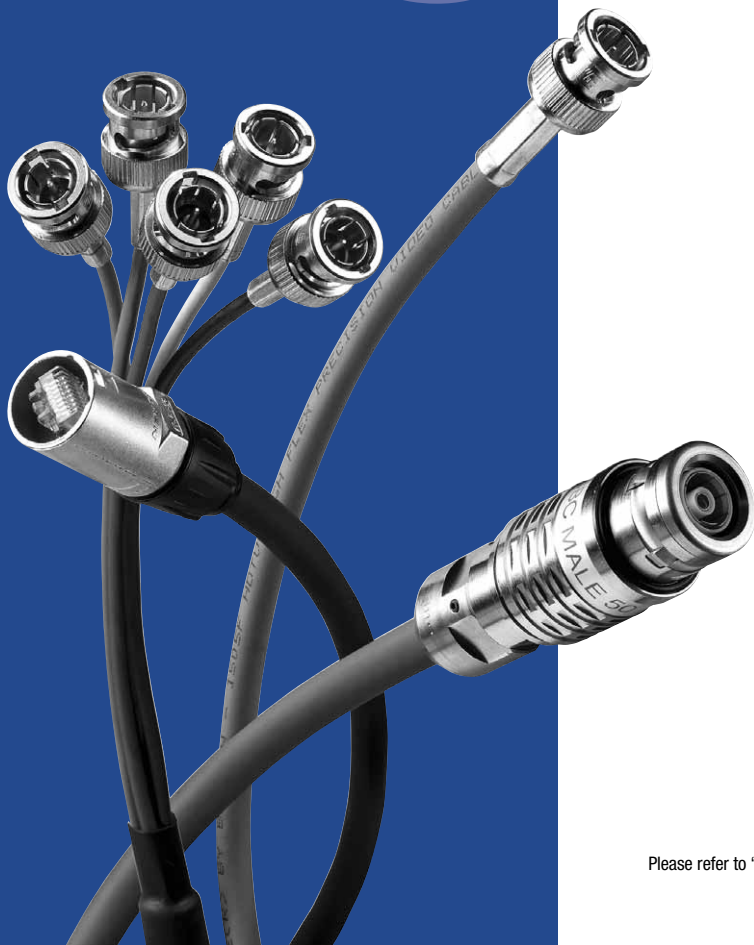




Cable Assemblies

Table of Contents

Cable Assemblies	Page No
Introduction	8.2
Coax Cable Assemblies	8.3 – 8.5
Video Cords	8.3
RGB Patch Cables	8.4
Triax Cables	8.5
Twisted Pair and Fiber Optic Cable Assemblies	8.6
CatSnake™	8.6
Fiber Optic Assemblies for HDTV Cameras (SMPTE 311)	8.6



Introduction

Brilliant in Every Way

Everyone in HDTV wants unmatched high life cycle performance, quality, longevity and peace of mind. Brilliance Assemblies are designed and optimized for HDTV. This requires the cabling to conform to the very highest of standards so it can deliver the very best in performance throughout its long lifetime. Quite simply, nothing beats a Belden cable – a proven fact, perfectly demonstrated by a product range that delivers top performance in every way and enhances the assurances offered by Brilliance Assemblies.

From precise installation with materials perfectly suited to their requirements to rigorous and proven testing methods supported by the Belden Installable Performance™ processes, users find that Brilliance Assemblies offer a peace of mind that is unmatched.

Key Applications

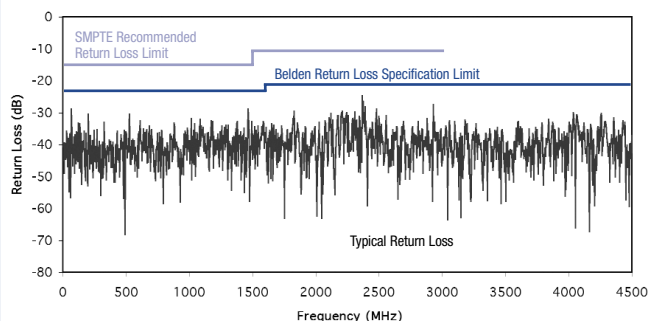
- High-resolution monitors
- Project imaging
- OB Vans
- Satellite head ends
- Video networks
- CCTV
- Ethernet professional audio

