

# RJ-45 Cables for Audio and Video Applications

## 4-Pair UTP Cables for RGB Video

### NanoSkew™ Non-Data and Brilliance VideoTwist® Low-Skew Data Rated Types



For economy, some system designers seek to use UTP (unshielded twisted pair) cable for video applications. However, Digital Video and Digital Data are processed and viewed differently. Digital Video contains much more information, requiring more bandwidth than Ethernet data. In addition, video has to be streaming — viewable live and continuously — whereas data can be sent in packets, resent as necessary, and given time to recompile. Such delays are unacceptable in video. Be cautious, digital signals are not all the same thing!

Delay Skew should be kept to a minimum for component video and RGB applications for better picture quality and the ability to transmit over longer distances. Delay skew is the difference in the time of arrival of the components transmitted over different cable components — pairs in the case of UTP. Skew is inherent in all cables, but especially in UTP cables because the pairs are normally

twisted to differing degrees for Ethernet data purposes, specifically to reduce crosstalk. Obviously picture clarity is lost when the red, green, and blue components arrive out of time with each other, and varying twist rates cause exactly that to occur.

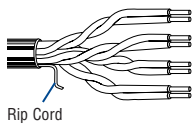
Cables in this section are NanoSkew, a UTP cable with no Ethernet data rating (all pairs have the same twist rate), and Brilliance VideoTwist Cat 5e and Cat 6 rated cables with lower, carefully monitored skew relative to standard data cables. Cables designed only for data applications meet their own skew requirements, but those are too high for better video transmission, and may be varied by manufacturers without notice. For guaranteed low and consistent skew performance from UTP cables, only NanoSkew or VideoTwist should be used. The Cat 5e and Cat 6 rated versions are ideal for KVM and blade-edge computer applications.

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nominal OD		Max. DCR (Ω/100m)	Nom. Imped. (Ω)	Min. RL (dB)	Freq. (MHz)	Max. Atten. (dB/100m)
				Ft.	m	Lbs.	kg	Inch	mm					

**Nanoskew™ 24 AWG** Solid BC Conductors • Twisted Pairs • Skew 2.2ns/100m nom. • Rip cord • See Color Code Chart (below)

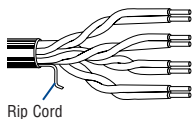
**Non-Plenum • Polyolefin Insulation • Maroon PVC Jacket**

300V RMS	<b>7987R</b> <small>new</small>	NEC: CMR CEC: CMG	4	U-1000 U-1640	U-304.8 U-500.0	20.0 32.8	9.1 14.9	.195	4.95	9.0	100	15.0	1	2.0
													4	4.1
													8	5.8
													10	6.5
													16	8.2
													20	9.3
													25	10.4
													31.25	11.7
													62.5	17.0
													100	22.0
													155	28.1
													200	32.0
													250*	36.4
													350*	44.8



**Plenum • FEP Insulation • Maroon Flamarrest® PVC Jacket**

300V RMS	<b>7987P</b> <small>new</small>	NEC: CMP CEC: CMP	4	U-1000 U-1640	U-304.8 U-500.0	22.0 36.1	10.0 16.4	.200	5.08	9.0	100	15.0	(same as above)	
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Third party verified to TIA/EIA-568-B.2, Category 5e

BC = Bare Copper • DCR = DC Resistance • FEP = Fluorinated Ethylene Propylene • RL = Return Loss • UTP = Unshielded Twisted Pair(s)

\*Values provided for information only.

**Color Codes: DataTwist 5e**

Pair No.	Color Combination
1	White/Blue Stripe & Blue
2	White/Orange Stripe & Orange
3	White/Green Stripe & Green
4	White/Brown Stripe & Brown



# RJ-45 Cables for Audio and Video Applications

4-Pair UTP Cables for RGB Video & Wireless LAN

NanoSkew® Non-Data and Brilliance VideoTwist® Low-Skew Data Rated Types

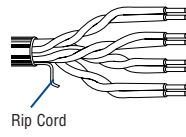


19 • Brilliance® Broadcast

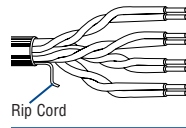
Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Insulation Thickness		Nominal OD		Max. DCR (Ω/ 100m)	Max. DCR Unbal. (%)	Max. Cap. Unbal. (pF/ 100m)	Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/ 100m)	Input Imped. (Ω)	Min. RL (dB)
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm										

