

## LANmark Industry Copper cables

LANmark Industry SF/UTP AWG24 LSZH+PE black 500m reel

Nexans ref.: N10i.004

- For installation in areas exposed to moisture, UVs and water
- Shielded construction with Central cross member to maintain geometry and performance
- LSZH+PE sheath with enhanced mechanical properties
- Guaranteed performance to Cat.6 - 250MHz
- Optimised for used with LANmark connectors

### Description

#### Specification

The LANmark Industry SF/UTP LSZH+PE cable features performance up to 250MHz. When terminated to LANmark-6 connectors it meets the Class E requirements (ISO/IEC 11801:2002). It enables to reach the full bandwidth on the link and secures the future proofing of the installation. Its PE outer sheath gives mechanical strength as well as resistance against water.

#### Application

The LANmark Industry SF/UTP LSZH+PE cable is the appropriate cable for fixed LAN networks in industrial and exposed areas. It will support industrial Ethernet applications as well as high speed data applications.

- 10Base-T,
- 100 Base-T
- 1GBase-T
- Industrial Ethernet

#### Screening

The SF/UTP cable consists of 4 pairs, bundled by an overall foil and a braid. It complies with the EMC requirements for screened cables and shows excellent transfer impedance values. It is designed for electrically "noisy" environments.

#### Fire classification

- Fire test according to IEC 60332-1 (without outer sheath PE)
- Fire load: 700MJ/km (without outer sheath PE)

#### Cable sheath

- Outer sheath PE (black) compound for superior UV, water and moisture resistance. This cable is suitable for installation in ducts. It is not suitable for direct burial. The cable can be installed indoor if the PE outer sheath is removed. A ripcord enables to remove this outer sheath very easily.
- Inner sheath LSZH (orange) Lead Free - Halogen Free

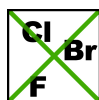


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### Standards

#### International

EN 50288; IEC 61156-5; ISO/  
IEC 11801; ISO/IEC 24702



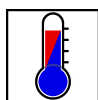
Halogen free  
Yes



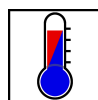
Lead free  
No



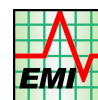
Flame  
retardant  
No



Operating temp.  
range  
-20 .. 60 °C



Ambient installation T°  
C range  
-10 .. 50 °C



Electro magnetic  
interference resistance  
Yes



RoHS conform  
Yes

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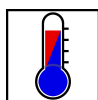
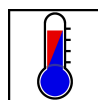
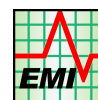
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### Characteristics

Construction characteristics	
Type of cable	SF/UTP
Individual screen	None
Overall screen	Tinned copper drain wire + aluminium/polyester tape
Inner sheath	Low smoke, zero halogen thermoplastic compound
Outer sheath	PE
Sheath colour	Black
Halogen free	Yes
Lead free	No
Dimensional characteristics	
Number of pairs	4
Conductor cross-section (AWG)	24
Diameter over insulation	1.13 mm
Outer Diameter	10.1 mm
Approximate weight	80 kg/km
Electrical characteristics	
Maximal operating frequency	250 MHz
Characteristic impedance	100 Ohm
Max. transfer impedance at 30 MHz (Ohm/km)	200 Ohm/km
Max. DC resistance of the conductor at 20°C	70 Ohm/km
Mutual capacitance	56 nF/km
Transmission characteristics	
Attenuation Crosstalk Ratio, 250MHz	383 dB/100m
Nominal Velocity of Propagation (NVP)	68 %
Skew	40 ns/100m
Propagation delay, max. 100 MHz	473 ns/100m
Coupling attenuation at 30 MHz	80 dB
Mechanical characteristics	
Maximum permanent tensile load	0.1 kN
Maximum pulling force by laying	0.21 kN
Usage characteristics	
Category	Cat. 6
Field of application	Fixed installations
Packaging	Reel
Length	500 m


Halogen free  
Yes

Lead free  
No

Flame  
retardant  
No

Operating temp.  
range  
-20 .. 60 °C

Ambient installation T°  
C range  
-10 .. 50 °C

Electro magnetic  
interference resistance  
Yes

RoHS conform  
Yes

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### Usage characteristics

Fire load	700 MJ/km
Flame retardant	No
Operating temperature, range	-20 .. 60 °C
Ambient installation temperature, range	-10 .. 50 °C
Minimum Bend Radius - Installed	40.4 mm
Minimum Bend Radius - During Installation (under Tension)	80.8 mm
Silicon free	No
Electro magnetic interference resistance	Yes
RoHS conform	Yes








### Electrical Performance LANmark-6 cables

All values are specified at 20°C

	IL		NEXT		PSNEXT		ACR-F		PS ACR-F		RL	
Freq.	in Db/100m		in dB		in dB		in dB		in dB		in dB	
in MHz	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
1	2.0	2.0	74.3	80.3	72.3	78.3	67.8	72.8	64.8	69.8	20.0	22.0
4	3.8	3.8	65.3	71.3	63.3	69.3	55.8	60.8	52.8	57.8	23.0	25.0
10	6.0	6.0	59.3	65.3	57.3	63.3	47.8	52.8	44.8	49.8	25.0	27.0
16	7.6	7.6	56.2	62.2	54.2	60.2	43.7	48.7	40.7	45.7	25.0	27.0
20	8.5	8.5	54.8	60.8	52.8	58.8	41.8	46.8	38.8	43.8	25.0	27.0
31.25	10.7	10.7	51.9	57.9	49.9	55.9	37.9	42.9	34.9	39.9	23.6	25.6
62.5	15.4	15.4	47.4	53.4	45.4	51.4	31.9	36.9	28.9	33.9	21.5	23.5
100	19.8	19.8	44.3	50.3	42.3	48.3	27.8	32.8	24.8	29.8	20.1	22.1
155	25.2	25.2	41.4	47.4	39.4	45.4	24.0	29.0	21.0	26.0	18.8	20.8
200	29.0	29.0	39.8	45.8	37.8	43.8	21.8	26.8	18.8	23.8	18.0	20.0
250	32.8	32.8	38.3	44.3	36.3	42.3	19.8	24.8	16.8	21.8	17.3	19.3
300	-	36.4	-	43.1	-	41.1	-	23.3	-	20.3	-	18.8
350	-	39.8	-	42.1	-	40.1	-	21.9	-	18.9	-	18.3

### Selling information

It is recommended to use the LANmark Industry SF/UTP Category 6 LSZH+PE cable in conjunction with LANmark-6 connectors in order to achieve full class E 250MHz performance as a link. Please note that Nexans has a range of patch panels and outlets for installations in industrial areas.

						
Halogen free Yes	Lead free No	Flame retardant No	Operating temp. range -20 .. 60 °C	Ambient installation T° C range -10 .. 50 °C	Electro magnetic interference resistance Yes	RoHS conform Yes