



**Product:** [IOP6AF](#)

Category 6A Indoor/Outdoor Cable, 4 Pair, F/UTP, CMP/CMX, Gel Free

### Product Description

Category 6A Premise Horizontal Cable, Indoor/Outdoor, 4 Pair, 23 AWG Solid Bare Copper Conductors, F/UTP - Foil Shielded, Plenum-CMP/CMX Outdoor, Gel Free

### Technical Specifications

#### Product Overview

Suitable Applications:	Indoor/Outdoor, Premise Horizontal Cable, Ethernet up to 10GBASE-T, Wi-Fi 6, Wi-Fi 5, PoE++, PoE+, PoE, Noisy Environments, HDBaseT, IP Cameras, Wet Locations following Product Notes
Patent:	This product has one or more applicable patents. More information on patents can be found at <a href="https://www.belden.com/patents">https://www.belden.com/patents</a> .

#### Construction Details

##### Conductor

Size	Stranding	Material	No. of Pairs
23	Solid	BC - Bare Copper	4

##### Insulation

Material	Color Code
FEP - Fluorinated Ethylene Propylene	White & Blue, White & Orange, White & Green, White & Brown

##### Outer Shield

Shield Type	Material	Coverage	Drainwire Type
Tape	Bi-Laminate (Alum+Poly)	100%	26 AWG (7x34) TC

##### Outer Jacket

Separator	Material	Nom. Diameter	Ripcord
Center Member (Patented X-Spline®)	PVDF - Polyvinylidene Fluoride	0.27 in (6.9 mm)	Yes

Overall Cable Diameter (Nominal): 0.27 in (6.9 mm)

#### Electrical Characteristics

##### Electricals

Max. Conductor DCR	Max. Capacitance Unbalance
82 Ohm/km (25 Ohm/1000ft)	45 pF/100m

##### Delay

Frequency	Max. Delay	Max. Delay Skew	Nom. Velocity of Prop.
100 MHz	537.6 ns/100m	45 ns/100m	70%

##### High Frequency

Frequency [MHz]	Max. Insertion Loss (Attenuation) [dB/100m]	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. ACR [dB]	Min. PSACR [dB]	Min. ACRF (ELFEXT) [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]	Max./Min. Input Impedance (unFitted)	Max./Min. Fitted Impedance	Min. PSANEXT [dB]	Min. PSAACRF [dB]	Min. TCL [dB]	Min. ELTCTL [dB]
1	2.1	74.3	72.3	72.2	70.2	67.8	64.8	20.0	105 +/- 10	115 +/- 15	67.0	67.0	40.0	35.0
4	3.8	65.3	63.3	61.5	59.5	55.8	52.8	23.0	105 +/- 10	100 +/- 7	67.0	66.2	40.0	23.0

8	5.3	60.8	58.8	55.4	53.4	49.7	46.7	24.5	100 +/- 22	100 +/- 7	67.0	60.1	40.0	16.9
10	5.9	59.3	57.3	53.4	51.4	47.8	44.8	25.0	100 +/- 22	100 +/- 7	67.0	58.2	40.0	15.0
16	7.5	56.2	54.2	48.8	46.8	43.7	40.7	25.0	100 +/- 22	100 +/- 7	67.0	54.1	38.0	10.9
20	8.4	54.8	52.8	46.4	44.4	41.8	38.8	25.0	100 +/- 22	100 +/- 7	67.0	52.2	37.0	9.0
25	9.4	53.3	51.3	44.0	42.0	39.8	36.8	24.3	100 +/- 22	100 +/- 7	67.0	50.2	36.0	7.0
31.25	10.5	51.9	49.9	41.4	39.4	37.9	34.9	23.6	100 +/- 22	100 +/- 7	67.0	48.3	35.1	5.1
62.5	15.0	47.4	45.4	32.4	30.4	31.9	28.9	21.5	100 +/- 22	100 +/- 7	65.6	42.3	32.0	
100	19.1	44.3	42.3	25.2	23.2	27.8	24.8	20.1	100 +/- 22	100 +/- 7	62.5	38.2	30.0	
200	27.6	39.8	37.8	12.2	10.2	21.8	18.8	18.0	100 +/- 22	100 +/- 7	58.0	32.2	27.0	
250	31.1	38.3	36.3	7.3	5.3	19.8	16.8	17.3	100 +/- 32	100 +/- 7	56.5	30.2	26.0	
300	34.3	37.1	35.1	2.9	0.9	18.3	15.3	16.8	100 +/- 32	100 +/- 7	55.3	28.7	25.2	
350	37.2	36.1	34.1			16.9	13.9	16.3	100 +/- 32	100 +/- 7	54.3	27.3	24.6	
400	40.1	35.3	33.3			15.8	12.8	15.9	100 +/- 32	100 +/- 7	53.5	26.2	24.0	
450	42.7	34.5	32.5			14.7	11.7	15.5	100 +/- 32	100 +/- 7	52.7	25.1	23.5	
500	45.3	33.8	31.8			13.8	10.8	15.2	100 +/- 32	100 +/- 7	52.0	24.2	23.0	

#### Voltage

<b>UL Voltage Rating</b>
300 V (CMP), 300 V (CL3P)

#### Mechanical Characteristics

##### Temperature

UL Temperature	Operating	Installation	Storage
150C	-40°C To +75°C	0°C To +60°C	-40°C To +75°C

##### Bend Radius

<b>Installation Min.</b>
2.7 in (69 mm)

Max. Pull Tension: 25 lbs (11 kg)

Bulk Cable Weight: 39 lbs/1000ft (58 kg/km)

#### Standards and Compliance

Environmental Suitability:	Indoor/Outdoor, Water Exposure/Below-Grade Conduit, Indoor, Outdoor, Sunlight Resistance
Flammability / Reaction to Fire:	NFPA 262, UL 910 (Plenum), FT6
NEC / UL Compliance:	Article 800, CMP
IEEE Compliance:	IEEE 802.3bt Type 1, Type 2, Type 3, Type 4
Data Category:	Category 6A
TIA/EIA Compliance:	ANSI/TIA-568.2-D Category 6A
ISO/IEC Compliance:	11801 ed 2.2 (2011) Class EA
CENELEC Compliance:	Segregation class according EN50174-2 = a
European Directive Compliance:	REACH

#### Product Notes

Notes:	Electrical values are expected performance based on cable testing and representative performance within a typical Belden system. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0. Not Suitable for Direct Burial. Cable jacket system is specially designed to protect cable core. Cable contains no water-blocking tapes, gels, or powders. Install in accordance with all applicable electrical codes. Maintain jacket integrity throughout installation process. Do not allow water or fluids to penetrate jacket sheath or to enter ends of cable. Ensure ends of cable will be protected from water/fluids after installation.
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#### History

Update and Revision:	Revision Number: 0.33 Revision Date: 12-12-2023
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#### Part Numbers

##### Variants

Item #	Color	Putup Type	Length
IOP6AF 0101000	Black	Reel	1,000 ft

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