

# LANmark-6A Cable

LANmark-6A F1/UTP AWG23 Cat 6A LSZH Cca s1a d1 a1 Orange 1000m reel

**Aginode Ref.:** N100.622G-OC

- Ideal cable for 10GBase-T application
- Full compliance to latest standards for Category 6A and Class EA
- Guaranteed performance up to 500MHz
- Global screen offering Alien Crosstalk immunity
- Foil with aluminium side facing outwards providing easy bonding with connector
- Enhanced reaction-to-fire performance according to CPR classification Cca-s1a,d1,a1 (h/EN50575:2014+A1:2016)

## DESCRIPTION

### Application

LANmark-6A cables are the ideal solution for a 10G Ethernet network. The range has been designed specifically to support the higher frequencies required for 10 Gigabit Ethernet, while maintaining full backwards compatibility with today's needs. All LANmark-6A cables are shielded, in order to ensure immunity to Alien Crosstalk and other external interferences.

- 10Base-T Ethernet
- 100Base-TX Fast Ethernet
- 1000Base-TX Gigabit Ethernet
- 10GBase-T 10 Gigabit Ethernet IEEE 802.3
- 155 Mbit ATM
- 1.2 Gbit ATM
- future Cat 6A and Class EA applications

### Performance

With guaranteed performance to 500MHz, Aginode LANmark-6A cables exceed the requirements of the International, European and American cable standards, including ISO/IEC 11801, IEC 61156-5, EN 50173, EN 50288 and TIA/EIA 568-C.2.

When used in combination with Aginode LANmark-6A Evo connectors and LANmark-6A Ultim patch cords, the system supports the 10GBase-T applications as defined in IEEE 802.3an and meets or exceeds the link and channel requirements for Category 6A and Class EA as defined in TIA/EIA 568-C.2 and ISO/IEC 11801.

### Installation

The LANmark-6A cables have the advantage of offering equal dimensions and flexibility as the equivalent LANmark-6 screened cables with the same ease of installation and termination.



You may see a combination of brands on documents or products during the transition.

## DECLARATION OF PERFORMANCE

Cca-s1a,d1,a1

## STANDARDS

**International** EN 50173-1; EN 50288-4-1; IEC 61156-5; IEEE 802.3bt (PoE++); ISO/IEC 11801

**National** ANSI/TIA-568-C.2



Ambient installation T°C range  
-10 ... 60 °C



Operating temp.  
-20 ... 60 °C



Flame retardant  
IEC 60332-1



Smoke density  
IEC 61034



Gases corrosivity  
IEC 60754-1; IEC 60754-2

All drawings, designs, specifications, plans and particulars of weights, size and dimensions contained in the technical or commercial documentation of Aginode is indicative only and shall not be binding on Aginode or be treated as constituting a representation on the part of Aginode.

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To support the correct set-up of hand held analysers for installation testing, the actual cable NVP value is given in the cable's print legend.

## Guarantees

Traceability codes on both cable and packaging ensure quality validation of the installed cable.

Installations with LANmark-6A cable and connectivity are qualified for a 25 year full system warranty, which includes Parts, Channel Performance, Application Support and Labour, as described in the Aginode Certified System Warranty.



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## CHARACTERISTICS

### Construction characteristics

|                    |        |
|--------------------|--------|
| Type of cable      | F/UTP  |
| Outer sheath       | LSZH   |
| Colour             | Orange |
| Conductor material |        |
| Type of conductor  |        |

### Dimensional characteristics

|                                     |          |
|-------------------------------------|----------|
| Approximate weight                  | 52 kg/km |
| Conductor cross-section (AWG/KCMIL) | 23       |
| Diameter over insulation            | 1.2 mm   |
| Nominal outer diameter              | 7.5 mm   |

### Electrical characteristics

|   |            |
|---|------------|
| Characteristic impedance                    | 100 Ohm    |
| Max. DC resistance of the conductor at 20°C | 80 Ohm/km  |
| Max. transfer impedance at 30 MHz (Ohm/km)  | 120 Ohm/km |
| Mutual capacitance                          | 45 nF/km   |

### Transmission characteristics

|                                       |              |
|---------------------------------------|--------------|
| Attenuation Crosstalk Ratio, 250MHz   | 12.2 dB/100m |
| Coupling attenuation at 30 MHz        | >70 dB       |
| Nominal Velocity of Propagation (NVP) | 68 %         |
| Propagation delay, max. 100 MHz       | 536 ns/100m  |
| Skew                                  | 45 ns/100m   |

### Mechanical characteristics

|                                 |       |
|---------------------------------|-------|
| Maximum operating pulling force | 100 N |
|---------------------------------|-------|

