



Description:

Miniature, 23 AWG solid .023" bare copper conductors, solid copper, gas-injected foam HDPE insulation, Duofoil® + tinned copper braid shield (95% coverage), overall PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
10	23	Solid	BC - Bare Copper	.023

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
Gas-injected FHDPE - Foam High Density Polyethylene	.102

Inner Shield

Inner Shield Material:

Layer #	Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape-Aluminum Foil	100
2		Braid	TC - Tinned Copper	95

Inner Jacket

Inner Jacket Material:

Inner Jacket Material	Nom. Dia. (in.)
PVC - Polyvinyl Chloride	.159

Inner Jacket Color Code Chart:

Number	Color
1	Red
2	Green
3	Blue
4	White
5	Yellow
6	Brown
7	Orange
8	Gray
9	Purple
10	Black

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cabling

Overall Nominal Diameter: 0.796 in.

Mechanical Characteristics (Overall)

Operating Temperature Range: -35°C To +75°C

UL Temperature Rating: 60°C

Non-UL Temperature Rating:	75°C
Bulk Cable Weight:	280 lbs/1000 ft.
Max. Recommended Pulling Tension:	360 lbs.
Min. Bend Radius (Install)/Minor Axis:	8 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR
CEC/C(UL) Specification:	CMG
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):	01/01/2004
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
RG Type:	Mini

Flame Test

UL Flame Test:	UL1666 Vertical Shaft
----------------	-----------------------

Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes

Plenum/Non-Plenum

Plenum (Y/N):	No
---------------	----

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)

75

Nom. Inductance:

Inductance (µH/ft)

0.106

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)

16.5

Nominal Velocity of Propagation:

VP (%)

83

Nominal Delay:

Delay (ns/ft)

1.24

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

20.1

Nom. Inner Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

7.6

Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
1	0.4
3.6	0.8
10	1.2
71.5	3.1
135	3.8
270	5.4
360	6.2
540	7.7
720	9.1
750	9.5
1000	10.5
1500	13.0
2500	16.9
3000	18.5

Max. Operating Voltage - UL:

Voltage
300 V RMS

Other Electrical Characteristic 1: Impedance tested in accordance with ASTM D-4566 paragraph 43.2, option 2 using a 75 Ohm fixed bridge and termination.

Other Electrical Characteristic 2: Return Loss Tested in Accordance With ASTM D-4566 Paragraph 45.3, Using a 75 Ohm Fixed Bridge and Termination.

Minimum Return Loss:

Start Freq. (MHz)	Stop Freq. (MHz)	Min. RL (dB)
5	570	23
570	645	15
645	850	23
851	3000	15

Sweep Test

Sweep Testing: Sweep tested 5 MHz to 3 GHz.

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
7791A B591000	1,000 FT	304.000 LB	BLACK, MATTE	C	10 #23 PE/GIFHDPE SH PVC PVC
7791A B59500	500 FT	155.500 LB	BLACK, MATTE	C	10 #23 PE/GIFHDPE SH PVC PVC

Notes:

C = CRATE REEL PUT-UP.

Introduction



Broadcast — there is perhaps no other industry which values performance so highly, for the lack of broadcast performance has immediate, far-reaching, and embarrassing results.

That's why the broadcast industry prefers Belden® cable. From major network events such as the Olympics, space launches, and presidential news conferences to everyday audio and video applications, Belden is the local, regional, and national choice. The overwhelming reason? Performance.

In broadcast, cable performance means ensured product quality, absolute signal integrity, and no system downtime. Belden products provide performance for both critical field applications (where cable is dragged, crunched, trod, and tread upon) and permanent studio installations (where the long run is all important). Belden products are an important link in network and cable broadcasts (NBC Nightly News, Lifetime Cable Network, CNN News, and CNN Headline News), film studios (Lucasfilm) and corporate broadcasting (USA Today, Merrill Lynch).

Watch television last night or listen to the radio this morning? Chances are the link was made with Belden cable. And with dedication to development and innovation, the chance the link will be Belden increases.

