CATALOGUE · REELING FIBRE OPTIC CABLES

E9/125 · G50/125 · G62.5/125

32 variants · 2 diameter classes

Alternatives to Nexans RHEYCORD®-OFE-R

FC-RFO-R
Reeling fibre optic cables — product catalogue

Torsion-resistant, all-dielectric fibre optic cables for motor-driven cable reels — PUR sheaths with anti-torsion braid, 4 to 48 singlemode or multimode fibres — functional alternatives to the Nexans RHEYCORD®-OFE-R reeling fibre optic cable.

Document no. **FC-CAT-RFO-2026-R100-EN** Revision **0** DRAFT Issue date **13 October 2026**

Language **English**

01 Programme overview

FeiChun FC-RFO-R reeling fibre optic cables are designed for continuous reeling and unreeling on motor-driven cable reels of mobile equipment. The series is a functional alternative to the Nexans RHEYCORD®-OFE-R reeling fibre optic cable: fibre counts, fibre types and designations follow the reference cable, and outer diameter, weight per metre and permissible tensile force are designed to match it, so that the cable can be used on existing reels and guiding systems after a compatibility check.

Gel-filled loose tubes with controlled excess fibre length are stranded with a short lay around an FRP central

Typical applications

- Ship-to-shore (STS) container cranes, RTG and RMG gantry cranes
- Stacker-reclaimers, ship loaders and unloaders
- Bucket wheel excavators, mining and tunnelling machines
- Trippers, mobile conveyors and spreader cable reels
- Motor-driven reels of industrial cranes and handling equipment

REFERENCE CABLE
Nexans RHEYCORD®-OFE-R

→

FEICHUN ALTERNATIVE
FC-RFO-R

strength member. Aramid yarns take the tensile load, and an anti-torsion braid between the PUR inner and outer sheaths keeps the cable torsionally stable over its service life. The all-dielectric design is immune to electromagnetic interference and needs no earthing — the right choice for data links (Ethernet, PROFINET, CCTV) between moving machines and the stationary control system.

32
variants in 2 diameter classes

4 – 48
fibres per cable

OS2 · OM1–OM3
fibre categories

240 m/min
max. reeling speed

Range overview

FeiChun type	Nexans reference	Fibre type	Category	Fibres	Outer Ø max. mm	Variants	Section
FC-RFO-R …E9/125	RHEYCORD®-OFE-R … E9/125	Singlemode E9/125	OS2	4 – 48	13.0 / 14.5	8	§05
FC-RFO-R …G50/125 OM2	RHEYCORD®-OFE-R … G50/125	Multimode G50/125	OM2	4 – 48	13.0 / 14.5	8	§05
FC-RFO-R …G50/125 OM3	RHEYCORD®-OFE-R … G50/125	Multimode G50/125	OM3	4 – 48	13.0 / 14.5	8	§05
FC-RFO-R …G62.5/125	RHEYCORD®-OFE-R … G62.5/125	Multimode G62.5/125	OM1	4 – 48	13.0 / 14.5	8	§05

02 Selection guide

SINGLEMODE · OS2

E9/125 (ITU-T G.652.D)

Long links between crane and control room, port backbone, 1G/10G Ethernet over kilometres.

- Links up to 10 km and more
- Lowest attenuation: ≤ 0.40 / 0.30 dB/km
- Reserve for higher data rates
- Bend-insensitive G.657.A1 fibre on request

MULTIMODE · OM2 / OM3

G50/125

Crane and machine networks with cost-effective 850 nm transceivers.

- 1000BASE-SX up to 550 m
- 10GBASE-SR up to 300 m (OM3)
- OM4 on request
- For LED and VCSEL sources

MULTIMODE · OM1

G62.5/125

Replacement in existing installations designed for 62.5 µm fibre.

- 1000BASE-SX up to 275 m
- Matches existing transceivers and patch panels
- Never mix 50 µm and 62.5 µm fibres in one link

Typical link lengths (IEEE 802.3)

Application	Wavelength nm	OS2	OM1	OM2	OM3
100BASE-FX	1300	—	2 km	2 km	2 km
1000BASE-SX	850	—	275 m	550 m	550 m
1000BASE-LX	1310	5 km	550 m[1]	550 m[1]	550 m[1]
10GBASE-SR	850	—	33 m	82 m	300 m
10GBASE-LR	1310	10 km	—	—	—

[1] With mode-conditioning patch cord. Values per IEEE 802.3; the optical budget must include connectors, splices and the fibre optic rotary joint (FORJ) of the reel.

