FC® ANHUI FEICHUN SPECIAL CABLE CO., LTD. · HEFEI · CHINA

FC-FLX™ ES3-R 3×35 + 2×25/2 + (16×2.5)C + 24FO (62.5/125) 6/10 kV

Medium-Voltage Reeling Cable with Integrated Control Cores & Optical Fibres — Drop-in Equivalent to TRATOSFLEX ES3

Kontrol Damarlı ve Fiber Optikli Orta Gerilim Makara (Reeling) Kablosu — TRATOSFLEX ES3 Muadili

TECHNICAL DATASHEET + QUOTATION | 6/10 (12) kV | DIN VDE 0250-813/814 | IEC 60228 Class 5 | 24× OM1 Fibre | Customer Ref. 27.32.14.111

Doc No. **FC-TDS-ES3R-2026-TK46FA** Quotation No. **FC-QTN-TR-2026-8B3E** Date **22 July 2026** Rev. **A**

1. Addressee *Alıcı Bilgileri*

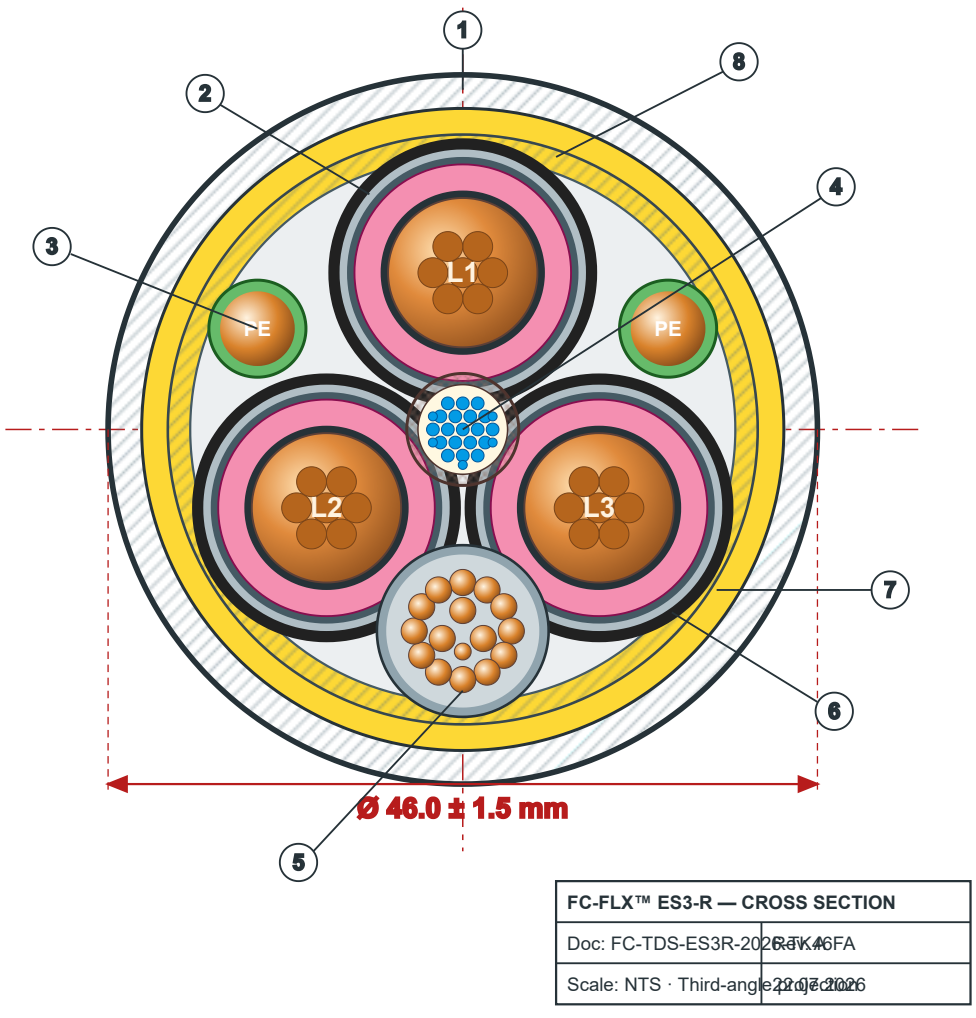
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Address / Adres	Emniyet Evleri Mah., Yeniçeri Sk., Güler İş Merkezi No: 2/1, Kağıthane / İstanbul, Türkiye
Subject / Konu	Technical offer for FeiChun equivalent to TRATOSFLEX ES3 3×35+2×25/2+(16×2.5)C+24FO(62.5/125) 6/10 kV — ref. 27.32.14.111 *TRATOSFLEX ES3 muadili FeiChun kablosu için teknik teklif*

