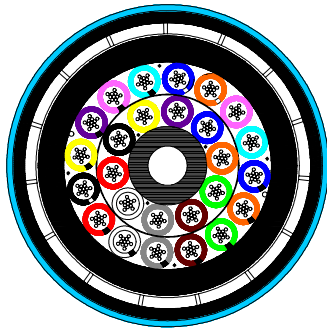


## External Underground Loosetube Optical Cable

IEC 60794-3-11  
ACMA - AS/CA S008

### Cable Design



- Drawing not to scale -

- **Multi-loose tube construction** – Double layer 216 to 312 fibres
- **Central strength member (CSM):** Glass fibre reinforced plastic material (GRP) with or without over-sheathing
- **Tube:** Thermoplastic material, containing 12 optical fibres filled with a low viscosity, thixotropic, non-melting gel fully compatible with fibre coating and tube material
- **Stranding:** The required numbers of elements (tubes and fillers) are SZ stranded in two layers around the central strength member
- **Longitudinal water tightness:** Water swellable elements (dry-core technology)
- **Bedding:** Polyethylene in compliance with AS1049
- **Armour:** Flat GRP Rods
- **Sheath:** UV stabilised polyethylene in compliance with AS 1049. Two ripcords provided beneath the sheath for easy removal
- **Outer jacket:** UV stabilised polyamide (Nylon) in compliance with AS 1049 integrally bonded to PE sheath

This loose tube dielectric optical cable is designed for external underground installations in ducts or by direct burial. GRP armour provides rodent protection and polyamide provides anti-termite protection.

### Technical data

Number of Fibres		216	288	312
Number of elements	1 <sup>st</sup> layer	6	9	10
	2 <sup>nd</sup> layer	12	15	16
Tube / Filler diameter	mm	2.1		
Cable nominal diameter	mm	17.6	20.5	20.5
Cable nominal weight	kg/km	260	355	360
Max. installation tension	kN	4.0		
Max. crush resistance	kN/100 mm	6.0 (Short term) / 3.0 (Long term)		
Min. bending radius	mm	At full load 30 x Cable OD		
		At no load 15 x Cable OD		
Temperature range	°C	Installation -0 -> +50	Transport & Storage -20 -> +70	Operation -10 -> +70

### Optical Characteristics

See the attached cabled optical fibre data sheet.

### Identification

#### Fibre Colours

No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

**Buffer Tube Colours**

No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua
No.	13	14	15	16	17	18	19	20	21	22	23	24
Colour	blue	orange	green	brown	grey	white	red	white	yellow	violet	pink	aqua
No.	25	26										
Colour	blue	orange										

Tubes 13 and above have one black stripe with the exclusion of tubes 20, 25 & 26 which have one white stripe.

**Sheath Colour:**

The outer sheath colour is blue.

**Sheath Marking:**

The outer sheath is marked in 1 meter intervals as follows:

PRYSMIAN DW ARM@CORE Part Number  N10514 T/N #### MM/YY *****M
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**Main mechanical characteristics**

Parameter	Test method	Test conditions	Acceptance criteria*
Tensile strength	IEC 60794-1-2-E1	Load: As per cable maximum tensile strength in table above.	After 30 minutes the maximum strain on the fibre should not exceed 0.6% and no attenuation increase greater than 0.1 dB occurs
Crush	IEC 60794-1-2-E3	Short time: 10 min Long time: 120 min Load: As per maximum crush resistance in table above Number of positions: 3 adjacent sections (ensuring one over tube and one over lay reversal)	No damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs
Impact	IEC 60794-1-2-E4	Weight: 1.5 kg Height: 1.0 m Anvil radius: 12.5 mm Impacts: 1	After 5 minutes no fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs
Torsion	IEC 60794-1-2-E7	Sample length: 1 m Bends: 360° (1turn) clockwise and after measurement (one minute) 720° (2turns) anticlockwise (two minutes)	No fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs
Bend	IEC 60794-1-2-E11	Mandrel diameter: 30 x Cable OD Bend: 360° (1turn)	No attenuation increase greater than 0.1 dB occurs
Bend under tension	Concurrent to tensile test IEC 60794-1-2-E18	Mandrel diameter: 60 x Cable OD Bend: 360° (1turn)	After 1minute no fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs from no load to full load
Temperature cycling	IEC 60794-1-2-F1	Sample length: 1000 m (minimum) Temperature range: From - 10 °C to +70 °C	There should be no average attenuation increase at the temperature extremes when compared to the attenuation at ambient temperature. No individual fibre should measure an attenuation greater than 0.15 dB/km
Water penetration	IEC 60794-1-2-F5B	Sample length=3m, Water height=1m	No water leakage after 24 hour

\* All optical measurements for singlemode fibres performed at 1550 nm.

## Logistic

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**Packing:**

Steel drums to AS 3983 with NOLCO-FLEX protection

**Delivery Lengths:**

Standard delivery length is 4 km with a tolerance of - 1% / + 3%

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