Special Features

- **1505F:** This cable is the focus product for video cords, a super high flex coax developed by Belden for digital patch panel cabling requirements. The 1505F has a soft matte PVC jacket which envelopes two tinned copper braids with a unique compacted stranded central conductor. This combines the flexibility borne from its stranded design to stability and RL performance that come right from its solid core. The 1505F is fully sweep tested to 4.5 GHz.
- **Low Return Loss (RL):** Use your head room! Belden delivers Return Loss (RL) performance that offers ample head room below the SMPTE 292M -15dB requirement. Belden products offer a best in class RL performance.

Bandwidth

Broadcasting needs are evolving at a rapid rate. Brilliance Assemblies offer the most significant scope for ensuring growth whatever the bandwidth. Belden products offer a best in class RL performance tested to 4.5 GHz throughout the entire installation and monitoring processes and even after packaging.



- **Exceptional Flexibility and Superior Cable Life:** Under the stress of repeated pulling, flexing, bending and crushing, cables can quickly display discrepancies that lead to degraded signal transmission – or even breakage. To combat these usage problems, Belden offers robust performance and enhanced flexibility in all Brilliance Assemblies. An abrasion-resistant jacket adds further protection and flexibility.
- **Crush Resistance:** Improves bending/flexing without pushing out the centre pin and/or damaging attached equipment – ideal for the more rugged installations.

High resistance to crushing is provided by the foamed high-density polyethylene. Belden products have as much as twice the crush resistance of similar commercially available products. This means that the cables are less susceptible to diameter variations during their installation and use – resulting in minimal degradation of impedance and RL.

The Connectors

Brilliance Assemblies are put together using true 75 Ohm connectors that constantly perform to the very highest levels. Nominal 75 Ohm connectors can cause high BER (Bit Error Rate) and significantly reduce transmission distance.

Belden perfectly complements innovative products such as ADC's ProAx™ triax connectors and Neutrik's OpticalCon® next generation of HDTV camera connectors. The Belden line includes three one-piece connectors, a stripping tool and a compression tool that facilitates swift cable connection.

High quality BNC, RCA and F connectors, recommended for RGB patch cables, feature a brass and nickel construction with nickel-plated centre pins. In addition, they offer twin compression points that seal and hold the connector to the coaxial cable. By having two compression points, and a patent-pending viewing window on the connector, installation is made much simpler.

To meet the requirements of the market, Belden is able to deliver Brilliance Assemblies with other popular connector brands.

Availability

Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find your assembly in this catalog section that meets your technical requirements contact technical support at +31-77-3875-414 or techsupport.venlo@belden.com.

ProAx™ is an ADC Krone trademark.
OpticalCon® is a Neutrik trademark.

Coax Cable Assemblies

Video Cords


Part No.	Gender	Standard Lengths		Standard Unit Weight		Cond. AWG (Stranding) Diameter Nom. DCR	Nominal Insulation OD		Shielding Material 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.

Brilliance Assemblies • 1505F HDTV/SDI • BNC, RCA or F Connectors on both ends • Superflex 75 Ohm broadcast quality assembled colored cable with two strain relief boosts

Digital video and HDTV run at higher frequencies and make better use of composite video for even greater picture clarity. To accommodate the need for higher frequency, and the ability to run more demanding applications such as high resolution VGA on large screens, HDTV, Hi-Res CAD, animation, editing and special effects, Belden uses the extremely popular 1505F which has the optimum design to meet these new high-end requirements. The Belden line includes high performance professional connectors with excellent connector pull strength and minimal signal loss. Perfect for patching, rack wiring, OB vans, satellite headends, CCTV, etc.

