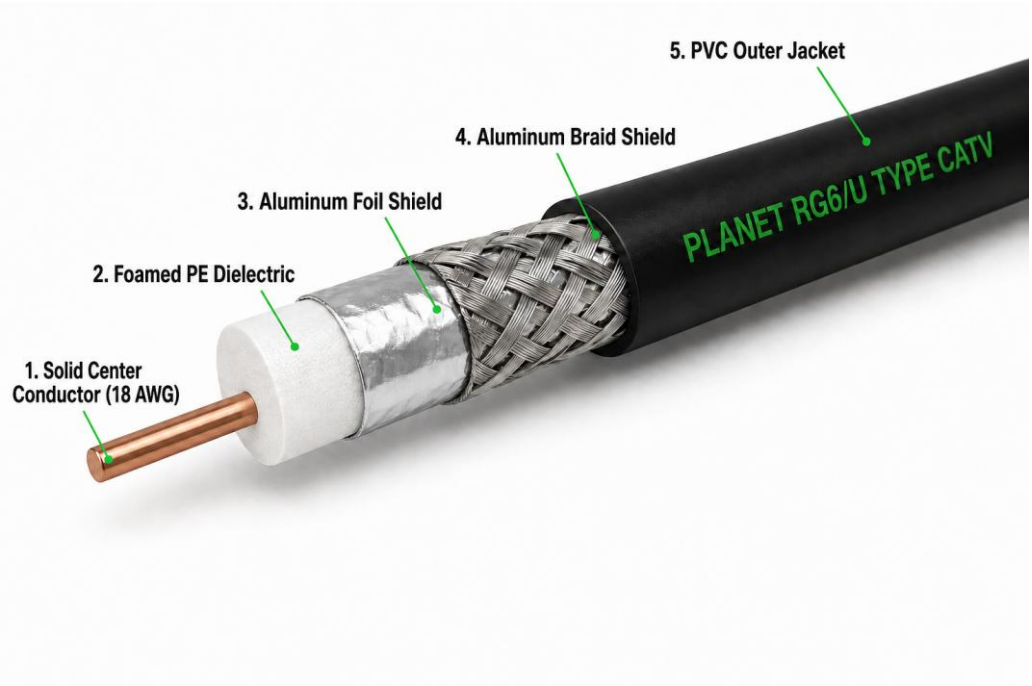
Planet
Structure Cabling Systems

Category : RG6/U CATV coaxial Cable

Coaxial Cable

3D PRODUCT VIEW



1. PRODUCT OVERVIEW

A 75-ohm RG6/U, IEC 75-5S standard-shield coaxial cable for CATV, MATV/SMATV, satellite receiving, broadband video, HFC drop and general RF distribution from 5 to 3000 MHz. The controlled construction uses an 18 AWG solid BC or CCS center conductor, gas-injected foamed-PE dielectric, bonded aluminum-polymeric foil, aluminum-alloy braid and a black PVC jacket. Unless identified as nominal, the stated values are acceptance requirements for the complete ordered part number.

75 OHM	18 AWG	5-3000 MHz	BC / CCS
CATV impedance	1.02 mm solid	Specified range	Controlled variants

2. INDEX BY PART NUMBER

Part Number	Center Conductor	Controlled Use
PL-RG6OP3	18 AWG solid Bare Copper (BC)	IEC 75-5S-BC-ALT+A-PVC-C; preferred where DC is passed
PL-RG6OP3S	18 AWG solid Copper-Clad Steel (CCS)	IEC 75-5S-CCS-ALT+A-PVC-C; RF use; verify DC voltage drop and heating

KEY FEATURES

- 18 AWG solid 1.02 mm center conductor with separately identified BC and CCS variants.
- IEC 75-5S geometry: 4.57 mm foamed-PE dielectric and 6.93 mm finished cable diameter.
- Bonded aluminum-polymeric foil plus minimum 60% aluminum-alloy braid; Class C screening is mandatory.
- Jacket marking includes PLANET RG6/U TYPE CATV and sequential length identification.

