

**RoHS**



# BRAVOTWIST™

## INSIDE CABLE CATEGORY 5E



**DESCRIPTION:**

- 24 gauge solid bare copper conductor
- Polyethylene insulation
- Insulated conductors twisted into pairs
- PVC Jacket
- CMR or CM
- Operating Temp: -20°C to 75°C

**SPECIFICATIONS:**

NEC 800 **RoHS**  
ANSI/EIA/TIA 568.C.2

**FEATURES:**

Category 5E and ETL - c(ETL) intended for riser installation.

Standard put-ups are 1000 boxes

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness	Insulation Thickness
664455 <sup>+</sup>	4	0.189"	18	0.017"	0.0073"
664472	25	0.295"	48	0.019"	0.0089"

+ CMR Rated Cable    ~ CM Rated Cable

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω 1 to 100 MHz	Delay Skew Maximum ns	Return Loss Minimal (fin Mhz) dB
28.6 Ω/ft	14	100 ± 15	45	20+5Log(f) ; 1≤f<10 25 ; 10≤f<20 25-7.0Log(f/20) ; 20≤f≤100

Transmission Characteristics			
Frequency MHz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
4	4.1	56.3	51.8
10	6.5	50.3	43.8
16	8.2	47.2	39.7
31	11.7	42.9	33.9
100	22.0	35.3	23.8
200	32.4	30.8	17.8
250	36.9	29.3	15.8
350	44.9	27.1	12.9

\*Typical values, there are no specified values at this frequency in the specification

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# BRAVOTWIST™

## INDOOR CABLE CATEGORY 5E PLENUM



**DESCRIPTION:**

- 24 gauge solid bare copper conductor
- FEP insulation
- Insulated conductors twisted into pairs
- Low smoke PVC Jacket
- CMP

**FEATURES:**

Category 5E verified and ETL - c(ETL) intended for horizontal, riser and plenum installation.

Standard put-ups are 1000 boxes or 500' coil pak

**SPECIFICATIONS:**

NEC 800 **RoHS**  
ANSI/EIA/TIA 568.C.2

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness	Insulation Thickness
664373	4	0.195"	21	0.013"	0.0065"

Transmission Characteristics			
Frequency MHz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
4	4.1	56.3	51.8
10	6.5	50.3	43.8
16	8.2	47.2	39.7
31	11.7	42.9	33.9
100	22.0	35.3	23.8
200	32.4	30.8	17.8
250	36.9	29.3	15.8
350	44.9	27.1	12.9

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω 1 to 100 MHz	Delay Skew Maximum ns	Return Loss Minimal (fin Mhz) dB
28.6 Ω/ft	14	100 ± 15	45	20+5Log(f) ; 1≤f<10 25 ; 10≤f<20 25-7.0Log(f/20) ; 20≤f≤100

\*Typical values, there are no specified values at this frequency in the specification

\*All values are nominal, and subject to manufacturing tolerances.



# BRAVOTWIST™

## INSIDE CABLE CATEGORY 5E - STRANDED

\*All values are nominal, and subject to manufacturing tolerances.



### DESCRIPTION:

- 24 gauge stranded bare copper conductor
- Polyethylene insulation
- Insulated conductors twisted into pairs
- PVC Jacket
- CM or CMR

### FEATURES:

Category 5E verified and ETL - c(ETL)  
Standard put-ups are 1000 foot reels, boxes and reel-in-a-box.

SPECIFICATIONS:  
NEC 800, CM rated  
ANSI/EIA/TIA 568.C.2  
**RoHS**

Product Code	Number of Pairs	Conductor Construction Wires/AWG	Overall Diameter	Net Weight Lb/mft	Jacket Thickness	Insulation Thickness
◆ 664555	4	7/32	0.217"	24	0.020"	0.0071"

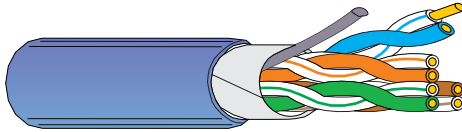
Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω 1 to 100 MHz	Delay Skew Maximum ns	Return Loss Minimal (in Mhz) dB
28.6 Ω/ft	14	100 ± 15	45	20+5Log(f) ; 1≤f<10 25 ; 10≤f<20 25-8.6Log(f/20) ; 20≤f≤100

Transmission Characteristics		
Frequency MHz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m
4	4.9	56.3
10	7.8	50.3
16	9.9	47.2
31	14.1	42.9
100	26.4	35.3
200*	38.9	30.8
250*	44.2	29.3
350*	53.8	27.1

\*Typical values, there are no specified values at this frequency in the specification

◆ Non-Stocked item, subject to minimum quantity.

