



Description:

28.5 AWG solid .012" bare copper conductor, gas-injected foam HDPE insulation, Duobond® foil + tinned copper braid shield (95% coverage), PVC jacket.

Usage (Overall)

Suitable Applications: Broadcast Mobil Trucks, Digital Video, Precision Video, Telecommunications

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
1	28.5	Solid	BC - Bare Copper	.0122

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
Gas-injected FHDPE - Foam High Density Polyethylene	.056

Outer Shield

Outer Shield Material:

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

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cabling

Overall Nominal Diameter: 0.100 in.

Mechanical Characteristics (Overall)

Operating Temperature Range: -20°C To +75°C

UL Temperature Rating: 75°C

Bulk Cable Weight: 7.300 lbs/1000 ft.

Max. Recommended Pulling Tension: 15 lbs.

Min. Bend Radius (Install)/Minor Axis: 0.500 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:	179/U

Flame Test

UL Flame Test:	UL1666 Vertical Shaft
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Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	No
Suitability - Aerial:	No

Plenum/Non-Plenum

Plenum (Y/N):	No
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Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)

75

Nom. Inductance:

Inductance (µH/ft)

.106

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)

17.4

Nominal Velocity of Propagation:

VP (%)

77

Nominal Delay:

Delay (ns/ft)

1.32

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

108

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

8.9

Nom. Attenuation:

Freq. (MHz) Attenuation (dB/100 ft.)

1	1.18
5	1.85
7	2.15
10	2.39
67.5	5.89
71.5	5.98
88.5	6.61
100	6.89
135	7.85
143	8.07
180	8.93
270	10.8

360	12.5
540	15.4
720	17.9
750	18.3
1000	21.3
1500	26.3
2000	30.8
2250	32.8
3000	38.3
4500	47.5

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. 75 +/- 3 Ohms

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	1600	23
1600	4500	21

Sweep Test

Sweep Testing: 100% Sweep tested 5 MHz to 4.5 GHz.

Misc. Information (Overall)

Other Description: Added CMR and CMG to UL section. 3/14/06 added rl requirements. 06/02/06 changed to duofoil tape.

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
179DT N3U1000	1,000 FT	9.000 LB	GREEN, MIL	C	#28H PE/GIFPE SH PVC
179DT 0011000	1,000 FT	9.000 LB	BROWN		#28H PE/GIFPE SH PVC
179DT 0021000	1,000 FT	9.000 LB	RED	C	#28H PE/GIFPE SH PVC
179DT 0031000	1,000 FT	9.000 LB	ORANGE	C	#28H PE/GIFPE SH PVC
179DT 0041000	1,000 FT	9.000 LB	YELLOW	C	#28H PE/GIFPE SH PVC
179DT 0061000	1,000 FT	9.000 LB	BLUE, LIGHT		#28H PE/GIFPE SH PVC
179DT 0071000	1,000 FT	9.000 LB	VIOLET		#28H PE/GIFPE SH PVC
179DT 0081000	1,000 FT	9.000 LB	GRAY	C	#28H PE/GIFPE SH PVC
179DT 0091000	1,000 FT	9.000 LB	WHITE		#28H PE/GIFPE SH PVC
179DT 0101000	1,000 FT	9.000 LB	BLACK		#28H PE/GIFPE SH PVC
179DT 010500	500 FT	4.500 LB	BLACK		#28H PE/GIFPE SH PVC

Notes:

C = CRATE REEL PUT-UP.

Precision Video Cable for Analog and Digital

Overview



Analog Video

Belden® precision video cables are used in critical analog and digital video circuits and high quality applications such as live broadcast in network studios and pre- or post-production facilities. They should be used where superior signal integrity is required.

Precision video cables usually have solid center conductors and dual shields. The dielectrics can either be foamed or solid. Tighter impedance and attenuation tolerances, superior Return Loss (RL) specifications, and improved shielding give precision video cables their no-compromise performance.

The frequency response loss curves of the solid dielectric cables, such as 8281, are different from those with foam dielectric, like 1505A. Therefore, different equalization equipment is necessary and commercially available. Avoid mixing 8281 and 1505A for this reason.

Digital Video

Precision video cables are also recommended for the latest digital video applications. Since its inception in the early '80s, digital broadcast is quickly becoming the preferred video format. The advantages of the digital format are many. Digital is very stable, minimizing equipment adjustments. Copies or reproductions retain the quality of the original. Signal degradation is virtually eliminated, and noise immunity is greatly improved. Digital video is transmitted over a cable in either a Parallel or Serial format.

