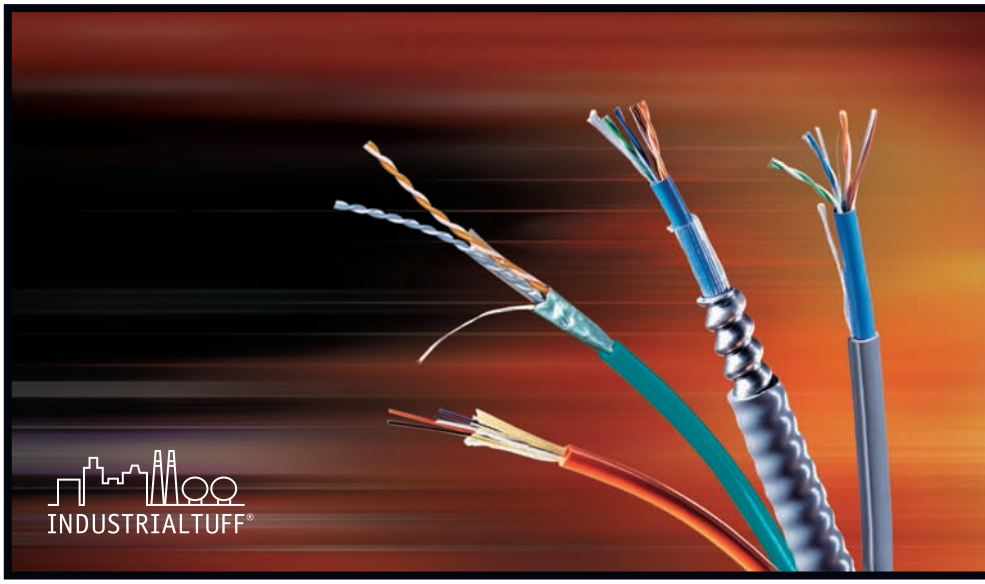
BELDEN
SENDING ALL THE RIGHT SIGNALS

New Product Bulletin

NP 231

Industrial Ethernet

Whether you specify copper or fiber optic cables, peak network efficiency and reliability are achieved with Belden® DataTuff® Industrial Ethernet cables. Bonded-Pair UTP and ScTP versions also offer Installable Performance®.



Belden Expands the DataTuff® Cable Line With Low Smoke Zero Halogen Cables, Along With Shielded Burial Cable

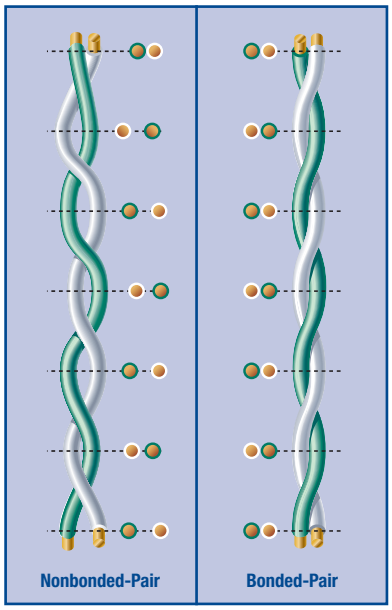
The reliability of your Industrial Ethernet network depends on the cable infrastructure: Data transmission errors can lead to interruptions in critical control functions resulting in lost production time and even safety issues. To help ensure optimum factory floor performance, Belden has consistently 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.

Since Belden has 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, sunlight and gasoline
- Temperature variations
- Abrasion, crushing and burial
- Presence of EMI/RFI (electromagnetic interference or radio frequency interference)
- MSHA mining approval
- Red jackets designating safety network

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 conductor insulation 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, or centricity, 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.

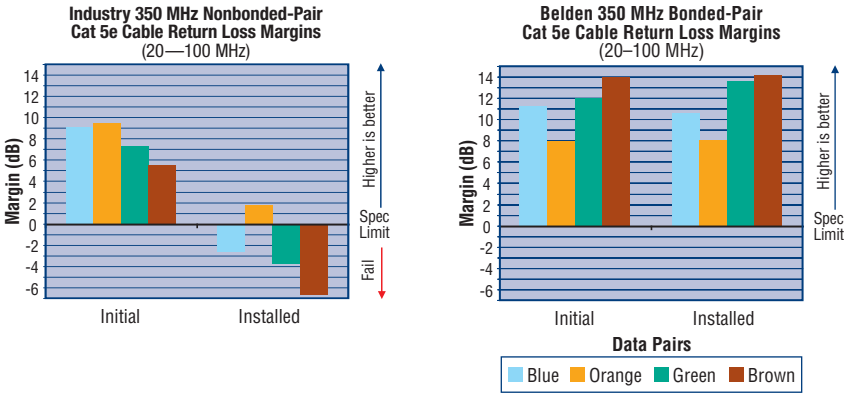


Installed and manipulated nonbonded-pairs (left) have a tendency to gap, varying the centricity of the two conductors. Bonded-Pairs (right) do not gap so the physical integrity of the pair is maintained.

A cable prep tool is included in each reel of Bonded-Pair products. The tool is sold separately as 1797B.

Additionally, when the nonbonded pairs gap, an impedance mismatch occurs. When the transmitted signal encounters this mismatch, portions of the signal are reflected back toward the receiver. This is called return loss, or RL. A cable with poor RL values can significantly impact the performance of an active network, reduce network efficiency and lead to excessive bit error rates.