3. CONSTRUCTION SPECIFICATIONS

Component	Material / Construction	Specified Dimension / Requirement
Center conductor	Solid BC or CCS, selected by complete part number	1.02 +/- 0.02 mm (18 AWG nominal)
Dielectric	Gas-injected foamed polyethylene (Foam PE)	4.57 +/- 0.13 mm diameter; ovality <= 5%; eccentricity <= 10%
Foil shield	Bonded aluminum-polymeric laminated tape (ALT)	100% coverage; 18% to 35% longitudinal overlap; inner shield OD 4.78 +/- 0.13 mm
Braid shield	Aluminum-alloy wire braid (A)	112 ends x 0.12 +/- 0.005 mm; coverage >= 60% (IEC minimum >= 59%)
Outer jacket	Black PVC, indoor base construction	Minimum thickness 0.60 mm; finished OD 6.93 +/- 0.20 mm; ovality <= 7%; eccentricity <= 10%
Cable marking	Brand, type, complete part number, lot and sequential length	PLANET RG6/U TYPE CATV; IEC construction designation on reel/test documents
Standard length	Reel or pull-box packaging as ordered	305 m (1,000 ft) nominal

4. ELECTRICAL CHARACTERISTICS

Parameter	Specified Requirement
RF operating range	5 to 3000 MHz
Characteristic impedance	75 +/- 3 ohm; measured at 200 MHz
Capacitance, center to shield	53 pF/m nominal at 1 kHz; measured value available upon request
Relative propagation velocity	85% nominal (IEC engineering information)
Propagation delay	Approximately 3.92 ns/m nominal, derived from 85% propagation velocity
Return loss	>= 20 dB: 5-1000 MHz; >= 18 dB: 1000-2000 MHz; >= 16 dB: 2000-3000 MHz; measurement uncertainty < 1 dB
Attenuation constant at 20 deg C	Shall not exceed the IEC 61196-6-3:2020 Annex B limits listed in Section 5
Regularity of impedance	>= 40 dB or response <= 1%; test from both ends per IEC 61196-1-115
Transfer impedance after flex	Screening Class C: <= 50 mohm/m from 5 to 30 MHz
Screening attenuation after flex	Class C: >= 75 dB, 30-1000 MHz; >= 65 dB, 1000-2000 MHz; >= 55 dB, 2000-3000 MHz
BC center-conductor DCR at 20 deg C	<= 21.10 ohm/km
CCS center-conductor DCR at 20 deg C	<= 102.00 ohm/km
Outer-conductor DCR at 20 deg C	<= 33.00 ohm/km for ALT+A standard shield
Insulation resistance	Center-to-shield >= 10,000 MOhm-km
Dielectric withstand	1.5 kVAC for 1 min or 2.1 kVDC for 1 min; alternatives: 3.75 kVAC or 5.25 kVDC for 2 s
Sheath withstand	2.5 kVAC for 1 min or 3.5 kVDC for 1 min; alternatives: 6.25 kVAC or 8.75 kVDC for 2 s
Jacket spark test	2.5 kVAC at 50 Hz, or 3.0 kVAC at 15 kHz, or 3.75 kVDC
Maximum current capacity	BC: 8 A at 20 deg C / 6 A at 40 deg C; CCS: 4 A / 3 A; inner-conductor Tc <= 65 deg C
Voltage-use limitation	Signal or approved SELV/PELV circuits only; withstand and spark values are test voltages, not working-voltage ratings

5. MAXIMUM ATTENUATION AT 20 deg C

Frequency (MHz)	Maximum (dB/100 m) - governing	Equivalent (dB/100 ft)
5	2.0	0.61
50	5.1	1.55
100	6.7	2.04
200	9.5	2.90
400	13.9	4.24
700	18.5	5.64
900	21.2	6.46
1000	22.3	6.80
1450	26.9	8.20
1800	30.2	9.20
2100	32.3	9.85
2250	33.5	10.21
3000	39.4	12.01

6. MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Item	Specified Requirement
Jacket and temperature	Black PVC, indoor base construction; operating/storage: -20 deg C to +70 deg C
Installation temperature	0 deg C to +50 deg C; manufacturer installation instruction
Minimum bend radius / flex test	>= 10 x nominal cable OD (69.3 mm); 3 flex cycles; no damage and post-flex Class C screening limits shall be met
Cold bend	Method B; mandrel 20 x cable OD; -20 +/- 2 deg C for PVC; no physical damage
Climatic sequence and damp heat	-20 deg C to +70 deg C, 24 h, 3 cycles; no damage; attenuation change <= 7%; after damp heat IR >= 10,000 MOhm-km
Thermal ageing	80 +/- 2 deg C for 168 h; no physical damage; attenuation change <= 7%
Geometrical integrity	Dielectric ovality <= 5% and eccentricity <= 10%; jacket ovality <= 7% and eccentricity <= 10%
Conductor mechanical	BC elongation >= 25%; CCS tensile strength >= 760 MPa and elongation >= 1%; after 20 twists no surface defects, and after continued twisting no copper/core separation
Conductor-to-dielectric adhesion	22 N to 89 N at 20 +/- 5 deg C; 50 mm specimen
Connector compatibility	75-ohm RG6 / 75-5 connectors suitable for 1.02 mm center conductor and 6.93 +/- 0.20 mm jacket
Base-construction exclusions	No UV, direct-burial, plenum, LSZH or flame-classification claim unless separately ordered and documented

7. APPLICATIONS

- CATV, MATV and SMATV distribution within the specified RF limits.
- Satellite-television receiving systems and broadband/HFC subscriber drops.
- Analog and digital video, cable-modem and general 75-ohm RF distribution.
- CCTV and surveillance-video interconnections using compatible 75-ohm connectors.

8. STANDARDS AND REGULATORY STATUS

Standard / Classification	Application to This Datasheet
IEC 61196-6-3:2020	Primary detail specification for 75-5 type CATV drop cable, 5-3000 MHz
IEC 61196-6:2009	Dated sectional specification referenced normatively by IEC 61196-6-3:2020
IEC 61196-6:2021	Current sectional specification used supplementally for CATV drop-cable marking and labelling; it does not replace the dated reference in the detail specification
IEC 61196-1:2005 and applicable test-method parts	Generic requirements and the relevant IEC 61196-1-1xx / 1-2xx / 1-3xx electrical, environmental and mechanical methods
IEC 62153-4-3 / IEC 62153-4-4	Transfer-impedance and screening-attenuation triaxial test methods
IEC 60728 series	CATV/MATV system-application reference; not a standalone product certificate
ASTM B869	Optional material reference for CCS wire when specified and documented
RoHS / REACH	Applicable material declarations for the exact ordered part number are available upon request
CE / CPR	No claim from this datasheet alone; declare only where legally applicable and supported for the exact construction
ISO 9001	Manufacturer quality-management-system certification only; not a product certificate
UL / ETL / flame / UV / direct burial / LSZH	No claim unless separately ordered and supported by a valid report for the complete part number

9. QUALITY ASSURANCE AND TESTING

- Routine controls: dimensions, continuity/open-short, center and outer-conductor DCR, insulation resistance, dielectric/sheath withstand, jacket spark test and marking inspection.
- Lot RF verification: impedance at 200 MHz, return loss over 5-3000 MHz and impedance regularity from both cable ends; lot records retained.
- Qualification and periodic verification: Annex B attenuation, NVP/delay, transfer impedance and screening attenuation after flex, plus electrical safety tests.
- Mechanical/environmental qualification: bend/flex, cold bend, climatic sequence, damp heat, thermal ageing, geometry, conductor mechanical and adhesion tests; UV/flame tests only for separately ordered constructions.
- All reports shall identify the exact part number, center-conductor material, shield construction, batch and applicable test method.

10. ORDE ING AND ACCEPTANCE REQUIREMENTS

Requirement	Acceptance Basis
Complete part number	PL-RG6OP3 identifies BC; PL-RG6OP3S identifies CCS
IEC construction designation	BC: 75-5S-BC-ALT+A-PVC-C; CCS: 75-5S-CCS-ALT+A-PVC-C
Cable and reel marking	PLANET RG6/U TYPE CATV, complete part number, lot, sequential length and production identification
Material control	BC and CCS substitution is prohibited without written approval and revised acceptance documents
Consultant submittal	Datasheet plus requested type-test report, routine certificate and material declaration for the exact ordered variant
Certification status	No third-party product certification is claimed unless a valid certificate names the exact complete part number