

# ABA Industry, Inc.

## Specification for Approval

### Product Part Number

- TSR2304S03XX

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### Product Description

- F/UTP, 23AWG solid bare copper, CAT.6A, CMR
- With cross filler
- Overall metal foil screen with drain wire



### Product Features

- High performance of transmission.
- High quality of safety property.
- Sweep frequency up to 650 MHz.

**Contact Us @ 888-568-1230**

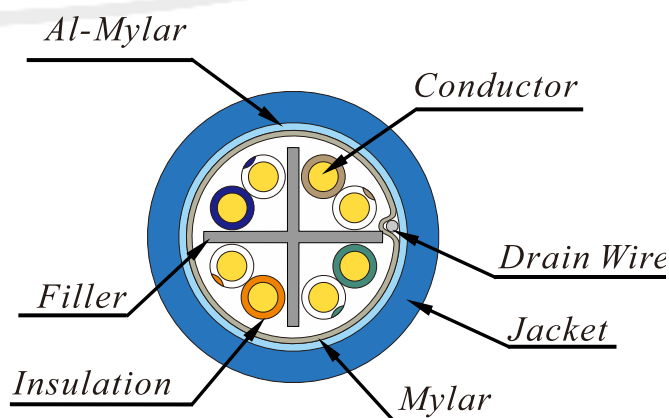
### Application

- Structure cabling for horizontal and building backbone cable.
- Transmission of digital and analogue for data, video and audio applications.
- Overall metal shielded providing good protection from EMI noise.
- IEEE 802.3an 10GBASE-T and legacy speeds.
- CDDI / ATM / Token Ring
- IEEE 802.3af (PoE) / IEEE 802.3at (PoE+)

### Applicable Standard

- Electrical Transmission
  - ANSI/TIA-568-C.2 (2009)
  - ISO/IEC 11801 (Edition 2.2)
  - IEC 61156-5 (Edition 2.0)
- Flame Test
  - UL 1666 (CMR)
- Material and Construction
  - UL 444
  - CSA 22.2 NO.214
- EU Directive 2011/65/EC (RoHS2)
- EU Directive 2006/95/EC (LVD)
- CE compliance date: 2010.01.01

### Sectional Drawing



Establish Date	2014.03.01	Edition	1.0	Revised Date	
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### Material and Construction

Conductor	Material	23AWG solid bare copper	
Insulation	Material	Polyolefin (PO)	
	Color code & diameter	Blue & white/blue Stripe	1.15 ± 0.02 mm
		Orange & white/orange stripe	1.11 ± 0.02 mm
		Green & white/green stripe	1.15 ± 0.02 mm
		Brown & white/brown stripe	1.11 ± 0.02 mm
Twisted	Description	Left hand direction	
Filler	Material	Polyolefin (PO)	
Assembly	Description	Left hand direction	
Shield	Material	Mylar tape	
Drain wire	Material	24AWG solid tinned copper	
Shield	Material	Al Mylar tape	
	Description	100 % coverage and mylar side facing out	
Jacket	Material	Flame retardant polyvinyl chloride (FRPVC)	
	Diameter	7.60 ± 0.2 mm	
	Thickness	0.55 ± 0.05 mm	
	Color	Per customer`s request	
Marking	ELITE 10GS CAT 6A --- E142890 FTP 4PR 23AWG CMR C(UL)US --- ETL VERIFIED TO TIA-568-C. 2 CAT 6A mmyy <sup>1</sup> RoHS COMPLIANT XXXXFT  Note 1: mmyy is date code.		

### 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		$\geq 4$ times of overall diameter
Maximum pulling tension		$\leq 110$ N

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### 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