In tests performed by Belden that simulate the effects of the installation process, both an industry-leading 350 MHz Cat 5e cable (a nonbonded-pair cable) and a Belden 350 MHz Cat 5e Bonded-Pair cable were tested right off the reel and then for the sake of comparison, they were subjected to an Installation Stress Test. This Stress Test simulated just some of the stresses that a cable experiences as it is installed (being bent around corners, creating a service loop and being stuffed into an outlet box). The results? The nonbonded-pair cable showed an RL degradation greater than 12 dB — over 15 times worse than its before-installation value. The Bonded-Pair cables showed little change in RL performance. *(For more detailed information, request the Technical Bulletin TB-66 "The Impact of Installation Stresses on Cable Performance.")*



In an Installation Stress Test that simulates the installation process, the Cat 5e nonbonded-pair cables (left) showed an RL degradation of more than 12 dB. The Bonded-Pair cables (right) exhibited little change in RL performance.

TrayOptic® Cables Feature Laser Certified Fiber (LCFÍ) and Water-Blocking Capability

When the installation demands the combination of sophisticated fiber optic technology and rugged durability, look 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 fiber optic cables, including TrayOptic cables, contact Belden at **1.800.BELDEN.1** or visit www.belden.com.

Quality You Can Trust

These Belden products are RoHS compliant, plus they 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.

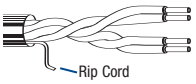
Belden Quality Means Uptime and Superior Safety Performance

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.

Industrial Data Solutions® — Industrial Ethernet

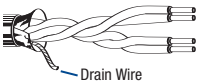
Category 5e DataTuff® Twisted Pair Cables, 2-Pair
Heavy-Duty Sunlight and Oil-Resistant Jackets

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		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							
Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • Rip Cord • See Color Code Chart																
Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- & Oil-resistant Black, Red or Teal PVC Jacket																
EtherNet/IP™ Compliant	**7932A**	NEC: CMR CEC: CMR FT4	2	1000 2000†	304.8 609.6	19.0 38.0	8.62 17.25	.207	5.26	1	2.0	65.3	63.3	60.8	100±12	20.0
										4	4.0	56.3	52.3	48.7	100±12	23.6
										8	5.7	51.8	46.1	42.7	100±12	25.4
										10	6.4	50.3	43.9	40.8	100±12	26.0
										16	8.1	47.3	39.1	36.7	100±12	26.0
										25	10.3	44.3	34.1	32.8	100±15	25.5
										31.25	11.6	42.9	31.3	30.9	100±15	25.0
										62.5	16.8	38.4	21.6	24.8	100±15	23.5
										100	21.7	35.3	17.1	20.8	100±15	22.5
										155	27.7	32.5	4.7	16.9	100±18	19.0
										200	32.0	30.8	3.0	14.7	100±20	19.0
										250	36.4	29.3	—	12.8	100±20	18.0
										350	44.3	27.2	—	9.9	100±22	17.0



Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
M-12 or RJ-45 Compatible • U.S. Patents 5,606,151 and 5,734,126 • Cable passes -40°C Cold Bend per UL1581
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 • Overall Beldfoil® Shield • Drain Wire • See Color Code Chart																
Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- & Oil-resistant Black, Red or Teal PVC Jacket																
EtherNet/IP™ Compliant **Shielded**	**7933A**	NEC: CMR CEC: CMR FT4	2	1000 2000†	304.8 609.6	32.0 64.8	14.5 29.4	.227	5.77	1	2.0	62.3	60.3	60.8	100±15	20.0
										4	4.1	53.3	49.2	48.7	100±15	23.6
										10	6.5	47.3	40.8	40.8	100±15	26.0
										16	8.2	44.3	36.1	36.7	100±15	26.0
										31.25	11.7	39.9	28.2	30.9	100±15	25.0
										62.5	17.0	35.4	18.4	24.8	100±15	23.5
										100	22.0	32.3	10.3	20.8	100±15	22.5
										200	32.4	27.8	1.0	14.7	100±25	15.0



Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
M-12 or RJ-45 Compatible • U.S. Patents 5,606,151 and 5,734,126 • Cable passes -40°C Cold Bend per UL1581
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e • Shield is bonded to jacket inner wall for electrical stability.

ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss
* Subject to length de-rating.
† 2000 ft. put-up available in Black only.

2-Pair Color Codes

Pair No.	Color Combination
1	White/Orange Stripe & Orange
2	White/Green Stripe & Green

BELDEN
SENDING ALL THE RIGHT SIGNALS

Category 5e DataTuff® Twisted Pair Cables, 4-Pair

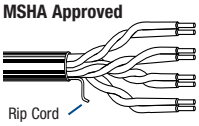
Heavy-Duty Sunlight and Oil-Resistant Jackets

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, Red or Teal PVC Jacket

EtherNet/IP Compliant

MSHA Approved



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths Ft.	Standard Lengths m	Standard Unit Wt. Lbs.	Standard Unit Wt. kg	Nominal OD Inch	Nominal OD mm
	7923A	NEC: CMR, CMX-Outdoor CEC: CMR FT4	4	1000 2000†	304.8 609.6	28.0 54.0	12.7 24.5	.230	5.84