### Usage characteristics

|   |                          |
|---|--------------------------|
| Category  | Cat. 6A                  |
| Range   | LANmark-6A               |
| Ambient installation temperature, range                   | -10 ... 60 °C            |
| Operating temperature, range                              | -20 ... 60 °C            |
| Minimum Bend Radius - During Installation (under Tension) | 60 mm                    |
| Minimum Bend Radius - Installed                           | 30 mm                    |
| Flame retardant   | IEC 60332-1              |
| Smoke density   | IEC 61034                |
| Gases corrosivity   | IEC 60754-1; IEC 60754-2 |
| Length  | 1000 m                   |
| Packaging   | Reel                     |

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## ELECTRICAL PERFORMANCE LANMARK-6A F1/UTP CABLE

| Freq<br>in MHz | Attn<br>in dB |      | NEXT<br>in dB |      | PSNEXT<br>in dB |      | ACR-F<br>in dB |      | PS ACR-F<br>in dB |      | PS ANEXT<br>in dB |      | PS AACR-F<br>in dB |      | RL<br>in dB |      |
|----------------|---------------|------|---------------|------|-----------------|------|----------------|------|-------------------|------|-------------------|------|--------------------|------|-------------|------|
|                | Max           | Typ. | Min           | Typ. | Min             | Typ. | Min            | Typ. | Min               | Typ. | Min               | Typ. | Min                | Typ. | Min         | Typ. |
| 1              | 2,1           | 2,1  | 74,3          | 79,3 | 72,3            | 77,3 | 67,8           | 87,8 | 64,8              | 84,8 | 67,0              | 90,0 | 67,0               | 76,7 | 20,0        | 26,0 |
| 4              | 3,8           | 3,8  | 65,3          | 70,3 | 63,3            | 68,3 | 55,8           | 75,8 | 52,8              | 72,8 | 67,0              | 90,0 | 66,2               | 75,9 | 23,0        | 29,0 |
| 10             | 5,9           | 5,9  | 59,3          | 64,3 | 57,3            | 62,3 | 47,8           | 67,8 | 44,8              | 64,8 | 67,0              | 87,0 | 58,2               | 67,9 | 25,0        | 31,0 |
| 16             | 7,5           | 7,5  | 56,2          | 61,2 | 54,2            | 59,2 | 43,7           | 63,7 | 40,7              | 60,7 | 67,0              | 85,0 | 54,1               | 63,8 | 25,0        | 31,0 |
| 20             | 8,4           | 8,4  | 54,8          | 59,8 | 52,8            | 57,8 | 41,8           | 61,8 | 38,8              | 58,8 | 67,0              | 84,0 | 52,2               | 61,9 | 25,0        | 31,0 |
| 31,25          | 10,5          | 10,5 | 51,9          | 56,9 | 49,9            | 54,9 | 37,9           | 57,9 | 34,9              | 54,9 | 67,0              | 82,1 | 48,3               | 58,0 | 23,6        | 29,6 |
| 62,5           | 15,0          | 15,0 | 47,4          | 52,4 | 45,4            | 50,4 | 31,9           | 51,9 | 28,9              | 48,9 | 65,6              | 79,0 | 42,3               | 52,0 | 21,5        | 27,5 |
| 100            | 19,1          | 19,1 | 44,3          | 49,3 | 42,3            | 47,3 | 27,8           | 47,8 | 24,8              | 44,8 | 62,5              | 77,0 | 38,2               | 47,9 | 20,1        | 26,1 |
| 155            | 24,1          | 24,1 | 41,4          | 46,4 | 39,4            | 44,4 | 24,0           | 44,0 | 21,0              | 41,0 | 59,6              | 74,1 | 34,4               | 44,1 | 18,8        | 24,8 |
| 200            | 27,6          | 27,6 | 39,8          | 44,8 | 37,8            | 42,8 | 21,8           | 41,8 | 18,8              | 38,8 | 58,0              | 72,5 | 32,2               | 41,9 | 18,0        | 24,0 |
| 250            | 31,1          | 31,1 | 38,3          | 43,3 | 36,3            | 41,3 | 19,8           | 39,8 | 16,8              | 36,8 | 56,5              | 71,0 | 30,2               | 39,9 | 17,3        | 23,3 |
| 300            | 34,3          | 34,3 | 37,1          | 40,1 | 35,1            | 38,1 | 18,3           | 38,3 | 15,3              | 35,3 | 55,3              | 69,8 | 28,7               | 38,4 | 16,8        | 22,8 |
| 500            | 45,3          | 45,3 | 33,8          | 36,8 | 31,8            | 34,8 | 13,8           | 33,8 | 10,8              | 30,8 | 52,0              | 66,5 | 24,2               | 33,9 | 15,2        | 21,2 |

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