

## 2147A Multi-Conductor - Category 6A Indoor/Outdoor OSP/CM-LS U/UTP LSZH Cable



For more Information  
please call

1-800-Belden1



### General Description:

CAT6A (500 MHz), 4 Pair, U/UTP-Unshielded, Indoor/Outdoor OSP/CM-LS, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented X-Spline, Gel-Filled, Haloarrest® LSZH Inner Jacket, Overall EquiBlock™ Technology, Ripcord, UV-Resistant Flame Retardant Haloarrest® LSZH Outer Jacket

### Usage (Overall)

**Suitable Applications:**

OSP, Outside Plant, Outdoor, 10 Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio, AES51, RS-422, Noisy Environments, PoE, PoE+

### Physical Characteristics (Overall)

#### Conductor

**AWG:**

# Pairs	AWG	Stranding	Conductor Material
4	23	Solid	BC - Bare Copper

**Total Number of Conductors:** 8

#### Insulation

**Insulation Material:**

Insulation Material
Polyolefin

#### Inner Shield

**Inner Shield Material:**

Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)	Dia. (mm)
EquiBlock(TM) Technology	Tri-Laminate	polyester/foil/polyester	100.000	6.858

#### Inner Jacket

**Inner Jacket Material:**

Inner Jacket Material
Haloarrest(R) LSZH

**Inner Jacket Ripcord:** Yes

#### Outer Jacket

**Outer Jacket Material:**

Outer Jacket Material
Haloarrest(R) LSZH

**Outer Jacket Diameter:**

Nom. Dia. (mm)
9.144

**Outer Jacket Ripcord:** Yes

#### Overall Cable

**Overall Cabling Separator Material:** Patented X-Spline Center Member

#### Pair

**Pair Color Code Chart:**

Number	Color

## 2147A Multi-Conductor - Category 6A Indoor/Outdoor OSP/CM-LS U/UTP LSZH Cable

1	White/Blue Stripe & Blue
2	White/Orange Stripe & Orange
3	White/Green Stripe & Green
4	White/Brown Stripe & Brown

**Mechanical Characteristics (Overall)**

Storage Temperature Range:	-40°C To +75°C
Installation Temperature Range:	-20°C To +75°C
Operating Temperature Range:	-20°C To +75°C
UL Temperature Rating:	75C
Bulk Cable Weight:	98.221 Kg/Km
Max. Recommended Pulling Tension:	200.169 N
Min. Bend Radius/Minor Axis:	76.200 mm
Min. Bend/Installation:	95.250 mm

**Applicable Specifications and Agency Compliance (Overall)****Applicable Standards & Environmental Programs**

NEC/(UL) Specification:	CM-LS
CEC/C(UL) Specification:	CM-LS
EU Directive 2011/65/EU (ROHS II):	Yes
IEEE Specification:	POE per 802.3af & POE+ per 802.3at-2009
Other Standards:	ISO/IEC 11801 ed 2 Amendment 2:2010 Class EA
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	03/07/2011
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes
Telecommunications Standards:	Category 6A - TIA 568.C.2
ANSI Specification:	ANSI/TIA 568-C.2 Category 6A, ANSI/ICEA S-116-732-2013 Category 6A
Other Specification:	ANSI/ICEA S-56-434 Outdoor Use and ANSI/ICEA S-99-689 Broadband Outdoor Use

**Applicable Patents:**

Country
<a href="http://www.belden.com/p">www.belden.com/p</a>

**Flame Test**

UL Flame Test:	UL1581 Vertical Tray
C(UL) Flame Test:	Limited Smoke
IEC Flame Test:	60332-1

**Suitability**

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes
Suitability - Aerial:	Yes - When supported by messenger wire
Suitability - Burial:	Yes

METRIC MEASUREMENT VERSION

## 2147A Multi-Conductor - Category 6A Indoor/Outdoor OSP/CM-LS U/UTP LSZH Cable

Sunlight Resistance: Yes

Oil Resistance: No

Non-halogenated: Yes

### Plenum/Non-Plenum

Plenum (Y/N): No

Plenum Number: 10GXS13 / 10GXS33

Non-Plenum Number: 10GXS12 / 10GXS32

### Electrical Characteristics (Overall)

#### Nom. Mutual Capacitance:

Capacitance (pF/m)

55.777

Maximum Capacitance Unbalance (pF/100 m): 90

#### Nominal Velocity of Propagation:

VP (%)

