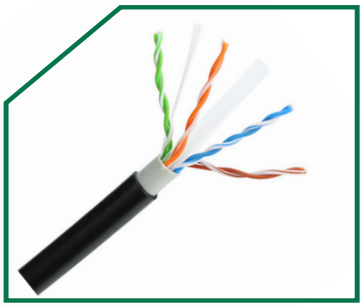
Planet
Structure Cabling Systems

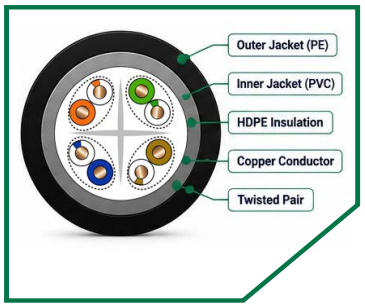
Category : 6 - U/UTP Outdoor Double Jacket

Network Cable

Part Number:

PVC+PE : PL-CA6UTO

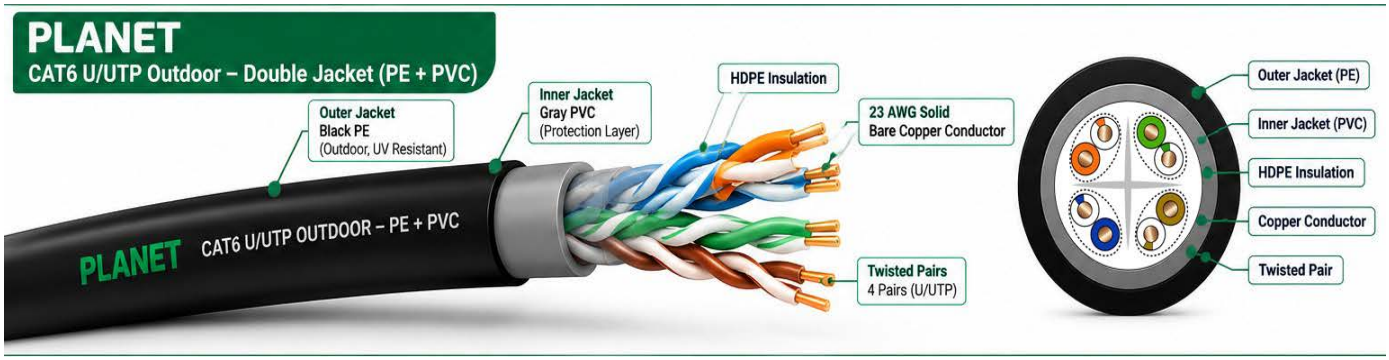




1. General Description

Category 6 U/UTP outdoor double-jacket cable for structured cabling systems. The proposed construction uses four unshielded twisted pairs of 23 AWG solid bare copper conductors with HDPE insulation and a PE cross separator. A grey PVC inner jacket and a black UV-resistant HDPE outer jacket provide dual-layer protection for outdoor, industrial and duct installations. Direct-burial use requires the optional water-blocking construction and verification against project conditions.

U/UTP	DUAL	250 MHz	PoE Types 1-4
Unshielded Outdoor	Double Jacket	Category 6	Subject to limits



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2. Construction

Parameter	Specification
Conductor Material	100% solid bare annealed copper (Cu)
Conductor Size	23 AWG solid bare copper (0.570 ± 0.005 mm; design target)
Number of Conductors	8 (4 unshielded, color-coded twisted pairs)
Insulation Material	High-Density Polyethylene (HDPE)
Pair Separator	PE cross filler / separator (subject to factory confirmation)
Individual Pair Shield	None - unshielded pairs
Overall Shielding	None - no aluminum foil, braid, or metallic screen
Shielding Type	U/UTP - unshielded overall / unshielded twisted pairs
Cable Diameter	7.5 ± 0.5 mm - proposed target; confirm manufactured OD
Inner Jacket	Standard: grey PVC inner jacket; optional: grey LSZH
Jacket Construction	Double jacket: grey PVC inner + black UV-resistant HDPE outer
Water Blocking	Optional gel/tape for ordered direct-burial construction
Drain Wire	Not applicable - no metallic shielding
Jacket Type	Double-layer virgin material (non-recycled; proposed)
Installation Type	Standard: outdoor / industrial / duct; direct burial: optional water-blocked version
Rip Cord	Nylon rip cord between the two jackets
Jacket Color	Black outer + grey inner