Gas-injected Foam HDPE Insulation • PVC Jacket (Matte Black, Red, Green, Blue, Yellow, White, Violet, Orange)

1.6	0.5	0.18	0.08	22 AWG	0.145	3.68	Double	0.242	6.15	75	80%	17.0	55.7	1	0.2	0.7
3.3	1.0	0.26	0.12	0.79 mm			95% TC							3.6	0.5	1.6
6.6	2.0	0.43	0.19	(7x29) BC			Braid							10	0.9	2.9
9.8	3.0	0.59	0.27	47.8 Ω/km*			7.8 Ω/km***							71.5	2.5	8.2
16.4	5.0	0.92	0.42	40.0 Ω/km**										135	3.5	11.5
19.7	6.0	1.09	0.49											270	5.1	16.7
49.2	15.0	2.58	1.17											360	6.0	19.7
65.6	20.0	3.40	1.54											540	7.4	24.3
98.4	30.0	5.06	2.29											720	8.7	28.5
147.6	45.0	7.54	3.42											750	8.9	29.2
														1000	10.5	34.4
														1500	13.3	43.6
														2250	16.9	55.4
														3000	20.3	66.6



Return loss at 5-3000 MHz: ≥ 15 dB

1505F BNC-BNC • for Analog & Digital Video, Patchcords, CCTV, Satellite Uplink/Downlink, Telecom

Length	Violet	Black	Red	Green	Blue	Yellow	White	Orange
CA00100...	0.5	00C0D5	01C0D5	02C0D5	03C0D5	04C0D5	05C0D5	06C0D5
	1.0	00C1	01C1	02C1	03C1	04C1	05C1	06C1
	2.0	00C2	01C2	02C2	03C2	04C2	05C2	06C2
	3.0	00C3	01C3	02C3	03C3	04C3	05C3	06C3
	5.0	00C5	01C5	02C5	03C5	04C5	05C5	06C5
	6.0	00C6	01C6	02C6	03C6	04C6	05C6	06C6
	15.0	00C15	01C15	02C15	03C15	04C15	05C15	06C15
Example Part No. CA0010000C0D5 = 1505F BNC-BNC, 0.5 m, violet	20.0	00C20	01C20	02C20	03C20	04C20	05C20	06C20
	30.0	00C30	01C30	02C30	03C30	04C30	05C30	06C30
	45.0	00C45	01C45	02C45	03C45	04C45	05C45	06C45

1505F RCA-RCA • for Audio or Video, Projectors, Digital Audio (S/PDIF) Subwoofer, Analog Audio and Composite Video

Length	Violet	Black	Red	Green	Blue	Yellow	White	Orange
CA00101...	0.5	00C0D5	01C0D5	02C0D5	03C0D5	04C0D5	05C0D5	06C0D5
	1.0	00C1	01C1	02C1	03C1	04C1	05C1	06C1
	2.0	00C2	01C2	02C2	03C2	04C2	05C2	06C2
	3.0	00C3	01C3	02C3	03C3	04C3	05C3	06C3
	5.0	00C5	01C5	02C5	03C5	04C5	05C5	06C5
	6.0	00C6	01C6	02C6	03C6	04C6	05C6	06C6
	15.0	00C15	01C15	02C15	03C15	04C15	05C15	06C15
Example Part No. CA0010100C0D5 = 1505F RCA-RCA, 0.5 m, violet	20.0	00C20	01C20	02C20	03C20	04C20	05C20	06C20
	30.0	00C30	01C30	02C30	03C30	04C30	05C30	06C30
	45.0	00C45	01C45	02C45	03C45	04C45	05C45	06C45

1505F F-F • for Cable TV, Satellite and Antenna. The Brilliance Assemblies RF Video Cords can be Specially Ordered.

