Planet
Structure Cabling Systems

Stranded Loose Tube | APL Barrier Inner PE Corrugated Steel Tape Armor Outer PE Jacket

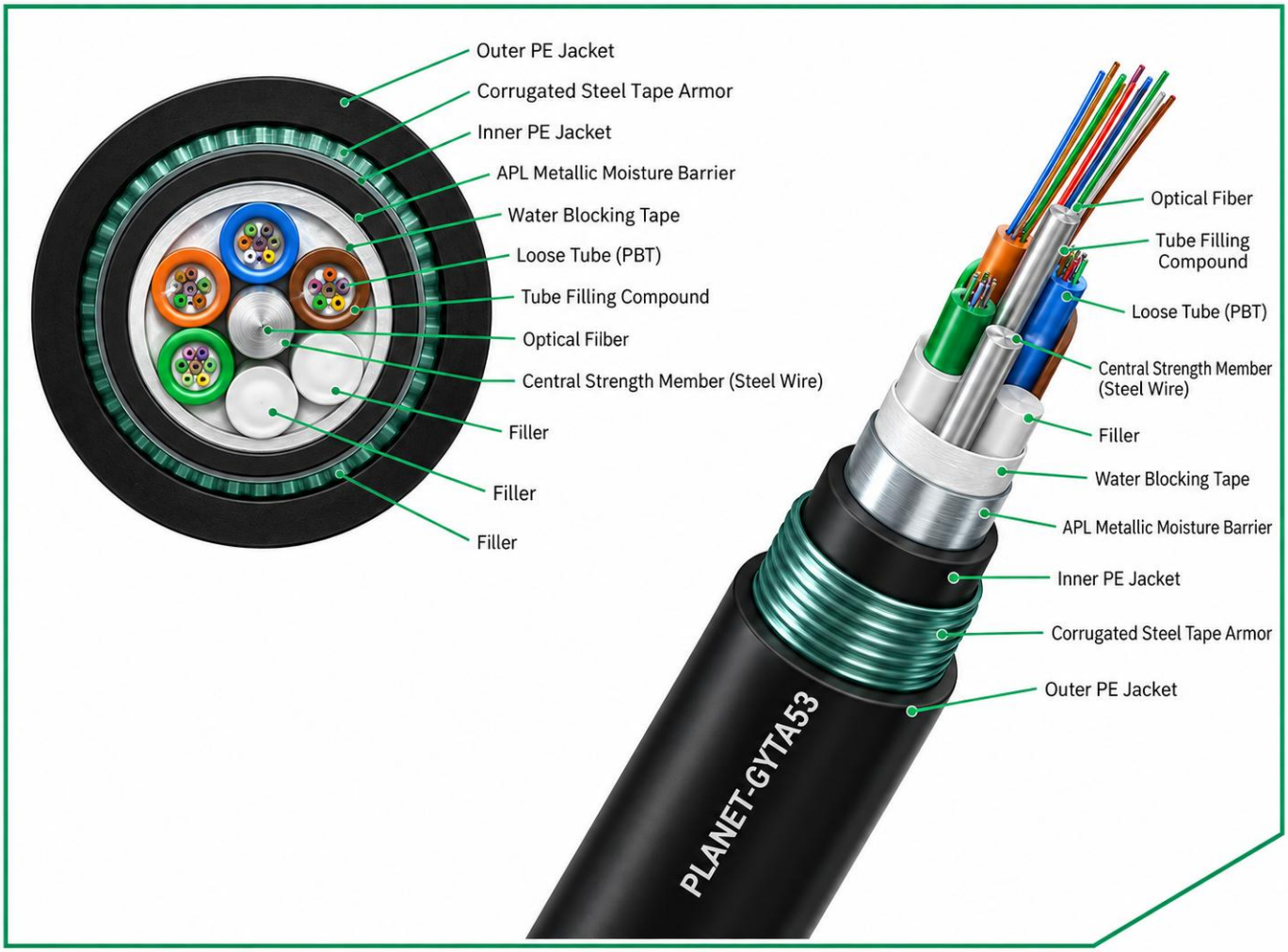
Fiber Optic Cable

PRODUCT DESCRIPTION

PLANET GYTA53 is a heavy-duty metallic armored outdoor stranded loose tube fiber optic cable designed for direct burial, duct, campus backbone and harsh outdoor infrastructure routes. Its construction uses color-coded optical fibers in high-modulus PBT loose tubes stranded around a phosphated steel central strength member, longitudinal water blocking, an Aluminum-Polyethylene Laminate (APL) metallic moisture barrier, an inner PE sheath, corrugated steel tape armor and a virgin black PE outer jacket. OS2 is the standard fiber selection; OM3, OM4 and OM5 are available for project-specific multimode requirements.

