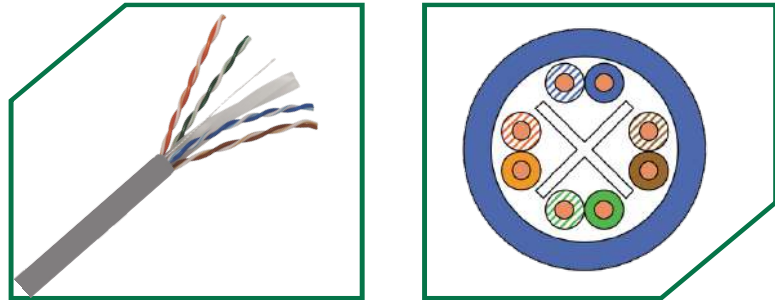


Part Number:

LSZH : PL-CA6UTL

PVC : PL-CA6UTP



High-performance Category 6 U/UTP cable engineered for structured cabling systems and designed to meet the Category 6 requirements stated in this datasheet. It delivers reliable and stable high-speed data transmission for commercial, residential, and enterprise network environments.

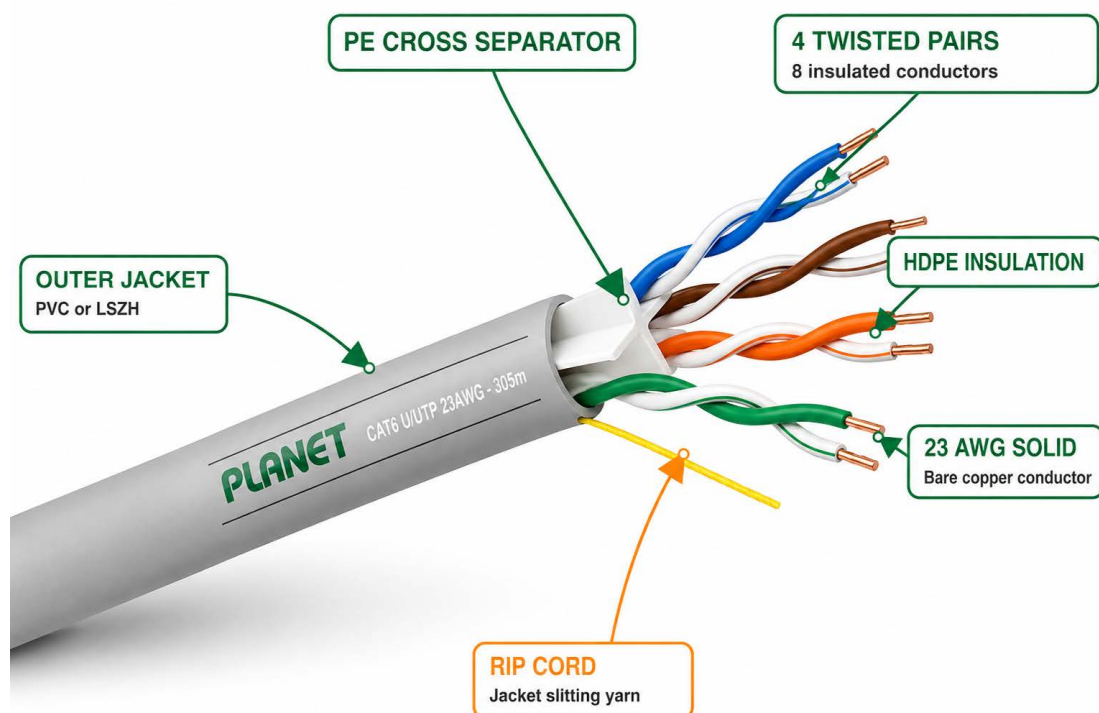
The cable supports Gigabit Ethernet applications up to 250 MHz and is designed for PoE applications in permanent links up to 90 m within a maximum 100 m channel.

100% CU Bare Copper	23 AWG Solid Conductor	250 MHz Category 6	PoE++ IEEE 802.3bt Types 3 / 4
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"Engineered for Performance. Built for Reliability."

1. General Description

High-performance Category 6 U/UTP cable engineered for structured cabling systems and designed to meet the listed Category 6 performance requirements. It provides reliable and consistent performance in commercial and enterprise network environments.



