

### Application

- Horizontal and building backbone cable.
- Support current and future **Category 6 and Category 5 enhanced** applications, such as: 10 Base-T, 100 Base-T, 1000 Base-T (*Gigabit Ethernet*), FDDI, ATM

### Standards

General standards: **ISO/IEC 11801, EN 50173, TIA/EIA 568-A-5 (enhanced)**  
Future standards like: JTC1 SC25 WG3 N568 and prEN 50288-3-1

### Construction & Dimensions

- Construction: Unshielded 4 twisted pairs
- Conductor: solid bare copper
- Conductor diameter: AWG 23 (0,57 mm)
- Conductor insulation material: Polyethylene (PE)
- Diameter over insulation: 1,05 mm ± 0.05 mm
- Jacket material: Flame retardant PVC
- Outer diameter: 6,50 mm ± 0.30 mm



#### Colour code

- Pair 1 White-Blue/Blue
- Pair 2 White-Orange/Orange
- Pair 3 White-Green/Green
- Pair 4 White-Brown/Brown

### Electrical characteristics (at 20 °C)

#### Attenuation

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Max.) <sup>1)</sup>	2.1	3.8	6.0	7.6	8.5	10.8	15.5	19.9	25.3	29.2	33	dB/ 100m
Typical	1.8	3.5	5.7	7.3	8.2	10.4	15.1	19.4	24.3	27.5	30.8	dB/ 100m

#### NEXT (Near end crosstalk)

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Min.) <sup>1)</sup>	74	65	59	56	55	52	47	44	41	40	38	dB/ 100m
Typical	80	76	70	67	66	63	58	55	51	49	45	dB/ 100m

#### Power sum NEXT

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Min.) <sup>1)</sup>	71	62	56	53	52	49	44	41	38	37	35	dB/ 100m
Typical	78	74	68	65	64	61	56	53	49	47	43	dB/ 100m

#### Power sum ELFEXT

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Min.) <sup>2)</sup>	53.0	53.0	45.0	40.9	39.0	35.1	29.1	25.0	21.2	19.0	17.1	dB/ 100m
Typical	70	63	57	51	49	45	39	35	31	29	27	dB/ 100m

#### ACR

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Min.) <sup>1)</sup>	71.9	61.2	53.0	48.4	46.5	41.2	31.5	24.1	15.7	10.8	5.0	dB/ 100m
Typical	78.2	72.5	64.3	59.7	57.8	52.6	42.9	35.6	26.7	21.5	14.2	dB/ 100m

#### Power sum ACR

Frequency	1	4	10	16	20	31.2	62.5	100	155	200	250	MHz
Spec. (Min.) <sup>1)</sup>	68.9	58.2	50.0	45.4	43.5	38.2	28.5	21.1	12.7	7.8	2.0	dB/ 100m
Typical	76.2	70.5	62.3	57.7	55.8	50.6	40.9	33.6	24.7	19.5	12.2	dB/ 100m

<sup>1)</sup>: Specification values according to cable requirements of ISO/IEC 11801 category 6

<sup>2)</sup>: Specification values according to cable requirements of ANSI/TIA/EIA-568-A-5 (enhanced)



**Electrical characteristics (at 20 °C)**

Nominal mutual capacitance at 1 kHz	80 nF/km
Maximum conductor DCR	77 Ohm/km
NVP - Nominal Velocity of Propagation	0.70 c
SKEW – Propagation delay difference (100 MHz)	typical ≤ 15 ns/100m
Impedance 1-100 MHz	100 ± 15 Ohm
Impedance 100 -250 MHz	100 ± 18 Ohm

**General and environmental characteristics**

Temperature range - operation	-20°C - +60°C
Temperature range - installation	+0°C - +50°C
Minimum bending radius - operation	26 mm
Minimum bending radius - installation	52 mm
Maximum pulling tension	80 N
Flame retardancy	IEC 332-1
Energy of flame	775 kJ/m
Weight (approx.)	43 kg/km
Maximum operating voltage	48 V rms
Maximum continuous current per conductor (25°C)	1.4 A

**Ordering information**

**MARKING**

Text on the cable jacket      Inkjet printing

**BELDEN 7812E UTP CAT6 4PR AWG23 ISO/IEC 11801 EN50173 VERIFIED 100 OHM**

Meter marking:                      Yes  
Production date marking:        Yes

**JACKET COLOUR**

Colour	RAL code	Belden colour code
Grey	RAL 7032	3136
Blue	RAL 5015	3135

**PACKAGING (PUT UP)**

Belden code	Delivery length	Weight	Remark
46078 xxxx 179	305 m	13 kg	Unreel box
46078 xxxx 079	305 m	13 kg	Non returnable reel
46078 xxxx 240	500 m	23 kg	Non returnable reel
46078 xxxx 241	1000 m	43 kg	Non returnable reel

xxxx: Belden colour code