Choosing the fibre count

Specify at least 30–50 % spare fibres: a reeling cable on a moving machine is a wear part, and spare fibres let you restore a link without replacing the cable. The number of channels of the reel's fibre optic rotary joint (FORJ) limits the usable fibre count.

Check before substitution: compare the outer diameter with the slot width of the monospiral reel, the weight per metre with the torque setting of the reel drive, the permissible tensile force with the maximum tension at full payout, and the minimum bending radius with the reel core and guide roller diameters. FeiChun engineers carry out this check on the basis of the reel data sheet.

03 FC-RFO-R PUR series

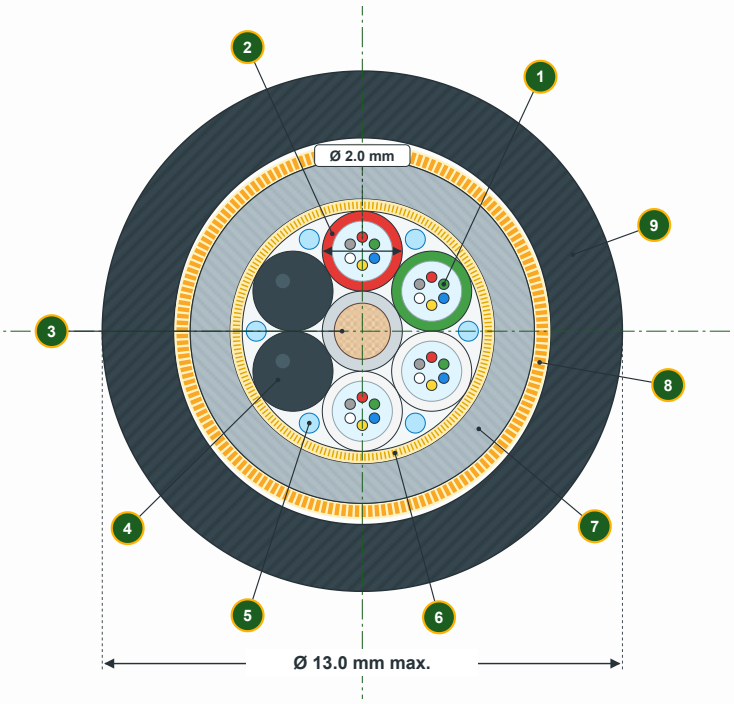
Alternative to Nexans RHEYCORD®-OFE-R

32 variants

Torsion-resistant reeling fibre optic cable, all-dielectric, PUR inner and outer sheath with anti-torsion braid, for motor-driven cable reels with high mechanical stress

Continuous operation on monospiral and cylindrical reels, guide rollers and lead-in funnels; travel speeds up to 240 m/min; torsional stress up to ±25°/m; permanent outdoor use with exposure to UV, ozone, water, oils and low temperatures. Gel-filled loose tubes decouple the fibres from tensile and bending strain; the dry, longitudinally watertight core simplifies termination.

4 – 48	Ø 13.0 / 14.5	15 × d	±25°/m
fibres, 2 diameter classes	outer diameter max., mm	min. bending radius, reeling	permissible torsion



FEICHUN · SECTION A–A · ALL-DIELECTRIC

FC-RFO-R 24E9/125

Doc. no. FC-TDS-RFOR-2026-R24A-EN
Desig. A-DQ(ZN)11Y(ZN)11Y 24E9/125
Rev. 0 · 2026-10-13 · 1st angle · not to scale

Drawing shows size A (24 fibres, 6 positions). Size B (36–48 fibres) has 8 positions, see section 05.