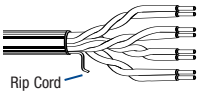
Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/ 100m)	Input Imped. (Ω)	Min. RL (dB)
1	2.0	65.3	63.3	60.8	100±12	20.0
4	4.0	56.3	52.3	48.7	100±12	23.6
8	5.7	51.8	46.1	42.7	100±12	25.4
10	6.4	50.3	43.9	40.8	100±12	26.0
16	8.1	47.3	39.1	36.7	100±12	26.0
25	10.3	44.3	34.1	32.8	100±15	25.5
31.25	11.6	42.9	31.3	30.9	100±15	25.0
62.5	16.8	38.4	21.6	24.8	100±15	23.5
100	21.7	35.3	17.1	20.8	100±15	22.5
155	27.7	32.5	4.7	16.9	100±18	19.0
200	32.0	30.8	3.0	14.7	100±20	19.0
250	36.4	29.3	—	12.8	100±20	18.0
350	44.3	27.2	—	9.9	100±22	17.0

Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
RJ-45 Compatible • U.S. Patents 5,606,151 and 5,734,126 • Cable passes -40°C Cold Bend per UL1581
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e • P-07-KA060003-MSHA**

Cat 5e • 24 AWG Solid BC • Twisted Pairs • Rip Cord • See Color Code Chart

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

MSHA Approved



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths Ft.	Standard Lengths m	Standard Unit Wt. Lbs.	Standard Unit Wt. kg	Nominal OD Inch	Nominal OD mm
	7918A	NEC: CMR, CMX-Outdoor CEC: CMR FT4	4	1000 2000†	304.8 609.6	28.0 52.0	12.7 23.6	.230	5.84

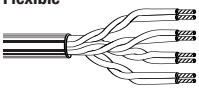
Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/ 100m)	Input Imped. (Ω)	Min. RL (dB)
1	2.0	62.3	60.3	60.8	100±15	20.0
4	4.1	53.3	49.2	48.7	100±15	23.0
10	6.5	47.3	40.8	40.8	100±15	25.0
16	8.2	44.3	36.1	36.7	100±15	25.0
31.25	11.7	39.9	28.2	30.9	100±15	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

Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*.
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • Jacket sequentially marked at 2 ft. intervals.
Third party verified to TIA/EIA-568-B.2, Category 5e • P-07-KA060003-MSHA**

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, Red or Teal PVC Jacket

Stranded Flexible



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths Ft.	Standard Lengths m	Standard Unit Wt. Lbs.	Standard Unit Wt. kg	Nominal OD Inch	Nominal OD mm
	7924A	NEC: CMR, CMX-Outdoor CEC: CMR FT4	4	1000 2000†	304.8 609.6	30.0 58.0	13.6 26.3	.242	6.15

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)
1	2.4	65.3	62.9	60.8	100±12	20.0
4	4.8	56.3	51.5	48.7	100±12	23.6
8	6.8	51.8	45.0	42.7	100±12	25.4
10	7.7	50.3	42.6	40.8	100±12	26.0
16	9.7	47.3	37.5	36.7	100±12	26.0
25	12.4	44.3	31.9	32.8	100±15	25.5
31.25	13.9	42.9	29.0	30.9	100±15	25.0
62.5	20.2	38.4	18.3	24.8	100±15	23.5
100	26.0	35.3	9.2	20.8	100±18	22.5
155	33.2	32.5	—	16.9	100±18	19.0
200	38.4	30.8	—	14.7	100±20	19.0
250	43.7	29.3	—	12.8	100±20	18.0
350	53.2	27.2	—	9.9	100±22	17.0

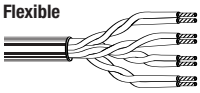
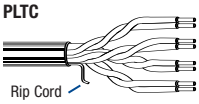
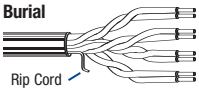
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • U.S. Patents 5,606,151; 5,734,126 and 5,763,823
Jacket sequentially marked at 2 ft. intervals. • Third party verified to TIA/EIA-568-B.2, Category 5e

ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss
* Subject to length de-rating.
** Pennsylvania Department of Environmental Resources and United States Mine Safety and Health Administration Certification
† 2000 ft. put-up available in Black only.

4-Pair 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

Category 5e DataTuff® Twisted Pair Cables, 4-Pair (continued)

