

PRODUCT DESCRIPTION

Category 6 Riser (CMR) is ideal for voice, data, video and security communication mediums for all your network installation requirements. Manufactured to the highest quality standards and approved by 3rd party organizations such as UL and ETL, Hyperline Cable, when compared to TIA guidelines; meets or surpasses the specifications in every category. The cable construction is comprised of 8 x 23-gauge solid bare copper cores, which are then insulated with high density polyethylene insulation and organized into four color coded twisted pair sets of conductors. Along with a CMR rated jacket and a rip cord to facilitate easy jacket removal, Hyperlines Cat 6 CMR cable is easy to use during installations and pulls smoothly with no kinks.

APPLICATIONS

- 10BASE-T through 1000BASE-T Ethernet
- Power over Ethernet (PoE) – IEEE 802.3af
- PoE+ – IEEE 802.3at Type 1 and 2
- Wi-Fi – IEEE 802.11a/b/g/n

PHYSICAL & ELECTRICAL CHARACTERISTICS

at 20 °C	
Temperature & voltage rating	75°C / 300V
Spark test	2.5 KV DC
AC leakage current through overall jacket	≤ 10mA (1.5KV AC)
Cable cold bend	-20°C for 4 hr
Conductor DC resistance	≤ 9.38 Ω/100m
Resistance unbalance	≤ 5%
Dielectric strength	1.5 KV ac for 2 s
Insulation resistance	≥ 5000 MΩ•m
Mutual capacitance	≤ 5.6 nF/100m
Capacitance unbalance pair-to-ground	≤ 330 pF/100m

USAGE & ENVIRONMENTAL CONDITION

Temperature range	Storage & shipping	-20°C to 75°C
	Installation	0°C to 60°C
	Operation	-20°C to 60°C
Minimum bending radius	≥ 4 times of overall diameter	
Maximum pulling tension	≤ 110 N	

PERFORMANCE COMPLIANCE

- UL 444
- CSA 22.2 NO.214
- EU Directive 2011/65/EC (RoHS2)
- EU Directive 2006/95/EC (LVD)

FEATURES

- Award winning trademarked packaging
- High performance of transmission
- High quality of safety property
- Sweep frequency up to 550 MHz (Enhanced) verified to 250 MHz
- Meets/exceeds ANSI/TIA-568-C.2 specification
- Meets ISO/IEC 11801 (Edition2.2)
- Meets IEC 61156-5 (Edition2.0)
- Flame Test –UL 1666 (CMR)
- Wide-mouth and Reelex carton
- Quick Count marking system in feet
- Lower cross talk

Available in nine different jacket colors



ELECTRICAL PERFORMANCE COMPARISON (At 20 °C)

Frequency (MHz)	INSERTION LOSS		NEXT		PS.NEXT		ACR	
	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline
	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m
1	2.0	2.0	74.3	79.3	72.3	77.3	72.3	77.3
4	3.8	3.7	65.3	70.3	63.3	68.3	61.5	66.5
8	5.3	5.3	60.8	65.8	58.8	63.7	55.4	60.4
10	6.0	5.9	59.3	64.3	57.3	62.3	53.3	58.3
16	7.6	7.4	56.2	61.2	54.2	59.2	48.6	53.6
20	8.5	8.3	54.8	59.8	52.8	57.8	46.3	51.3
25	9.5	9.3	53.3	58.3	51.3	56.3	43.8	48.8
31.25	10.7	10.4	51.9	56.9	49.9	54.9	41.2	46.2
62.5	15.4	15.0	47.4	52.4	45.4	50.4	32.0	37.0
100	19.8	19.3	44.3	49.3	42.3	47.3	24.5	29.5
155	25.2	24.6	41.4	46.7	39.4	44.7	16.3	21.9
200	29.0	28.3	39.8	44.8	37.8	42.8	10.8	15.8
250	32.8	31.1	38.3	43.3	36.3	41.3	5.5	10.5
300		34.6		42.1		40.1		7.5
400		40.6		40.3		38.3		NA
550		48.5		38.2		36.2		NA

Frequency (MHz)	PS.ACR		ACRF		PS.ACRF		RETURN LOSS	
	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline	TIA-568-C.2	Hyperline
	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m	Max. dB/100m
1	70.3	75.3	67.8	67.8	64.8	64.8	20.0	20.0
4	59.5	64.5	55.8	55.7	52.8	52.7	23.0	23.6
8	53.4	58.4	49.7	49.7	46.7	46.7	24.5	24.5
10	51.3	56.3	47.8	47.8	44.8	44.8	25.0	26.0
16	46.6	51.6	43.7	43.7	40.7	40.7	25.0	26.0
20	44.3	49.3	41.8	41.7	38.8	38.7	25.0	26.0
25	41.8	46.8	39.8	39.8	36.8	36.8	24.3	25.3
31.25	39.2	44.2	37.9	37.9	34.9	34.9	23.6	25.0
62.5	30.0	35.0	31.9	31.8	28.9	28.8	21.5	23.5
100	22.5	27.5	27.8	27.8	24.8	24.8	20.1	22.5
155	14.3	19.9	24.3	24.2	21.3	21.2	18.8	21.6
200	8.8	13.8	21.8	21.7	18.8	18.7	18.0	21.0
250	3.5	8.5	19.8	19.8	16.8	16.8	17.3	20.5
300		5.5		18.2		15.2		16.8
400		NA		15.7		12.7		15.9
550		NA		12.9		9.9		14.9



