



## Cable marking example

Marking is made on each meter of cable

Fiber optic cable = INCAB EUROPE = Blowing MT 12 PA 192 8 x 24 G.657.A1 1000N Ø 6.6mm BATCH 2023 = 00001 m =

1	2	3	4	5	6	7	8	9	10	11	

1 Cable name	7 Installation tension
2 Jacket type	8 Cable diameter
3 Fiber count	9 Batch number
4 Number of loose tubes	10 Year of production
5 Fibers per loose tube	11 Meter marking
6 Fiber type	

## Design details

Fiber count	192
Number of loose tubes	8
Fibers per loose tube	24
Cable diameter ±0.2 mm	6.6
Cable weight kg/km	27.3

Other designs upon request

## Optical fiber

Fiber type	«G.657.A1»
Product name	Corning® SMF 28®ULTRA 200
ITU-T Recommendation	G.657.A1

### Dimensional Specifications

Core-Clad Concentricity	0.5 µm
Cladding Diameter	125 ±0.7 µm
Cladding Non-Circularity	0.7 %
Coating Diameter	200 ±5 µm

### Transmission Specifications

Attenuation in the cable (dB/km)*:	
1310 nm wavelength (Typical** / Max.)	0.32 / 0.35
1550 nm wavelength (Typical** / Max.)	0.19 / 0.21

\* Local attenuation discontinuities caused by cable winding on a reel are allowed.

\*\* Typical attenuation is the real level of optical attenuation of at least 90% fibers after cabling

Additional information about optical fibers on [www.incabeurope.com](http://www.incabeurope.com)

## Operating parameters

Operating temperature ( $\Delta\alpha \leq 0.05$ dB/km)	-20°C...+70°C
Operating temperature ( $\Delta\alpha \leq 0.10$ dB/km)	-30°C...+70°C
Installation temperature	-30°C...+50°C
Transportation and storage temperature	-60°C...+70°C
Minimum bending radius	15 x cable diameter
Design life	25 years (per fiber supplier)

## Blowing performance

Tube outer/inner diameter, mm	Installation distance, m
12/8	950
14/10	1700

## Cable parameters

Parameter	Nominal value	Evaluation criterion
Tensile strength (IEC 60794-1-21 method E1)	Long term calc. OF strain $\leq 0.20\%$ 0.3 kN	Short term calc. OF strain $\leq 0.60\%$ 1.0 kN
Crush (IEC 60794-1-21 method E3)	50 N/cm	- $\Delta\alpha^* \leq 0.10$ dB - no damage
Repeated bending (IEC 60794-1-21 method E6)	20 cycles, bending radius $\pm 90^\circ$	
Torsion (IEC 60794-1-21 method E7)	- 10 cycles - torsion angle $\pm 360^\circ$ length 4 m	
Impact (IEC 60794-1-21 method E4)	Impact energy 2 J	
Water penetration (IEC 60794-1-22 method F5C)	Sample length: 3 m Testing time: 24 hours	No water at the cable end
Temperature cycling** (IEC 60794-1-22 method F1)	- temperature range from $-20^\circ\text{C}$ to $70^\circ\text{C}$ - temperature range from $-30^\circ\text{C}$ to $70^\circ\text{C}$ - 2 cycles - cycle period $\geq 16$ hours	$\Delta\alpha^* \leq 0.05$ dB/km $\Delta\alpha^* \leq 0.10$ dB/km
Compound flow (IEC 60794-1-21 method E14)	at $70^\circ\text{C}$	No dripped compound

\* - attenuation increasing at standard wavelengths

\*\* - other temperature range upon request

## Safety standards compliance

RoHS: 2011/65/EU; 2015/863/EU

"Restriction on the use of certain Hazardous Substances"

REACH: 1907/2006/EU

"Registration, Evaluation, Authorisation and Restrictions of Chemicals"

## Reel packing and marking

Cables are supplied on non-returnable wooden reels. Reel diameter is not less than 40 diameters of the cable. Not less than 2 m of inside end of the cable is fixed to the reel flange. The cable ends are sealed with waterproof covers.

The label on the outer reel flange contains our trademark, cable type, customer's name and PO, reel number, production date, cable length, cable weight net/gross.

The following information is printed on the reel flange: manufacturer's name and website, rotation direction, cable end indication, shipping and handling summary, labels "Fragile" and "Handle with care".

Our cable passport shows: cable type, technical standard number, cable length, fiber type, fiber coloring, fibers per tube, tube identification coloring, final attenuation for all fibers, refractive index of the fiber, fiber manufacturer and production date.

Cable passport is affixed to the inner flange in a plastic bag. Additional information can be included on the passport upon request.

This document is intended as a guide only. Whilst the information it contains is believed to be correct, Incab Europe can take no responsibility for actions taken based on the information contained in this document. Incab Europe reserves the right to make changes to this document without notice. All sales of product are subject to Incab Europe's terms and conditions of sale only, which can be found on Incab Europe's website [www.incabeurope.com](http://www.incabeurope.com). This document is protected by copyright (c) of Incab Europe. The products depicted are protected by intellectual property rights. Any unauthorized copying of this document or of our products is prohibited and Incab Europe will take action to prevent any infringement of its rights and to claim damages for the loss that it suffers.