**Nanoskew™ Category 5e • 24 AWG Bonded-Pairs** Solid Bare Copper Conductors • Skew 9.0ns/100m Nominal • Rip Cord

Non-Plenum • Polyolefin Insulation (Color Code: See Chart Below) • Green PVC Jacket																				
300V RMS	<b>7988R</b> <small>new</small>	NEC: CMR CEC: CMG FT4	4	U-1000 U-1640	U-304.8 U-500.0	22.0 36.1	10.0 16.4	.008 .20	.204	5.18	9.0	3.0	66.0	1	2.0	65.3	60.3	60.8	100±15	20.0
														4	4.1	53.3	49.2	48.7	100±15	23.0
														8	5.8	48.8	43.0	42.7	100±15	24.5
														10	6.5	47.3	40.8	40.8	100±15	25.0
														16	8.2	44.3	36.0	36.7	100±15	25.0
														20	9.3	42.8	33.5	34.7	100±15	25.0
														25	10.4	41.3	30.9	32.8	100±15	24.3
														31.25	11.7	39.9	28.2	30.9	100±15	23.6
														62.5	17.0	35.4	18.4	24.8	100±15	21.5
														100	22.0	32.3	10.3	20.8	100±15	20.1
														155	28.1	29.5	2.0	16.9	100±25	15.8
														200	32.4	27.8	1.0	14.7	100±25	15.0

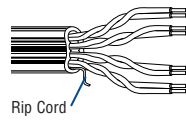


Plenum • FEP Insulation (Color Code: See Chart Below) • Green Flamarrest® Jacket																				
300V RMS	<b>7988P</b> <small>new</small>	NEC: CMP CEC: CMP FT6	4	U-1000 U-1640	U-304.8 U-500.0	23.0 37.7	10.4 17.1	.008 .20	.193	4.90	9.0	3.0	66.0							(same as 7988R above)

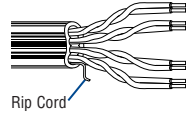


**Nanoskew™ Category 6 • 23 AWG Bonded-Pairs** Solid Bare Copper Conductors • Skew 10.0ns/100m Nominal • Rip Cord

Non-Plenum • Polypropylene Insulation (Color Code: See Chart Below) • Blue PVC Jacket																				
300V RMS	<b>7989R</b> <small>new</small>	NEC: CMR CEC: CMG FT4	4	1000 1640	304.8 500.0	32.0 52.5	14.5 23.8	.009 .23	.365	9.27	9.0	3.0	49.2	1	2.0	72.3	70.3	64.8	100±15	20.0
														4	3.8	63.3	59.5	52.7	100±15	23.0
														8	5.3	58.8	53.4	46.7	100±15	24.5
														10	6.0	57.3	51.3	44.8	100±15	25.0
														16	7.6	54.3	46.7	40.7	100±15	25.0
														20	8.5	52.8	44.3	38.7	100±15	25.0
														25	9.5	51.4	41.8	36.8	100±15	24.3
														31.25	10.7	49.9	39.2	34.9	100±15	23.6
														62.5	15.4	45.4	30.0	28.8	100±15	21.5
														100	19.8	42.3	22.5	24.8	100±15	20.1
														155	25.2	39.5	14.3	20.9	100±22	18.8
														200	29.0	37.8	8.8	18.7	100±22	18.0
														250	32.8	36.3	3.5	16.8	100±32	17.3



Plenum • FEP Teflon® Insulation (Color Code: See Chart Below) • Blue Flamarrest Jacket																					
300V RMS	<b>7989P</b> <small>new</small>	NEC: CMP CEC: CMP FT6	4	1000 1640	304.8 500.0	41.0 62.3	18.6 28.3	.009 .23	.365	9.27	9.0	3.0	49.2							(same as 7989R above)	



ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • DCR = DC Resistance • ELFEXT = Equal Level Far-end Crosstalk • FEP = Fluorinated Ethylene Propylene • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper • UTP = Unshielded Twisted Pair(s)

Not RoHS compliant at time of printing. Please check with Belden Technical Support for current compliance information at 1-800-BELDEN-1.

Teflon is a DuPont trademark.

Color Codes	
Pair No.	Color Combination
1	White/Blue Stripe & Blue
2	White/Orange Stripe & Orange
3	White/Green Stripe & Green
4	White/Brown Stripe & Brown

# RJ-45 Cables for Audio and Video Applications

4-Pair ScTP Cat 5e Indoor/Outdoor for Wireless LAN and High-Flex and Rugged Cat 5e Patch Cable

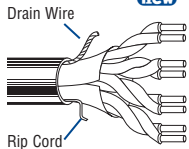


Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Insulation Thickness		Nominal OD		Max. DCR (Ω/100m)	Max. DCR Unbal. (%)	Max. Cap. Unbal. (pF/100m)	Freq. (MHz)	Max. Atten. (dB/100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/100m)	Min. PSUM ELFEXT (dB/100m)	Input Imped. (Ω)	Min. RL (dB)
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm										

**Wireless LAN • 24 AWG** Solid BC Conductors • Twisted Pairs • Overall Beldfoil Shield (100% Coverage) • Stranded TC Drain Wire

**Non-Plenum • Polyolefin Insulation** (Color Code: See Chart Below) • **Oil- and Sun-Resistant Black PVC Jacket**

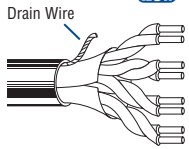
300V RMS	<b>1300A</b> <small>new</small>	NEC: CMR, CMX CEC: CMG FT4	4	500	152.4	18.5	8.4	.010	.25	.265	6.73	9.3	3.0	330	1	2.0	62.3	60.0	60.8	100±15	20.0
				1000	304.8	34.0	15.4								4	4.1	53.3	49.0	48.7	100±15	23.0
															8	5.8	48.8	43.0	42.7	100±15	24.5
															10	6.5	47.3	41.0	40.8	100±15	25.0
															16	8.2	44.3	36.0	36.7	100±15	25.0
															20	9.3	42.8	33.5	34.7	100±15	25.0
															25	10.4	41.3	30.9	32.8	100±15	24.3
															31.25	11.7	39.9	28.0	30.9	100±15	23.6
															62.5	17.0	35.4	19.0	24.8	100±15	21.5
															100	22.0	32.3	11.0	20.8	100±15	20.1



Shield bonded to jacket. Jacket sequentially marked at 2 ft. intervals.