64.000

#### Maximum Delay:

Delay (ns/100 m)

538 @ 100MHz

#### Max. Delay Skew:

Delay Skew (ns/100 m)

45.000

#### Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)

8.200

#### Max. Operating Voltage - UL:

Voltage

300 V RMS

#### Maximum DCR Unbalanced:

DCR Unbalance @ 20°C (%)

3.000

### Electrical Characteristics-Premise (Overall)

#### Premise Cable Electrical Table 1:

Freq. (MHz)	Max. Attenuation (dB/100 m)	Min. PSNEXT (dB)	Min. PSACR (dB)	Min RL (dB)
1	2.100	72.3	70.2	20.000
4	3.800	63.3	59.5	23.000
8	5.300	58.8	53.4	24.500
10	5.900	57.3	51.4	25.000
16	7.500	54.2	46.8	25.000
20	8.400	52.8	44.5	25.000
25	9.400	51.3	42.0	24.300
31.25	10.500	49.9	39.4	23.600
62.5	15.000	45.4	30.4	21.500
100	19.100	43.3	23.2	20.100
200	27.600	37.8	10.2	18.700
250	31.100	37.3	5.3	18.000
300	34.300	35.1	0.9	17.500
350	37.200	34.1	N/A	17.000
400	40.100	33.3	N/A	16.600
450	42.700	32.5	N/A	16.200
500	45.300	31.8	N/A	15.900

#### Premise Cable Electrical Table 2:

## METRIC MEASUREMENT VERSION

### 2147A Multi-Conductor - Category 6A Indoor/Outdoor OSP/CM-LS U/UTP LSZH Cable

Freq. (MHz)	Input (Unfitted) Imp. (Ohms)	Fitted Impedance	Min. ACRF (dB)	Min. PSACRF (dB)
1	100 ± 5	105 ± 15	67.8	64.8
4	100 ± 5	100 ± 07	55.8	52.8
8	100 ± 22	100 ± 07	49.7	46.7
10	100 ± 22	100 ± 07	47.8	44.8
16	100 ± 22	100 ± 07	43.7	40.7
20	100 ± 22	100 ± 07	41.8	38.8
25	100 ± 22	100 ± 07	39.8	36.8
31.25	100 ± 22	100 ± 07	37.9	34.9
62.5	100 ± 22	100 ± 07	31.9	28.9
100	100 ± 22	100 ± 07	27.8	24.8
200	100 ± 22	100 ± 07	21.8	18.8
250	100 ± 32	100 ± 07	19.8	16.8
300	100 ± 32	100 ± 07	18.3	14.3
350	100 ± 32	100 ± 07	16.9	13.9
400	100 ± 32	100 ± 07	15.8	12.8
450	100 ± 32	100 ± 07	14.7	11.7
500	100 ± 32	100 ± 07	13.8	10.8

Premise Cable Electrical Table 4:

Frequency (MHz)	Min. PSANEXT (dB)	Min. PSAACRF (dB)	Min. TCL (dB)	Min. ELTCTL (dB)
1.000	67.000	67.000	40.000	35.000
4.000	67.000	66.200	40.000	23.000
8.000	67.000	60.100	40.000	16.900
10.000	67.000	58.200	40.000	15.000
16.000	67.000	54.100	38.000	10.900
20.000	67.000	52.200	37.000	9.000
25.000	67.000	50.200	36.000	7.000
31.250	67.000	48.300	35.100	5.100
62.500	65.600	42.300	32.000	
100.000	62.500	38.200	30.000	
200.000	59.600	32.200	27.000	
250.000	58.000	30.200	26.000	
300.000	55.300	28.700	25.300	
350.000	54.300	27.300	24.600	
400.000	53.500	26.200	24.000	
450.000	52.700	25.100	23.500	
500.000	52.000	24.200	23.000	

### Notes (Overall)

**Notes:** Third party channel verified to and meets component requirements of TIA/EIA-568-C.2 Category 6A, Print includes descending footage/meter marking, -20C Cold Bend Compliance Per UL1581, Reference T/8-6 for Burial, T/8-36 for Sag and Span Aerial Water Penetration per GR 421-CORE para. 4.3.5.1, per ANSI/ICEA S-107-704 Para. 8.2.1 and ANSI/ICEA S-99-689

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
2147A 0101000	1,000 FT	72.000 LB	BLACK		CAT6A 4PR U/UTP OSP-CM REEL

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