



## GIGALAN AUGMENTED CABLE CAT6A F/UTP 23AWGX4P LSZH

**Product Type** LAN Cable

**Product Family** GigaLan Augmented

**Construction** RoHS Compliant

Category 6A

F/UTP

LSZH

### General Characteristics

**Features** 4 pairs twisted cable, using solid bare copper, 23 AWG, insulated with a special compound. External jacket using LSZH in accordance with IEC60332-3.

**Installation Environment** Internal

**Operation Environment** Non heavy

**Compatibility** FCS products

### Applications

1. Exceeds physical and electrical requirements of ANSI/TIA-568-C.2
2. Cable according with RoHS directive (Restriction of Hazardous Substances)
3. Can be used with all of the following protocols.
  - a) 10GIGABIT ETHERNET, IEEE 802.3an, 10 Gbps;
  - b) GIGABIT ETHERNET, IEEE 802.3z, 1000 Mbps;
  - c) 100BASE-TX, IEEE 802.3u, 100 Mbps;
  - d) 100BASE-T4, IEEE 802.3u, 100 Mbps;
  - e) 100vg-AnyLAN, IEEE802.12, 100 Mbps;
  - f) ATM -155 (UTP), AF-PHY-0015.000 y AF-PHY-0018.000, 155/51/25 Mbps;
  - g) TP-PMD, ANSI X3T9.5, 100 Mbps;
  - h) 10BASE-T, IEEE802.3, 10 Mbps;
  - i) TOKEN RING, IEEE802.5, 4/16 Mbps;
  - j) 3X-AS400, IBM, 10 Mbps;
  - k) Support POE+ (in accordance with IEEE 802.3at e TSB-184)
4. Solutions: Data Center, Commercial Building, Government, Financial, Health, Education.

### Standards Compliance

ANSI/TIA-568-C.2 and amendments, ISO/IEC 11801, UL 444, IEC 61156-5, NBR 14705, IEC 60332, IEC 60754-2 (Acidity of smoke), IEC 61034-2 (smoke density).

### Certifications

ETL Listed CMR/LSZH	G101002425
ETL Verified	3130563
ETL 4 connections	3132755
Anatel	1562-10-0256
ABNT EcoLabel	199.004

**Constructive characteristic**

**Conductor** Solid bare copper with nominal diameter 23AWG.

**Insulation** High density Polyethylene. Nominal diameter 1.0mm

**Insulation Resistance** 10000 MΩ.km

**Number of Pairs** 4 pairs, 23AWG

**Pair** All pairs are twisted in such way to reduce Crosstalk effects. Each conductor is identified according with the following color sequence.

**Color Codes**

Pair	Conductor "A"	Conductor "B"
1	White	Blue
2	White	Orange
3	White	Green
4	White	Brown

The color pattern above references the ANSI/TIA-568-C.2 item 5.3.3, which presents two configuration options possible, the Furukawa in this specification illustrates only one.

**Cabling** All pairs are assembled, making the core cable. Will be used a central member (Cross web) made of a thermoplastic material to separate all 4 pairs.

**Ripcord** With ripcord

**Shield** Over the cable core is used an aluminum foil tape

**Sheath** LSZH compound, flame retardant, suitable to meet the cable flame rating class

**Nominal Diameter** 7,5 mm

**Drain Wire** 26 AWG wire in contact with the foil.

**Color** Gray, blue e green. Other color available upon enquiry.

**Cable Weight** 58 kg/km

**Physical Characteristics**

**Flame Standards** **LSZH:** Cable shall comply with IEC 60332 Part 3-25: "Test for vertical flame spread of vertically mounted bunched wires or cables"  
**LSZH-1:** Cable shall comply with IEC 60332 Part 1-2: "Test for vertical flame propagation for a single insulated wire or cable"

**Installation Temperature** 0°C up to 50°C

**Storage Temperature** -20°C to 75°C

**Operation Temperature** -20°C up to 75°C

**Electrical Characteristics**

**Maximum Unbalance Resistance** 4%

**Conductor Max. DC Resistance at 20°C** 93.8 Ω/km

**Maximum Mutual Capacitance 1kHz** 56 pF/m

**Max. Unbalance Capacitance Pair x Ground** 3,3 pF/m

**Characteristic Impedance** 100±15% Ω

**Maximum Propagation Delay** 545ns/100m

**Maximum Delay Skew** 45ns/100m

<b>Dielectric strength</b>	Between two pairs	Between a pair and shield
	1000 VDC/3s	500 VDC/3s