3. Electrical Characteristics

Parameter	Specification
Characteristic Impedance	100 ± 15 Ω
DC Resistance	≤ 9.38 Ω/100 m at 20°C
DC Loop Resistance	≤ 18.8 Ω/100 m at 20°C
Resistance Unbalance	≤ 5% within a pair (cable value; verify installed PoE channel)
Mutual Capacitance	≤ 5.6 nF/100 m
Frequency Range	Up to 250 MHz
Remote Powering Support	IEEE 802.3af / at / bt PoE (up to 57 V DC); subject to channel, bundle and temperature limits

Part Number: **PVC+PE** : PL-CA6UTO

4. Mechanical Characteristics

Parameter	Value
Minimum Bend Radius	≥ 6 × cable diameter after installation (design recommendation)
Pulling Force	≤ 110 N (proposed; factory test confirmation required)
Operating Temperature	-40°C to +75°C (target; confirm PVC and HDPE grades)
Installation Temperature	-20°C to +50°C (target; verify production jacket)
UV Resistance	High UV stability - weather-resistant outdoor HDPE outer jacket
Outdoor / Water Exposure	UV/weather-resistant HDPE jacket; direct burial requires optional water-blocking
Mechanical Protection	Double jacket protection; quantitative impact/crush rating requires testing
Flame Rating	No base flame-rating claim; IEC 60332-1 only on verified ordered construction

5. Applications

- Outdoor structured cabling systems and protected industrial networks
- Outdoor IP CCTV systems and Smart City infrastructure networks
- Gigabit Ethernet (1000BASE-T) and outdoor wireless access points
- Building-to-building copper links only where grounding and surge-protection rules permit; fiber is preferred between separate buildings
- PoE / PoE+ / 4PPoE under IEEE 802.3af/at/bt installation limits
- Underground conduit installations; direct burial only with ordered water-blocking
- Outdoor-to-indoor transitions using correctly rated cable at building entrances

PERFORMANCE & KEY FEATURES **CAT6 U/UTP DOUBLE JACKET | 250 MHz**

6. Technical Performance

Category 6 Permanent Link reference limits up to 250 MHz (90 m maximum). These are installed-link reference limits, NOT individual bulk-cable component readings; complete channels may extend to 100 m. Model-specific compliance must be verified by factory and installed-link tests.

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

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7. Transmission Performance

- Supports 10/100/1000 Mbps (Gigabit Ethernet) with compliant channel components
- Bandwidth up to 250 MHz; designed for Category 6 / Class E transmission
- Designed for IEEE 802.3af/at/bt PoE applications, subject to channel, bundle and temperature limits
- Category 6 NEXT, ACRF and Return Loss requirements subject to test confirmation
- Unshielded construction: no foil/braid and no cable-shield bonding required
- 90 m maximum permanent link / 100 m maximum channel, if the installed system passes
- Outdoor environmental limits depend on validated jackets and ordered water-blocking option

8. Key Features

- 23 AWG solid bare copper conductors; four precision twisted unshielded pairs
- Double-jacket construction (grey PVC inner + black UV-resistant HDPE outer)
- PE cross separator for pair geometry and crosstalk control
- Optional LSZH inner jacket; optional water-blocking gel/tape for approved direct-burial installations
- No pair foil, overall braid or drain wire
- PoE Types 1-4 support subject to installation and thermal limits
- Representative Fluke 90 m Permanent Link / 100 m Channel reports to be confirmed

9. Standards Compliance

Standard / Certification	Status
ISO/IEC 11801-1 (Class E cabling support)	Target design support; validation required
ANSI/TIA-568.2-E	Target Category 6 compliance; validate with factory report
EN 50173-1 (Class E cabling support)	Target design support; validation required
EN 50288-6-1 (unshielded up to 250 MHz)	Applicable unscreened cable standard; verify conformity
RoHS	Declaration required for the ordered U/UTP model
CE Marking	Subject to applicable EU conformity documentation
CPR (EN 50575)	Only for applicable construction; class and DoP required
UL / ETL Verification	Optional; valid file/listing needed for any claim

10. Quality Assurance

- Validate conductors, pair twist geometry, HDPE insulation and both jacket layers
- Verify Category 6 electrical performance on representative production batches
- UV/weather testing and water-ingress testing for the ordered construction
- Fluke 90 m Permanent Link / 100 m Channel verification where records are available

11. Key Advantages

- Enhanced physical and weather protection with dual-jacket construction
- Unshielded Cat6 design where additional EMI/RFI shielding is not required
- 23 AWG solid bare copper construction for stable data transmission
- Optional water-blocked construction for specifically approved burial installations
- Simplified U/UTP terminations without shielded connector requirements
- PoE suitability subject to verified installed-channel, cable-bundle and ambient temperature limits
- Appropriate for outdoor industrial, campus and infrastructure networks within installation limits

12. Warranty

25-Year System Warranty	**Subject to proper installation and certified components usage.**