**Non-Plenum • Polypropylene Insulation** (Color Code: See Chart Below) • **Black Low-Smoke, Zero-Halogen Jacket**

300V RMS	<b>1300SB</b> <small>new</small>	NEC: CMG-LS CEC: CMG-LS FT4 Limited Smoke	4	1000	304.8	35.0	15.9	.010	.25	.260	6.60	9.3	3.0	330	1	2.0	62.3	60.3	60.8	100±15	20.0
															4	4.1	53.3	49.2	48.7	100±15	23.0
															8	5.8	48.8	43.0	42.7	100±15	24.5
															10	6.5	47.3	40.8	40.8	100±15	25.0
															16	8.2	44.3	36.1	36.7	100±15	25.0
															20	9.3	42.8	33.5	34.7	100±15	25.0
															25	10.4	41.3	30.9	32.8	100±15	24.3
															31.25	11.7	39.9	28.2	30.9	100±15	23.6
															62.5	17.0	35.4	18.4	24.8	100±15	21.5
															100	22.0	32.3	10.3	20.8	100±15	20.1

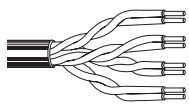


LSZH and ABS Type Approved  
Jacket sequentially marked at 2 ft. intervals.

**Hi-Flex Patch • 24 AWG Bonded Pairs** Stranded (7x32) Bare Copper Conductors

**Non-Plenum • Polyolefin Insulation** (Color Code: See Chart Below) • **Black Industrial-Grade PVC Jacket**

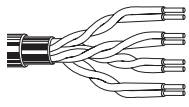
300V RMS	<b>1304A</b> <small>new</small>		4	500	152.4	14.5	6.6	.009	.22	.245	6.22	9.0	3.0	66	1	2.4	65.3	62.9	60.8	100±12	20.0
				1000	304.8	28.0	12.7								4	4.8	56.3	51.5	48.7	100±12	23.0
															8	6.8	51.8	45.0	42.7	100±12	24.5
															10	7.7	50.3	42.6	40.8	100±12	25.0
															16	9.7	47.3	37.5	36.7	100±12	25.0
															20	11.0	45.8	34.8	34.7	100±12	25.0
															25	12.4	44.3	31.9	32.8	100±15	24.3
															31.25	13.9	42.9	29.0	30.9	100±15	23.6
															62.5	20.2	38.4	18.3	24.8	100±15	21.5
															100	26.0	35.3	9.2	20.8	100±18	20.1
															300	48.6	28.2	—	11.2	100±20	18.0
															350	53.2	27.2	—	9.9	100±22	17.0



Jacket sequentially marked at 2 ft. intervals.

**Non-Plenum • Polyolefin Insulation** (Color Code: See Chart Below) • **PVC Inner Jacket • Matte Black PVC Outer Jacket**

300V RMS	<b>1305A</b> <small>new</small>		4	500	152.4	23.0	10.4	.009	.22	.295	7.49	9.0	3.0	66	1	2.4	65.3	62.9	60.8	100±12	20.0
				1000	304.8	42.0	19.1								4	4.8	56.3	51.5	48.7	100±12	23.0
															8	6.8	51.8	45.0	42.7	100±12	24.5
															10	7.7	50.3	42.6	40.8	100±12	25.0
															16	9.7	47.3	37.5	36.7	100±12	25.0
															20	11.0	45.8	34.8	34.7	100±12	25.0
															25	12.4	44.3	31.9	32.8	100±15	24.3
															31.25	13.9	42.9	29.0	30.9	100±15	23.6
															62.5	20.2	38.4	18.3	24.8	100±15	21.5
															100	26.0	35.3	9.2	20.8	100±18	20.1
															300	48.6	28.2	—	11.2	100±20	18.0
															350	53.2	27.2	—	9.9	100±22	17.0



Jacket sequentially marked at 2 ft. intervals.

ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • DCR = DC Resistance • ELFEXT = Equal Level Far-end Crosstalk • FEP = Fluorinated Ethylene Propylene • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper • UTP = Unshielded Twisted Pair(s)

Teflon is a DuPont trademark.

**Color Codes**

Pair No.	Color Combination
1	White/Blue Stripe & Blue
2	White/Orange Stripe & Orange
3	White/Green Stripe & Green
4	White/Brown Stripe & Brown



For more information, contact Belden Technical Support: 1-800-BELDEN-1 • www.belden.com