Pos.	Element	Material
1	Optical fibre	E9/125, G50/125 or G62.5/125; colour-coded acrylate coating Ø 245 µm
2	Loose tube	PBT tube Ø 2.0 mm, gel-filled, ≤ 6 fibres
3	Central strength member	FRP rod (glass-fibre reinforced plastic) with PE upcoat
4	Filler element	PE, black
5	Water-swellable yarns	Dry, longitudinally watertight core
6	Strength members	Aramid yarns
7	Inner sheath	PUR, grey
8	Anti-torsion braid	High-tenacity aramid / polyester yarns
9	Outer sheath	PUR, halogen-free, black (similar to RAL 9005), white marking

Construction details

Element	Description
Optical fibres	Singlemode E9/125 (ITU-T G.652.D) or multimode G50/125 (OM2, OM3) / G62.5/125 (OM1); acrylate coating Ø 245 ± 10 µm, colour-coded; proof test ≥ 1 % (≈ 0.69 GPa)
Loose tubes	PBT tubes Ø 2.0 mm filled with thixotropic gel, ≤ 6 fibres per tube, controlled excess fibre length
Central strength member	FRP rod (glass-fibre reinforced plastic) with PE upcoat
Core construction	Size A (4–24 fibres): 6 positions; size B (36–48 fibres): 8 positions. Loose tubes and PE filler elements helically stranded with short lay; interstices with water-swellable yarns (dry, longitudinally watertight core)

Element	Description
Strength members	Aramid yarns with optimised lay angle take the tensile load
Inner sheath	PUR, pressure-extruded, grey
Anti-torsion braid	Braid of high-tenacity aramid / polyester yarns between inner and outer sheath
Outer sheath	Halogen-free, flame-retardant, abrasion- and cut-resistant ether-based PUR compound, black (similar to RAL 9005), white marking
Type designation (DIN VDE 0888, informative)	A-DQ(ZN)11Y(ZN)11Y n × fibre type

Main technical data

Parameter	Value
Outer diameter max.	Size A: 13.0 mm; size B: 14.5 mm
Min. bending radius, reeling on drum	15 × d
Min. bending radius, guide rollers / lead-in funnel	15 × d
Min. bending radius, S-type change of direction	20 × d
Min. bending radius, fixed installation	10 × d
Permissible tensile force, operation (continuous)	A: 1500 N; B: 2000 N
Max. tensile force, short-term (installation)	A: 3000 N; B: 4000 N
Reeling speed max.	240 m/min (4 m/s)
Torsion	±25° per 1 m cable length
Crush resistance	2000 N / 100 mm (IEC 60794-1-21, E3)
Impact resistance	5 N·m, 5 impacts (IEC 60794-1-21, E4)

Parameter	Value
Temperature, reeling operation	−25 °C … +70 °C
Temperature, fixed installation	−40 °C … +70 °C
Temperature, installation / handling	−10 °C … +50 °C
Temperature, storage and transport	−40 °C … +70 °C
Oil resistance	Outer sheath per IEC 60811-404
UV, weather and ozone resistance	High; for permanent outdoor use
Flame retardance	IEC 60332-1-2
Halogen-free	Outer sheath per IEC 60754-1 / -2
Hydrolysis and microbe resistance	Yes (ether-based PUR)
Longitudinal water tightness	IEC 60794-1-22, method F5B
Metal-free / EMC	All-dielectric — no earthing required, immune to EMI
RoHS / REACH	Compliant: 2011/65/EU, (EU) 2015/863; (EC) 1907/2006

04 Optical data

Parameter	E9/125 · OS2	G50/125 · OM2	G50/125 · OM3	G62.5/125 · OM1
Fibre standard	IEC 60793-2-50 B-652.D / ITU-T G.652.D	IEC 60793-2-10 A1a	IEC 60793-2-10 A1a	IEC 60793-2-10 A1b
Core (MFD) / cladding	MFD 9.2 ± 0.4 µm @1310 nm / 125 ± 0.7 µm	50 ± 2.5 / 125 ± 1 µm	50 ± 2.5 / 125 ± 1 µm	62.5 ± 2.5 / 125 ± 1 µm
Coating diameter	245 ± 10 µm	245 ± 10 µm	245 ± 10 µm	245 ± 10 µm
Attenuation max. (cabled), 1st window	≤ 0.40 dB/km @1310 nm	≤ 3.0 dB/km @850 nm	≤ 3.0 dB/km @850 nm	≤ 3.5 dB/km @850 nm
Attenuation max. (cabled), 2nd window	≤ 0.30 dB/km @1550 nm	≤ 1.0 dB/km @1300 nm	≤ 1.0 dB/km @1300 nm	≤ 1.5 dB/km @1300 nm
Bandwidth OFL 850 / 1300 nm	—	≥ 500 / 500 MHz·km	≥ 1500 / 500 MHz·km	≥ 200 / 500 MHz·km
Effective modal bandwidth (EMB) 850 nm	—	—	≥ 2000 MHz·km	—
Numerical aperture	—	0.200 ± 0.015	0.200 ± 0.015	0.275 ± 0.015
Chromatic dispersion	≤ 18 ps/(nm·km) @1550 nm; λ_0 1300–1324 nm	—	—	—
Cable cut-off wavelength	≤ 1260 nm	—	—	—
Proof test	≥ 1 %	≥ 1 %	≥ 1 %	≥ 1 %

Attenuation values are maximum values for the cabled fibre at +20 °C. OM4, G.657.A1 and TIA-598 colour coding on request.

