

# Essential-6 U/UTP Cable

Essential-6 U/UTP AWG24 Cat 6 LSZH Eca Orange 305m box

## Contact

LAN Systems (Nexans Cabling Solutions)  
Phone: +44 (0)1256 486640  
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Nexans ref.: [N100.161-OE](#)

- Unshielded construction
- Complies to latest Category 6 standards
- Central cross maintains geometry and performance
- Supports Class E applications up to 250 MHz.

## DESCRIPTION

### Application

The Nexans Essential-6 cables are manufactured and tested to the latest Category 6 specifications. They are compatible with the complete Essential-6 modular and PCB connectivity range. When the cable is installed in conjunction with Essential-6 outlets and patch panels, a 25 year Class E Link Certificate can be obtained from the Nexans website.

### Design

The Essential-6 cables have 24 AWG solid copper wires and comply with IEC 60228. The PE central cross filler keeps the pairs in place and reduces the risks of losing performance when bending the cable. The cables are available with a Light Grey PVC or an Orange LSZH outer jacket.

### Performance

Nexans Essential-6 cables are compliant with the requirements of the International, European and American cable standards, including ISO/IEC 11801, IEC 61156-5, EN 50173, EN 50288 and TIA/EIA 568-C.2.

### Installation

The Essential-6 cables are as easy to install as their Category 5e equivalent, due to their small nominal outer diameter.

To support the correct set-up of hand held analysers for installation testing, the actual cable NVP value is given in the cable's print legend.



**essential-6**

## DECLARATION OF PERFORMANCE

Reaction to fire: E<sub>ca</sub>  
according to EN50575:2014  
+A1:2016

## STANDARDS

**International** ISO/IEC 11801

**National** ANSI/TIA-568-C.2



Reaction to fire  
E<sub>ca</sub>



Ambient installation T°  
C range  
-10 .. 60 °C



Operating temp.  
-20 .. 60 °C



Flame retardant  
IEC 60332-1



Smoke density  
IEC 61034



Gases toxicity  
IEC 60754



Gases corrosivity  
IEC 60754

All drawings, designs, specifications, plans and particulars of weights, size and dimensions contained in the technical or commercial documentation of Nexans is indicative only and shall not be binding on Nexans or be treated as constituting a representation on the part of Nexans.

Generated 27/09/17 [www.nexans.co.uk](http://www.nexans.co.uk) Page 1 / 3

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## CHARACTERISTICS

### Construction characteristics

Type of cable	U/UTP
Screen	Aluminium foil
Outer sheath	LSZH
Colour	Orange

### Dimensional characteristics

Diameter over insulation	0.97 mm
Conductor cross-section (AWG)	24
Nominal outer diameter	5.9 mm
Approximate weight	38.5 kg/km

### Electrical characteristics

Characteristic impedance	100 Ohm
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### Transmission characteristics

Attenuation Crosstalk Ratio, 250MHz	5.5 dB/100m
Nominal Velocity of Propagation (NVP)	69 %
Propagation delay, max. 100 MHz	536 ns/100m
Skew	30 ns/100m

### Usage characteristics

Category	Cat. 6
Range	essential-6
Minimum Bend Radius - During Installation (under Tension)	48 mm
Minimum Bend Radius - Installed	24 mm
Ambient installation temperature, range	-10 .. 60 °C
Operating temperature, range	-20 .. 60 °C
Flame retardant	IEC 60332-1
Smoke density	IEC 61034
Gases toxicity	IEC 60754
Gases corrosivity	IEC 60754
Packaging	Box 305m
Field of application	Indoor

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## CHANNEL PERFORMANCE

Values given for 2-connector channel, built with Essential-6 cable, outlet and patch panel. (Values specified at 20°C)

Frequency MHz	Insertion Loss dB/100m	NEXT PP dB	PS NEXT dB	ACR dB/100m	PS ACR dB/100m	ELFEXT dB/100m	PSELFEXT dB/100m	Return Loss dB
1	4.0	65.0	62.0	65.0	62.0	63.3	60.3	19.0
4	4.2	63.0	60.5	58.9	56.4	51.2	48.2	19.0
10	6.6	56.6	54.0	50.0	47.4	43.3	40.3	19.0
16	8.3	53.2	50.6	44.9	42.3	39.2	36.2	18.0
20	9.3	51.6	49.0	42.3	39.7	37.2	34.2	17.5
31.25	11.7	48.4	45.7	36.7	34.0	33.4	30.4	16.5
62.5	16.9	43.4	40.6	26.5	23.7	27.3	24.3	14.0
100	21.7	39.9	37.1	18.2	15.4	23.3	20.3	12.0
155	27.6	36.7	33.8	9.1	6.2	19.5	16.5	10.1
200	31.7	34.8	31.9	3.1	0.1	17.2	14.2	9.0
250	35.9	33.1	30.2	-2.8	-5.8	15.3	12.3	8.0