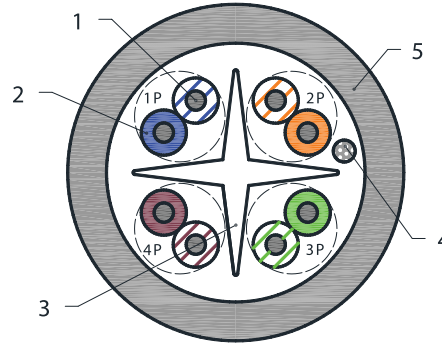




CONTRACTOR:	
PROJECT:	DATE:
PREPARED BY:	MODEL:

SPECIFICATION & FEATURES

CAT6A



- 1. Inner Conductor
- 2. Insulation
- 3. Cross Member
- 4. Ripcord
- 5. Jacket

CONSTRUCTION ITEM DESCRIPTION				
Conductor	Construction	AWG	0.560 ± 0.015 mm	
	Material	23	Bare Solid Copper	
Insulation	Material	/	PE Skin-Foam-Skin	
	Proportion	g/cm³	/	
	Outside Diameter	mm	1.01 ± 0.01	
	Average Thickness	mm	0.23 ± 0.02	
	Color	/	/	1p: blue stripe + white + blue stripe & blue
				2p: orange stripe + white + orange stripe & orange
3p: green stripe + white + green stripe & green				
4p: brown stripe + white + brown stripe & brown				
Pair Twist	Lay & Direction	/	1p: S=10.0 mm (27%)	
			2p: S=13	
			3p: S=11.5 mm (31%)	
			4p: S=17.0 mm (40%)	
Inner Assemble	Lay & Direction	/	S=100 ± 1 0 mm	
Filler	Ripcord	/	300D	
	Drain Wire	/	Tinned Copper (TC)	
Pair Shield	Shield	/	/	
	Construction	mm	/	
	Material	/	/	
	Coverage	%	/	
Jacket	Material	/	PVC , Rated 60 or 75°C	
	Hardness	A	81±3	
	Outside Diameter	mm	6.3 ± 0.2	
	Average Thickness	mm	0.55 ~ 0.65	
	Color	/	according to the customer's requirements	
	Marking Color	/	Black	
Marking	Jacket	/	E502490 UL C(UL) CM 4PR	

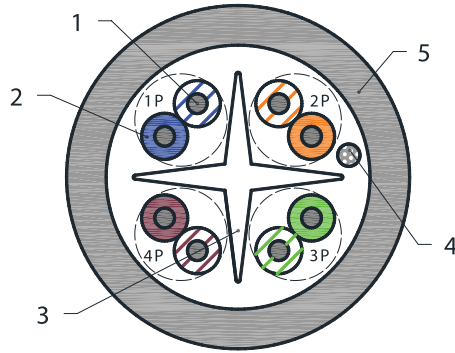




CONTRACTOR:	
PROJECT:	DATE:
PREPARED BY:	MODEL:

SPECIFICATION & FEATURES

CAT6A



- 1. Inner Conductor**
Composition: Solid Bare Copper (BC)
Diameter: See table below
- 2. Insulation**
Composition: PE Skin-Foam-Skin
Diameter: See table below
- 3. Filler**
Type of filler: Cross-Member
Composition: High density Polyethylene (HDPE)
- 4. Filler**
Type of filler: Ripcord
Composition: Polyester
- 5. Jacket**
Composition: PVC, Rated 60 or 75°C
Dimensions: See table below
Color: According to the customer's requirements

DIMENSIONAL TABLE					
Nb pairs	Section	Diameter of	Diameter of insulated conductor (mm)	Minimal thickness of jacket (mm)	Diameter of outer jacket (mm)
	(AWG)	inner conductor (mm)			
4	23	0.56 ± 0.015	1.0 1 ± 0.02	0.5 5 ~ 0.65	6.3 ± 0.2
Diameters of inner conductor and insulated conductor must be designed in order to reach the electrical and transmission properties of CAT6A.					

COLOR TABLE		
Pair No.	Conductor 1	Conductor 2
1	blue stripe + white + blue stripe	Blue
2	orange stripe + white + orange stripe	Orange
3	green stripe + white + green stripe	Green
4	brown stripe + white + brown stripe	Brown

REFERENCE STANDARD								
Materials		Fire Performance	Electrical Performance	Low	Zero Halogen (ZH)		Reach Regulation	RoHS Directive
				Smoke Density during combustion	Amount of Halogen acid gas during combustion	Degree of acidity (corrosivity) of gases for materials during combustion		
Insulation	Jacket							
UL444 CSA C22.2 No. 214	UL444 CSA C22.2 No. 214	UL 1581 vertically	ANSI/TIA-568.2-D ISO/ IEC 11801 EN 50173 IEC 61156-5	NA	NA	NA	NA	NA

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SPECIFICATION & FEATURES

MECHANICAL PROPERTIES

Test Method	According to		
	In Standard	UL444 & CSA C22.2 No. 214	
	L0=200mm, speed =100mm/min	L0=20mm, speed =250mm/min (or 25mm/min for PE&PP insulation)	
	INNER CONDUCTOR	INSULATION	JACKET
Tensile Strength (MPa)	-	≥ 10 MPa	≥ 13.5 MPa
Elongation (%)	9%~24%	≥ 200 %	≥ 150 %

THERMAL PROPERTIES

Operating Temperature Range (°C)	-Rated 60 or 75°C
----------------------------------	-------------------

