

The force will be with you.

TENAX-LUMEN – our self-luminous cable safely brings power to your mobile mining equipment.



Prysmian
Group

Linking
the Future

*"A security guarantee for
personnel and equipment."*

A luminescent mining cable.

TENAX-LUMEN self-luminous power cable is like a modern version of the canary in a coal mine, adding safety to miners and equipment. This extremely robust trailing cable supplies power to large mobile mining equipment in environments where it is crucial the cable is visible at all times. An enlightened choice in dark places.

TENAX-LUMEN

Application

The TENAX-LUMEN is intended as trailing cable for the power supply to large mobile equipment in mines, such as shovels and draglines. Especially intended for application where, to guarantee the safety of personnel and equipment, the cable must be visible in the dark.

The transparent polyurethane outer sheath, combined with the use of active illuminating element, allows the cable illumination also when not energized.

The extremely robust sheath has excellent resistance against impact, abrasion and tearing, and also suitable for fully flexible operation down to -50 °C.

MAIN FEATURES

- ✓ Brightly self-luminous in dark areas
- ✓ Exceptional cold resistance down to -50 °C
- ✓ Excellent impact and abrasion resistant
- ✓ Resistant to UV, ozone, oil and moisture

TENAX-LUMEN									
Number of cores x cross section	Conductor diameter max. mm	Outer diameter mm		Weight (approx.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Inductance nom. mH/km	Current carrying capacity* A	Short circuit current (conductor) kA
		min.	max.						
TENAX-LUMEN 3.6/6 kV									
3x35+2x16+16	7.5	46.2	49.7	3 200	2 625	0.565	0.34	162	5.01
3x50+2x16+16	9	49.3	53.8	3 800	3 750	0.393	0.32	202	7.15
3x70+2x25+16	10.6	54.6	59.1	4 900	5 250	0.277	0.3	250	10.01
3x95+2x25+16	12.6	58.9	63.4	5 750	7 125	0.21	0.29	301	13.59
3x120+2x35+16	14.8	65.5	70	7 250	9 000	0.164	0.28	352	17.16
3x150+2x35+16	16	68.8	72.4	8 350	11 250	0.132	0.27	404	21.45
3x185+2x50+16	17.7	71.7	76.2	9 850	13 875	0.108	0.27	461	26.46
3x240+2x70+16	20.3	79.1	83.6	12 500	18 000	0.0817	0.26	540	34.32
TENAX-LUMEN 6/10 kV									
3x35+2x16+16	7.5	51	55.5	3 465	2 625	0.565	0.35	162	5.01
3x50+2x16+16	9	52	56	4 280	3 750	0.393	0.33	202	7.15
3x70+2x25+16	10.6	56.3	60.8	5 360	5 250	0.277	0.31	250	10.01
3x95+2x25+16	12.6	60.6	65.1	6 495	7 125	0.21	0.3	301	13.59
3x120+2x35+16	14.8	67.2	71.7	7 660	9 000	0.164	0.29	352	17.16
3x150+2x35+16	16	69.6	74.1	8 685	11 250	0.132	0.28	404	21.45
3x185+2x50+16	17.7	73.4	77.9	10 460	13 875	0.108	0.27	461	26.46
3x240+2x70+16	20.3	80.8	85.3	12 890	18 000	0.0817	0.26	540	34.32

* Nominal current carrying capacity for rubber cables laid on a surface, at 30 °C ambient temperature (see also VDE 0298-4, table 15).



TENAX-LUMEN	
Global data	
Brand	TENAX -LUMEN
Type designation	(N)TSCGEH3S
Standard	Based on DIN VDE 0250-813
Construction characteristics	
Conductor	Tinned copper, finely stranded class 5
Insulation	German made special cross-linked EPR
Electrical field control	Inner and outer layer of semi-conductive rubber compound
Core identification	Main cores and earth cores: black Pilot core: blue
Illuminating element	Special electroluminescent string designed for high visibility and low power consumption
Core arrangement	Three main cores, split earth and pilot laid up around semi-conductive central filler with aramid yarns. Electroluminescent string in the interstices
Outer sheath	German made special PUR compound. Abrasion and tear-proof, cold-resistant to -50 °C
Outer sheath colour	Light orange/Transparent
Mechanical characteristics	
Resistance to impact	Excellent
Abrasion resistance	Excellent
Cable flexibility	Excellent, also at very low temp.
Cable handling	Excellent
Cable visibility in the dark	Excellent, thanks to active illuminating strings visible through transparent sheath
Bending radius	6 x D in fixed installation 10 x D in flexible operation
Max. tensile load on the conductor	25 N/mm ²

TENAX-LUMEN		
Usage characteristics		
Lead free	Yes	
Oil resistance	Yes	
Chemical resistance	Yes	
Ozone resistance	Yes	
UV resistance	Yes	
Reaction to fire	EN 60322-1-2, IEC 60322-1-2	
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture	
Thermal parameters		
Max. permissible temperature at conductor	90 °C	
Max. short circuit temperature	250 °C	
Ambient temp. in flexible application (min. – max.)	-50 °C – +60 °C	
Ambient temp. in fixed installation (min. – max.)	-50 °C – +80 °C	
Electrical parameters		
Rated voltage	3.6/6 kV	6/10 kV
Max. permissible operating voltage AC	4.2/7.2 kV	6.9/12 kV
Max. permissible operating voltage DC	5.4/10.8 kV	9/18 kV
AC test voltage	11 kV	17 kV
Electroluminescent string parameters		
Max. voltage	125 Vac	
Max. frequency	2 000 Hz	
Current absorption	ca. 15 A/km	
Heat development	None	
Light homogeneity	> 95%	
Irradiation	360 °	

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Made locally.

We've been making cables in Germany since 1858. Today we have 2,000 skilled co-workers developing state-of-the-art cables in seven plants all over the country. We can offer a complete range of cables covering everything from the deep blue sea, mines and tunnels to skyscrapers and satellites.

Two of our facilities are Centres of Excellence including R&D departments in which we develop new solutions to meet your specific needs as well as the common challenges of tomorrow.

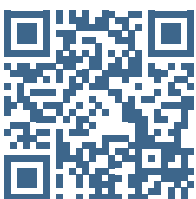
When that is not enough, we have the largest cable manufacturer in the world to our disposal, Prysmian Group. That includes 50 countries, 112 plants, 25 R&D centres and about 30,000 skilled professionals doing nothing but developing and producing cable solutions that will solve your current and future needs.



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