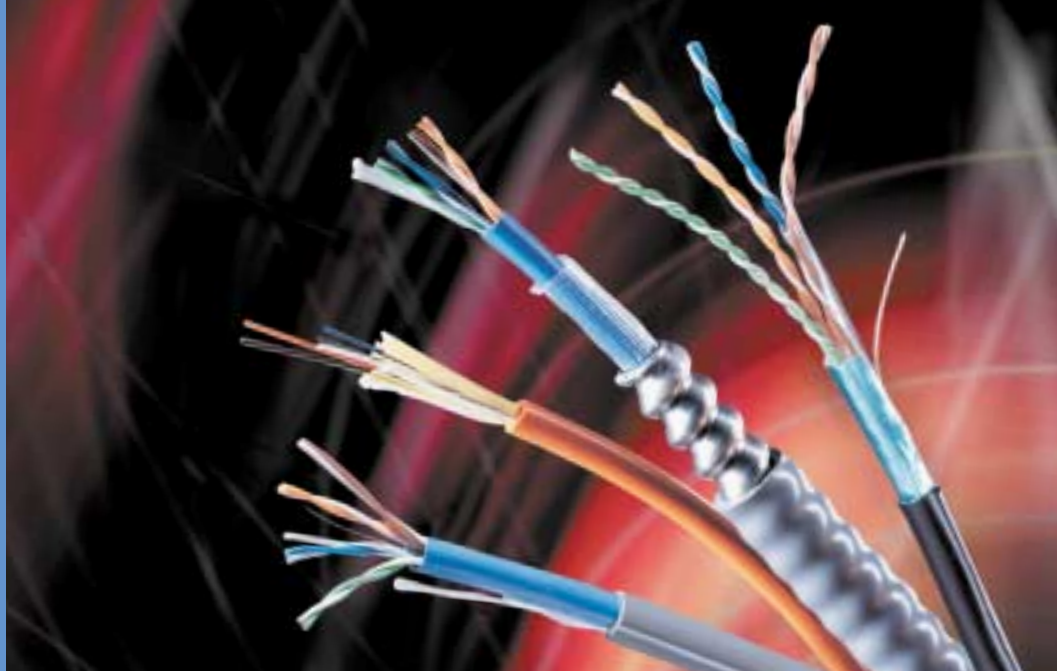


# BULLETIN

Peak network efficiency  
and reliability are achieved  
with Belden's DataTuff  
Industrial Ethernet cables.  
Bonded-Pair versions also  
offer the unique advantage  
of Installable Performance.™



## DataTuff® Category 6 and 5e Ethernet Cables Are Made for Tough Industrial Environments

The reliability of your Industrial Ethernet network depends on the cable infrastructure: Data transmission errors can lead to interruptions in critical control functions resulting in lost production time and even safety issues. To help ensure optimum factory floor performance, Belden has consistently built both quality and reliability into each cable it manufactures. From the introduction and dominant call-out of Belden's Blue Hose® cables, to our present line of DataTuff Category 6 and 5e copper cables and TrayOptic® fiber optic Industrial Ethernet cables, Belden has always supplied the cable you need, when you need it.

And because we have been at the forefront of the industrial marketplace for decades and understand the rigors of the industrial environment, we also have the unique ability to provide top performing cables – regardless of the work environment. So, even if your cabling system is exposed to the following conditions you can turn to Belden for the right solution:

- > Oil and sunlight
- > Temperature variations
- > Abrasion and crushing
- > Presence of EMI/RFI (electromagnetic interference or radio frequency interference)

### Only DataTuff Cables with Belden's Patented Bonded-Pair Technology Offer The Benefit of Installable Performance

Many versions of DataTuff cables feature Belden's patented Bonded-Pair technology. This construction feature affixes the conductors of the cable pairs along their longitudinal axes to ensure that no performance-robbing gaps can develop between the conductor pairs. Since no gaps can occur and the conductor-to-conductor spacing is always

uniform, the cable offers excellent and consistently reliable electrical performance – even after the cable has been subjected to the bending, pulling and twisting that is inherent in the installation process. Belden calls this unique after-installation performance capability Installable Performance.

### TrayOptic Cables Feature Laser Certified Fiber (LCF™) and Water-Blocking Capability

When the installation demands the combination of sophisticated fiber optic technology and rugged durability, turn to Belden's line of TrayOptic indoor/outdoor fiber optic cables – now upgraded to include a water-blocking agent. All TrayOptic products also utilize Laser Certified Fiber to handle Gigabit Ethernet light sources and any expanded bandwidth requirements. For information on Belden's full line of BelOptix® fiber optic cables, including TrayOptic cables, contact Belden at 1-800-BELDEN-4 or visit [www.belden.com](http://www.belden.com).