05 Dimensions & part numbers

Dimensions, weight and ratings — FC-RFO-R

Fibres × type	FeiChun part no.	Nexans reference	Size	Tubes × fibres	Outer Ø max. mm	Weight approx. kg/km	Tensile force, operation N	Min. bend radius, reeling mm
Singlemode E9/125 · OS2 (ITU-T G.652.D)								
4E9/125	FC-RFOR-E9-004	OFE-R 4E9/125	A	1 × 4	13.0	150	1500	195
6E9/125	FC-RFOR-E9-006	OFE-R 6E9/125	A	1 × 6	13.0	150	1500	195
8E9/125	FC-RFOR-E9-008	OFE-R 8E9/125	A	2 × 4	13.0	152	1500	195
12E9/125	FC-RFOR-E9-012	OFE-R 12E9/125	A	2 × 6	13.0	152	1500	195
18E9/125	FC-RFOR-E9-018	OFE-R 18E9/125	A	3 × 6	13.0	154	1500	195
24E9/125	FC-RFOR-E9-024	OFE-R 24E9/125	A	4 × 6	13.0	155	1500	195
36E9/125	FC-RFOR-E9-036	OFE-R 36E9/125	B	6 × 6	14.5	178	2000	218
48E9/125	FC-RFOR-E9-048	OFE-R 48E9/125	B	8 × 6	14.5	180	2000	218
Multimode G50/125 · OM2								
4G50/125 OM2	FC-RFOR-G50M2-004	OFE-R 4G50/125	A	1 × 4	13.0	150	1500	195
6G50/125 OM2	FC-RFOR-G50M2-006	OFE-R 6G50/125	A	1 × 6	13.0	150	1500	195
8G50/125 OM2	FC-RFOR-G50M2-008	OFE-R 8G50/125	A	2 × 4	13.0	152	1500	195
12G50/125 OM2	FC-RFOR-G50M2-012	OFE-R 12G50/125	A	2 × 6	13.0	152	1500	195
18G50/125 OM2	FC-RFOR-G50M2-018	OFE-R 18G50/125	A	3 × 6	13.0	154	1500	195
24G50/125 OM2	FC-RFOR-G50M2-024	OFE-R 24G50/125	A	4 × 6	13.0	155	1500	195
36G50/125 OM2	FC-RFOR-G50M2-036	OFE-R 36G50/125	B	6 × 6	14.5	178	2000	218
48G50/125 OM2	FC-RFOR-G50M2-048	OFE-R 48G50/125	B	8 × 6	14.5	180	2000	218
Multimode G50/125 · OM3 (laser-optimised)								
4G50/125 OM3	FC-RFOR-G50M3-004	OFE-R 4G50/125	A	1 × 4	13.0	150	1500	195
6G50/125 OM3	FC-RFOR-G50M3-006	OFE-R 6G50/125	A	1 × 6	13.0	150	1500	195
8G50/125 OM3	FC-RFOR-G50M3-008	OFE-R 8G50/125	A	2 × 4	13.0	152	1500	195
12G50/125 OM3	FC-RFOR-G50M3-012	OFE-R 12G50/125	A	2 × 6	13.0	152	1500	195
18G50/125 OM3	FC-RFOR-G50M3-018	OFE-R 18G50/125	A	3 × 6	13.0	154	1500	195
24G50/125 OM3	FC-RFOR-G50M3-024	OFE-R 24G50/125	A	4 × 6	13.0	155	1500	195
36G50/125 OM3	FC-RFOR-G50M3-036	OFE-R 36G50/125	B	6 × 6	14.5	178	2000	218
48G50/125 OM3	FC-RFOR-G50M3-048	OFE-R 48G50/125	B	8 × 6	14.5	180	2000	218
Multimode G62.5/125 · OM1								
4G62.5/125	FC-RFOR-G62-004	OFE-R 4G62.5/125	A	1 × 4	13.0	150	1500	195
6G62.5/125	FC-RFOR-G62-006	OFE-R 6G62.5/125	A	1 × 6	13.0	150	1500	195
8G62.5/125	FC-RFOR-G62-008	OFE-R 8G62.5/125	A	2 × 4	13.0	152	1500	195
12G62.5/125	FC-RFOR-G62-012	OFE-R 12G62.5/125	A	2 × 6	13.0	152	1500	195
18G62.5/125	FC-RFOR-G62-018	OFE-R 18G62.5/125	A	3 × 6	13.0	154	1500	195
24G62.5/125	FC-RFOR-G62-024	OFE-R 24G62.5/125	A	4 × 6	13.0	155	1500	195
36G62.5/125	FC-RFOR-G62-036	OFE-R 36G62.5/125	B	6 × 6	14.5	178	2000	218