### Transmission Performance (at 20°C)

Frequency	IL	NEXT	PS. NEXT	ACR	PS. ACR	ACRF	PS. ACRF	RL	Propagation Delay	Delay Skew	PS. ANEXT	PS. AACRF
(MHz)	Max. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Max. ns/100m	Max. ns/100m	Min. dB/100m	Min. dB/100m
1	2.08	74.30	72.30	72.22	70.22	67.80	64.80	20.00	570.00	45.00	67.00	67.00
4	3.80	65.27	63.27	61.47	59.47	55.76	52.76	23.01	552.00		67.00	66.16
8	5.31	60.75	58.75	55.44	53.44	49.74	46.74	24.52	546.73		67.00	60.14
10	5.93	59.30	57.30	53.37	51.37	47.80	44.80	25.00	545.38		67.00	58.20
16	7.49	56.24	54.24	48.75	46.75	43.72	40.72	25.00	543.00		67.00	54.12
20	8.38	54.78	52.78	46.41	44.41	41.78	38.78	25.00	542.05		67.00	52.18
25	9.38	53.33	51.33	43.95	41.95	39.84	36.84	24.32	541.20		67.00	50.24
31.25	10.50	51.88	49.88	41.37	39.37	37.90	34.90	23.64	540.44		67.00	48.30
62.5	14.99	47.36	45.36	32.37	30.37	31.88	28.88	21.54	538.55		65.56	42.28
100	19.14	44.30	42.30	25.17	23.17	27.80	24.80	20.11	537.60		62.50	38.20
150	23.68	41.66	39.66	17.98	15.98	24.28	21.28	18.87	536.94		59.86	34.68
200	27.58	39.78	37.78	12.21	10.21	21.78	18.78	18.00	536.55		57.98	32.18
250	31.07	38.33	36.33	7.26	5.26	19.84	16.84	17.32	536.28		56.53	30.24
300	34.27	37.14	35.14	2.88	0.88	18.26	15.26	16.77	536.08		55.34	28.66
350	37.25	36.14	34.14	N.A.	N.A.	16.92	13.92	16.30	535.92		54.34	27.32
400	40.05	35.27	33.27	N.A.	N.A.	15.76	12.76	15.89	535.80		53.47	26.16
450	42.71	34.50	32.50	N.A.	N.A.	14.74	11.74	15.53	535.70		52.70	25.14
500	45.26	33.82	31.82	N.A.	N.A.	13.82	10.82	15.21	535.61		52.02	24.22
550	47.70	33.19	31.19	N.A.	N.A.	12.99	9.99	14.92	535.54		51.39	23.39
600	50.05	32.63	30.63	N.A.	N.A.	12.24	9.24	14.66	535.47		50.83	22.64
650	52.33	32.11	30.11	N.A.	N.A.	11.54	8.54	14.42	535.41		50.31	21.94

Values above 500MHz are for information only.

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### Shipping Information

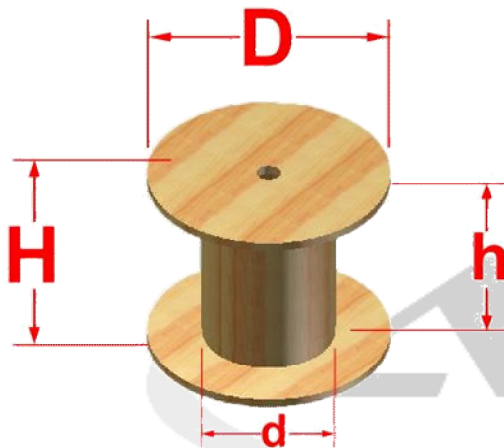
Item	Dimension	Nominal net weight
Cable	305 m	17.65 kg (38.81 lb)
Plywood reel	D440 x d270 x H320 x h290 mm	3.9 kg
Pallet	1150 x1150 x120 mm	14.1 kg

Container type	Capacity of pallet	Capacity of reel
20 feet	20	300
40 feet	40	600

Shipping could use standard delivery form or per customer's request.

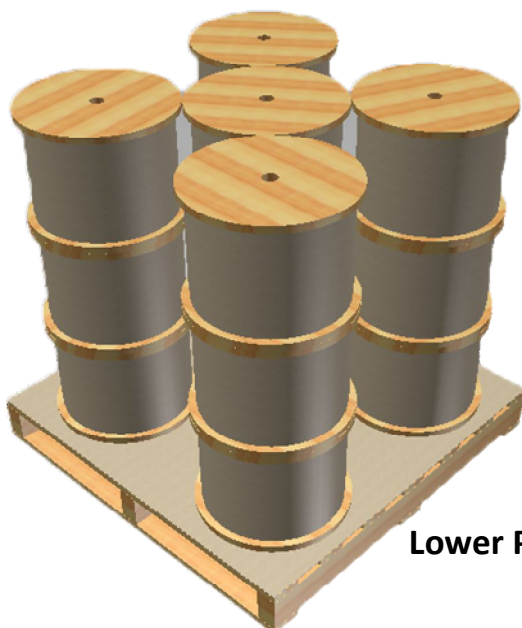
### Schematic Drawing of Reel

Fumigated plywood reel.

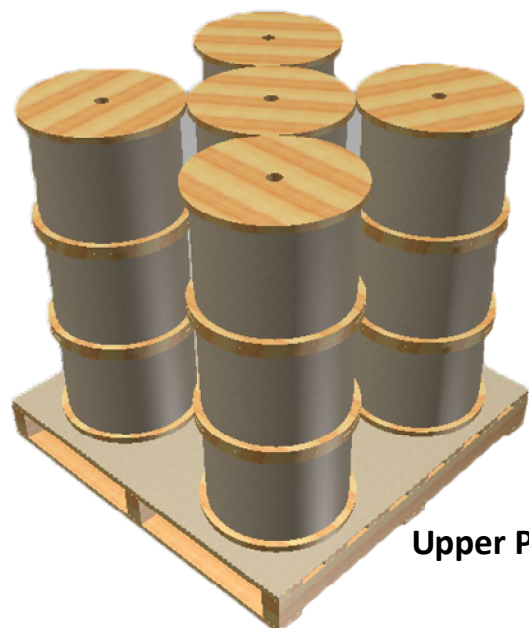


### Schematic Drawing of Package

Each package of pallet delivered with plastic wrap and packing strap.



Lower Pallet



Upper Pallet