Length	Violet	Black	Red	Green	Blue	Yellow	White	Orange
CA00102...	0.5	00C0D5	01C0D5	02C0D5	03C0D5	04C0D5	05C0D5	06C0D5
	1.0	00C1	01C1	02C1	03C1	04C1	05C1	06C1
	2.0	00C2	01C2	02C2	03C2	04C2	05C2	06C2
	3.0	00C3	01C3	02C3	03C3	04C3	05C3	06C3
	5.0	00C5	01C5	02C5	03C5	04C5	05C5	06C5
	6.0	00C6	01C6	02C6	03C6	04C6	05C6	06C6
	15.0	00C15	01C15	02C15	03C15	04C15	05C15	06C15
Example Part No. CA0010200C0D5 = 1505F F-F, 0.5 m, violet	20.0	00C20	01C20	02C20	03C20	04C20	05C20	06C20
	30.0	00C30	01C30	02C30	03C30	04C30	05C30	06C30
	45.0	00C45	01C45	02C45	03C45	04C45	05C45	06C45

* DC loop resistance • ** DC resistance inner conductor • *** DC resistance outer conductor • DCR = DC resistance • M = Male • F = Female • TC = Tinned Copper • BC = Bare Copper

To comfortably support today's broadcast technology, Brilliance Assemblies can be specially ordered:

- for mobile television broadcast trucks with 179DT BNC-BNC (CA00103)
- as an economical version with 1855A BNC-BNC (CA00106)
- for long runs with 1505A BNC-BNC (CA00109)
- for longer runs with 1694A BNC-BNC (CA00112)

All these Brilliance Assemblies are available in 10 colors (1505A with 8 colors).

If you require a specific connector, you can choose from the following brands: ADC, Neutrik, Damar+Hagen, Telegaertner.

Recommended Color Schema:

Red + Black	Analog audio
RGB (Red, Green, Blue)	Component video
Orange	Digital audio
Yellow	Composite video
Violet	Digital video/HDTV

Coax Cable Assemblies

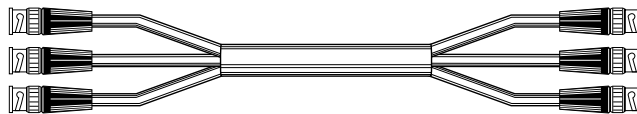
RGB Patch Cables

Part No.	Gender	Standard Lengths		Standard Unit Weight		Cond. AWG (Stranding) Diameter Nom. DCR	Nominal Insulation OD		Shielding Material 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/100 m

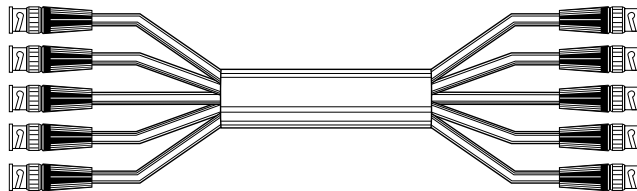
Brilliance Assemblies • 1277R (3-Coax) and 1279R (5-Coax) HDTV/SDI • 3 or 5 BNC Connectors on both ends • Flexible 75 Ohm broadcast quality assembled RGB cable with strain relief boots

RGB cables are used for component video formatted applications that segment the video signal into Red, Green and Blue elements, identified through use of corresponding cable jacket colors (RGB cables). Synchronization (Sync) and Vertical Hold (Hold) signals can be embedded within one of the elemental video components or they can be transmitted separately utilizing the 4th and 5th coaxes. When present, the 4th coax has a yellow jacket; the 5th coax has a black jacket. The outer jacket of the Belden line is stripped back 150 mm from both ends. The unique design of these cables also makes them ideal for multiple runs of composite video signals such as SDI or HDTV (video snake cable). The Belden lines are ideal for high-resolution monitor and projection imaging in corporate boardrooms, command and control centers, multi-purpose auditoriums, home theaters, performance venues, etc.

Foam HDPE Insulation • Matte Black PVC Jacket																	
CA00150 01C1	BNC-BNC	3.3	1.0	0.24	25 AWG	0.092	2.33	Duofoil®	0.320	8.13	75	80%	17.0	55.7	5	1.2	3.8
CA00150 01C2		6.6	2.0		0.45 mm		Coax OD:	95% TC	0.403	10.24					50	3.7	12.1
CA00150 01C3		9.8	3.0		(Solid) BC	0.114	2.90	Braid							100	4.9	16.1
CA00150 01C6		19.7	6.0												400	9.5	31.2
CA00150 01C15		49.2	15.0												750	13.4	44.0
CA00150 01C20		65.6	20.0												900	15.0	49.2
CA00150 01C30		98.4	30.0												1000	15.8	51.8
CA00150 01C45		147.6	45.0												3000	31.2	102.4