**NVP** 68%

Transmission Performance

Freq. (MHz)	Attenuation (dB)		NEXT (dB)		PSNEXT (dB)		ACRF (dB)	
	TIA Maximum	TYPICAL	TIA MINIMUM	TYPICAL	TIA MINIMUM	TYPICAL	TIA MINIMUM	TYPICAL
1	2,1	1,6	74,3	104,6	72,3	91,4	67,8	100,8
4	3,8	3,2	65,3	93,8	63,3	80,2	55,8	95,6
8	5,3	4,8	60,8	91,3	58,8	78,0	49,7	89,4
10	5,9	5,3	59,3	95,6	57,3	73,8	47,8	87,4
16	7,5	6,7	56,2	79,9	54,2	72,6	43,7	80,8
20	8,4	7,7	54,8	82,1	52,8	71,8	41,8	77,9
25	9,4	8,7	53,3	85,9	51,3	72,8	39,8	76,6
31,25	10,5	9,6	51,9	75,3	49,9	69,4	37,9	74,6
62,5	15,0	13,8	47,4	68,6	45,4	60,8	31,9	64,0
100	19,1	17,6	44,3	66,5	42,3	61,0	27,8	60,3
200	27,6	25,2	39,8	63,3	37,8	56,2	21,8	57,5
250	31,1	28,4	38,3	59,5	36,3	53,8	19,8	50,5
300	34,3	31,1	37,1	59,2	35,1	51,9	18,3	49,8
400	40,1	36,3	35,3	57,6	33,3	49,6	15,8	49,7
500	45,3	40,7	33,8	54,4	31,8	48,6	13,8	43,2

Freq. (MHz)	PSACRF (dB)		RL (dB)		PSANEXT (dB)		PSAACRF (dB)	
	TIA MINIMUM	TYPICAL	TIA MINIMUM	TYPICAL	TIA MINIMUM	TYPICAL	TIA MINIMUM	TYPICAL
1	64,8	93,8	20,0	35,4	67,0	90,0	67,0	88,0
4	52,8	88,4	23,0	37,2	67,0	90,8	66,2	87,3
8	46,7	81,8	24,5	42,3	67,0	92,8	60,1	87,0
10	44,8	77,7	25,0	36,9	67,0	92,4	58,2	87,1
16	40,7	71,3	25,0	40,5	67,0	91,9	54,1	84,7
20	38,8	69,6	25,0	39,9	67,0	85,3	52,2	79,3
25	36,8	67,4	24,3	38,2	67,0	86,5	50,2	77,8
31,25	34,9	65,8	23,6	39,5	67,0	86,2	48,3	76,9
62,5	28,8	58,4	21,5	31,3	65,6	85,6	42,3	72,3
100	24,8	53,7	20,1	31,2	62,5	86,6	38,2	68,9
200	18,8	50,8	18,0	30,2	58,0	83,6	32,2	60,5
250	16,8	44,8	17,3	26,2	56,5	83,9	30,2	56,9
300	15,3	44,2	16,8	29,5	55,3	81,8	28,7	52,8
400	12,8	42,3	15,9	26,5	53,5	79,7	26,2	46,8
500	10,8	35,4	15,2	21,8	52,0	76,7	24,2	38,6

Cable Measurements are made at 20°C in 100 meters cables, pulled out of their packages and released on a non-conductive surface as described in TIA-568-C.2. Alien Crosstalk measurement made at 20°C in seven 100 meters samples (Six around one configuration) according with TIA 568-C.2.

<b>Marking</b>	<p>FURUKAWA GIGALAN AUGMENTED CAT 6A F/UTP 23AWGX4P LSZH IEC 60332-3 NBR                  14703 ANATEL 1562-10-0256 ETL VERIFIED TO TIA-568-C.2 CATEGORY 6A                  YAAMMDDHHmm {1}M                  Na qual:                  Where is:                  {1} - Decreasing metrical sequential  <b>Traceability</b>                  Y- Manufacturing Process  <b>AAMMDDHHmm</b>: AA - year; MM - Month; DD - Day; HH - Hour; mm - minute.</p>
<b>Package</b>	Plywood reel or wooden reel
<b>Package Type</b>	Plywood reel suitable for 305 and 1000 meters of cable.