

General Description

The PDR-FOS Series is a range of ultra-light optical fiber payout spools engineered for tethered UAV and unmanned-vehicle communication, where a single fiber must dispense cleanly and reliably at high speed during flight or deployment. Each spool is wound with bend-insensitive G657.A2 single-mode fiber weighing just 80 g/km, with an optional Kevlar coating for high strength and wear resistance in harsh environments. The lightweight black housing withstands a 60 N pulling force and operates across a wide -40°C to +85°C range, making it suitable for demanding field and airborne conditions. Spools are supplied in seventeen standard lengths from 500 m to 50 km, each terminated with an FC single-mode single-fiber optical interface. Optional Kevlar coating and custom connector types are available through PDR's OEM/ODM engineering service.



Key Features

- Ultra-light payout spool design optimized for tethered UAV and unmanned-vehicle fiber links
- Bend-insensitive G657.A2 single-mode fiber for reliable high-speed payout with minimal bend loss
- Lightweight fiber at only 80 g/km for minimal payload weight
- Optional Kevlar coating for high strength and wear resistance in harsh environments
- Rated 60 N pulling force for controlled, snag-free fiber dispensing under tension
- Rugged black housing built for demanding field and airborne conditions
- Wide operating temperature range of -40°C to +85°C for airborne and field deployment
- FC single-mode, single-fiber optical interface for simple, low-loss termination
- Seventeen standard lengths from 500 m to 50 km to match mission range requirements
- OEM/ODM customization of Kevlar coating and connector type on request

PDR VIDEOTRONICS (INDIA) PRIVATE LIMITED

ADDRESS

99, Old Prabhadevi Road
Mumbai 400 025, India

CONTACT

T: +91 22 2430 6494 / 2430 9536 / 2436 1647
M: +91 86910 00897 / 95946 56333

ONLINE

E: info@pdrworld.com
W: www.pdrworld.com



Technical Specifications

Parameter	Specification
Product Name	Optical fiber payout spool
Fiber Type	G657.A2 bend-insensitive single-mode fiber (ITU-T G.657.A2)
Fiber Count	Single-mode, single fiber
Coating	Optional Kevlar coating — high strength and wear resistance
Unit Weight	80 g/km
Pulling Force	60 N
Optical Interface	FC (single-mode, single-fiber)
Housing	Black housing
Available Lengths	500 m to 50 km (17 standard variants — see Ordering Information)
Operating Temperature	-40°C to +85°C
Country of Origin	India
Customization	OEM/ODM — Kevlar coating and connector type on request

Applications

- Tethered UAV and drone fiber-optic communication and control links
- Defence, ISR and loitering / FPV unmanned systems requiring jam-resistant fiber tethers
- Unmanned surface and underwater vehicles (USV/ROV) and unmanned vessels
- Underwater exploration, tunnels, pipelines and underground culvert deployment
- Rapid field-deployable and emergency fiber-optic communication links
- Industrial and research applications demanding lightweight, high-strength fiber payout

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Ordering Information

Available Lengths & Packaging Options

Model	Length	Spool Size	Spool Wt.	Packaging Size	Box Wt.
PDR-FOS-500M	500 m	88×121 mm	0.20 kg	430×180×150 mm	0.30 kg
PDR-FOS-01K	1 km	88×121 mm	0.26 kg	430×180×150 mm	0.30 kg
PDR-FOS-02K	2 km	88×121 mm	0.30 kg	430×180×150 mm	0.30 kg
PDR-FOS-03K	3 km	121×246 mm	0.54 kg	430×180×150 mm	0.30 kg
PDR-FOS-04K	4 km	121×246 mm	0.60 kg	430×180×150 mm	0.30 kg
PDR-FOS-05K	5 km	121×246 mm	0.64 kg	430×180×150 mm	0.30 kg
PDR-FOS-06K	6 km	121×246 mm	0.75 kg	430×180×150 mm	0.30 kg
PDR-FOS-08K	8 km	121×246 mm	0.89 kg	430×180×150 mm	0.30 kg
PDR-FOS-10K	10 km	121×246 mm	1.10 kg	430×180×150 mm	0.30 kg
PDR-FOS-15K	15 km	121×246 mm	1.50 kg	430×180×150 mm	0.30 kg
PDR-FOS-20K	20 km	147×276 mm	2.06 kg	480×205×175 mm	0.45 kg
PDR-FOS-25K	25 km	147×276 mm	2.55 kg	480×205×175 mm	0.45 kg
PDR-FOS-30K	30 km	147×276 mm	2.85 kg	480×205×175 mm	0.45 kg
PDR-FOS-35K	35 km	147×276 mm	3.30 kg	480×205×175 mm	0.45 kg
PDR-FOS-40K	40 km	147×416 mm	3.80 kg	610×220×187 mm	0.50 kg
PDR-FOS-45K	45 km	147×416 mm	4.40 kg	610×220×187 mm	0.50 kg
PDR-FOS-50K	50 km	147×416 mm	4.85 kg	610×220×187 mm	0.50 kg

All variants supplied with G657.A2 single-mode fiber and FC optical interface. Single box weight is additional to spool weight. Custom lengths and connectors available via PDR OEM/ODM service.

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