

# TECHNICAL DATA

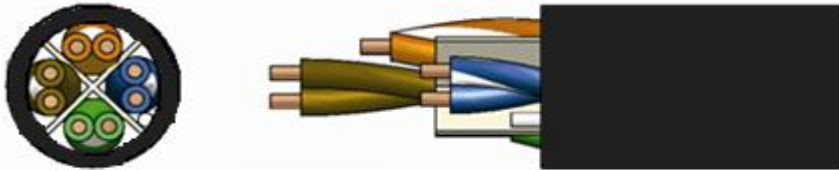
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<b>Category 6</b>	<b>4 X 23AWG – 250MHz U-UTP LSZH Cable</b>	
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**A - APPLICATION :**

For horizontal network and voice application in a structured cabling system , including IEEE802.3 1000 Base-T, 100 Base-Tx, 10 Base-T, 1000 Base-Tx (ANSI/TIA/EIA-854-2001), 155Mb/s ATM, 4/16 Mb/s Token ring etc..

**B – CONSTRUCTION :**



Solid bare copper conductors insulated with polyolefin. Two insulated conductors twisted together to form a pair and four such pairs cabled to form the basic unit. A cross filler is cabled in between to separate the 4 pairs insulated conductors Overall jacket with FR-LSZH compound.

**C - REFERENCE STANDARDS :**

IEC 61156-5 edit 2.0  
TIA-568-C.2 Cat.6

**D - CERTIFICATION : CPR B2CA**

**E - CABLE DESCRIPTION :**

<b><u>1 – CONDUCTOR</u></b>	
<b>Size</b>	23AWG
<b>Type</b>	Solid bare copper
<b>Diameter (mm)</b>	0.55± 0.01
<b><u>2 – INSULATION</u></b>	
<b>Type</b>	PE
<b>Diameter (mm)</b>	0.973± 0.05
<b>Min. thickness (mm)</b>	0.186

<b>Design :</b>	<b>Checked :</b>	<b>Approved :</b>	<b>App. Date :</b> 2017/08
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E. CABLE DESCRIPTION :		
<b>3 – PAIRS</b>	<b>Color code</b>	
	<b>Pair 1 -</b>	Blue / White – blue strip
	<b>Pair 2 -</b>	Orange / White – orange strip
	<b>Pair 3 -</b>	Green / White – green strip
	<b>Pair 4 -</b>	Brown / White – brown strip
<b>4 – CENTRAL ELEMENT</b>		
	<b>Type</b>	LSZH cross separator
<b>5 – JACKET</b>		
	<b>Type</b>	FR-LSZH
	<b>Overall Diameter (mm)</b>	6.46 ± 0.3
F. TECHNICAL DATA – PHYSICAL :		
<b>1. CPR Class</b>	B2ca-s1a,d1,a1	
<b>2. Cold bend test</b>	-20 ± 2°C X 4hrs no. crack	
<b>3. Dielectric strength</b>	AC 1.7 KV for 2S.	
<b>4. Insulation</b>	<b>Before Aging</b>	<b>After aging</b>
<b>Min. Tension strength (psi)</b>	2400	75% before aging (100°C X 48hrs)
<b>Min elongation (%)</b>	300	75% before aging (100°C X 48hrs)
<b>5. Jacket</b>		
<b>Min. Tension strength (psi)</b>	1300	60% before aging (100°C X 168hrs)
<b>Min elongation (%)</b>	100	60% before aging (100°C X 168hrs)
<b>6. Min. bending radius (mm)</b>	52	
<b>7. Max. pulling tension (lbs)</b>	25	
<b>8. Installation temperature</b>	-10°C to +60°C	
<b>9. Operating temperature</b>	-10°C to +60°C	
G. PACKING :		
305 mt on a wooden drum overall wrapped over by PE film		

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H. TECHNICAL DATA - ELECTRICAL			
1. Conductor resistance ( $\Omega/100m @ 20^{\circ}C$ )	Max.	9.5	
2. DC resistance unbalance (%)	Max.	4	
3. Pair-to-ground capacitance unbalance (pF/km)	Max.	1600	
4. Delay skew (ns/100m)	Max.	45	$4 \leq f \leq 250MHz$
5. Insertion Loss (dB/100m)	Max.	$1.82*\sqrt{f} + 0.0169*f + 0.25/\sqrt{f}$	$1 \leq f \leq 250MHz$
6. Pair to Pair NEXT (dB/100m)	Min.	$75.3 - 15 * \log(f)$	$1 \leq f \leq 250MHz$
7. PowerSum pr-pr NEXT (dB/100m)	Min.	$72.3 - 15 * \log(f)$	$1 \leq f \leq 250MHz$
8. ELFEXT (dB/100m)	Min.	$68 - 20 * \log(f)$	$1 \leq f \leq 250MHz$
9. PowerSum ELFEXT (dB/100m)	Min.	$65 - 20 * \log(f)$	$1 \leq f \leq 250MHz$
10. Return Loss (dB)	Min.	$20 + 5 * \log(f)$	$1 \leq f < 10MHz$
		25	$10 \leq f < 20MHz$
		$25 - 7 * \log(f / 20)$	$20 \leq f \leq 250MHz$
11. Propagation Delay (ns/100m)	Max.	$534 + 36 / \sqrt{f}$	$1 \leq f \leq 250MHz$
12. Input Impedance ( $\Omega$ )		$100 \pm 15\%$	$1 \leq f \leq 100MHz$
		$100 \pm 22\%$	$100 < f \leq 250MHz$

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IEC 61156-5 ed2.0 Category 6 horizontal cable parameters							
Freq. (MHz)	Ins. Loss (dB/100m)	RL (dB)	Pair to Pair		Power Sum		Po. Delay (ns/100)
			NEXT	ELFEXT	NEXT	ELFEXT	
			(dB/100m)		(dB/100m)		
	Max.	Min.	Min.	Min.	Min.	Min.	Max.
1	2.1	20	75.0	68.0	72.3	65.0	570.0
4	3.8	23	66.3	56.0	63.3	53.0	552.0
10	6.0	25	60.3	48.0	57.3	45.0	545.4
16	7.6	25	57.2	43.9	54.2	40.9	543.0
20	8.5	25	55.8	42.0	52.8	39.0	542.0
31.25	10.7	23.6	52.9	38.1	49.9	35.1	540.4
62.5	15.5	21.5	48.4	32.1	45.4	29.1	538.6
100	19.9	20.1	45.3	28.0	42.3	25.0	537.6
200	29.1	18	40.8	22.0	37.8	19.0	536.5
250	33.0	17.3	39.3	20.0	36.3	17.0	536.3

Note1: All tests include 401 points swept frequency measurements.

Note2: All electrical characteristics are given at 20°C

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