TENAX-LUMEN (N)TSCGH3S

Self-Illuminating Medium Voltage Trailing Cable | 6 - 10 kV

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Self-Illuminating Trailing Cable for Enhanced Safety

TENAX-LUMEN (N)TSCGH3S is a self-illuminating medium voltage trailing cable for the power supply to large mobile equipment in mines, such as shovels and draglines. Especially intended for applications where, to guarantee the safety of personnel and equipment, the cable must be visible in the dark.

The active illuminating element, embedded under a transparent polyurethane outer sheath, allows the cable illumination also when not energized. The outer sheath is extremely robust and tough against abrasion and tearing, suitable for fully flexible operation down to -50°C.

Total Configurations: 20 — covering 2 voltage classes, 3.6/6 kV and 6/10 kV, with conductor sizes from 3×35 mm² up to 3×240 mm².

Technical Summary & Specifications

ELECTRICAL

Voltage: 3.6/6 (7.2) – 6/10 (12) kV

Test Voltage: 11 – 17 kV

Conductor: Finely stranded tinned copper, class 5

THERMAL

Max conductor temp: 90°C

Short circuit temp: 250°C

Fixed install: -50 to +80°C

Flexible install: -50 to +60°C

MECHANICAL

Tensile strength: 25 N/mm² static

Bend radius: 6×D fixed / 10×D flexible

S-type directional changes: 20×D min

CHEMICAL

Halogen Free: ✓ Yes

Flame Retardant: ✓ EN/IEC 60332-1-2

Oil / Ozone / UV: ✓ Resistant

Standards: DIN VDE 0250-813 • DIN EN 60228 / IEC 60228 / VDE 0295 • DIN EN 60332-1-2 / IEC 60332-1-2 • IEC 60754-2 • DIN VDE 0298-4 • DIN EN 60811-404 / IEC 60811-404 • GOST-R/-K/-B Fire Certificate (Russian Federation)

LUMEN — Electroluminescent String Parameters

Electrical

Voltage max: 125 V AC

Frequency max: 2000 Hz

Current absorption: ~15 A/km

Performance

Heat development: None

Light homogeneity: >95%

Irradiation: 360°

Cable Construction

1. Conductor — finely stranded copper, tinned, class 5
2. Semi-conductive EPR
3. EPR rubber core insulation (Special compound 3G13)
4. Cores laid up around semi-conductive central filler with aramid yarns; EL-strings in the outer interstices
5. Semi-conductive NBR easy strip
6. Copper, tinned, class 5; EPR insulation
7. Electro-luminescent string — special electroluminescent string designed for high visibility and low power consumption
8. Outer sheath — Polyurethane (PUR), special compound, transparent

Complete Technical Specifications — All 20 Configurations

TENAX-LUMEN (N)TSCGH3S 3.6/6kV — 10 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×35+3×25/3	7.5	45.2	48.5	3,100	2,625	260	0.34	0.565	162
3×35+2×16+1×16	7.5	44.5	48.5	3,150	2,625	260	0.34	0.565	162
3×50+2×16+1×16	9	49.3	53.8	3,800	3,750	290	0.32	0.393	202
3×70+3×35/3	10.6	52	56	4,650	5,250	320	0.30	0.277	250
3×95+2×25+1×16	12.6	58.9	63.4	5,750	7,125	370	0.29	0.21	301
3×70+2×25+1×16	10.6	52	56	4,700	5,250	320	0.30	0.277	250
3×150+2×35+1×16	16	68.8	72.4	8,350	11,250	440	0.27	0.132	404
3×120+2×35+1×16	14.8	60.5	64.5	6,700	9,000	400	0.28	0.164	352
3×185+2×50+1×16	17.7	71.7	76.2	9,850	13,875	480	0.27	0.108	461
3×240+2×70+1×16	20.3	74.3	78.3	12,000	18,000	540	0.26	0.0817	540

TENAX-LUMEN (N)TSCGH3S 6/10kV — 10 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×35+2×16+1×16	7.5	46	50	3,380	2,625	240	0.35	0.565	162
3×50+2×16+1×16	9	49.2	53.2	3,950	3,750	270	0.33	0.393	202
3×70+2×25+1×16	10.6	53.5	57.5	4,850	5,250	310	0.31	0.277	250
3×95+2×25+1×16	12.6	57	61	5,700	7,125	340	0.30	0.21	301
3×120+2×35+1×16	14.8	61.7	65.7	6,990	9,000	380	0.29	0.164	352
3×150+2×35+1×16	16	65.5	69.5	7,800	11,250	410	0.28	0.132	404
3×185+2×50+1×16	17.7	72.8	76.8	10,000	13,875	440	0.27	0.108	461
3×240+2×70+1×16	20.3	77.3	81.3	12,500	18,000	490	0.26	0.0817	540
3×50+3×25/3	9	49.2	53.2	3,900	3,750	270	0.33	0.393	202
3×70+3×35/3	10.6	53.5	57.5	4,800	5,250	310	0.31	0.277	250

Applications

Application	Benefit
Personnel & Equipment Safety	Self-illuminating sheath keeps cable visible in the dark, even when not energized
Shovels & Draglines	Fully flexible operation to -50°C for extreme cold-climate mining
Low-Visibility Work Sites	360° irradiation and >95% light homogeneity for consistent visibility from any angle

Ordering Information

For custom lengths, drum packaging, or technical consultation, please contact us directly via WhatsApp or visit our websites below. All 20 standard configurations are available ex-works with standard lead times.

Contact AnHui Feichun Special Cable Co., Ltd
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