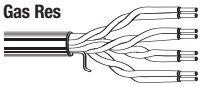
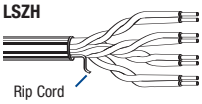
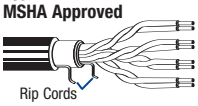
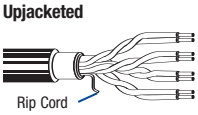
Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nominal OD		Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/100m)	Input Imped. (W)	Min. RL (dB)
				Ft.	m	Lbs.	kg	Inch	mm							
Cat 5e • 24 AWG Stranded BC (7x32) • Twisted Pairs • See Color Code Chart																
Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight- and Oil-resistant Black PVC Jacket																
Stranded Flexible 	**7930A**	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000 2000	304.8 609.6	29.0 56.0	13.2 25.4	.240	6.09	1 4 10 16 31.25 62.5 100 200	2.5 4.9 7.8 9.9 14.1 20.4 26.4 38.9	62.3 53.3 47.3 44.3 39.9 35.4 32.3 27.8	59.8 48.4 39.5 34.4 25.8 15.0 5.9 —	60.8 48.7 40.8 36.7 30.9 24.8 20.8 14.7	100±15 100±15 100±15 100±15 100±15 100±15 100±15 100±25	20.0 23.0 25.0 25.0 23.6 21.5 20.1 15.0
Installation Temperature: -10°C to +75°C; Operating Temperature: -25°C to +75°C* RJ-45 Compatible • Cable passes -25°C Cold Bend per UL1581 Jacket sequentially marked at 2 ft. intervals. Third party verified to TIA/EIA-568-B.2, Category 5e																
Enhanced Cat 5e • 22 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																
PLTC  Rip Cord	**7922A**	NEC: PLTC, CMR, CMX- Outdoor CEC: CMR FT4	4	1000 2000	304.8 609.6	46.3 92.5	21.0 42.0	.301	7.65	1 4 8 10 16 25 31.25 62.5 100 155 200 250 350	2.0 4.0 5.7 6.4 8.1 10.3 11.6 16.8 21.7 27.7 32.0 36.4 44.3	65.3 56.3 51.8 50.3 47.3 44.3 42.9 38.4 35.3 32.5 30.8 29.3 27.2	63.3 52.3 46.1 43.9 39.1 34.1 31.3 21.6 17.1 4.7 3.0 — —	60.8 48.7 42.7 40.8 36.7 32.8 30.9 24.8 20.8 16.9 14.7 12.8 9.9	100±12 100±12 100±12 100±12 100±12 100±15 100±15 100±15 100±15 100±18 100±20 100±20 100±22	20.0 23.0 24.5 25.0 25.0 24.3 23.6 21.5 20.1 19.0 19.0 18.0 17.0
Installation Temperature: -10°C to +75°C; Operating Temperature: -25°C to +75°C* Cable passes -25°C Cold Bend per UL1581 • Jacket sequentially marked at 2 ft. intervals. U.S. Patents 5,606,151 and 5,734,126 • 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 • Waterblocked • Sunlight- and Oil-resistant Black Polyethylene Jacket																
EtherNet/IP Compliant **Halogen Free Waterblocked Burial**  Rip Cord	**7934A**	—	4	1000	304.8	25.0	11.4	.230	5.84	1 4 8 10 16 20 25 31.25 62.5 100 155 200	2.0 4.1 5.8 6.5 8.2 9.3 10.4 11.7 17.0 22.0 28.1 32.0	62.3 53.3 48.8 47.3 44.3 42.8 41.3 39.9 35.4 32.3 29.5 27.8	60.0 49.0 43.0 41.0 36.0 33.5 30.9 28.0 19.0 11.0 1.4 1.0	60.8 48.7 42.7 40.8 36.7 34.7 32.8 30.9 24.8 20.8 16.9 14.7	100±15 100±15 100±15 100±15 100±15 100±15 100±15 100±15 100±15 100±15 100±25 100±25	20.0 23.6 25.4 26.0 26.0 26.0 25.5 25.0 23.5 22.5 15.8 15.0
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C* Waterblocked per Telcordia, IEC and ICEA U.S. Patents 5,606,151 and 5,734,126 • Third party verified to TIA/EIA-568-B.2, Category 5e RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • Jacket sequentially marked at 3 ft. intervals.																

ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss
* Subject to length de-rating.

4-Pair 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

Category 5e DataTuff® Twisted Pair Cables, 4-Pair (continued)

