | Red ** | Blue ** | Green ** | Yellow ** |          |          |           |         |          |               |             |         |
|  | 288         | Red *  | Blue *  | Green *  | Yellow *  | Violet*  | White *  | Orange *  | Grey *  | Brown *  | Light green * | Turquoise*  | Pink *  |
|  |             | Red ** | Blue ** | Green ** | Yellow ** | Violet** | White ** | Orange ** | Grey ** | Brown ** | Lightgreen ** | Turquoise** | Pink ** |

*Note: In 192, 288 fibre cables the micromodules from 1 to 12 will be marked with a ring and the micromodules from 13 to 24 will be marked with 2 rings.*

TABLE 2: FIBRE COLOUR CODE

| Fibre  | 1   | 2    | 3     | 4      | 5      | 6     | 7      | 8    | 9     | 10    | 11        | 12   |
|--------|-----|------|-------|--------|--------|-------|--------|------|-------|-------|-----------|------|
| Colour | Red | Blue | Green | Yellow | Violet | White | Orange | Grey | Brown | Black | Turquoise | Pink |

All drawings, weights and dimensions details, as well as tube and fibre colours in this document are only indicative and must not be considered contractual.

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## MICROMODULE STRUCTURE FIBRE-OPTIC CABLES

| MODULARITY 12 FO / TUBE                                          |                                                                        |         |         |                                   |         |         |  |         |         |         |
|------------------------------------------------------------------|------------------------------------------------------------------------|---------|---------|-----------------------------------|---------|---------|--|---------|---------|---------|
| FIBRES Num.                                                      | 12                                                                     | 24      | 36      | 48                                | 72      | 96      |  | 144     | 192     | 288     |
| MODULE Num.                                                      | 1                                                                      | 2       | 3       | 4                                 | 6       | 8       |  | 12      | 16      | 24      |
| WEIGHT (kg/km)                                                   | 29                                                                     | 36      | 43      | 50                                | 59      | 67      |  | 88      | 101     | 123     |
| NOMINAL OD. (mm)                                                 | 5.7                                                                    | 6.4     | 7.3     | 7.8                               | 8.8     | 9.5     |  | 10.8    | 11.6    | 12.8    |
| Installation Tensile Strength - ITS (N)<br>EN 60794-1-2, Met. E1 | 850                                                                    | 1000    | 1100    | 1350                              | 1450    | 1500    |  | 2100    | 2250    | 2600    |
| IMPACT RESISTANCE<br>EN 60794-1-2, Met. E4                       | 3 J                                                                    |         |         | 5 J                               |         |         |  |         |         |         |
| CURVATURE<br>EN 60794-1-2, Met. 11                               | r = 10 mm, T° 20°C, Δα reversible                                      |         |         |                                   |         |         |  |         |         |         |
|                                                                  | D = 15 x cable OD<br>5 cycles, Δα reversible (<0.1 dB)                 |         |         |                                   |         |         |  |         |         |         |
| CRUSH RESISTANCE<br>EN 60794-1-2, Met. E3                        | 1600 N / 100mm. 15 min,<br>Δα<0.1 dB                                   |         |         | 2000 N / 100mm. 15 min, Δα<0.1 dB |         |         |  |         |         |         |
|                                                                  | 2500 N / 100mm. 15 min, Δα reversible                                  |         |         |                                   |         |         |  |         |         |         |
| OPERATING TEMPERATURE<br>EN 60794-1-2, Met. F1                   | -30°C / +60°C Δα< 0.1 dB and reversible<br>-40°C / +70°C Δα reversible |         |         |                                   |         |         |  |         |         |         |
| WATER PENETRATION<br>EN 60794-1-2, Met. F5C                      | LP <sub>water</sub> ≤ 3 m (24 hours) (Cable core)                      |         |         |                                   |         |         |  |         |         |         |
| Jacket Thickness / FRP Diam (mm)                                 | 1.7/1.0                                                                | 1.8/1.1 | 1.8/1.1 | 1.9/1.2                           | 1.9/1.2 | 1.9/1.2 |  | 2.1/1.4 | 2.1/1.4 | 2.1/1.4 |