Part Number: BE43887

ECE R118 Approved Ethernet Cat 7 10Gb/s



Product Description

ECE R118 Approved Ethernet Cat 7, 10Gb/s, 4 Pair, AWG 23(1), Solid, Foil+ 30% Braid, No Halogen jacket, Approved for Bus and Coach Applications

Technical Specifications

Product Overview

Environmental Space:	Indoor

Physical Characteristics (Overall)

Conductor

Element	AWG	Stranding	Material	No. of Pairs
Individual shielded pair	23	Solid	BC - Bare Copper	4

Conductor Count:	8
Total Number of Pairs:	4
Conductor Size:	23 AWG

Insulation

Element	Type	Material	Nominal Diameter
Individual shielded pair	Dielectric	FPE - Foamed Polyethylene	1.45 mm

Bonded-Pair:	No

Color Chart

Number	Color
Pair 1	White & Blue
Pair 2	White & Orange
Pair 3	White & Green
Pair 4	White & Brown

Inner Shield Material

Element	Type	Material	Coverage [%]
Individual shielded pair	Tape	Aluminum / Polyester	100 %

InnerShield, Table Note:	Aluminum facing outside

Outer Shield Material

Type	Material	Min. Coverage [%]
Braid	TC - Tinned Copper	30 %

Outer Jacket Material

Material	Nominal Diameter	Diameter +/- Tolerance	Ripcord
LSZH / FRNC	7.0 mm	0.3 mm	Yes

Construction and Dimensions

Min Elongation at Breakof Conductors:	10 %
Min Elongation at Breakof Insulation:	100 %

Cabling

Description
4 shielded pairs twisted together

Min Elongation at Breakof Jacket:	100 %
Min Tensile Strength of Jacket:	9 MPa

Electrical Characteristics

Conductor DCR

Max. Conductor DCR	Max DCR Unbalanced Between Pairs [%]	Max. DCR Unbalanced Within Pair [%]
95 Ohm/km	4 %	2 Ohm

Capacitance

Max. Capacitance Unbalance	Max. Mutual Capacitance
1,600 pF/m	56 pF/m

Impedance

Nominal Characteristic Impedance
100 Ohm

High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss	Nom. NEXT [dB]	Nom. PSNEXT [dB]	Nom. ACR [dB]	Nom. PSACR [dB]	Nom. ACRF (ELFEXT) [dB]	Nom. PSACRF (PSELFEXT) [dB]
1 MHz	1.8 dB/100m	103 dB	100 dB	101 dB	98 dB	95 dB	92 dB
4 MHz	3.4 dB/100m	100 dB	97 dB	97 dB	94 dB	94 dB	91 dB
10 MHz	5.5 dB/100m	98 dB	95 dB	92 dB	89 dB	93 dB	92 dB
16 MHz	6.9 dB/100m	97 dB	94 dB	90 dB	87 dB	91 dB	88 dB
31.2 MHz	9.7 dB/100m	95 dB	92 dB	85 dB	82 dB	90 dB	87 dB
62.5 MHz	13.9 dB/100m	94 dB	91 dB	80 dB	77 dB	87 dB	84 dB
100 MHz	17.7 dB/100m	93 dB	90 dB	75 dB	72 dB	85 dB	82 dB
125 MHz	19.9 dB/100m	92 dB	89 dB	72 dB	69 dB	83 dB	80 dB
200 MHz	25.6 dB/100m	91 dB	88 dB	65 dB	64 dB	77 dB	74 dB
250 MHz	28.8 dB/100m	90 dB	87 dB	61 dB	58 dB	74 dB	71 dB
300 MHz	31.8 dB/100m	90 dB	87 dB	58 dB	55 dB	74 dB	71 dB
600 MHz	46.6 dB/100m	89 dB	86 dB	42 dB	39 dB	60 dB	57 dB
1000 MHz	62.2 dB/100m	88 dB	85 dB	26 dB	23 dB	50 dB	47 dB