2. Application *Uygulama Alanı*

EN — FC-FLX™ ES3-R is a heavy-duty medium-voltage reeling cable engineered for motorised cable reels on ship-to-shore (STS) container cranes, rail-mounted gantry (RMG) cranes, stacker-reclaimers, ship unloaders and bulk-handling machines. It combines three 6/10 kV power cores, split earth conductors, a collectively screened 16-core control unit and 24 multimode optical fibres in a single torsion-balanced construction, permitting simultaneous power supply, PLC control and high-bandwidth data/CCTV transmission through one cable. It is a form-fit-function equivalent to TRATOSFLEX ES3 and is dimensionally compatible with existing reels, monospiral drums and cable guidance systems.

TR — *FC-FLX™ ES3-R; STS konteyner vinçleri, RMG vinçleri, kepçeli yükleyiciler ve dökme yük makineleri üzerindeki motorlu kablo makaraları için tasarlanmış ağır hizmet tipi orta gerilim makara kablosudur. Üç adet 6/10 kV güç damarı, bölünmüş topraklama iletkenleri, toplu ekranlı 16 damarlı kumanda ünitesi ve 24 adet çok modlu optik fiberi tek bir burulma-dengeli yapıda birleştirir; tek kablo üzerinden enerji, PLC kumandası ve yüksek bant genişlikli veri/CCTV iletimini mümkün kılar. TRATOSFLEX ES3 ile birebir muadildir ve mevcut makara sistemleriyle boyutsal olarak uyumludur.*

3. Cross-Section & Construction *Kesit Görünümü ve Yapı*



Pos.	Element / Eleman	Material / Malzeme
1	Outer sheath · *Dış kılıf*	Vulcanised PCP/PUR blend (5GM5), abrasion-, oil-, ozone- & UV-resistant, yellow
2	Power core insulation screen · *Yalıtım ekranı*	Extruded semi-conductive rubber, strippable
3	Earth conductors 2 × 25/2 · *Topraklama iletkenleri*	Bare flexible Cu, semi-conductive covered, in interstices
4	Optical unit 24FO · *Fiber optik ünite*	24 × MM 62.5/125 µm (OM1), aramid-reinforced anti-buckling element, central
5	Control unit (16×2.5)C · *Kumanda ünitesi*	16 × 2.5 mm² tinned Cu class 5, EPR insulated, collective tinned-Cu braid screen
6	Power conductors 3 × 35 · *Güç iletkenleri*	Bare flexible copper, IEC 60228 class 5
7	Power core insulation · *Damar yalıtımı*	HEPR compound, 6/10 kV grade, with conductor screen
8	Inner sheath & torsion elements · *İç kılıf ve burulma elemanları*	Rubber bedding with anti-torsion support braiding

4. Technical Data *Teknik Veriler*

Parameter / Parametre	Value / Değer
Type designation · Tip kodu	FC-FLX™ ES3-R 3×35+2×25/2+(16×2.5)C+24FO(62.5/125)
Cross-reference · Muadil	TRATOSFLEX ES3 (Tratos) · customer ref. 27.32.14.111
Rated voltage U_0/U (Um) · Anma gerilimi	6/10 (12) kV
Routine voltage test · Rutin gerilim testi	15 kV AC, 5 min (core/screen)
Design standards · Tasarım standartları	DIN VDE 0250-813/-814, IEC 60228 Cl. 5, IEC 60332-1-2, IEC 60793-2-10 (fibre)
Nominal outer diameter · Nominal dış çap	approx. 46.0 ± 1.5 mm
Nominal weight · Nominal ağırlık	approx. 2,850 kg/km
Current rating (30 °C air) · Akım taşıma kapasitesi	approx. 165 A (35 mm^2, free in air, unwound)
Min. bending radius · Min. bükülme yarıçapı	Reeling operation ≥ 6.5 × D (≈ 300 mm); fixed ≥ 5 × D
Max. tensile force · Maks. çekme kuvveti	1,600 N (reeling service)
Max. travel speed · Maks. hareket hızı	120 m/min; acceleration ≤ 0.8 m/s^2
Temperature range · Sıcaklık aralığı	Mobile −25 °C … +80 °C; conductor max. +90 °C
Optical fibres · Optik fiberler	24 × OM1 62.5/125 µm; attenuation ≤ 3.5 dB/km @ 850 nm, ≤ 1.5 dB/km @ 1300 nm; bandwidth ≥ 200/500 MHz·km
Control unit · Kumanda ünitesi	(16×2.5)C mm^2, 0.6/1 kV service, collective screen coverage ≥ 80 %
Sheath properties · Kılıf özellikleri	Oil, ozone, UV, seawater and abrasion resistant; flame retardant to IEC 60332-1-2; torsion-balanced for monospiral reels