### Quality You Can Trust

All Belden products are manufactured to the industry's highest standards of quality, utilizing the most advanced equipment, systems, controls and processes. In fact, Belden has long been a pioneer in production processes, such as statistical process control (SPC), that have become industry standards. And Belden was the first major designer and manufacturer of cable products to achieve ISO 9000 registration for the majority of its domestic and overseas facilities.

### Belden Quality Means Uptime and Superior Safety Performance

Today's critical industrial networking applications can't afford data transmission errors that can cause downtime, delays, and even safety concerns. Belden quality gives you the performance and reliability you need on a day-by-day basis.



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nom. Insulated Conductor OD		Nominal OD		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							

**Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • Rip Cord • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket**

	<b>7923A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	28.0	12.7	.038	.97	.230	5.94	1	2.0	65.3	63.3	60.8	100±12	20.0			
				2000	609.6	54.0	24.5	x	x					4	4.0	56.3	52.3	48.7	100±12	23.0	
															8	5.7	51.8	46.1	42.7	100±12	24.5
															10	6.4	50.3	43.9	40.8	100±12	25.0
															16	8.1	47.3	39.1	36.7	100±12	25.0
															25	10.3	44.3	34.1	32.8	100±15	24.3
															31.25	11.6	42.9	31.3	30.9	100±15	23.6
															62.5	16.8	38.4	21.6	24.8	100±15	21.5
															100	21.7	35.3	17.1	20.8	100±15	20.1
															155	27.7	32.5	4.7	16.9	100±18	19.0
											200	32.0	30.8	3.0	14.7	100±18	19.0				
											250	36.4	29.3	—	12.8	100±20	18.0				
											350	44.3	27.2	—	9.9	100±22	17.0				

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126  
 Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

**Cat 5e • 24 AWG Bonded-Pairs Solid BC • Overall Beldfoil® Shield • 24 AWG Stranded TC Drain Wire • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket**

	<b>7929A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	36.0	16.3	.045	1.14	.265	6.73	1	2.0	62.3	60.3	60.8	100±15	20.0			
				2000	609.6	70.0	31.8	x	x					4	4.1	53.3	49.2	48.7	100±15	23.0	
															10	6.5	47.3	41.8	40.8	100±15	25.0
															16	8.2	44.3	36.0	36.7	100±15	25.0
															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
															200	32.4	27.8	1.0	14.7	100±25	15.0

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126  
 Shield is bonded to jacket inner wall for electrical stability. • Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

**Cat 5e • 24 AWG Bonded-Pairs Solid BC • Overall Beldfoil + 70% TC Braid • 24 AWG Solid Spiral Drain Wire • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket**

	<b>7921A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	55.0	24.9	.047	1.19	.330	8.38	1	2.0	62.3	60.3	60.8	100±15	20.0			
				2000	609.6	108.0	49.0	x	x					4	4.1	53.3	49.2	48.7	100±15	23.0	
															10	6.5	47.3	41.8	40.8	100±15	25.0
															16	8.2	44.3	36.0	36.7	100±15	25.0
															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

-25°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126 • Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

**Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • Rip Cord • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .035" Industrial Grade Black or Gray PVC Outer Jacket**

	<b>11700A</b>	NEC: CMR CEC: CMR FT4	4	1000	304.8	39.0	17.7	.038	.97	.285	7.24	(Same as 7923A above)								
				3000	914.4	117.0	53.2	x	x											
															Nominal Core OD:					
															.200	5.08				

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126 • Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e • Outer jacket is sunlight- and oil-resistant.

**Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • Mylar® Wrap • Rip Cord • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .045" Industrial Grade Black or Gray PVC Outer Jacket**

	<b>121700A</b>	NEC: CMG CEC: HL CMG FT4	4	1000	304.8	155.0	70.5	.038	.97	.530	13.46	(Same as 7923A above)								
				3000	914.4	465.0	211.4	x	x											
															Nominal Core OD:					
															.200	5.08				

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126 • Jacket sequentially marked at 1 meter intervals. • Verified to TIA/EIA-568-B.2, Category 5e • Outer jacket is sunlight- and oil-resistant.