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nominal OD		Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/100m)	Input Imped. (W)	Min. RL (dB)
				Ft.	m	Lbs.	kg	Inch	mm							
Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • See Color Code Chart																
Plenum • FEP Insulation • Sunlight-, Oil- and Gas-resistant Black FEP Jacket																
EtherNet/IP Compliant **High & Low Temp** **Oil Res I & II** **Gas Res** 	**7928A**	NEC: Limited Combustible FHC 25/50 CMP CEC: CMP FT6	4	1000	304.8	24.0	10.9	.187	4.75	1 4 8 10 16 25 31.25 62.5 100 155 200 250 350	2.0 4.0 5.7 6.4 8.1 10.3 11.6 16.8 21.7 27.7 32.0 36.4 44.3	65.3 56.3 51.8 50.3 47.3 44.3 42.9 38.4 35.3 32.5 30.8 29.3 27.2	63.3 52.3 46.1 43.9 39.1 34.1 31.3 21.6 17.1 4.7 3.0 — —	60.8 48.7 42.7 40.8 36.7 32.8 30.9 24.8 20.8 16.9 14.7 12.8 9.9	100±12 100±12 100±12 100±12 100±12 100±15 100±15 100±15 100±15 100±18 100±20 100±20 100±22	20.0 23.0 25.0 26.0 26.0 25.0 25.0 23.0 22.0 19.0 19.0 18.0 17.0
Installation Temperature: -55°C to +150°C*; Operating Temperature: -70°C to +150°C* U.S. Patents 5,606,151 and 5,734,126 • Third party verified to TIA/EIA-568-B.2, Category 5e RJ-45 Compatible • Cable passes -70°C Cold Bend per UL1581• Jacket sequentially marked at 2 ft. intervals.																
Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC Conductors • Rip Cord • See Color Code Chart																
Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight-resistant Black Low Smoke Zero Halogen Jacket																
EtherNet/IP Compliant **LSZH**  Rip Cord	**7935A** new	NEC: CM CEC: CM FT1	4	1000 2000	304.8 609.6	24.0 44.0	10.90 19.96	.230	5.84	1 4 8 10 16 25 31.25 62.5 100 155 200 250 350	2.0 4.0 5.7 6.4 8.1 10.3 11.6 16.8 21.7 27.7 32.0 36.4 44.3	65.3 56.3 51.8 50.3 47.3 44.3 42.9 38.4 35.3 32.5 30.8 29.3 27.2	63.3 52.3 46.1 43.9 39.1 34.1 31.3 21.6 17.1 4.7 3.0 — —	60.8 48.7 42.7 40.8 36.7 32.8 30.9 24.8 20.8 16.9 14.7 12.8 9.9	100±12 100±12 100±12 100±12 100±12 100±15 100±15 100±15 100±15 100±18 100±20 100±20 100±22	20.0 23.0 25.0 26.0 26.0 25.0 25.0 23.0 22.0 19.0 19.0 18.0 17.0
Installation Temperature: +5°C to +75°C • Operating Temperature: -10°C to +75°C* RJ-45 Compatible • 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, Gray, Red, Teal or Blue PVC Outer Jacket																
EtherNet/IP Compliant **Upjacketed** **MSHA Approved**  Rip Cords	**11700A**	NEC: CMR, CMX-Outdoor CEC: CMR FT4	4	1000 3000†	304.8 914.4	39.0 117.0	17.7 53.2	.285 Nominal Core OD: .200	7.24 5.08	1 4 8 10 16 25 31.25 62.5 100 155 200 250 350	2.0 4.0 5.7 6.4 8.1 10.3 11.6 16.8 21.7 27.7 32.0 36.4 44.3	65.3 56.3 51.8 50.3 47.3 44.3 42.9 38.4 35.3 32.5 30.8 29.3 27.2	63.3 52.3 46.1 43.9 39.1 34.1 31.3 21.6 17.1 4.7 3.0 — —	60.8 48.7 42.7 40.8 36.7 32.8 30.9 24.8 20.8 16.9 14.7 12.8 9.9	100±12 100±12 100±12 100±12 100±12 100±15 100±15 100±15 100±15 100±18 100±20 100±20 100±22	20.0 23.0 25.4 26.0 26.0 25.0 25.0 23.0 22.5 19.0 19.0 18.0 17.0
†3000 ft. put-up available in Black only. Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C* • P-07-KA060005-MSHA** Cable passes -40°C Cold Bend per UL1581 • RJ-45 Compatible • 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 • Rip Cord • See Color Code Chart																
Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .035" Industrial Grade Black or Blue PVC Outer Jacket																
Oil Res I & II **Upjacketed**  Rip Cord	**11700A2**	NEC: CMR CEC: CMR FT4	4	1000 2000†	304.8 609.6	42.0 86.0	19.1 39.1	.285 Nominal Core OD: .200	7.24 5.08	1 4 8 10 16 25 31.25 62.5 100 155 200 250 350	2.0 4.0 5.7 6.4 8.1 10.3 11.6 16.8 21.7 27.7 32.0 36.4 44.3	65.3 56.3 51.8 50.3 47.3 44.3 42.9 38.4 35.3 32.5 30.8 29.3 27.2	63.3 52.3 46.1 43.9 39.1 34.1 31.3 21.6 17.1 4.7 3.0 — —	60.8 48.7 42.7 40.8 36.7 32.8 30.9 24.8 20.8 16.9 14.7 12.8 9.9	100±12 100±12 100±12 100±12 100±12 100±15 100±15 100±15 100±15 100±18 100±20 100±20 100±22	20.0 23.0 24.5 25.0 25.0 24.3 23.6 21.5 20.1 19.0 19.0 18.0 17.0
†2000 ft. put-up available in Black only. Installation Temperature: +5°C to +75°C; Operating Temperature: -10°C to +75°C* Cable passes -10°C Cold Bend per UL1581 • RJ-45 Compatible • 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 also sunlight-resistant.																

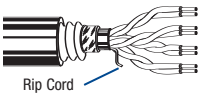
ACR = Attenuation Crosstalk Ratio • BC = Bare Copper • ELFEXT = Equal Level Far-end Crosstalk • NEXT = Near-end Crosstalk • PSUM = Power Sum • RL = Return Loss • TC = Tinned Copper

* Subject to length de-rating.

** Pennsylvania Department of Environmental Resources and United States Mine Safety and Health Administration Certification

Category 5e DataTuff® Twisted Pair Cables, 4-Pair (continued)

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Standard Lengths		Standard Unit Wt.		Nominal OD		Freq. (MHz)	Max. Atten. (dB/ 100m)	Min. PSUM NEXT (dB)	Min. PSUM ACR (dB/ 100m)	Min. PSUM ELFEXT (dB/100m)	Input Imped. (W)	Min. RL (dB)
				Ft.	m	Lbs.	kg	Inch	mm							
Enhanced Cat 5e • 24 AWG Bonded-Pairs Solid BC • Polyester Wrap • Rip Cord • See Color Code Chart																
AL Interlocked Armor • Polyolefin Insulation • PVC Inner Jacket • .045" Industrial Grade Black or Gray PVC Outer Jacket																
Interlocked AL Armor	**121700A**	NEC: CM CEC: HL CMG FT4	4	1000	304.8	159.0	72.0	.530	13.46	1	2.0	65.3	63.3	60.8	100±12	20.0
				3000†	914.4	459.0	210.6			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
								Nominal Core OD:		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
								.200	5.08	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±20	19.0
										250	36.4	29.3	—	12.8	100±20	18.0
										350	44.3	27.2	—	9.9	100±22	17.0

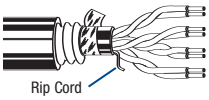


†3000 ft. put-up available in Black only.
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*RJ-45 Compatible
Cable passes -40°C Cold Bend per UL1581 • U.S. Patents 5,606,151 and 5,734,126 • Jacket sequentially marked at 1 meter intervals.
Third party verified to TIA/EIA-568-B.2, Category 5e • Outer jacket is sunlight- and oil-resistant.