Delay

Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
25 ns/100m	78 %

High Freq

Frequency [MHz]	Max. Insertion Loss (Attenuation)	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]	Min. TCL [dB]	Min. ELTCTL [dB]
1 MHz	2 dB/100m	78 dB	75 dB	76 dB	73 dB	78 dB	75 dB	20 dB	40 dB	35 dB
4 MHz	3.7 dB/100m	78 dB	75 dB	74.3 dB	71.3 dB	78 dB	75 dB	23 dB	34 dB	23 dB
10 MHz	5.9 dB/100m	78 dB	75 dB	72.1 dB	69.1 dB	75.3 dB	72.3 dB	25 dB	30 dB	15 dB
16 MHz	7.4 dB/100m	78 dB	75 dB	70.6 dB	67.6 dB	71.2 dB	68.2 dB	25 dB	28 dB	10.9 dB
31.2 MHz	10.4 dB/100m	78 dB	75 dB	67.6 dB	64.6 dB	65.4 dB	62.4 dB	23.6 dB	25.1 dB	5.1 dB
62.5 MHz	14.9 dB/100m	75.5 dB	72.5 dB	60.6 dB	57.6 dB	59.4 dB	56.4 dB	21.5 dB	22 dB	
100 MHz	19 dB/100m	72.4 dB	69.4 dB	53.4 dB	50.4 dB	55.3 dB	52.3 dB	20.1 dB	20 dB	
125 MHz	21.4 dB/100m	70.9 dB	67.9 dB	49.6 dB	46.6 dB	53.4 dB	50.4 dB	19.4 dB	19 dB	
200 MHz	27.5 dB/100m	67.9 dB	64.9 dB	40.4 dB	37.4 dB	49.3 dB	46.3 dB	18 dB	17 dB	
250 MHz	31 dB/100m	66.4 dB	63.4 dB	35.5 dB	32.5 dB	47.3 dB	44.3 dB	17.3 dB	16 dB	
300 MHz	34.2 dB/100m	65.2 dB	62.2 dB	31.1 dB	28.1 dB	45.8 dB	42.8 dB	17.3 dB		
600 MHz	50.1 dB/100m	60.7 dB	57.7 dB	10.6 dB	7.6 dB	39.7 dB	36.7 dB	17.3 dB		
1000 MHz	66.9 dB/100m	57.4 dB	54.4 dB			35.3 dB	32.3 dB	15.1 dB		

High Freq Table Note:	Limits below 4MHz are for information only; Values at 1000 MHz are for information only
Coupling Attenuation Class:	Type Ib
Segregation class according EN50174-2:	c

Transfer Impedance

Frequency [MHz]	Description	Transfer Impedance
1 Mhz	Grade 2	Max. 50 mOhm/m
10 Mhz		Max. 100 mOhm/m

30 Mhz		Max. 200 mOhm/m
100 Mhz		Max. 1000 mOhm/m

Current

Max. Recommended Current [A]
1.5 A

Voltage

Voltage Rating [V]
72 V

Temperature Range

Installation Temp Range:	0°C To +50°C
Operating Temp Range:	-30°C To +60°C

Mechanical Characteristics

Bulk Cable Weight:	52 kg/km
Max Recommended Pulling Tension:	85 N
Min Bend Radius During Installation:	58 mm
Min Bend Radius During Operation:	29 mm

Standards

ISO/IEC Compliance:	ISO/IEC 11801 Ed. 2.2:2002/A2:2010/C1:2011
CPR Euroclass:	Eca
CENELEC Compliance:	EN 50173-1 Ed. 3:2011
Data Category:	Category 7

Applicable Environmental and Other Programs

EU RoHS Compliance Date (yyyy-mm-dd):	2017-03-31

Flammability, LS0H, Toxicity Testing

ISO/IEC Flammability:	IEC 60332-1
Other Flammability:	ECE R118
Burning Load:	500 kJ/m
Amount of Halogen acc. to IEC 60754-1 & EN50267-1:	Zero

Part Number

Patent:	https://www.belden.com/resources/patents

© 2019 Belden, Inc

All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.