MAIN CLASSIFICATION

Fiber Type Options	Structure	Cable Classification	Dielectric Status
OS2 / OM3 / OM4 / OM5	Stranded Loose Tube + APL + Double PE Sheath	METALLIC ARMORED - HEAVY DUTY	NOT All-Dielectric



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GENERAL SPECIFICATIONS & CABLE CONSTRUCTION

Environment	Outside Plant (OSP), direct burial, duct, campus backbone, harsh outdoor infrastructure.
Applications	Telecom backbone, metropolitan distribution, inter-building backbone, road/tunnel, utility and direct-burial routes.
Fiber Type	OS2 G.652.D standard; G.657.A1/A2 optional; OM3 / OM4 / OM5 multimode available upon project request.
Fiber Count	2F to 144F standard family range; higher counts subject to engineering approval.
Fiber Proof Test	≥ 100 kpsi proof-tested optical fiber.
Loose Tube	High-modulus, hydrolysis-resistant virgin PBT; max. 12 fibers/tube unless approved.
Central Strength Member	Phosphated steel wire / metallic central strength member.
Water Blocking	Tube filling compound plus cable-core water-blocking tape/yarn and/or filling compound.
APL Moisture Barrier	Polymer-coated aluminum tape / Aluminum-Polyethylene Laminate, nominal metal-laminate thickness ≥ 0.20 mm.
Inner PE Sheath	Virgin PE inner sheath, nominal thickness ≥ 1.00 mm; final minimum per approved production drawing.
Corrugated Steel Tape Armor	Polymer-coated corrugated steel tape armor for heavy mechanical and rodent protection; steel substrate nominal ≥ 0.15 mm.
Outer PE Jacket	Virgin black MDPE or HDPE, UV-resistant outdoor grade; nominal thickness ≥ 1.80 mm.
Cable Marking	PLANET-GYTA53 + fiber count + fiber type + sequential meter marking + production traceability.

MECHANICAL & ENVIRONMENTAL PERFORMANCE

Parameter	PLANET Minimum Requirement
Operating / Storage Temp.	-40°C to +70°C
Installation Temp.	-20°C to +60°C
Tensile - Long Term	≥ 1000 N
Tensile - Short Term	≥ 3000 N
Crush - Long / Short Term	≥ 1000 / 3000 N per 100 mm
Bend Radius - Static / Installation	≤ 10D / ≤ 20D
Water Penetration	Pass IEC 60794-1-22 F5B or current equivalent
Temperature Cycling	-40°C to +70°C; additional attenuation ≤ 0.05 dB/km after test

OPTICAL CHARACTERISTICS - OS2 / OM3 / OM4 / OM5

Parameter	OS2 G.652.D	OM3 50/125	OM4 50/125	OM5 50/125
Attenuation @ 850 nm	—	≤ 3.0 dB/km	≤ 3.0 dB/km	≤ 3.0 dB/km
Attenuation @ 953 nm	—	—	—	≤ 3.0 dB/km
Attenuation @ 1300 / 1310 nm	≤ 0.35 dB/km @1310	≤ 1.0 dB/km @1300	≤ 1.0 dB/km @1300	≤ 1.0 dB/km @1300
Attenuation @ 1550 nm	≤ 0.21 dB/km	—	—	—
Attenuation @ 1625 nm	≤ 0.23 dB/km	—	—	—
Mode Field / Core Diameter	8.6-9.5 µm @1310	50 ± 2.5 µm	50 ± 2.5 µm	50 ± 2.5 µm
Cladding Diameter	125.0 ± 0.7 µm	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 1.0 µm
Coating Diameter	245 ± 10 µm	245 ± 10 µm	245 ± 10 µm	245 ± 10 µm
PMD	≤ 0.20 ps/√km	—	—	—
EMB @ 850 nm	—	≥ 2000 MHz·km	≥ 4700 MHz·km	≥ 4700 MHz·km
EMB @ 953 nm	—	—	—	≥ 2470 MHz·km
Fiber Standard	ITU-T G.652.D / IEC 60793-2-50	IEC 60793-2-10 A1a.2	IEC 60793-2-10 A1a.3	IEC 60793-2-10 A1a.4

DESIGN GUIDE / DIMENSIONAL CONTROL

Fiber Count	Target Max O.D.	Target Max Weight	Min. Tensile L/S	Min. Crush L/S
24F	≤ 13.5 mm	≤ 190 kg/km	1000 / 3000 N	1000 / 3000 N/100 mm
48F	≤ 14.5 mm	≤ 220 kg/km	1000 / 3000 N	1000 / 3000 N/100 mm
72F	≤ 15.5 mm	≤ 255 kg/km	1000 / 3000 N	1000 / 3000 N/100 mm
96F	≤ 17.0 mm	≤ 300 kg/km	1000 / 3000 N	1000 / 3000 N/100 mm
144F	≤ 19.5 mm	≤ 390 kg/km	1000 / 3000 N	1000 / 3000 N/100 mm

STANDARDS & COMPLIANCE

IEC 60794 Series	Optical fiber cable construction, mechanical and environmental test framework.
ITU-T G.652.D	Standard OS2 single-mode fiber.
IEC 60793-2-50	Single-mode optical fiber product specification reference.
IEC 60793-2-10	Multimode optical fiber product specification reference for OM3 / OM4 / OM5.
RoHS	Hazardous substance compliance subject to production declaration / report.
CE Marking	Subject to applicable EU conformity documentation.
CPR / EN 50575	Optional project-specific classification and declaration only.

