

<i>Parameter</i>	<i>Specification</i>	<i>Unit</i>
<b>General</b>		
Edition	1	
Date	July 1, 2004	
Standards	ISO/IEC 11801 2nd edition September 2002 EN 50173-1 November 2002	
<b>Cable construction</b>		
Conductor		
Material	Solid bare copper ETP	
Diameter	AWG 24	
Insulation		
Material	Polyethylene	
Diameter over insulated conductor	1.15 ± 0.05	mm
Pair		
Pair	2 twisted insulated conductors	
Number of pairs	4, all twisted together	
Colour code pair 1	White / Blue & Blue	
Colour code pair 2	White / Orange & Orange	
Colour code pair 3	White / Green & Green	
Colour code pair 4	White / Brown & Brown	
Spline		
Material	Polyethylene	
Insulating foil		
Material	Polyester	
Width	25	mm
Shielding foil		
Material	Laminated Aluminium / Polyester	
Width	23	mm
Binder		
Material	Polypropylene	
Width	3	mm
Drain wire		
Material	Solid tinned copper	
Diameter	AWG 26	
Sheath		
Material	FRNC	
Diameter	7.3 ± 0.3	mm
Colour	Grey, blue	

<i>Parameter</i>	<i>Specification</i>	<i>Unit</i>
Standard text	BELDEN 7860ENH FTP CAT6 4PR AWG24 LSNH ISO/IEC 11801 EN50173 VERIFIED 100 OHM	
Length indication	Yes, in meter	
<b>Electrical characteristics</b>		
Low frequency and D.C.		
D.C. resistance conductor	< 93.8	Ω/km
D.C. loop resistance conductor	< 19.0	Ω/100m
Resistance unbalance	< 2.0	%
D.C. insulation resistance	≥ 5000	MΩ.km
Dielectric strength cond. – cond. (2 sec)	2.5	kV D.C.
Dielectric strength cond – screen (2 sec)	2.5	kV D.C.
Mutual capacitance	< 56	nF/km
Capacitance unbalance	< 1600	pF/km
High frequency		
Velocity of propagation		
@ 4 – 250 MHz	≥ 0.6	c
Skew		
@ 4 – 250 MHz	≤ 40	ns/100m
Propagation delay		
@ 1 – 250 MHz	≤ 534 + 36/Vf	ns/100m
Longitudinal attenuation		
@ 4 – 250 MHz	≤ 1.820*Vf+0.0169*f+0.25/Vf	dB
Transverse Conversion Loss (TCL)		
@ 1 – 250 MHz	> 40 – 10*log (f)	dB
Equal Level Transverse Conversion Loss (ELTCL)		
@ 1 – 30 MHz	> 35 – 20*log (f)	dB
Near end cross talk (NEXT)		
@ 1 – 250 MHz	≥ 75.3-15*log(f)	dB
Power sum near end cross talk (PSNEXT)		
@ 1 – 250 MHz	≥ 72.3-15*log(f)	dB
Equal level far end cross talk (ELFEXT)		
@ 1 – 250 MHz	≥ 70.0-20*log(f)	dB
Power sum equal level far end cross talk (PSELFEXT)		
@ 1 – 250 MHz	≥ 67.0-20*log(f)	dB
Attenuation cross talk ratio (ACR)		
@ 4 – 250 MHz	≥ 75.3-15*log(f)-(1.820*Vf+0.0169*f+0.25/Vf)	dB
Power sum attenuation cross talk ratio (PSACR)		
@ 4 – 250 MHz	≥ 72.3-15*log(f)-(1.82*Vf+0.0169*f+0.25/Vf)	dB
Input Impedance open / short (Zo/s)		

<i>Parameter</i>	<i>Specification</i>	<i>Unit</i>
@ 4 – 100 MHz	100 ± 15	Ω
@ 100 – 250 MHz	100 ± 22	Ω
Mean characteristic impedance (Z <sub>cm</sub> )		
@ 100 MHz	100 ± 5	Ω
Return Loss (RL)		
@ 4 ≤ f ≤ 10 MHz	≥ 20 + 5 log (f)	dB
@ 10 ≤ f ≤ 20 MHz	≥ 25	dB
@ 20 ≤ f ≤ 250 MHz	≥ 25 – 7 log (f/20)	dB
Coupling Attenuation		
@ 30 – 100 MHz	> 55	dB
@ 100 – 250 MHz	> 55 – 20*log (f/100)	dB
Transfer Impedance (Z <sub>T</sub> )		
@ 1 MHz	< 50	mΩ/m
@ 10 MHz	< 100	mΩ/m
@ 30 MHz	< 200	mΩ/m
@ 100 MHz	< 1000	mΩ/m

#### **Mechanical characteristics**

Elongation at break of the conductors	≥ 10	%
Minimum elongation at break of the insulation	≥ 100	%
Minimum elongation at break of the sheath	≥ 100	%
Tensile strength of sheath	≥ 9	Mpa

#### **Environmental and overall characteristics**

Total cable weight	52	kg/km
Maximum operating voltage	450	V D.C.
	300	V A.C.
Maximum continuous current per conductor (@25°C)	1.9	A
Maximum bending radius	50	mm
Maximum pulling strength	80	N
Flame propagation	According to IEC 60332-1	
Burning load	834	kJ/m