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

AL Interlocked Armor • Polyolefin Insulation • PVC Inner Jacket • .045" Industrial Grade Black or Blue PVC Outer Jacket

Interlocked AL Armor -40ºC Cold Impact	**121700R** new	NEC: CM CEC: HL CMG FT4	4	1000	304.8	159.0	72.0	.530	13.46	1	2.0	65.3	63.3	60.8	100±12	20.0
				3000†	914.4	459.0	210.6			4	4.0	56.3	52.3	48.7	100±12	23.0
				5000†	1524.0	690.0	313.0			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
								Nominal Core OD:		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
								.200	5.08	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±20	19.0
										250	36.4	29.3	—	12.8	100±20	18.0
										350	44.3	27.2	—	9.9	100±22	17.0

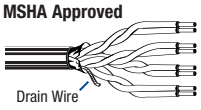


†3000 ft. and 5000 ft. put-ups available in Blue only. • RJ-45 Compatible • Installation Temperature: -25°C to +75°C
Operating Temperature: -40°C to +75°C* • Outer Jacket is sunlight and oil-resistant • Jacket sequentially marked at 1 meter intervals
Third party verified to TIA/EIA-568-B.2, Category 5e • U.S. Patents 5,606,151 and 5,734,126

Enhanced 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 or Blue PVC Jacket

Shielded MSHA Approved	**7929A**	NEC: CMR, CMX-Outdoor CEC: CMR FT4	4	1000	304.8	37.0	16.8	.265	6.73	1	2.0	62.3	60.3	60.8	100±15	20.0
				2000†	609.6	72.0	32.7			4	4.1	53.3	49.2	48.7	100±15	23.0
										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
										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±15	15.0



†2000 ft. put-up available in Black only.
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C* • P-07-KA060003-MSHA**
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • 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

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
* Subject to length de-rating.
** Pennsylvania Department of Environmental Resources and United States Mine Safety and Health Administration Certification

4-Pair 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

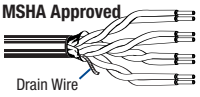
Category 5e DataTuff® Twisted Pair Cables, 4-Pair (continued)

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

Cat 5e • 24 AWG Solid BC • Twisted Pairs • 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 or Blue PVC Jacket

Shielded
MSHA Approved



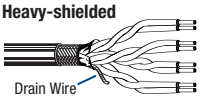
7919A	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	35.0	15.9	.265	6.73	1	2.0	62.3	60.3	60.8	100±15	20.0
			2000†	609.6	68.0	30.9			4	4.1	53.3	49.2	48.7	100±15	23.0
									10	6.5	47.3	40.8	40.8	100±15	25.0
									16	8.2	44.3	36.1	36.7	100±15	25.0
									31.25	11.7	39.9	28.2	30.9	100±15	23.6
									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

†2000 ft. put-up available in Black only.
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C* • P-07-KA060004-MSHA** • Cable passes -40°C Cold Bend per UL1581
RJ-45 Compatible • 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

Enhanced 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, Red & Teal or Blue PVC Jacket

EtherNet/IP™
Compliant
Heavy-shielded



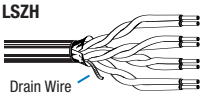
7921A	NEC: CMR, CMX- Outdoor CEC: CMR FT4	4	1000	304.8	55.0	24.9	.330	8.38	1	2.0	62.3	60.3	60.8	100±15	20.0
			2000†	609.6	106.0	48.1			4	4.1	53.3	49.2	48.7	100±15	23.6
									10	6.5	47.3	40.8	40.8	100±15	26.0
									16	8.2	44.3	36.1	36.7	100±15	26.0
									31.25	11.7	39.9	28.2	30.9	100±15	25.6
									62.5	17.0	35.4	18.4	24.8	100±15	23.5
									100	22.0	32.3	10.3	20.8	100±15	22.5

†2000 ft. put-up available in Black only.
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C* • Cable passes -40°C Cold Bend per UL1581
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 • Overall Beldfoil Shield • 24 AWG Stranded TC Drain Wire • See Color Code Chart

Non-Plenum • Polyolefin Insulation • .030" Industrial Grade Sunlight-resistant Black Low Smoke Zero Halogen PVC Jacket

EtherNet/IP™
Compliant
Shielded
LSZH



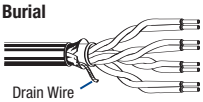
7936A new	NEC: CMR CEC: CMG FT4	4	1000	304.8	39.0	17.69	.265	6.73	1	2.0	62.3	60.3	60.8	100±15	20.0
			2000	609.6	76.0	34.50			4	4.1	53.3	49.2	48.7	100±15	23.0
									10	6.5	47.3	40.8	40.8	100±15	25.0
									16	8.2	44.3	36.1	36.7	100±15	25.0
									31.25	11.7	39.9	28.2	30.9	100±15	23.6
									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

Installation Temperature: +5°C to +75°C • Operating Temperature: -10°C to +75°C*
RJ-45 Compatible • 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

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

Polyolefin Insulation • Waterblocked • PE Inner Jacket • Sunlight- and Oil-resistant Black PE Outer Jacket

Halogen Free
Shielded
Waterlocked
Burial



7937A new	—	4	1000	304.8	38.0	17.23	.276	7.01	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	40.8	40.8	100±15	25.0
									16	8.2	44.3	36.1	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

Installation Temperature: -25°C to +75°C • Operating Temperature: -40°C to +75°C*
Waterblocked per Telcordia, IEC and ICEA
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • U.S. Patents 5,606,151 and 5,734,126
Jacket sequentially marked at 2 ft. intervals.