MANDATORY FACTORY TESTS & DOCUMENTATION

- 100% OTDR test per drum at 1310 nm and 1550 nm for OS2; appropriate 850/1300 nm test set for multimode production where specified.
- Factory attenuation report and fiber-batch traceability for each production lot.
- Construction report confirming virgin PBT material, steel strength member, APL thickness, inner PE sheath, corrugated steel tape armor and outer PE jacket thickness.
- Mechanical type-test evidence for tensile, crush, impact, bend, repeated bend / flex and torsion to applicable IEC 60794 methods.
- Water penetration and temperature-cycling test evidence.
- RoHS declaration / report and final drum inspection with sealed cable ends and continuous meter marking.

RECOMMENDED APPLICATIONS

- Heavy-duty direct-burial networks.
- Underground duct / conduit networks requiring enhanced mechanical protection.
- Campus, inter-building and metropolitan backbone.
- Road, tunnel, utility and industrial outdoor infrastructure routes.
- Harsh environments requiring metallic steel-tape armor and double PE sheath protection.
- OS2 long-distance backbone as the standard selection; OM3 / OM4 / OM5 for project-specific multimode outdoor links.

SELECTION NOTE

GYTA53 is a heavy-duty metallic armored outdoor cable with an APL moisture barrier, inner PE sheath, corrugated steel tape armor and outer PE sheath. It is NOT an all-dielectric cable. It is the preferred PLANET family in this group for direct-burial routes where stronger mechanical and rodent protection is required than standard GYTA.

QUALITY & CHANGE CONTROL

- Virgin PBT loose-tube material and virgin PE inner/outer sheaths; no silent recycled-material substitution.
- Phosphated steel central strength member unless an alternate construction is explicitly approved in writing.
- APL nominal metal-laminate thickness ≥ 0.20 mm; inner PE nominal ≥ 1.00 mm; corrugated steel tape armor nominal steel substrate ≥ 0.15 mm; outer PE nominal ≥ 1.80 mm.
- No change to fiber manufacturer/type, tube allocation, water-blocking system, APL, inner sheath, steel armor, PE compounds, cable diameter or mechanical performance without prior PLANET approval.
- Final production drawing and type-test documentation shall be approved before mass production.

AVAILABLE PROJECT OPTIONS

- OS2 G.657.A1 / G.657.A2 bend-insensitive single-mode fiber.
- OM3, OM4 or OM5 50/125 µm multimode fiber.
- Dry-core / dry water-blocking construction subject to approved design.
- Custom fiber count and loose-tube allocation.
- Custom jacket printing and sequential meter marking.
- CPR / flame-rated versions only when separately tested and documented for the exact construction.

ORDERING DESCRIPTION

Part Number Family	PL-GYTA53
Typical OS2 Description	PLANET GYTA53 - 48F - OS2 G.652.D - Stranded Loose Tube - Steel CSM - APL ≥ 0.20 mm - Inner PE - CST Armor - Virgin Black Outer PE
Typical OM3 Description	PLANET GYTA53 - 24F - OM3 50/125 - Stranded Loose Tube - APL - Inner PE - CST Armor - Black Outer PE
Typical OM4 Description	PLANET GYTA53 - 24F - OM4 50/125 - Stranded Loose Tube - APL - Inner PE - CST Armor - Black Outer PE
Typical OM5 Description	PLANET GYTA53 - 24F - OM5 50/125 - Stranded Loose Tube - APL - Inner PE - CST Armor - Black Outer PE

PRODUCT IDENTIFICATION PRINCIPLE

The approved product description shall state the actual construction and shall not rely only on the Chinese family code: fiber type + fiber count + loose-tube structure + steel central strength member + water blocking + APL metallic barrier + inner PE sheath + corrugated steel tape armor + outer PE jacket + intended installation method.

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

Part Number	Description
PL-GYTA53-xxS2	Outdoor Fiber Optic Cable **Single Mode OS2**
PL-GYTA53-xxM3	Outdoor Fiber Optic Cable **Multi Mode OM3**
PL-GYTA53-xxM4	Outdoor Fiber Optic Cable **Multi Mode OM4**
PL-GYTA53-xxM5	Outdoor Fiber Optic Cable **Multi Mode OM5**

XX: Number of Core