**Enhanced Cat 5e • 24 AWG Bonded-Pairs Stranded TC (7x32) • See Color Code Chart**

**Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket**

	<b>7924A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	30.0	13.6	.039	.99	.242	6.15	1	2.4	65.3	62.9	60.8	100±12	20.0			
				2000	609.6	58.0	26.3	x	x					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
															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±15	20.1
															155	33.2	32.5	—	16.9	100±18	19.0
											200	38.4	30.8	—	14.7	100±18	19.0				
											250	43.7	29.3	—	12.8	100±20	18.0				
											350	53.2	27.2	—	9.9	100±22	17.0				

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151; 5,734,126 and 5,763,823  
 Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

ACR = Attenuation Crosstalk Ratio • AL = Aluminum • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper

Mylar is a DuPont trademark.



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nom. Insulated Conductor OD		Nominal OD		Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/ 100m)	Input Imped. ( $\Omega$ )	Min. RL (dB)			
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm										
<b>Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • See Color Code Chart</b>																					
<b>FEP Insulation • Sunlight-, Oil- and Gas-resistant Black FEP Jacket</b>																					
High & Low Temp Oil Res I & II Gas Res	<b>7928A</b> <small>new</small>	NEC: Limited Combustible FHC 25/50 CMP CEC: CMP FT6	4	1000	304.8	24.0	10.9	.036	.91	.187	4.75	1	2.0	65.3	63.3	60.8	100±12	20.0			
								x	x					4	4.0	56.3	52.3	48.7	100±12	23.0	
															8	5.7	51.8	46.1	42.7	100±12	24.5
												.071	1.80		10	6.4	50.3	43.9	40.8	100±12	25.0
															16	8.1	47.3	39.1	36.7	100±12	25.0
															25	10.3	44.3	34.1	32.8	100±15	24.3
															31.25	11.6	42.9	31.3	30.9	100±15	23.6
															62.5	16.8	38.4	21.6	24.8	100±15	21.5
															100	21.7	35.3	17.1	20.8	100±15	20.1
															155	27.7	32.5	4.7	16.9	100±18	19.0
											200	32.0	30.8	3.0	14.7	100±18	19.0				
											250	36.4	29.3	—	12.8	100±20	18.0				
											350	44.3	27.2	—	9.9	100±22	17.0				

RJ-45 Compatible • -70°C • U.S. Patents 5,606,151 and 5,734,126  
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

<b>Cat 5e • 24 AWG Solid BC • Twisted Pairs • Rip Cord • See Color Code Chart</b>																					
<b>Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket</b>																					
Rip Cord	<b>7918A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	28.0	12.7	.037	.94	.230	5.84	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	
															10	6.5	47.3	41.8	40.8	100±15	25.0
															16	8.2	44.3	36.0	36.7	100±15	25.0
															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
															200	32.4	27.8	1.0	14.7	100±25	15.0

RJ-45 Compatible • -25°C Cold Bend • Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

<b>Cat 5e • 24 AWG Solid BC • Twisted Pairs • Overall Beldfoil® Shield • 24 AWG Stranded TC Drain Wire • See Color Code Chart</b>																		
<b>Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket</b>																		
Shielded	<b>7919A</b> <small>new</small>	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	36.0	16.3	.042	1.07	.265	6.73	(Same as 7918A above)						
				2000	609.6	70.0	31.8											

RJ-45 Compatible • -25°C Cold Bend • Shield is bonded to jacket inner wall for electrical stability. • Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

<b>Enhanced Cat 6 • 23 AWG Bonded-Pairs Solid BC • Patented E-Spline Center Member • Rip Cord • See Color Code Chart</b>																					
<b>Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket</b>																					
Rip Cord	<b>7927A</b> <small>new</small>	NEC: CMR CEC: CMR FT4	4	1000	304.8	44.0	20.0	.042	1.07	.251	6.38	1	1.9	80.3	78.5	70.8	100±12	20.0			
														10	5.7	65.3	59.6	50.8	100±12	25.0	
															31.25	10.2	57.9	47.7	40.9	100±15	25.0
															62.5	14.7	53.4	38.7	34.9	100±15	25.0
															100	18.9	50.3	31.4	30.8	100±15	25.0
															155	23.9	47.5	23.5	27.0	100±15	22.8
															200	27.5	45.8	18.3	24.8	100±15	21.7
															250	31.2	44.3	13.2	22.8	100±20	20.5
															350	37.7	40.2	4.5	19.9	100±22	19.8
															400	40.6	39.3	0.6	18.8	100±22	19.5
											500	46.2	37.8	>0*	16.8	100±22	18.4				
											550	48.8	37.2	—	16.0	100±22	18.0				
											600	51.4	36.6	—	15.2	100±22	17.6				

RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151; 5,734,126; 5,789,711 and 6,297,454-B1  
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2-1, Category 6  
\*PSUM ACR >0 is guaranteed to 460 MHz.