Foam HDPE Insulation • Matte Black PVC Jacket																	
CA00151 01C1	BNC-BNC	3.3	1.0		25 AWG	0.092	2.33	Duofoil®	0.320	8.13	75	80%	17.0	55.7	5	1.2	3.8
CA00151 01C2		6.6	2.0		0.45 mm		Coax OD:	95% TC	0.403	10.24					50	3.7	12.1
CA00151 01C3		9.8	3.0		(Solid) BC	0.114	2.90	Braid							100	4.9	16.1
CA00151 01C6		19.7	6.0												400	9.5	31.2
CA00151 01C15		49.2	15.0												750	13.4	44.0
CA00151 01C20		65.6	20.0												900	15.0	49.2
CA00151 01C30		98.4	30.0												1000	15.8	51.8
CA00151 01C45		147.6	45.0												3000	31.2	102.4



* DC loop resistance • ** DC resistance inner conductor • *** DC resistance outer conductor • DCR = DC resistance • M = Male • F = Female • TC = Tinned Copper • BC = Bare Copper

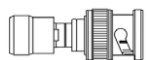
To comfortably support today's broadcast technology, Brilliance Assemblies can be specially ordered:

	3-Coax BNC-BNC	5-Coax BNC-BNC
1. same but Banana Peel® design	1281S3 (CA00152)	1281S5 (CA00153)
2. as an economical version with 1855A	7787A (CA00154)	7789A (CA00155)
3. for long runs with 1505A	7794A (CA00156)	7796A (CA00157)
4. for longer runs with 1694A	7710A (CA00158)	7712A (CA00159)

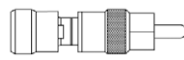
If you require a specific connector you can choose from the following brands: ADC, Neutrik, Damar+Hagen, Telegaertner.

Additional Accessories for 1277R-1279R and 1281S3-S5 One-Piece Connector

1B25A • 75-Ohm BNC (male)



1R25A • 75-Ohm RCA



Stripping and Compression Tool

HCST • Cable Prep Tool



HCCT • works with BNC, RCA and F Connectors



Coax Cable Assemblies

Triax Cables

Part No.	Gender	Standard Lengths		Standard Unit Weight		Cond. AWG (Stranding) Diameter Nom. DCR	Nominal Insulation OD		Shielding Material 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.

Brilliance Assemblies • 7783AF Triax 8 HDTV/SDI • ProAx™ Triax Camera Connectors: Global Format on both ends • Flexible 75 Ohm broadcast quality assembled Triax cable

The Belden triax lines are assembled with ADC's ProAx™ triaxial camera connectors. This combination will undoubtedly change your views of triaxial assemblies. ADC's patented ProAx™ triaxial camera connector has a two-piece center conductor offering several options. Key benefits include the ability to swap gender parts from male to female and vice versa in only a few seconds and the way mates can be swapped equally quickly with Kings, Lemo, Fischer and Damar+Hagen parts. The Belden lines are ideal for field use, sporting/live events, mobile trucks, stadiums, fixed wiring, TV/Studio production.

Foam Insulation • Red PVC Jacket

CA00200 02C50	Male - Female	164	50	13.56	6.15	0.99 mm	0.178	4.52	90% SPC	0.331	8.40	75	83%	16.5	54.0	1	0.2	0.6
CA00200 02C100		328	100	26.01	11.80	20 AWG			Braid							10	0.7	2.2
CA00200 02C150		492	150	38.47	17.45	(19x0.36) SPC			+ 80% BC							20	1.0	3.2
CA00200 02C200		656	200	50.93	23.10	32.0 Ω/km*			Braid							40	1.4	4.6
CA00200 02C250		820	250	63.38	28.75	22.0 Ω/km**			10.0 Ω/km***							50	1.6	5.1
									6.5 mm							60	1.7	5.6
																100	2.3	7.5
																300	4.2	13.8



Return loss at 1-100 MHz: ≥ 26 dB
100-300 MHz: ≥ 23 dB

Screening attenuation at 30-1000 MHz: ≥ 75 dB
Brilliance® Broadcast Assembly line can be specially ordered with mates for Kings, Lemo Redel F, Fischer SE & KE and Damar+Hagen.