Committed to Product Innovation and Technical Excellence

Belden's commitment to product innovation and technical excellence in the broadcast industry has resulted in a line of dependable audio and video cabling products called Brilliance®. Named for the sound and picture brilliance obtainable through new product innovations and improved signal integrity, Brilliance encompasses all Belden Audio/Video products. The line includes:

- High-Conductivity Microphone Cables
- Analog/Digital Audio Cables
- Speaker Cables
- Precision Analog/Digital Video Cables
- Triaxial Cables
- Audio/Video Composite Cables
- RGB & Component Video Cables
- Multimedia Cables
- Fiber Optic Cable
(See Fiber Optic Section)

Most of our Brilliance cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find Brilliance cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

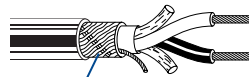
Performance Features

Innovative Shielding

Belden shielded cable ensures signal integrity and provides confidence in audio and video transmissions, preventing downtime and maintaining sound and picture clarity. Among the shield types available are: braid shields, foil shields, combination shields and Belden's patented "French Braid" shield.

"French Braid" Shields

Belden's patented "French Braid" shield is a double spiral (double serve bare copper shield) with the two spirals tied together by one weave. This construction provides improved flex life over standard spiral shields, improved flexibility over conventional braid shields, and lower levels of microphonic or triboelectric noise than either spiral or conventional braid shields. The "French Braid" is easier to terminate than a standard braid since it is not fully woven. It also provides for a lower DC loop resistance than a single spiral braid for improved performance.



French Braid

Special Noise/Interference Problems in Broadcasting

Triboelectric noise is generated by mechanical motion of a cable, causing movement in the cable's shield. Belden detects and measures triboelectric noise through the use of Low Noise Test equipment. Belden developed the test procedure and the equipment based on a combination of three low noise standards: NBS, ISA-S, and MIL-C-17.

Mechanically induced noise is a critical and frequent concern in the use of guitar cords and microphone cables. Belden rigorously employs the properties of special conductive tapes and insulations to prevent these noise problems.

Insulations

Belden formulates its own insulations to provide superior performance under a variety of broadcast environment conditions while meeting the electrical requirements of specific applications. Belden cables are available in a number of UL Listed and CSA Approved insulation compounds. Insulation materials include polyethylene, polypropylene, PVC, fluorinated ethylene-propylene (FEP) and Belden's Datalene® — a crush-resistant, lightweight insulation that provides a low dielectric constant and dissipation factor that's well suited to high-speed, low-distortion data handling.

Jackets

Belden broadcast cables are manufactured in a wide selection of standard jacketing materials. Special compounds and variations of standard compounds are used to meet critical broadcast application requirements and unusual environmental conditions. Proper matching of cable jackets to their working environment can prevent deterioration due to intense heat and cold, sunlight, mechanical abuse, impact and crowd or vehicle traffic. Jacket materials offered include PVC (in standard and matte finishes), polyethylene, FEP, Neoprene, Hypalon®, silicone rubber and natural rubber.

For more detailed information and assistance in selecting the correct cable component features for your needs, please refer to the Technical Information section of this catalog.

Hypalon is a DuPont trademark.

VideoFLEX® Snake Cable for Precision Digital and Analog

Bundled Miniature and RG-59/U Type



19 • Brilliance® Broadcast

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Cond.	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Nominal Core OD		Shielding Materials Nom. DCR	Nominal OD		Nom. Imp. (Ω)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation		
				Ft.	m	Lbs.	kg		Inch	mm		Inch	mm			pF/Ft.	pF/m	MHz	dB/ 100 Ft.	dB/ 100m

Miniature • 23 AWG Solid .023" Bare Copper Conductors • Duofoil® (100% Coverage) + Tinned Copper Braid Shield (95% Coverage)

Gas-injected Foam HDPE Insulation • Overall Matte Black PVC Jacket (Color Code: See chart below)