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
* Subject to length de-rating.
** Pennsylvania Department of Environmental Resources and United States Mine Safety and Health Administration Certification

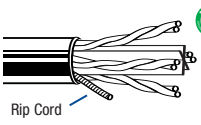
Industrial Data Solutions® — Industrial Ethernet

Category 6 DataTuff® Twisted Pair Cables, 4-Pair
Heavy-Duty Sunlight and Oil-Resistant Jackets

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

Enhanced Cat 6 • 23 AWG Bonded-Pairs Solid BC • Patented E-Spline Center Member • Rip Cord • See Color Code Chart

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



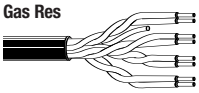
7927A	NEC:	4	1000	304.8	44.0	20.0	.251	6.38	1	10.9	80.3	78.5	70.8	100±12	20.0
	CMR		2000	609.6	88.0	39.9	x	x	10	5.7	66.3	59.6	5.08	100±12	25.0
	CEC:						.339	8.61	31.25	10.2	57.9	47.7	40.9	100±15	25.0
	CMR FT4								62.5	14.7	53.4	38.7	34.9	100±15	25.0
									100	18.9	50.3	31.4	30.8	100±15	25.0
									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	>0.0 **	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

**PSUM ACR >0 is guaranteed to 460 MHz. Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581
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

Cat 6 • 23 AWG Bonded-Pairs Solid BC • See Color Code Chart

Plenum • FEP Insulation • Sunlight-, Oil- and Gas-resistant Black FEP Jacket

High & Low Temp
Oil Res I & II
Gas Res



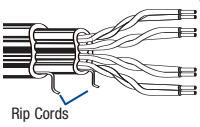
7931A	NEC:	4	1000	304.8	35.0	15.9	.214	5.44	1	2.0	72.3	70.3	64.8	100±15	20.0
	Limited Combustible								10	6.0	57.3	51.3	44.8	100±15	25.0
	FHC 25/50								20	8.5	52.8	44.3	38.7	100±15	25.0
	CMP								31.25	10.7	49.9	39.2	34.9	100±15	23.6
	CEC:								62.5	15.4	45.4	30.0	28.8	100±15	21.5
	CMP FT6								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

Installation Temperature: -55°C to +150°C*; Operating Temperature: -70°C to +150°C*
RJ-45 Compatible • Cable passes -70°C Cold Bend per UL1581 • 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

Enhanced Cat 6 • 23 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

Upjacketed



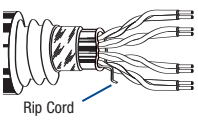
11872A	NEC:	4	1000	304.8	66.0	30.0	.475	12.07	1	1.9	72.3	70	64.8	100±12	20.0
	CM						x	x	4	3.7	63.3	59	52.7	100±12	25.0
	CEC:						.265	6.73	10	5.9	57.3	51	44.8	100±12	25.0
	CM								16	7.5	54.3	46	40.7	100±12	25.0
	FT1								31.25	10.63	49.9	39	34.9	100±15	23.6
							Nominal Core OD:		62.5	15.4	45.4	30	28.8	100±15	21.5
									100	19.8	42.3	25	24.8	100±15	21.0
							.365	9.27	155	25.1	39.5	14	20.9	100±15	21.0
							x	x	200	29.0	37.9	10	18.7	100±15	21.0
							.165	4.19	310	37.1	34.9	—	14.9	100±20	18.0
									350	39.8	34.2	—	13.9	100±22	17.0
									400***	43.0	33.3	—	12.7	100±32	14.0
									500***	49.0	31.8	—	10.8	100±32	14.0

***Value provided for information only.
Installation Temperature: -10°C to +75°C; Operating Temperature: -25°C to +75°C*
Cable passes -25°C Cold Bend per UL1581 • U.S. Patents 5,606,151, 5,734,126 and 5,821,467
RJ-45 Compatible • Jacket sequentially marked at 2 ft. intervals. • Verified to TIA/EIA-568-B.2-1, Category 6

Enhanced Cat 6 • 23 AWG Bonded-Pairs Solid BC • Polyester Wrap • Rip Cord • See Color Code Chart

Non-Plenum • Polyolefin Insulation • PVC Inner Jacket • .055" Industrial Grade Black or Gray PVC Outer Jacket

Interlocked AL Armor



121872A	NEC:	4	1000	304.8	222.0	100.6	.684	17.37	1	1.9	72.3	70	64.8	100±12	20.0
	CM								4	3.7	63.3	59	52.7	100±12	23.0
	CEC:								10	5.9	57.3	51	44.8	100±12	25.0
	HL								16	7.5	54.3	46	40.7	100±12	25.0
	CMG FT4								31.25	10.6	49.9	39	34.9	100±15	23.6
							Nominal Core OD:		62.5	15.4	45.4	30	28.8	100±15	21.5
									100	19.8	42.3	25	24.8	100±15	21.0
							.365	9.27	155	25.1	39.5	14	20.9	100±15	21.0
							x	x	200	29.0	37.9	10	18.7	100±15	21.0
							.165	4.19	310	37.1	34.9	—	14.9	100±20	18.0
									350	39.8	34.2	—	13.9	100±22	17.0
									400***	43.0	33.3	—	12.7	100±32	14.0
									500***	49.0	31.8	—	10.8	100±32	14.0

***Value provided for information only.
Installation Temperature: -25°C to +75°C; Operating Temperature: -40°C to +75°C*
RJ-45 Compatible • Cable passes -40°C Cold Bend per UL1581 • 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
* Subject to length de-rating.