ELECTRICAL SPECIFICATIONS (At 20 °C)

Frequency (MHz)	Propagation Delay	
	TIA-568-C.2	Hyperline
	Max. dB/100m	Max. dB/100m
1	570	570
4	552	552
8	547	546
10	545	545
16	543	543
20	542	542
25	541	541
31.25	540	540
62.5	539	538
100	538	537
155	537	536
200	537	536
250	536	536
300		536
400		535
550		535

Values above 250MHz are for information only

MATERIALS & CONSTRUCTION

Conductor	Material	23AWG solid bare copper	
Insulation	Material	Polyolefin (PO)	
	Color code & diameter	Blue & white/blue stripe	1.02 ± 0.02 mm
		Orange & white/orange stripe	0.98 ± 0.02 mm
		Green & white/green stripe	1.02 ± 0.02 mm
		Brown & white/brown stripe	0.98 ± 0.02 mm
Twisted	Description	Left hand direction	
Filler	Material	Polyolefin (PO)	
Assembly	Description	Left hand direction	
Jacket	Material	Flame retardant polyvinyl chloride (FRPVC) or Polyethylene (PE)	
	Diameter	6.0 ± 0.2 mm	
	Thickness	0.50 ± 0.05 mm	
	Color	Per Hyperline standard	



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MATERIALS & CONSTRUCTION

Rip cord	Material	Polyester multi-yarn
Nominal Velocity of Propagation	(NVP) 69%	
NRTL Program	c(UL)us listed CMR ETL Verified / CSA certified	
Marking	Hyperline UTP4-C6-SOLID-CMR- --- E303448 U/UTP 4PR 23AWG C(UL)US CMR --- ETL VERIFIED TO ANSI/TIA-568-C.2 CAT 6E 550MHz ##### WW/YY xxxxFT-A Note 1: ww/yy is date code	

ORDERING

Part Number	Product Description
UTP4-C6-SOLID-CMR-WH-305	Category 6 Riser, UTP, 23 AWG, White 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-BL-305	Category 6 Riser, UTP, 23 AWG, Blue 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-GY-305	Category 6 Riser, UTP, 23 AWG, Grey 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-OR-305	Category 6 Riser, UTP, 23 AWG, Orange 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-GN-305	Category 6 Riser, UTP, 23 AWG, Green 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-VT-305	Category 6 Riser, UTP, 23 AWG, Violet 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-BK-305	Category 6 Riser, UTP, 23 AWG, Black 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-YL-305	Category 6 Riser, UTP, 23 AWG, Yellow 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-RD-305	Category 6 Riser, UTP, 23 AWG, Red 305 Meter/1000 FT Pull Box
UTP4-C6-SOLID-CMR-PK-305	Category 6 Riser, UTP, 23 AWG, Pink 305 Meter/1000 FT Pull Box

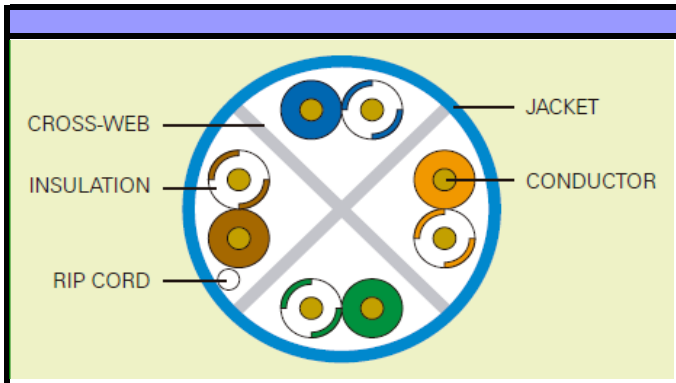


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Description

23 AWG CAT6E CMR, High-Performance Data Cable

Applicable Standards

- UTP CABLE CAT6, #23 AWG X 4 PAIR W/HDPE INSULATION AND FLAME-RETARDANT PVC JACKET
- UL Listed Type CMR
- C(UL) listed CMG FT4
- ETL Listed Type CMR
- C(ETL) listed CMG FT4
- TIA/EIA-568-C.2, UL 1666 CMR RATED
- IEC 61156 AND ANSI/TIA-568-C.2
- ROHS Compliant
- ATM 155 Mbps
- Ethernet 10BASE-T, 100BASE-TX, 100BASE-VG, 100BASE-T4,
- 1000 Mbps 1000BASE-T Gigabit Ethernet™ (IEEE 802.3)
- 16 Mbps Token Ring™ (IEEE 802.5)