Brilliance Assemblies • 7784AF Triax 11 HDTV/SDI • ProAx™ Triax Camera Connectors: Global Format on both ends • Flexible 75 Ohm broadcast quality assembled Triax cable

Foam Insulation • Red PVC Jacket

CA00201 02C50	Male - Female	164	50	20.17	9.15	1.4 mm	0.256	6.50	90% SPC	0.433	11.00	75	82%	16.5	54.0	1	0.2	0.5
CA00201 02C100		328	100	39.24	17.80	16 AWG			Braid							10	0.5	1.6
CA00201 02C150		492	150	58.31	26.45	(19x0.28) SPC			+ 80% BC							20	0.7	2.3
CA00201 02C200		656	200	77.38	35.10	26.0 Ω/km*			Braid							40	1.0	3.3
CA00201 02C500		1640	500	191.80	87.00	18.0 Ω/km**			8.0 Ω/km***							50	1.1	3.7
									8.5 mm							60	1.3	4.1
																100	1.6	5.4
																300	3.1	10.3



Return loss at 1-100 MHz: ≥ 26 dB
100-300 MHz: ≥ 23 dB

Screening attenuation at 30-1000 MHz: ≥ 75 dB
Brilliance® Broadcast Assembly line can be specially ordered with mates for Kings, Lemo Redel F, Fischer SE & KE and Damar+Hagen.

Brilliance Assemblies • 7785A Triax 14 HDTV/SDI • ProAx™ Triax Camera Connectors: Global Format on both ends • Flexible 75 Ohm broadcast quality assembled Triax cable

Foam Insulation • Red PVC Jacket

CA00202 02C50	Male - Female	164	50	30.31	13.75	2.21 mm	0.382	9.70	90% SPC	0.551	14.00	75	82%	16.5	54.0	1	0.1	0.4
CA00202 02C100		328	100	59.52	27.00	12 AWG			Braid							10	0.3	1.1
CA00202 02C150		492	150	88.74	40.25	(7x0.75) SPC			+ 80% BC							20	0.5	1.6
CA00202 02C200		656	200	117.95	53.50	14.0 Ω/km*			Braid							40	0.7	2.3
CA00202 02C500		1640	500	293.21	133.00	10.0 Ω/km**			4.0 Ω/km***							50	0.8	2.6
CA00202 02C1000		3280	1000	585.32	265.50				12.7 mm							60	0.9	2.8
																100	1.2	3.8
																300	2.3	7.7



Return loss at 5-850 MHz: ≥ 21 dB

Screening attenuation at 30-1000 MHz: ≥ 75 dB
Brilliance® Broadcast Assembly line can be specially ordered with mates for Kings, Lemo Redel F, Fischer SE & KE and Damar+Hagen

* DC loop resistance • ** DC resistance inner conductor • *** DC resistance outer conductor • DCR = DC resistance • M = Male • F = Female • BC = Bare Copper • SPC = Silver-Plated Copper
ProAx™ is an ADC Krone trademark.

Twisted Pair and Fiber Optic Cable Assemblies

CatSnake™

Part No.	Connector	Standard Lengths		Standard Unit Weight		Conductor (Stranding) Diameter Nom. DCR	Nominal Insulation OD		Shielding Material Nom. DCR	Nominal OD		Freq. MHz	Max. Atten. dB/100m	Min. PSUM			ACR dB/100m	Min. RL dB
		ft.	m	lbs.	kg		inch	mm		inch	mm			NEXT dB	ACR dB/100m	ELFEXT dB/100m		

Brilliance Assemblies • 1305A • Mobile Cat 5e • Neutrik EtherCon® Connectors • CatSnake™ is a new design from Belden and assembled with standard RJ45 connectors

The round PVC jacket provides durability and the cable ends are assembled with Neutrik's EtherCon®. This design was developed to provide a comprehensive solution for data transfer in harsh and demanding applications. CatSnake™ assembly is particularly suitable for Ethernet networking in commercial audio, concert sound reinforcement, stage production, DMX lighting and industrial internet access environments.

