fiber optic cable series

DSS V1

Distributed Strain Sensing Fibre Optic Cable



Compact Ø 3.2 mm monolithic nylon-bonded distributed strain sensing fibre cable

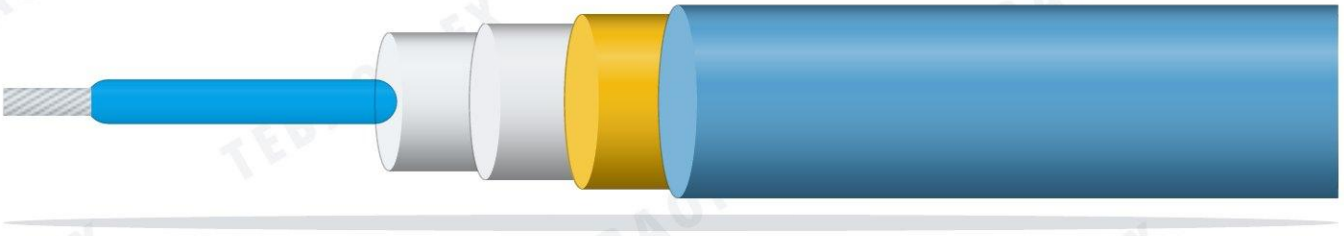
IEC 61757-1-1 DSS | Ø 3.2 mm Monolithic | Surface & Composite Bond

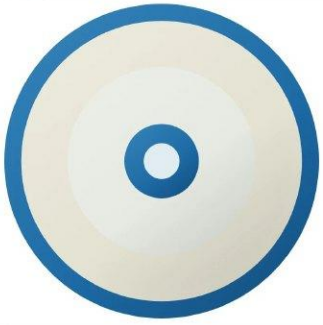
Application

DSS V1 Distributed Strain Sensing Fibre Optic Cable with a monolithic polyamide-extruded sensing core that bonds directly to composite laminates, steel girders, concrete surfaces and wind turbine blades for high-resolution.

Typical uses: Bridge Girder & Concrete Crack Detection, Wind Turbine Blade & Tower SHM, Pipeline Hoop & Bending Strain, Aerospace & CFRP Composite Testing, Nuclear Containment & LNG Tank Monitoring

Construction





Cross-section, not to scale

1	High-strength strain sensing fibre	
2	Intermediate strain-transfer buffer	
3	Dielectric aramid micro-reinforcement	
4	Surface-bondable PA12 outer jacket	Ø 3.2 mm smooth or micro-textured surface

Technical data

Typical values

Sensing principle	Rayleigh OFDR (mm-scale) & Brillouin BOTDA/BOTDR	**Strain sensitivity**	0.0498 MHz / με (Brillouin) · 1.20 pm / με (Rayleigh)
Dielectric rating	100 % metal-free non-conductive sensor	**Operating temperature**	-40 °C to +85 °C
Short-term curing peak	Up to +110 °C during composite autoclave/epoxy cure	**Installation temperature**	-15 °C to +60 °C
Operating strain range	-15,000 με to +15,000 με (±1.5 %)	**Axial stiffness (EA)**	≈ 18 kN (will not reinforce thin host substrates)
Max. tensile load	350 N (installation) · 200 N (continuous)	**Crush resistance**	1,500 N / 100 mm
Min. bend radius	15 mm (static) · 30 mm (installation)	**Fibre grade**	ITU-T G.657.A2 bend-insensitive SM (200 kpsi)
Attenuation @ 1550 nm	≤ 0.25 dB/km	**Attenuation @ 1310 nm**	≤ 0.38 dB/km
Adhesive compatibility	Bonds with epoxy, polyurethane, cyanoacrylate & grout	**Chemical & alkaline**	PA12 resists concrete pore water (pH 13), oils & fuels
Flame option	Halogen-free LSZH variant per IEC 60332-1-2	**Standards**	IEC 61757-1-1 Distributed Strain Measurement

Sizes

3 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Sensing fibres & jacket	Outer Ø mm	Weight ≈ kg/km	Max. load N	Min. bend R mm
DSS V1 Monolithic Low-Stiffness Strain Sensors 3 sizes					
☐ **DSS V1-01SM-PA**	**1 × G.657.A2 SM · PA12**	**3.2**	**11**	**350**	**15**
☐ **DSS V1-02SM-PA**	**2 × G.657.A2 SM · PA12**	**3.6**	**14**	**450**	**18**
☐ **DSS V1-02SM-LSZH**	**2 × G.657.A2 SM · LSZH**	**3.6**	**16**	**400**	**18**

– Low axial stiffness (EA ≈ 18 kN) ensures accurate strain transfer on thin composite, steel or concrete members without local reinforcement.

Standards and approvals

- IEC 61757-1-1 Distributed Strain
- ITU-T G.657.A2 Bend-Insensitive
- RoHS 2 & REACH Compliant

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
+86 185 9591 3361

Email
info@tebaoflex.com

Web
tebaoflex.com/cables/brusens-dss-v1-distributed-strain-sensing-fibre-optic-cable

Typical values for this cable type, based on IEC 61757-1-1 / IEC 60794-1-21 / ITU-T G.657.A1. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.