ELECTRICAL PROPERTIES

Test Method	Standard	Value
Conductor Resistance at 20°C	UL 444 & CSA C22.2 No. 214	≤ 9.5 Ω / 100m
Resistance unbalance within a pair		≤ 5%
Dielectric Strength Test Voltage (cd/cd): 1.00KV DC or 0.7 KV AC for 1 min Test Voltage (cd/screen): 1.00KV DC or 0.7 KV AC for 1 min		No breakdown
Insulation Resistance at 20°C after 2min of electrification under a DC voltage between 100 & 500V		>1500 MΩ / 100m
Mutual capacitance		5600pF / 100m MAX
Capacitance unbalance pair to ground at 500Hz or 1 kHz		≤ 160 pF / 100m
Characteristic impedance at 100MHz		100 ± 5 Ω
Spark Test		2000 ± 250VOC





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SPECIFICATION & FEATURES

TRANSMISSION PROPERTIES

CAT6A ANSI/TIA-568.2-D; IEC 61156-6; YD/T1019-2013

No.	Frequency	Attenuation (Max)	Propagation Delay (Max)	Propagation Delay Skew (Max)	Return Loss (Minz)	NEXT (Min)	PS NEXT (Min)	EL-FEXT (Min)	PS EL-FEXT (Min)
	MHz	dB/100m	ns/100m	ns/100m	dB(on 100m)	dB(on 100m)	dB(on 100m)	dB(on 100m)	dB(on 100m)
1	4	3.8	552	45	23.01	66.27	63.27	55.96	52.96
2	8	5.31	546.73	45	24.52	61.75	58.75	49.94	46.94
3	10	5.93	545.38	45	25	60.3	57.3	48	45
4	16	7.49	543	45	25	57.24	54.24	43.92	40.92
5	20	8.38	542.05	45	25	55.78	52.78	41.98	38.98
6	25	9.38	541.2	45	24.32	54.33	51.33	40.04	37.04
7	31.25	10.5	540.44	45	23.64	52.88	49.88	38.1	35.1
8	50	13.36	539.09	45	22.21	49.82	46.82	34.02	31.02
9	62.5	14.99	538.55	45	21.54	48.36	45.36	32.08	29.08
10	100	19.13	537.6	45	20.11	45.3	42.3	28	25
11	125	21.51	537.22	45	19.43	43.85	40.85	26.06	23.06
12	200	27.58	536.55	45	18	40.78	37.78	21.98	18.98
13	250	31.07	536.28	45	17.32	39.33	36.33	20.04	17.04
14	300	34.27	536.08	45	17.3	38.14	35.14	18.46	15.46
15	350	37.25	535.92	45	17.3	37.14	34.14	17.12	14.12
16	400	40.05	535.8	45	17.3	36.27	33.27	15.96	12.96
17	450	42.71	535.7	45	17.3	35.5	32.5	14.94	11.94
18	500	45.26	535.61	45	17.3	34.82	31.82	14.02	11.02

APPLICATION

The cable must support class E applications and must be compatible POE, POE+ and UPOE.

MARKING

Type	Ink
Color	Black
Text	E502490 UL C(UL) CM 4PR

PACKING

Type of Packing	Dimension (mm)	Qt of per Packing (mm)	Label Type	Cut Allowed	Tolerance Length (%)
Drum	370 X 200 X 220 X 9	305	UL 444 Standard Label	No	0





CONTRACTOR:	
PROJECT:	DATE:
PREPARED BY:	MODEL:

PRODUCT DESIGN CARD					
CAT 6A U/UTP 4 X 2 X 0.560 (CM)					
Construction Item Description			Electrical Property		
Conductor	Material	Bare Solid Copper (elongation 19-24%)	Conductor Resistance at 20°C	≤ 9.5 Ω / 100m	
	OD	0.56 ± 0.015 mm	Resistance unbalance within a pair	≤ 2%	
Insulation	Material	PE Skin-Foam-Skin	Insulation Resistance at 20°C after 2min of electrification under a DC voltage between 100 & 500V	>1500 MΩ / 100m	
	OD	1.01 ± 0.02 mm	Mutual capacitance	5600 pF / 100m MAX	
	Average THK	0.23 ± 0.02	Capacitance unbalance pair to ground at 500Hz or 1 kHz	≤ 160 pF / 100m	
	Color	1p: white + 2 blue stripes & blue	Characteristic impedance at 100MHz	100 ± 1.5 Ω	
		2p: white + 2 orange stripes & orange	Dielectric Strength Test Voltage (cd/cd,cd/screen): 1.00KV DC or 0.7 KV AC for 1 min	No breakdown	
3p: white + 2 green stripes & green					
Pair Twist	Lay & Direction	4p: white + 2 brown stripes & brown	Mechanical Property		
		1p: S=10.0 mm (27%)			elongation before aging
		2p: S=13.5 mm (35%)	tensile strength before aging	≥ 10 MPa	
		3p: S=11.5 mm (31%)	elongation after aging	NA	
	OD	4p: S=17.0 mm (40%)	tensile strength after aging	NA	
Inner Assemble	Lay	/	insulation	elongation before aging	≥ 150 %
	Direction	S=100 ± 1 0 mm		tensile strength before aging	≥ 13.5 MPa
	Filler	according to the drawing	jacket	elongation after aging	≥ 125 %
OD	cross member 4.5X4.5X0.45mmT	tensile strength after aging		≥ 12.5 MPa	
Filler	Lay	/	Packing		
	Drain Wire	300D	Drum + UL 0444 Standard Label	370 X 200 X 220 X 9	
Pair Shield	Shield	Tinned Copper			
	Construction	/			
	Material	/			
	Coverage	/			
Jacket	Material	/			
	Hardness	PVC, Rated 60 or 75°C			
	OD	81 ± 3			
	Average THK	6.3 ± 0.2			
	Color	0.55 ~ 0.65 according to the customer's requirements			
Marking Color	requirements				
Marking		black			

E502490 UL C(UL) CM 4PR...



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