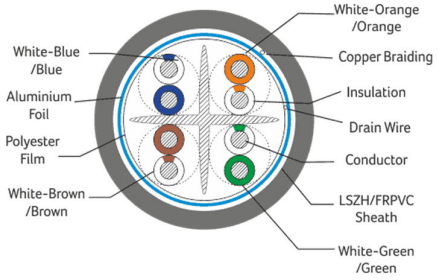
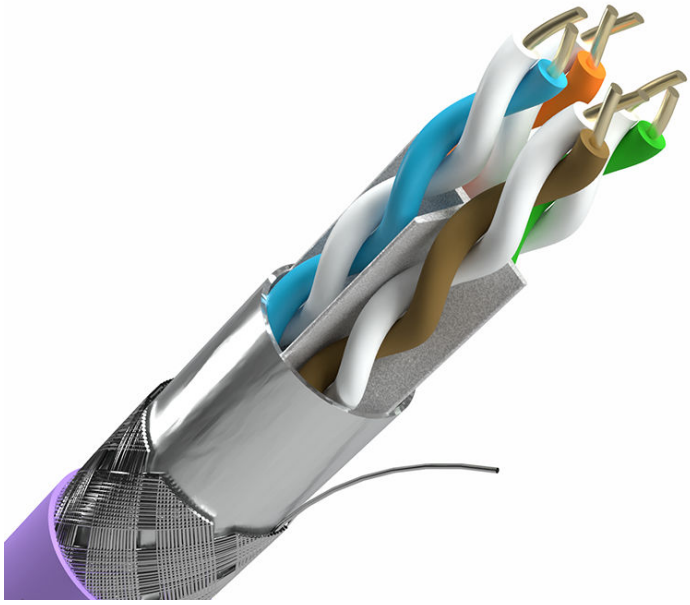
Cat6 SF/UTP Ethernet Bulk Cable — LSZH

4 Pairs | 24 AWG Solid Bare Copper | 250 MHz | 305 m (1000 ft) Reel





1. GENERAL DESCRIPTION

Cat6 SF/UTP (braid and foil screened) bulk cable is designed for structured cabling and Ethernet networks up to 1000BASE-T (Gigabit Ethernet) and short-reach 10GBASE-T. It features four twisted pairs of solid pure bare copper conductors with a cross-web separator, a dual overall screen of aluminium/polyester foil and tinned copper braid, and a Low Smoke Zero Halogen (LSZH) jacket, making it suitable for indoor installations in highly electrically noisy environments such as data centres, industrial plants and hospitals, where low smoke and halogen-free emission are also required. Supplied on a reel for easy, tangle-free pulling.

2. KEY FEATURES

- Pure bare copper solid conductors for low attenuation and stable long-run performance
- Dual overall screen (foil + tinned copper braid, SF/UTP) for superior EMI / RFI immunity and low transfer impedance
- Cross-web separator for improved NEXT and PS NEXT performance
- LSZH jacket: low smoke, zero halogen, reduced toxic and corrosive gas emission in fire
- Supports Gigabit Ethernet, PoE / PoE+ / PoE++ (IEEE 802.3af / at / bt) and 10GBASE-T over short links
- Characterised up to 250 MHz — higher bandwidth and headroom than Cat5e
- Supplied on a 305 m reel for smooth, tangle-free pay-out

3. APPLICATIONS

- Horizontal cabling in structured cabling systems (permanent link / channel)
- 10BASE-T, 100BASE-TX, 1000BASE-T Ethernet; 10GBASE-T over short links
- Voice, CCTV / IP cameras, access control, PoE devices
- Data centres, hospitals and industrial plants with strong electromagnetic interference
- Installations near power cables, motors, lifts, VFDs or other strong EMI sources (industrial automation)

4. APPLICABLE STANDARDS

- ANSI/TIA-568.2-D — Category 6 balanced twisted-pair cable
- ISO/IEC 11801 and IEC 61156-5 — Class E generic cabling
- IEC 60332-1 — Flame propagation (single vertical cable)