SDI/HDTV Digital Video 75°C/60°C (UL) (1855A Bundled)	7787A	NEC:	3	500	152.4	47.5	21.6	23 AWG (solid) .023" BC 20.1Ω/M' 65.9Ω/km	.102	2.55	Duofoil + 95% TC Braid 7.6Ω/M' 24.9Ω/km	.432	10.97	75	83%	16.5	54.1	1	.4	1.3
		CMR:		1000	304.8	94.0	42.7		Coax OD: .159	4.03		3.6	.8			2.6				
		CEC:																10	1.2	3.9
		CMG FT4																71.5	3.1	10.0
																		135	3.8	12.5
																		270	5.4	17.7
																		360	6.2	20.3
																		540	7.7	25.3
																		720	9.1	29.8
																		750	9.5	31.2
																		1000	10.5	34.4
																		1500	13.0	42.6
																		2500	16.9	55.4
																		3000	18.5	60.7
	7788A	NEC:	4	1000	304.8	110.0	49.9	same	.102	2.55	same	.481	12.22					750	9.5	31.2
		CMR:		as				above	Coax OD: .159	4.03		above	1000					10.5	34.4	
		CEC:																1500	13.0	42.6
		CMG FT4																2500	16.9	55.4
	7789A	NEC:	5	500	152.4	73.0	33.1	same	.102	2.55	same	.539	13.69					750	9.5	31.2
		CMR:		as	1000	304.8	142.0	64.4	above	Coax OD: .159		4.03	above					1000	10.5	34.4
		CEC:																1500	13.0	42.6
		CMG FT4																2500	16.9	55.4
	7790A	NEC:	6	500	152.4	88.5	40.2	same	.102	2.55	same	.597	15.16					750	9.5	31.2
		CMR:		as	1000	304.8	176.0	79.8	above	Coax OD: .159		4.03	above					1000	10.5	34.4
		CEC:																1500	13.0	42.6
		CMG FT4																2500	16.9	55.4
	7791A	NEC:	10	500	152.4	155.5	70.5	same	.102	2.55	same	.796	20.22					750	9.5	31.2
		CMR:		as	1000	304.8	304.0	137.9	above	Coax OD: .159		4.03	above					1000	10.5	34.4
		CEC:																1500	13.0	42.6
		CMG FT4																2500	16.9	55.4
	7792A	NEC:	12	500	152.4	178.5	81.0	same	.102	2.55	same	.825	20.96					750	9.5	31.2
		CMR:		as	1000	304.8	367.0	166.5	above	Coax OD: .159		4.03	above					1000	10.5	34.4
		CEC:																1500	13.0	42.6
		CMG FT4																2500	16.9	55.4

Sweep tested 5 MHz to 3 GHz.

RG-59/U Type • 20 AWG Solid .032" Bare Copper Conductors • Duofoil (100% Coverage) + Tinned Copper Braid Shield (95% Coverage)

Gas-injected Foam HDPE Insulation • Overall Matte Black PVC Jacket (Color Code: See chart below)

SDI/HDTV Digital Video 75°C/60°C (UL) (1505A Bundled)	7794A	NEC:	3	500	152.4	94.5	43.0	20 AWG (solid) .032" BC 10.0Ω/M' 32.8Ω/km	.145	3.68	Duofoil + 95% TC Braid 3.8Ω/M' 12.5Ω/km	.631	16.03	75	83%	16.2	53.1	1	.3	1.0
		CMR:		1000	304.8	187.0	84.8		Coax OD: .235	5.97		3.6	.6			1.8				
		CEC:																10	.9	2.9
		CMG FT4																71.5	2.1	6.9
																		135	2.7	8.9
																		270	3.8	12.5
																		360	4.4	14.4
																		540	5.5	18.0
																		720	6.4	21.0
																		750	6.5	21.3
																		1000	7.6	24.9
																		1500	9.4	30.8
																		2500	12.4	40.7
																		3000	13.8	45.3
	7795A	NEC:	4	500	152.4	116.5	53.0	same	.145	3.68	same	.706	17.93					750	6.5	21.3
		CMR:		as	1000	304.8	237.0	107.7	above	Coax OD: .235		5.97	above					1000	7.6	24.9
		CEC:																1500	9.4	30.8
		CMG FT4																2500	12.4	40.7
	7796A	NEC:	5	500	152.4	153.0	69.4	same	.145	3.68	same	.790	20.07					750	6.5	21.3
		CMR:		as	1000	304.8	299.0	135.6	above	Coax OD: .235		5.97	above					1000	7.6	24.9
		CEC:																1500	9.4	30.8
		CMG FT4																2500	12.4	40.7
	7798A	NEC:	10	500	152.4	319.5	145.2	same	.145	3.68	same	1.166	29.62					750	6.5	21.3
		CMR:		as	1000	304.8	625.0	284.1	above	Coax OD: .235		5.97	above					1000	7.6	24.9
		CEC:																1500	9.4	30.8
		CMG FT4																2500	12.4	40.7

Sweep tested 5 MHz to 3 GHz.

BC = Bare Copper • DCR = DC Resistance • HDPE = High-density Polyethylene • TC = Tinned Copper

Color Code Chart

Cond.	Color	Cond.	Color	Cond.	Color
1	Red	5	Yellow	9	Purple
2	Green	6	Brown	10	Black
3	Blue	7	Orange	11	Pink
4	White	8	Gray	12	Tan