Fibres × type	FeiChun part no.	Nexans reference	Size	Tubes × fibres	Outer Ø max. mm	Weight approx. kg/km	Tensile force, operation N	Min. bend radius, reeling mm
48G62.5/125	FC-RFOR-G62-048	OFE-R 48G62.5/125	B	8 × 6	14.5	180	2000	218

d = outer diameter max. Weights are approximate. Tensile force applies to the cable on the reel in operation; for short-term installation loads see section 03. Nexans reference = RHEYCORD®-OFE-R with the same fibre count and fibre type.

06 Colour code

Fibre colours within each tube (DIN VDE 0888 / IEC 60304)

- 1 red
- 2 green
- 3 blue
- 4 yellow
- 5 white
- 6 grey
- 7 brown
- 8 violet
- 9 turquoise
- 10 black
- 11 orange
- 12 pink

Standard tubes contain up to 6 fibres (colours 1–6). Colours 7–12 are used in special designs with 12 fibres per tube.

Loose tubes and fillers

- Tube 1 — red (counting tube)
- Tube 2 — green (direction tube)
- Tubes 3–8 — natural
- Filler elements — black

Tubes are counted from the red counting tube towards the green direction tube. TIA-598 colour code on request.

07 Reeling system design

Application	Min. bending radius	Max. speed	Notes
Monospiral reel	15 × d	240 m/min	Preferred reel type for FO cables; spiral gap to suit the max. outer diameter incl. tolerance
Cylindrical (multi-layer) reel	15 × d	120 m/min*	Limit the number of layers; check the crush load on the lower layers (2000 N / 100 mm)
Guide rollers / lead-in funnel	15 × d	—	Roller and funnel radius ≥ 15 × d; no sharp edges
S-type change of direction	20 × d	—	Straight length between opposite bends ≥ 20 × d
Fixed installation	10 × d	—	E.g. from the reel to the junction box

* Guideline value; depends on the number of layers and the level-wind system. d = outer diameter max.

Cable tension at the reel

$$F = M / r (+ m' \cdot g \cdot h) \leq F_{perm}$$

Recommendations

- Keep at least 2 safety turns on the reel at full payout.
- Set the reel torque so that the cable is always slightly tensioned but never exceeds the permissible operating

M — reel drive torque; r — current winding radius; m′ — cable weight per metre; h — hanging height for vertical reeling; Fperm — permissible tensile force in operation (section 05). Include the dynamic share during acceleration and braking.

force.

- Use a fibre optic rotary joint (FORJ) with enough channels for all fibres in use.
- Fit a strain-relief clamp (cable grip) at the feed point — never in the bending zone.

08 Standards and tests

Standard	Scope
IEC 60794-1-1	Optical fibre cables — generic specification
IEC 60794-1-21	Mechanical test methods (E1 tensile, E3 crush, E4 impact, E6 repeated bending, E7 torsion, E11 bend)
IEC 60794-1-22	Environmental test methods (F1 temperature cycling, F5B water penetration)
IEC 60794-3	Outdoor cables — sectional specification
IEC 60793-2-50 / ITU-T G.652.D	Singlemode fibre
IEC 60793-2-10	Multimode fibre A1a (50/125), A1b (62.5/125)
ISO/IEC 11801-1	Cabled fibre categories OS2, OM1–OM3
DIN VDE 0888	Type designation and colour code
IEC 60332-1-2	Flame propagation, single cable
IEC 60754-1 / -2	Halogen content / acidity of combustion gases
IEC 60811-404	Mineral oil immersion test for sheaths
2011/65/EU + (EU) 2015/863	RoHS
(EC) 1907/2006	REACH
IEEE 802.3	Ethernet link lengths