- IEC 60754-1 / -2 — Halogen content and acidity of gases
- IEC 61034 — Smoke density

5. CABLE CONSTRUCTION

Conductor	Solid pure bare copper, 24 AWG (Ø 0.57 mm nominal)
Insulation	Solid HDPE (high-density polyethylene)
Pairs	4 twisted pairs, different twist lengths to minimise crosstalk
Pair Colour Code	Blue / White-Blue, Orange / White-Orange, Green / White-Green, Brown / White-Brown
Screening	Overall Al/PET foil + tinned copper braid (SF/UTP) — foil coverage [100 %], braid coverage [≥ 65 %]
Drain Wire	[24 AWG tinned copper (7/0.20 mm) / None]
Separator / Ripcord	Cross-web filler (X-spline) / [Yes / No]
Outer Jacket	LSZH (Low Smoke Zero Halogen) — colour: [Grey / Blue / White]
Marking	CAT6 SF/UTP 4P 24AWG LSZH [standard] [metre marking]
Packing	305 m (1000 ft) on reel / pull box

Pair colour code

Pair	Conductor 1 (Tip)	Conductor 2 (Ring)
1	White / Blue	Blue
2	White / Orange	Orange
3	White / Green	Green
4	White / Brown	Brown

6. MECHANICAL & ENVIRONMENTAL

Overall Diameter (approx.)	[7.0 ± 0.3 mm]
Min. Bending Radius (installation)	8 × overall diameter
Max. Pulling Tension	110 N (25 lbf)
Operating Temperature	[-20 °C to +60 °C]
Installation Temperature	[0 °C to +50 °C]
Flame Retardancy	IEC 60332-1

7. ELECTRICAL CHARACTERISTICS (AT 20 °C)

Characteristic Impedance (1–250 MHz)	100 Ω ± 15 Ω
Max. DC Resistance (per conductor)	93.8 Ω/km (9.38 Ω/100 m)
Max. DC Resistance Unbalance	5 %
Max. Mutual Capacitance (1 kHz)	5.6 nF/100 m
Max. Capacitance Unbalance (pair to ground)	330 pF/100 m

Max. Propagation Delay (250 MHz)	536 ns/100 m
Max. Delay Skew	45 ns/100 m
Min. ACR-F / PS ACR-F (100 MHz)	27.8 dB / 24.8 dB per 100 m
Nominal Velocity of Propagation (NVP)	[~ 0.67]
Max. Operating Voltage	[72 V]
Screening Effectiveness	[Transfer impedance / coupling attenuation per IEC 61156-5]
Dielectric Strength (DC, 1 min)	[1.0 kV]

8. TRANSMISSION PERFORMANCE (PER 100 M)

Frequency (MHz)	Insertion Loss — max (dB)	NEXT — min (dB)	PS NEXT — min (dB)
1	2.0	74.3	72.3
4	3.8	65.3	63.3
10	6.0	59.3	57.3
16	7.6	56.2	54.2
31.25	10.7	51.9	49.9
62.5	15.4	47.4	45.4
100	19.8	44.3	42.3
200	29.0	39.8	37.8
250	32.8	38.3	36.3

9. INSTALLATION & HANDLING GUIDELINES

- Do not exceed the max. pulling tension (110 N) or the min. bending radius (8 × OD).
- Avoid kinks, sharp bends, crushing and over-tight cable ties — Cat6 performance is sensitive to cable deformation.
- Keep separation from power cables according to local wiring standards (EN 50174-2 / TIA-569).
- Untwist pairs by no more than 13 mm (0.5 in) at termination points.
- Use shielded Cat6-rated connectors, jacks and patch panels throughout the link.
- Terminate the foil, braid and drain wire to the shielded connector and ground the screen at one or both ends per the site earthing design; keep the shield continuous end to end.
- Test every installed link with a certified cable tester (Cat6 permanent link).