## INSIDE CABLE CATEGORY 5E - SHIELDED



**DESCRIPTION:**

- 24 gauge solid bare copper conductor
- Polyethylene insulation
- Insulated conductors twisted into pairs
- Tinned copper drain wire
- Foil Shield
- -10 C to 60 C
- PVC Jacket
- CM or CMR

**FEATURES:**

Category 5E and ETL - c(ETL)

**SPECIFICATIONS:**

CMR Rated, ISO/IEC 11801  
 ANSI/EIA/TIA 568.C.2

**RoHS**

Standard put-ups are 1000 foot reels.

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness	Insulation Thickness
664405	4	0.276"	30	0.024"	0.010"

Transmission Characteristics			
Frequency MHz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
4	4.1	56.3	51.8
10	6.5	50.3	43.8
16	8.2	47.2	39.7
31	11.7	42.9	33.9
100	22.0	35.3	23.8
200	32.4	30.8	17.8
250	36.9	29.3	15.8
350	44.9	27.1	12.9

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω 1 to 100 MHz	Delay Skew Maximum ns	Return Loss Minimal (fin Mhz) dB
28.6 Ω/ft	14	100 ± 15	45	20+5Log(f) ; 1≤f<10 25 ; 10≤f<20 25-7.0Log(f/20) ; 20≤f≤100

\*Typical values, there are no specified values at this frequency in the specification

RoHS



# BRAVOTWIST™

## OUTDOOR CABLE CATEGORY 5E DIRECT BURY



### DESCRIPTION:

- 24 gauge solid bare copper conductor
- Polyethylene insulation
- Insulated conductors twisted into pairs
- Core filled with water blocking gel
- Polyethylene Jacket

### SPECIFICATIONS:

ISO/IEC 11801 **RoHS**  
ANSI/EIA/TIA 568.C.2

### FEATURES:

Category 5E intended for structured cabling in telecommunications networks, for outdoor use in direct burial or duct installations.

Standard put-ups are 1000 ft Reels

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness
664455DB	4	0.225"	18	0.0205"

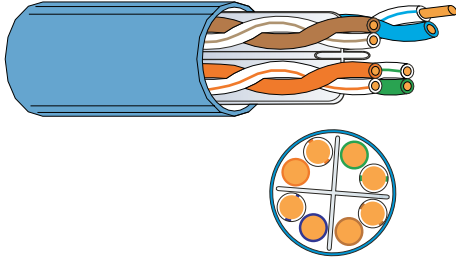
Transmission Characteristics			
Frequency MHz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
1	2.1	65.3	63.8
10	6.5	50.3	43.8
16	8.2	47.2	39.7
31	11.7	42.9	33.9
100	22.0	35.3	23.8
200*	32.4	30.8	17.8
250*	36.9	29.3	15.8
350*	44.9	27.1	12.9
400*	48.5	26.3	11.8

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω 1 to 100 MHz	Delay Skew Maximum ns	Return Loss Minimal (fin Mhz) dB
28.6 Ω/ft	16	100 ± 15 (1-100MHz)	45	20+5Log(f) ; 1≤f<10 25 ; 10≤f<20 25-7.0Log(f/20) ; 20≤f≤100
		100 ± 22 (100-200MHz)		

\*All values are nominal, and subject to manufacturing tolerances.

\*Typical values, there are no specified values at this frequency in the specification

## INDOOR CABLE CATEGORY 6



**DESCRIPTION:**

- 23 gauge solid bare copper conductor
- Polyethylene insulation
- Insulated conductors twisted into pairs
- PVC Jacket
- Polyethylene crossweb to separate the pairs
- CMR

**SPECIFICATIONS:**

NEC 800 UL-444 **RoHS**  
 ANSI/EIA/TIA 568.C.2

**FEATURES:**

Category 6 verified and UL and ETL- c(ETL)  
 Intended for horizontal installation.  
 Structured cabling in LAN of high speeds:  
 - 10 BASE T (IEEE 802.3).  
 - 100 BASE TX (Fast Ethernet).  
 - 16/100 Mb/s Token Ring (IEEE 802.5).  
 - ATM 55/155/1200 Mb/s  
 - 100 Mb/s TP-PDM (ANSI X3T9.5).  
 - 1000 BASE T (Gigabit Ethernet)  
 Standard put-ups are 1000  
 Reel-in-a-box.