4 Bonded-pairs UTP • Black PVC Jacket																		
CA00250 01C50	EtherCon®	164	50	11.02	5.0	0.51 mm	0.037	0.95	Bonded-Pair	0.295	7.49	1	2.0	65.3	63.3	60.8	63.3	20.0
CA00250 01C100		328	100	19.84	9.0	24 AWG			Unshielded			4	4.0	56.3	52.3	48.7	52.3	23.0
CA00250 01C500		1640	500	90.39	41.0	(7x32) TC						10	6.4	50.3	43.9	40.8	43.9	25.0
												16	8.1	47.3	39.1	36.7	39.1	25.0
												20	9.2	45.8	35.2	34.7	35.2	25.0
												31.25	11.2	42.9	31.3	30.9	31.3	23.6
												62.5	16.8	38.4	21.6	24.8	21.6	21.9
												100	21.7	35.3	17.1	20.8	17.1	20.1
												155	27.7	32.5	4.7	16.9	4.7	19.0
												200	32.0	30.8	3.0	14.7	3.0	19.0
												310	41.3	27.9	> 0	10.9	> 0	18.0
												350	44.3	27.2	> 0	9.9	> 0	17.0



Brilliance® Broadcast Assembly line can be specially ordered as CA00251 with only RJ-45.

Fiber Optic Assembly For HDTV Cameras (SMPTE 311)

Part No.	Connector	Standard Lengths		Standard Unit Weight		Conductor (Stranding) Diameter Nom. DCR	Nominal OD		Component	Description	Shielding Material & Nom. DCR	Component OD		Nominal Attenuation	
		ft.	m	lbs.	kg		inch	mm				inch	mm	dB/100 ft.	dB/100 m

Brilliance Assemblies • 7804C • SMPTE 311M HDTV cable • Single-Mode Fiber with copper conductors • Lemo 3K.93C connectors

With the rise of high-definition video applications, such as 1080i and 720p, the bandwidth demands on camera cables has grown significantly. To meet these new requirements, Belden now offers (new generation) 7804C, which consists of dual single-mode fiber optic cables and copper components for power and data, and a special connector made by Lemo.

Composite Cable: 2 Power Conductors • SM Fiber (24 AWG and 16 AWG) • Stranded TC Conductors • Black Belflex® Jacket															
CA00270 01C100	2x3K.93C.TLMC	328	100	64.82	29.40	—	0.362	9.2	2xFiber	(2) Breakout Fibers	38 AWG TC Braid	0.079	2.00	0.14	0.45
CA00270 01C500		1640	500	318.79	144.60					SM/125µ/900µ core/clad/buffer	95% Shield Coverage				
CA00270 01C1.000		3280	1000	636.25	288.60						2.8 Ω/m* 9.2 Ω/km				
							0.362	9.2	(2) Conductors	24 AWG (7x32) TC	38 AWG TC Braid	0.050	1.27	0.14	0.45
										0.024"	95% Shield Coverage				
										23.3 Ω/m* 76.4 Ω/km	2.8 Ω/m* 9.2 Ω/km				
							0.362	9.2	(2) Conductors	16 AWG (65x34) TC	38 AWG TC Braid	0.093	2.36	0.14	0.45
										0.037"	95% Shield Coverage				
										4.3 Ω/m* 14.1 Ω/km	2.8 Ω/m* 9.2 Ω/km				



Brilliance® Broadcast Assembly line can be specially ordered as CA00271 with: Neutrik's OpticalCon® • Suitable for indoor studio and camera applications acc. IEC 60664-1 (Pollution degree 1, over voltage category 1), not compatible to SMPTE standard.

* DC loop resistance • DCR = DC resistance • TC = Tinned Copper

EtherCon® and OpticalCon® are Neutrik trademarks.