5. Commercial Quotation — FC-QTN-TR-2026-8B3E *Resmî Fiyat Teklifi*

Item	Description / Açıklama	Quantity / Miktar	Unit Price (USD/m)	Amount (USD)
1	**FC-FLX™ ES3-R 3×35+2×25/2+(16×2.5)C+24FO(62.5/125) 6/10 kV** MV reeling cable, TRATOSFLEX ES3 equivalent, ref. 27.32.14.111 One continuous length on drum · *OG makara kablosu, TRATOSFLEX ES3 muadili — tek parça boy*	**300 m**	**73.16**	**21,948.00**
TOTAL — FOB Shanghai / TOPLAM — FOB Şanghay				**USD 21,948.00**

Trade term · Teslim şekli	**FOB Shanghai, China** (Incoterms® 2020) · *FOB Şanghay*
Payment · Ödeme	T/T — 50 % advance with order, 50 % before shipment · *%50 sipariş avansı, %50 sevkiyat öncesi*
Lead time · Teslim süresi	**2–3 weeks** after receipt of advance payment · *Avans ödemesinden sonra 2–3 hafta*
Price basis · Fiyat esası	Prices are subject to LME copper market fluctuation and will be confirmed at order placement · *Fiyatlar LME bakır piyasası dalgalanmalarına tabidir ve sipariş anında teyit edilir*
Delivery lengths · Teslim boyları	Continuous lengths to customer requirement; standard drum lengths 250 m / 500 m
Documentation · Dokümantasyon	Factory test report (routine tests incl. voltage test & OTDR fibre report), certificate of conformity, commercial invoice, packing list, B/L
Warranty · Garanti	18 months from shipment against manufacturing defects

6. Estimated Packing List — FC-PKL-TR-2026-2C7D *Tahmini Çeki Listesi (Navlun Hesabı İçin)*

EN — Estimated shipping data for freight calculation. Cable is supplied on export-grade steel-reinforced wooden drums, fully lagged, seaworthy packing, ISPM-15 heat-treated timber.
TR — *Navlun hesabı için tahmini sevkiyat verileri. Kablo, ihracat tipi çelik takviyeli ahşap makaralarda, tam kapaklı, deniz taşımacılığına uygun ambalajda ve ISPM-15 ısıl işlemli ahşapla sevk edilir.*

Item	Qty	Length	Drum size (flange Ø × width)	Packed dimensions (L×W×H)	Net wt	Gross wt	Volume
Drum No. 1 — one continuous length *Tek parça boy*	1	300 m	Ø 1,600 × 900 mm	1.65 × 0.95 × 1.70 m	≈ 855 kg	≈ 995 kg	≈ 2.67 m³
TOTAL / TOPLAM					**≈ 855 kg**	**≈ 995 kg**	**≈ 2.67 m³**

Freight basis / Navlun esası: Sea LCL chargeable ≈ 2.7 revenue tonnes (volume-driven, W/M 1:1). Air chargeable weight: actual gross weight governs (≈ 995 kg vs volumetric ≈ 445 kg at ÷6,000). Cargo is non-hazardous, general cargo; single package, forklift/crane handling, do not lay drum flat.
Deniz LCL için hacim esaslıdır (≈ 2.7 W/M); havayolu için gerçek brüt ağırlık (≈ 995 kg) geçerlidir. Tehlikesiz genel kargodur; tek koli, forklift/vinç ile elleçlenir, makara yatık taşınmaz.

Note / Not: All packing figures are engineering estimates based on nominal cable data (Ø ≈ 46 mm, ≈ 2.85 kg/m) and standard FeiChun export drums. Final weights and dimensions will be confirmed on the official packing list at shipment. *Tüm değerler tahminidir; kesin ağırlık ve ölçüler sevkiyat anındaki resmî çeki listesinde teyit edilecektir.*

7. Issued By *Düzenleyen*

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Signature & company stamp — Anhui FeiChun Special Cable Co., Ltd.
İmza ve şirket kaşesi

安徽飞纯特种电缆有限公司
ANHUI FEICHUN SPECIAL CABLE CO., LTD.

Customer acceptance — Purchasing Department Manager
Müşteri onayı — Satın Alma Müdürü

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