Parallel Digital Video (D₁, D₂ & D₃)

The Parallel format transmits each bit of an 8 or 10 bit digital word simultaneously or parallel down a separate signal path at a frequency of 27 Mb/s. This type of transmission requires the use of a 100 to 120 ohm 12-1/2 pair data cable (Belden part nos. 8142 or 8112 page 19.56). These cables are limited to a transmission distance of less than 30 meters.

Serial Digital Video (SDI)

The Society of Motion Picture and Television Engineers (SMPTE) has developed two different standards for serial digital transmissions (SDI). A third format that transmits at 540 Mb/s is under development. There is also a European standards body known as ITU (formerly CCIR) that developed the specifications for Europe known as PAL. Each of these specifications differs in frequency and transmission technology, i.e., composite or component.

- **SMPTE 259M** — Covers digital video transmissions of composite NTSC 143 Mb/s (Level A) and PAL 177 Mb/s (Level B). It also covers 525/625 component transmissions of 270 Mb/s (Level C) and 360 Mb/s (Level D).
- **SMPTE 292M** — Covers the newest format for HDTV transmissions at 1.458 Gb/s.
- **SMPTE 344M** — Covers component widescreen transmissions of 540 Mb/s.
- **ITU-R BT.601** — International standard covers component PAL transmissions of 177 Mb/s.

Precision Video Cable for Analog and Digital

Sub-Miniature RG-59/U Type



Description	Part No.	UL NEC/ C(UL) CEC Type	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

28.5 AWG Solid .012" Bare Copper Conductor • Duobond® (100% Coverage) + Tinned Copper Braid Shield (95% Coverage)

Gas-injected Foam HDPE Insulation • PVC Jacket (Available in 10 colors)*

DigiTruck®	179DT	NEC:	500 [▲]	152.4	5.0	2.3	28.5 AWG	.056	1.42	Duobond	.100	2.54	75	77%	17.4	57.4	1	1.2	3.9
SDI/HDTV	new	CMR	1000	304.8	8.0	3.6	(solid)			(100%)							5	1.9	6.1
Digital Video		CEC:					.012"			+ TC Braid							10	2.4	7.8
75°C		CMG FT4					BC			(95% Cov.)							67.5	5.9	19.3
							108Ω/M'			8.9Ω/M'							71.5	6.0	19.6
							350Ω/km			29.2Ω/km							100	6.9	22.6
																	135	7.9	25.8
																	270	10.8	35.4
																	360	12.5	41.0
																	540	15.4	50.5
																	720	17.9	58.7
																	750	18.3	60.0
																	1000	21.3	69.9
																	1500	26.3	86.3
																	2000	30.8	101.1
																	2250	32.8	107.6
																	3000	38.3	125.7

▲500 ft. put-up available in Black only.

25 AWG Stranded (19x37) .021" Bare Copper Conductor • Duofoil® (100% Coverage) + Tinned Copper Braid Shield (95% Coverage)

Gas-injected Foam HDPE Insulation • PVC Jacket (Available in 10 colors)*

SDI/HDTV	1865A	NEC:	1000	304.8	14.0	6.4	25 AWG	.094	2.39	Duofoil	.150	3.81	75	82%	16.5	54.1	1	.5	1.5
Digital Video		CMR					(19x37)			(100%)							3.6	1.0	3.1
75°C		CEC:					.021"			+ TC Braid							10	1.6	5.2
		CMG FT4					BC			(95% Cov.)							71.5	3.7	12.1
							27.4Ω/M'			5.4Ω/M'							135	5.0	16.4
							89.9Ω/km			17.7Ω/km							270	7.1	23.3
																	360	8.2	26.9
																	540	10.1	33.1
																	720	11.8	38.7
																	750	12.0	39.4
																	1000	13.9	45.6
																	1500	17.0	55.8
																	2250	20.8	68.2
																	3000	24.0	78.7

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

Gas-injected Foam HDPE Insulation • PVC Jacket (Available in 10 colors)*

SDI/HDTV	1855A	NEC:	500 [▲]	152.4	9.0	4.1	23 AWG	.102	2.59	Duofoil	.159	4.03	75	82%	16.3	53.5	1	.4	1.3
Digital Video		CMR	1000	304.8	16.0	7.3	(solid)			(100%)							3.6	.8	2.6
75°C		CEC:					.023"			+ TC Braid							10	1.2	3.9
		CMG FT4					BC			(95% Cov.)							71.5	3.1	10.0
							20.1Ω/M'			7.6Ω/M'							135	3.8	12.5
							65.9Ω/km			24.9Ω/km							270	5.4	17.7
																	360	6.2	20.3
																	540	7.7	25.3
																	720	9.5	31.1
																	750	9.6	31.5
																	1000	10.5	34.4
																	1500	13.0	42.6
																	2250	16.0	52.5
																	3000	18.5	60.7

▲500 ft. put-up available in Black only.

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

*Available in Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White or Black.