<b>Cat 6 • 23 AWG Bonded-Pairs Solid BC • See Color Code Chart</b>																					
<b>FEP Insulation • Sunlight-, Oil- and Gas-resistant Black FEP Jacket</b>																					
High & Low Temp Oil Res I & II Gas Res	<b>7931A</b> <small>new</small>	NEC: Limited Combustible FHC 25/50 CMP CEC: CMP FT6	4	1000	304.8	35.0	15.9	.038	.97	.214	5.44	1	2.0	72.3	70.3	64.8	100±15	20.0			
														10	6.0	57.3	51.3	44.8	100±15	25.0	
															20	8.5	52.8	44.3	38.7	100±15	25.0
															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
															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

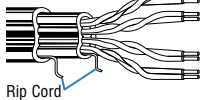
RJ-45 Compatible • -70°C Cold Bend • U.S. Patents 5,606,151 and 5,734,126  
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2-1, Category 6

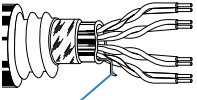
ACR = Attenuation Crosstalk Ratio • AL = Aluminum • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper

**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



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nom. Insulated Conductor OD		Nominal OD		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														
<b>Enhanced Cat 6 • 23 AWG Bonded-Pairs Solid BC • Rip Cord • See Color Code Chart</b>																									
<b>Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .035" Industrial Grade Black or Gray PVC Outer Jacket</b>																									
 Upjacketed Rip Cord	<b>11872A</b>	NEC:	4	1000	304.8	66.0	30.0	.041	1.04	.475	12.07	1	1.9	72.3	70	64.8	100±12	20.0							
		CM						X	X	X	X	4	3.7	63.3	59	52.7	100±12	23.0							
		CEC:																							
		CM																							
		FT1																							
RJ-45 Compatible • -25°C Cold Bend • U.S. Patents 5,606,151, 5,734,126 and 5,821,467 Jacket sequentially marked at 2 ft. intervals. • Verified to TIA/EIA-568-B.2-1, Category 6 *Value provided for information only.																									

<b>Enhanced Cat 6 • 23 AWG Bonded-Pairs Solid BC • Mylar® Wrap • Rip Cord • See Color Code Chart</b>																									
<b>Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .055" Industrial Grade Black or Gray PVC Outer Jacket</b>																									
 Interlocked AL Armor Rip Cord	<b>121872A</b>	NEC:	4	1000	304.8	293.0	133.2	.041	1.04	.684	17.37	(Same as 11872A above)													
		CMG						X	X																
		CEC:																							
		HL																							
		CMG FT4																							
RJ-45 Compatible • -40°C • U.S. Patents 5,606,151, 5,734,126 and 5,821,467 • Jacket sequentially marked at 1 meter intervals. • Verified to TIA/EIA-568-B.2-1, Category 6 ACR = Attenuation Crosstalk Ratio • AL = Aluminum • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper																									

### DataTuff® Industrial Ethernet Cable Selection Guide

Part No.	Category	Shielding		Conductor		Installation	Environmental Issues				Industrial Grade Jacket		
		Unshielded	Shielded*	Solid	Stranded**	Installation Stress Resistance†	Oil Resistance	UV Sunlight Resistance	Gasoline Resistance	HI/LO Temp	Heavy	Upjacket	Armored
7923A	Cat 5e	●		●		●	●	●			●		
7929A	Cat 5e		●	●		●	●	●			●		
7921A	Cat 5e		●	●		●	●	●			●		
11700A	Cat 5e	●		●		●	●	●				●	
121700A	Cat 5e	●		●		●	●	●					●
7924A	Cat 5e	●			●	●	●	●			●		
7928A	Cat 5e	●		●		●	●	●	●	●	●		
7918A	Cat 5e	●		●		●	●	●			●		
7919A	Cat 5e		●	●		●	●	●			●		
7927A	Cat 6	●		●		●	●	●			●		
7931A	Cat 6	●		●		●	●	●	●	●	●		
11872A	Cat 6	●		●		●	●	●				●	
121872A	Cat 6	●		●		●	●	●					●

\* Shielded products are recommended for high-noise environments.  
 \*\* Stranded products are recommended where more flexibility is needed.  
 † Products with Bonded-Pair technology provide Installable Performance™ advantages — refer to Belden Bonded-Pair Cable Bulletin #BP02.

This chart is meant to help the user select the right cable. Refer to cable specifications for details. See [www.belden.com](http://www.belden.com) for fiber optic cable recommendations and technical data sheets.

#### 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:** [www.belden.com/ienp197.pdf](http://www.belden.com/ienp197.pdf)

Belden Electronics Division Technical Support 1-800-BELDEN-1 or 1-800-BELDEN-3