BELDEN
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DataTuff® Industrial Ethernet Cable Selection Guide

This chart is meant to help the user in proper cable selection.

Part No.	No. of Pairs	Shielding		Conductor		Installation		Environmental Issues								Industrial Grade Jacket		
		Unshielded	Shielded ▲	Solid	Stranded ▲▲	Installation Stress Resistance††	Pull Tension	Oil Resistance	UV Sunlight Resistance	CMX/ Outdoor	Underground (burial)	Gasoline Resistance	LSZH	MSHA	Hi/Lo Temp	Heavy	Upjacket	Armored
Category 5e Cable																		
7932A EtherNet/IP	2	●		●		●	20	●	●							●		
7933A EtherNet/IP	2		●	●		●	20	●	●							●		
7923A EtherNet/IP	4	●		●		●	40	●	●	●				●		●		
7918A	4	●		●			35	●	●	●				●		●		
7924A	4	●			●	●	40	●	●	●						●		
7930A	4	●			●		25	●	●	●						●		
7922A PLTC	4	●		●		●	40	●	●	●						●		
7934A EtherNet/IP	4	●		●		●	40		●		●					●		
new **7937A**	4		●	●		●	40		●		●						●	
7928A EtherNet/IP	4	●		●		●	40	●	●			●			●	●		
11700A EtherNet/IP	4	●		●		●	40	●	●	●				●			●	
11700A2 Oil Res I&II	4	●		●		●	40	●	●								●	
121700A	4	●		●		●	40	●	●									●
new **121700R**	4	●		●		●	40	●	●									●
7929A	4		●	●		●	35	●	●	●				●		●		
7919A	4		●	●			25	●	●	●				●		●		
7921A EtherNet/IP	4		●	●		●	75	●	●	●						●		
new **7935A** EtherNet/IP	4	●		●		●	40		●				●			●		
new **7936A** EtherNet/IP	4		●	●		●	40		●				●			●		
Category 6 Cable																		
7927A	4	●		●		●	45	●	●							●		
7931A	4	●		●		●	40	●	●			●			●	●		
11872A	4	●		●		●	45										●	
121872A	4	●		●		●	45	●	●									●

▲ 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's Bonded-Pair Cable Bulletin #BP02

2-Pair Color Codes

Pair No.	Color Combination
1	White/Orange Stripe & Orange
2	White/Green Stripe & Green

4-Pair 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

TrayOptic® Heavy-Duty, All Dielectric Optical Fiber Cable
Loose Tube — Indoor/Outdoor Riser & Tray

Applications

- Industrial and other harsh environment applications
- Factory automation
- Direct burial

Product Description

Laser Optimized Fiber to handle Gigabit Ethernet light sources and expanded bandwidth requirements. Passes IEEE 383-2003 flame test. Waterblocking agent for moisture protection. CPE outer jacket option provides extra chemical or abrasion resistance.

Fiber Type	62.5/125µ
Jacket Material	PVC or CPE
Strength Member	Aramid Yarn
Jacket Color	Orange

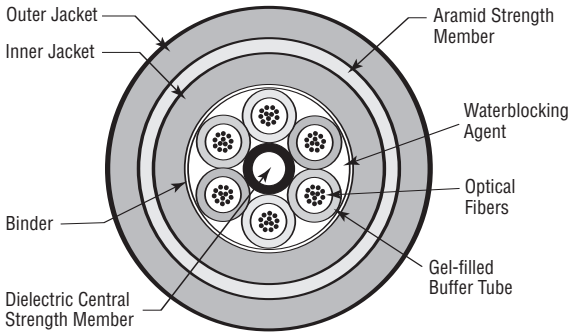
Ratings

Riser	
UL Type	OFNR
cUL Type	OFN FT4
Flame Resistance	IEEE1202/383-2003

Specifications

Temperature Range	
Storage	-40 to +70°C
Operating	-40 to +70°C
Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 impacts @ 1.6N-m
Cyclic Flexing (EIA-455-104)	25 cycles, 12 lbs., 20 x OD radius min.
Min. Bend Radius	
Installation	20 x OD
Long Term	15 x OD
Maximum Installation Load	600 lbs. (2700 N)
Optical Specifications	See page 10.2

Fiber Bundle Detail



More product information on page 12.

BELDEN
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No. of Fibers	Fibers Per Tube	Outside Diameter		PVC Jacket			CPE Jacket		
		Inches	mm	Belden Part No.	Weight Lbs./1000′	Weight kg/km	Belden Part No.	Weight Lbs./1000′	Weight kg/km
TrayOptic Series									
Riser (NEC/CEC OFNR/OFN FT4)									
2	2	0.440	11.18	**I100255**	88	131	**I100266**	83	124
4	4	0.440	11.18	**I100455**	88	131	**I100466**	83	124
6	6	0.440	11.18	**I100655**	88	131	**I100666**	83	124
8	4	0.440	11.18	**I400855**	88	131	**I400866**	83	124
12	6	0.440	11.18	**I601255**	88	131	**I601266**	83	124
18	6	0.440	11.18	**I601855**	88	131	**I601866**	83	124
24	6	0.440	11.18	**I602455**	88	131	**I602466**	83	124
36	6	0.440	11.18	**I603655**	88	131	**I603666**	83	124
48	12	0.540	13.72	**I604855**	136	202	**I604866**	129	192
60	12	0.540	13.72	**I606055**	136	202	**I606066**	129	192
72	12	0.540	13.72	**I607255**	136	202	**I607266**	129	192

All optical fiber products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.
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