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness	Insulation Thickness
664466R	4	0.244"	26	0.017"	0.009"

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω	Delay Skew Maximum ns	Return Loss Minimal (fin MHz) dB
26 Ω/ft	16.8	100 ± 15 (1 - 100 Mhz)	45	20+5Log(f) ; 1<f<10 25 ; 10<f<20 25-7.0Log(f/20) ; 20<f<250
		100 ± 22 (100 - 200 Mhz)		
		100 ± 32		
		(200 to 250 Mhz)		

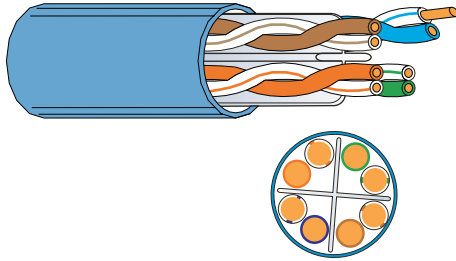
Transmission Characteristics			
Frequency Mhz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
10	6.0	59.3	47.8
16	7.7	36.2	43.2
31	10.7	51.9	37.9
100	19.8	44.3	27.8
200	29.0	39.8	21.8
250	32.8	38.3	19.8
350*	40.5*	36.1*	16.9*
400*	43.1*	35.3*	15.8*
500*	49.0*	33.8*	13.8*
550*	51.8*	33.2*	13.0*
600*	54.5*	32.6*	12.2*
650*	57.2*	32.1*	11.5*

\*Typical values, there are no specified values at this frequency in the specification



## INDOOR CABLE CATEGORY 6 PLENUM

\*All values are nominal, and subject to manufacturing tolerances.



**DESCRIPTION:**

- 23 gauge solid bare copper conductor
- FEP insulation
- Insulated conductors twisted into pairs
- Plenum rated PVC Jacket
- Polyethylene crossweb to separate the pairs
- CMP

**SPECIFICATIONS:**

ISO/IEC 11801 (2002)      UL-444: MPP  
 ANSI/EIA/TIA 568.C.2      NEMA WC 66  
**RoHS**

**FEATURES:**

Category 6 verified and UL and ETL- c(ETL)  
 Intended for horizontal installation.  
 Structured cabling in LAN of high speeds:  
 - 10 BASE T (IEEE 802.3).  
 - 100 BASE TX (Fast Ethernet).  
 - 16/100 Mb/s Token Ring (IEEE 802.5).  
 - ATM 55/155/1200 Mb/s  
 - 100 Mb/s TP-PDM (ANSI X3T9.5).  
 - 1000 BASE T (Gigabit Ethernet)  
 Standard put-ups are 1000  
 Reel-in-a-box.

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness
664866R	4	0.232"	28	0.014"

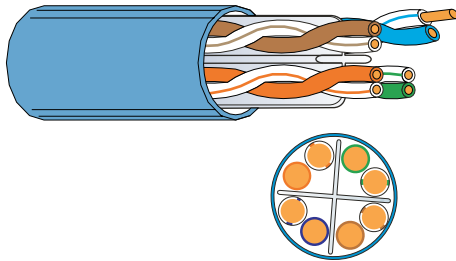
Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω	Delay Skew Maximum ns	Return Loss Minimal (fin MHz) dB
26 Ω/ft	16.8	100 ± 15	45	20+5Log(f) ; 1<f<10 25 ; 10<f<20 25-7.0Log(f/20) ; 20<f<250
		(1 - 100 Mhz)		
		100 ± 22		
		(100 - 200 Mhz)		
		100 ± 32		
		(200 to 250 Mhz)		

Transmission Characteristics			
Frequency Mhz	Maximum Attenuation dB/100 m	Minimum NEXT Loss dB/100 m	Minimum FEXT Loss dB/100 m
10	6.0	59.3	47.8
16	7.7	36.2	43.2
31	10.7	51.9	37.9
100	19.8	44.3	27.8
200	29.0	39.8	21.8
250	32.8	38.3	19.8
350*	40.5*	36.1*	16.9*
400*	43.1*	35.3*	15.8*
500*	49.0*	33.8*	13.8*
550*	51.8*	33.2*	13.0*
600*	54.5*	32.6*	12.2*
650*	57.2*	32.1*	11.5*

\*Typical values, there are no specified values at this frequency in the specification

## LAN CABLE UTP CATEGORY 6 OUTDOOR

\*All values are nominal, and subject to manufacturing tolerances.