Routine and type tests

- OTDR measurement of every fibre on every delivery length (SM 1310/1550 nm, MM 850/1300 nm) with test report
- Dimensional check (outer diameter, sheath thickness), visual inspection and marking check
- Fibre continuity and colour sequence check
- Mechanical type tests: tensile, crush, impact, repeated bending, torsion (IEC 60794-1-21)
- Environmental type tests: temperature cycling, water penetration (IEC 60794-1-22)
- Reeling test on a cable reel test rig (type test)

Test documentation: every delivery is accompanied by the OTDR test report and the inspection certificate of the FeiChun in-house laboratory. Witness testing by a third party can be arranged at the buyer's expense.

09 Installation, marking and delivery

Installation notes

- Unwind the cable from the delivery drum tangentially by rotating the drum; never pull it over the flange. Avoid loops and kinks.
- Wind the cable onto the reel in the same bending direction as on the delivery drum; avoid reverse bending.
- Let the cable relax without twist before fixing the second end; after the first reeling cycles check that no torsion builds up at the feed point.
- Observe the minimum bending radius; when terminating, do not bend loose tubes below 40 mm radius.
- Terminate by fusion-splicing pigtails in splice trays; route the tubes in protective tubing.

Sheath marking

```
FEICHUN FC-RFO-R [n × fibre type] A-DQ(ZN)11Y(ZN)11Y [year] [metre mark]
```

Packaging and delivery

Item	Standard
Drum	Steel or fumigated wooden drums, barrel Ø ≥ 20 × d; ends sealed with heat-shrink caps, inner end accessible for OTDR testing
Delivery lengths	To order, one continuous length (no splices)
Pre-assembly	Factory-fitted pigtails / connectors and pulling grips on request
Lead time	3–4 weeks after technical approval
Warranty	Not less than 3 years on manufacturing defects
Drum label	Type, fibre count and type, length, gross/net weight, batch no., drum no., inner/outer end marking

10 Quality and compliance

IEC 60794 type tests

Mechanical and environmental type tests per IEC 60794-1-21 / -22; reports on request

OTDR test report

100 % of fibres measured on every delivery length; report supplied with each drum

RoHS · REACH

Material compliance with 2011/65/EU incl. (EU) 2015/863 and (EC) 1907/2006; declarations on request

FeiChun's CE (LVD), EAC and UKCA certificates relate to the electrical cable programme and are listed in the respective catalogues. As an all-dielectric cable, FC-RFO-R is not subject to the Low Voltage Directive; project-specific approvals (e.g. port authorities, classification societies) are arranged together with the end user or the local distributor. Copies of documents are available on request.

11 Trademark & IP notice

Nexans® and RHEYCORD® are trademarks of the Nexans group. The designation RHEYCORD®-OFE-R is quoted solely to identify the reference product for technical comparison; FeiChun Cables is not affiliated with, endorsed or approved by the trademark owner. FC-RFO-R is a FeiChun product designed with equivalent functional characteristics. The comparison is based on publicly available data; suitability for a specific application must be verified by the user.

© 2026 Anhui FeiChun Special Cable Co., Ltd. — All rights reserved. This document, including drawings, tables and layout, is the intellectual property of FeiChun and is protected by the Copyright Law and the Anti-Unfair Competition Law of the People's Republic of China and by the Australian Copyright Act 1968 (Cth). Reproduction, distribution or modification in whole or in part without written consent is prohibited. Technical data are subject to change without notice in the course of continuous product improvement.

Technical and commercial contacts

Anhui FeiChun Special Cable Co., Ltd.
International Business Department
Park No. 1, Private Science and Technology Park, Hefei Economic and Technological Development Zone, Hefei, Anhui Province, China
Technical support: Tech@feichuncables.com
Mining and heavy industry: mining@feichuncables.com
Zihao Yang, Global Sales Manager:
zihao.yang@feichuncables.com
WhatsApp: +86 138 5512 3218
Web: www.feichuncables.com

Document control

Doc. no. FC-CAT-RFO-2026-R100-EN
Revision 0 — draft for technical approval
Date 13 October 2026
Scope 32 variants · 1 series · 2 diameter classes

Prepared — Technical Dept.	Checked — QA	Approved — Int'l Business