



fiber optic cable series

BRUsens 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

BRUsens 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 / $\mu\epsilon$ (Brillouin) · 1.20 pm / $\mu\epsilon$ (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 $\mu\epsilon$ to +15,000 $\mu\epsilon$ (± 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 $\approx$ kg/km	Max. load N	Min. bend R mm
DSS V1 Monolithic Low-Stiffness Strain Sensors 3 sizes					
☐ BRUsens DSS V1-01SM-PA	1 × G.657.A2 SM · PA12	3.2	11	350	15
☐ BRUsens DSS V1-02SM-PA	2 × G.657.A2 SM · PA12	3.6	14	450	18
☐ BRUsens 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.