CAT6 U/UTP Cable Construction - Annotated 3D View

Part Number: LSZH : PL-CA6UTL PVC : PL-CA6UTP

2. Construction

Parameter	Specification
Conductor Material	100% Bare Copper (CU)
Conductor Size	23 AWG bare copper (0.570 ± 0.005 mm)
Number of Conductors	8 (4 twisted pairs with standard pair identification)
Insulation Material	High-Density Polyethylene (HDPE)
Pair Separator	Cross filler (PE)
Shielding	U/UTP (unshielded)
Outer Jacket	Standard PVC model: PL-CA6UTP, Optional LSZH model PL-CA6UTL
Jacket Type	Virgin material (non-recycled)
Cable Diameter	6.0 ± 0.3 mm
Jacket Color	Standard: Grey. Options: Red and Black

TECHNICAL SPECIFICATIONS

CAT6 U/UTP | PVC / LSZH

3. Electrical Characteristics

Parameter	Specification
Remote Powering Support	IEEE 802.3af / 802.3at / 802.3bt PoE applications (up to 57 V DC), subject to installed-channel and thermal limits
DC Resistance	≤ 9.38 Ω/100 m at 20°C
Resistance Unbalance	≤ 5% within a pair (cable value; installed PoE channel verification recommended)
Mutual Capacitance	≤ 5.6 nF/100 m
Characteristic Impedance	100 ± 15 Ω
Frequency Range	Up to 250 MHz

OPTIONAL ADDITIONAL ELECTRICAL VERIFICATION: Loop resistance ≤ 18.76 Ω/100 m; capacitance unbalance ≤ 330 pF/100 m; propagation delay ≤ 538 ns/100 m; delay skew ≤ 45 ns/100 m; nominal NVP 68%. Subject to order confirmation and supporting test evidence.

4. Mechanical Characteristics

Parameter	Value
Minimum Bend Radius	4 × cable diameter after installation
Pulling Force	≤ 110 N
Operating Temperature	-20°C to +60°C
Installation Temperature	0°C to +50°C
Flame Rating	No flame-rating claim in the base configuration; optional ratings require verification

Part Number: LSZH : PL-CA6UTL PVC : PL-CA6UTP

5. Technical Performance

Category 6 Permanent Link reference limits up to 250 MHz (maximum 90 m). These are installed-link limits and not individual bulk-cable component values.

Frequency (MHz)	RL (≥ dB)	ATT (≤ dB)	NEXT (≥ dB)	ACRF (≥ dB)	PS NEXT (≥ dB)	PS ACRF (≥ dB)
1	19.1	3.0	65.0	64.2	62.0	61.2
4	21.0	3.5	64.1	52.1	61.8	49.1
8	21.0	5.0	59.4	46.1	57.0	43.1
10	21.0	5.5	57.8	44.2	55.5	41.2
16	20.0	7.0	54.6	40.1	52.2	37.1
20	19.5	7.9	53.1	38.2	50.7	35.2
25	19.0	8.9	51.5	36.2	49.1	33.2
31.25	18.5	10.0	50.0	34.3	47.5	31.3
62.5	16.0	14.4	45.1	28.3	42.7	25.3
100	14.0	18.6	41.8	24.2	39.3	21.2
200	11.0	27.4	36.9	18.2	34.3	15.2
250	10.0	31.1	35.3	16.2	32.7	13.2

APPLICATIONS, FEATURES & COMPLIANCE

CAT6 U/UTP | PVC / LSZH

6. Applications

- Structured Cabling Systems
- Gigabit Ethernet Networks (1000Base-T)
- Office Building and Enterprise Networks
- IP CCTV Systems
- Data Centers and Enterprise Networks
- VoIP, PoE Systems and Video Transmission
- Smart Home and Industrial Networks

7. Transmission Performance

- Supports 10/100/1000 Mbps (Gigabit Ethernet)
- Bandwidth up to 250 MHz
- Designed for IEEE 802.3af / 802.3at / 802.3bt PoE applications, subject to installation and thermal limits
- Excellent NEXT, ACRF, and Return Loss performance

8. Key Features

- 23 AWG solid bare-copper conductors for optimal conductivity
- Enhanced NEXT and ACRF performance for signal integrity
- Low attenuation for long-distance stable transmission
- Precision twisted pairs with cross filler for reduced crosstalk
- Designed for IEEE 802.3af / 802.3at / 802.3bt Types 1–4, subject to installation and thermal limits
- Durable outer jacket using 100% virgin material
- Design validated using representative Fluke 90 m Permanent Link and 100 m Channel tests; report available upon request

Part Number: LSZH : PL-CA6UTL PVC : PL-CA6UTP

9. Standards Compliance

Standard / Certification	Status
ISO/IEC 11801-1 (Class E cabling support)	Baseline design support
ANSI/TIA-568.2-E	Baseline compliance
RoHS	Compliant
CE Marking	Subject to applicable EU conformity documentation
CPR (EN 50575)	Upon request
UL / ETL Verification	Optional; valid listing/file required

QUALITY, OPTIONS & WARRANTY	CAT6 U/UTP 305 m
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10. Quality Assurance

Manufactured under strict quality control to ensure:

- Consistent electrical performance
- Long-term reliability
- Compliance with international standards

Validation: Representative 90 m Permanent Link and 100 m Channel configurations tested using a Fluke Networks cable analyzer; test report available upon request.

11. Key Advantages

- High copper purity for maximum transmission efficiency
- Excellent balance between cost and performance
- Stable performance under PoE load conditions
- Suitable for professional enterprise installations

12. Warranty

25-Year System Warranty

Subject to proper installation and certified components usage.