Physical Characteristics

Number of Conductor Pairs	4
Size	23 AWG
Stranding	Solid
Conductor Material	Solid Annealed Bare Copper
Shield Material	Unshielded
Rip Cord	Yes
Insulation Material	Polyethylene
Insulation Overall Diameter	0.040 in. ± 0.0002 in.
Insulation Average Thickness	0.0088 in.
Jacket	Flame Retardant PVC
Voltage Rating	300V
Outer Jacket Average Wall Thickness	0.023 in.
Outer Jacket Nominal O.D.	0.244 in. ± 0.008 in.
Nominal Weight	28 lbs. (RIB) / 30 lbs. (Reelex II)

Mechanical Characteristics

Temperature Rating	Installation	0 to + 60°C
	Operating	-20°C to + 75°C
Tensile Strength	Before	> = 13.8 Mpa
Elongation	Aging	> = 100%
Aging Condition		100°C x 168 hours
	After	> = 85% of unaged
	Aging	> = 50% of unaged

Color Code

Pair 1	White / Blue	Blue
Pair 2	White / Orange	Orange
Pair 3	White / Green	Green
Pair 4	White / Brown	Brown

Cable Marking

XXXXXX 23AWG 4 PR UTP CMR C(UL)US 75C FT4 C(ETL)US FT4
TESTED TO 550 MHz CATEGORY 6E TIA/EIA-568C.2 ETL
VERIFIED TO ****FT

Electrical Performance

Frequency (MHz)	Attenuation (dB/100m)	Return loss (dB)	NEXT (dB)	PS-NEXT (dB)
	Max.	Min.	Min.	Min.
1	2.0	20.0	77.3	75.3
4	3.8	23.6	68.3	66.3
8	5.3	25.4	63.8	61.8
10	5.9	26.0	62.3	30.3
16	7.4	26.0	59.3	57.3
20	8.3	26.0	57.8	55.8
25	9.3	25.5	56.3	54.3
31.25	10.4	25.0	54.9	52.9
62.5	14.9	23.5	50.4	48.4
100	19.0	22.5	47.3	45.3
155	23.9	21.6	45.8	43.5
200	27.4	21.0	42.8	40.8
250	30.8	20.5	41.3	39.3
300	34.0	20.1	40.2	38.2
350	37.0	19.8	39.2	37.2
400	39.7	19.5	38.3	36.3
450	42.1	19.2	37.5	35.5
500	44.9	19.0	36.8	34.8
550	47.3	18.8	36.2	34.2

Electrical Characteristics

Frequency (MHz)	ELFEXT Min. (dB)	PS-ELFEXT Min. (dB)	ACR Min. (dB)	PS-ACR Min. (dB)
1	70.8	67.8	75.0	73.0
4	58.7	55.7	64.0	62.0
8	52.7	49.7	57.7	55.7
10	50.8	47.8	55.6	53.6
16	46.7	43.7	50.7	48.7
20	44.7	41.7	48.2	16.2
25	42.8	39.8	45.6	13.6
31.25	40.9	37.9	42.8	40.8
62.5	34.8	31.8	32.9	30.9
100	30.8	27.8	24.9	22.9
155	27.0	23.6	21.0	21.5
200	24.7	21.7	18.4	16.4
250	22.8	19.8	13.5	11.5
300	21.2	18.2	9.6	5.0
350	19.9	16.9	5.2	3.2
400	18.7	15.7	1.5	-
450	17.7	14.7	-	-
500	16.8	13.8	-	-
550	15.9	12.9	-	-

* Values above 250MHz are information only

Electrical Characteristics

Maximum Conductor DC Resistance @ 20°C	9.38 Ω / 100 Meters
Maximum DC Resistance Unbalanced @ 20°C	5%
Maximum Pair-to-Pair Ground Capacitance Unbalance	330 pF / 100 Meters
Characteristic Impedance	100 ± 15 Ω
Mutual Capacitance	5.6 nF / 100 Meters
Maximum Delay Skew	40 nS / 100 Meters
NVP Nominal Velocity Propogation	0.7

Part Numbers

Part Numbers	Color	Put-up	Part Numbers	Color	Put-up
6E04URBK3	Black	RIB	6E04URBK4	Black	Reelex II
6E04URBL3	Blue	RIB	6E04URBL4	Blue	Reelex II
6E04URGN3	Green	RIB	6E04URGN4	Green	Reelex II
6E04URGY3	Grey	RIB	6E04URGY4	Grey	Reelex II
6E04URRD3	Red	RIB	6E04URRD4	Red	Reelex II
6E04URWH3	White	RIB	6E04URWH4	White	Reelex II
6E04URYL3	Yellow	RIB	6E04URYL4	Yellow	Reelex II