**DESCRIPTION:**

- 23 gauge solid bare copper conductor
- High Density Polyethylene insulation
- Paired and cabled conductors with Cross web
- Non Hygroscopic, flooding compound
- Low Density Polyethylene Jacket, UV-Resistant
- Direct bury cable

**SPECIFICATIONS:**

ISO-9001 Quality System  
ANSI/EIA/TIA 568.C.2

**RoHS**

**FEATURES:**

- Category 6 verified
- Intended for direct burial installation.
- Structured cabling in LAN of high speeds:
  - 10 BASE T (IEEE 802.3).
  - 16/100 Mb/s Token Ring (IEEE 802.5).
  - 100 Mb/s TP-PDM (ANSI X3T9.5).
  - 100 BASE BG
  - 1.2 Gb/s ATM
  - 1000 BASE T(IEEE 802.3 ab)
- Standard put-ups are 1000
- Reel-Black Jacket

Product Code	Number of Pairs	Overall Diameter	Net Weight Lb/mft	Jacket Thickness
664466DB	4	0.2696"	28	0.0244"

Conductor Resistance d.c. Maximum @ 20°C	Mutual Capacitance pf/ft	Characteristic Impedance Ω	Delay Skew Maximum ns	Return Loss Minimal (fin MHz) dB
26 Ω/ft	16.8	100 ± 15	45	20+5Log(f) ; 1<f<10 25 ; 10<f<20 25-7.0Log(f/20) ; 20<f<250
		(1 - 100 Mhz)		
		100 ± 22		
		(100 - 200 Mhz)		
		100 ± 32		
		(200 to 250 Mhz)		

Transmission Characteristics			
Frequency Mhz	Maximum Attenuation	Minimum NEXT Loss	Minimum FEXT Loss
1	2.0	72.3	64.8
4	3.8	63.3	52.8
8	5.3	58.8	46.7
10	6.0	57.3	44.8
16	7.6	54.2	40.7
20	8.5	52.8	38.8
25	9.5	51.3	36.8
31.25	10.7	49.9	34.9
62.5	15.4	45.4	28.9
100	19.8	42.3	24.8
200	29.0	37.8	18.8
250	32.8	36.3	16.8
350*	40.5*	34.0*	13.9*
400*	43.1*	32.0*	12.8*

\*Typical values, not normalized at this frequency.



# Coaxial Cables

## COAXIAL CABLE RG 59/U BC - 95% BC BRAID

**DESCRIPTION:**

- Conductor of solid copper wire
- Gas injected foamed polyethylene insulation
- Braid of copper wires
- Black PVC jacket

Standard lengths of 1000 ft boxes

**PROPERTIES:**

Flexible, high speed of propagation.

**SPECIFICATIONS:**

CM or CL2 ETL - c(ETL)  
 NEC 725/800 **RoHS**



Product Code	Conductor Diameter	Insulation Diameter	Overall Diameter	Braid Coverage	Net Weight Lb/kft
801426	20 AWG	0.144"	0.242"	95%	31
811428	20 AWG	0.144"	0.242"	95%	31

Impedance $\Omega$	Conductor Resistance @ 20°C $\Omega/kft$	Propagation Speed %	Nominal Capacitance pF/ft	Attenuation dB/100 ft	
				Frequency MHz	Maximum
75 $\pm$ 5	10.34	81	16	5	1.22
				55	2.06
				211	3.94
				300	4.72
				450	5.83
				550	6.47
				750	7.62
				870	8.24
				1000	8.87

\*All values are nominal, and subject to manufacturing tolerances.

## COAXIAL CABLE RG 6/U BC - 95% BC BRAID

**DESCRIPTION:**

- Conductor of solid copper wire
- Gas injected foamed polyethylene insulation
- Braid of copper wires
- Black PVC jacket

Standard stock lengths of 1000 ft boxes

**PROPERTIES:**

Flexible, high speed of propagation.

**SPECIFICATIONS:**

CM or CL2 ETL Listed  
 NEC 725/800 **RoHS**



Product Code	Conductor Diameter	Insulation Diameter	Overall Diameter	Braid Coverage	Net Weight Lb/kft
809145	18 AWG	0.180"	0.268"	95%	42

Impedance $\Omega$	Conductor Resistance @ 20°C $\Omega/kft$	Propagation Speed %	Nominal Capacitance pF/ft	Attenuation dB/100 ft	
				Frequency MHz	Maximum
75 $\pm$ 5	6.37	81	16	5	0.81
				55	1.60
				211	3.08
				300	3.70
				450	4.56
				550	5.09
				750	6.00
				870	6.50
				1000	7.00