TFN FKI Series Binocular Laser Rangefinder

Product Introduction

The TFN FKI Series Binocular Laser Rangefinder is a professional long-range measurement solution integrating distance, azimuth, inclination, and horizontal/vertical distance measurement into one rugged device. Covering models from F4KI (4,000m) to F10KI (10,000m), it delivers ±0.5m accuracy, 98% hit rate, and a 7x magnification optical system with low-dispersion lenses for clear viewing even for users with vision impairments. Built for harsh environments, it features dustproof, waterproof, and shockproof construction, plus a 1,000-point data storage function. Ideal for construction, outdoor climbing, hunting, and forestry, the FKI series eliminates the need for multiple tools – offering all-in-one efficiency, reliability, and ease of use.

Product Key Selling Points

☑ Ultra-Long Range & High Accuracy

The FKI series supports measurement from 30m up to 10,000m (depending on model), with a ranging error of only ±0.5m and a 98% hit rate. Whether you need to measure a building site or a distant mountain peak, this rangefinder delivers consistent, reliable data, saving you from repeated measurements and guesswork.

☑ Four-in-One Measurement Capability

Unlike basic laser rangefinders, the FKI series measures straight-line distance, azimuth (0–359.9°), inclination (±0.1° accuracy within ±25°), and horizontal/vertical distance simultaneously. This all-in-one functionality allows you to fully understand target positioning without carrying separate compasses or inclinometers.

☑ Advanced Gating (Strobe) Function

Interference from fog, rain, or background clutter is a common challenge. The strobe/gating function lets you selectively measure targets within a specific distance range (20–5100m, adjustable in 10m steps). This eliminates unwanted reflections and ensures you get the correct reading even in visually noisy environments.

☑ Large Internal Memory & Data Transfer

On-site data recording can be error-prone and time-consuming. The FKI series stores up to 1,000 measurement sets internally. After returning to the office, you can easily transfer data to a computer via the data interface for centralized processing, reducing transcription errors and improving workflow efficiency.

☑ Rugged, All-Weather Construction

Designed with a anti-slip texture and IP-grade dust/water resistance, this device withstands heavy rain, dust, and accidental drops. Operating from -20° C to +50° C, it is your reliable partner in construction sites, dense forests, or snowy mountains – ensuring the tool won't fail when you need it most.

Product Specifications

Parameter	Specification
Measuring Range	F4KI: 30~4000m F5KI: 30~5000m F6KI: 30~6000m F10KI: 30~10000m
Ranging Error	±0.5m
Range Gating	20~5100m (step 10m) for all models
Hit Rate	98%
Repetition Frequency	1/6~1/3 Hz (10~20 times/min)
Compass Accuracy	±1 degree
Inclination Accuracy	±0.1 degree (within ±25°)
Measurement Functions	1000 data storage
Receiving Aperture	Φ30mm
Field of View (Scope)	6.5°
Magnification	7X
Wavelength	1.064 μm
Light Source	Nd:YAG
Output Energy	≥5mJ
Operating Life	≥20,000 times
Operating Temperature	-20° C ~ +50° C
Environmental Protection	Dustproof, waterproof, shockproof
Dimensions	151mm × 154mm × 74mm
Weight	1 kg
Power Supply	Li-ion 18650, 3.7V / 3400mAh (one cell)

Product Features

Section 1: High-Precision Distance Measurement with Gating

The FKI series uses a Nd:YAG laser (1.064 μm) with ≥5mJ output energy to measure targets from 30m up to 10km. The ranging error is only ±0.5m, which is critical for applications like power line sag measurement or long-range hunting. But what truly sets it apart is the range gating feature – you can set a specific distance window (20 – 5100m, 10m steps). The device will ignore any echoes outside that window, effectively eliminating interference from foreground

branches, falling snow, or background terrain. This solves the pain point of “false returns” that plague conventional rangefinders in cluttered environments. Field workers no longer need to guess which reading is correct; the gating function guarantees they measure exactly what they aim at.

Section 2: Full Spatial Positioning: Azimuth, Inclination & Horizontal/Vertical Distance

A simple distance reading is often insufficient. Surveyors, geologists, and hunters need to know the target’s position in 3D space. The FKI series integrates a digital compass (accuracy ±1°) and inclinometer (accuracy ±0.1° within ±25°). It displays azimuth angle (0–359.9°, referenced to true north) and calculates horizontal distance (H) and vertical distance (V) automatically. For example, when measuring a cliff face, you get not only the slant range but also the true horizontal displacement and height difference. This eliminates the need to carry a separate compass, clinometer, or to perform trigonometric calculations manually. It dramatically reduces setup time and prevents calculation errors – a huge advantage for terrain mapping, construction layout, and avalanche safety assessments.

Section 3: Low-Dispersion Optics for All-Eye Comfort

Many rangefinders are difficult to use for technicians wearing eyeglasses, or for older workers with presbyopia. The FKI series features fully multi-coated, low-dispersion (ED) glass lenses that deliver sharp, high-contrast images with minimal chromatic aberration. More importantly, the diopter-adjustable right eyepiece allows users to focus the reticle and display without wearing corrective lenses – myopic, hyperopic, and presbyopic users can all view the image clearly with naked eyes. This solves a daily frustration: removing glasses to look through an eyepiece, then putting them back on to record data. With the FKI, you simply adjust the focus ring once, and you’re ready for hours of comfortable, fatigue-free observation.

Section 4: On-Board Data Logging & Computer Integration

In the field, writing down measurement values on paper is slow and prone to errors – wet weather, dirty hands, or lost notes can ruin entire days of work. The FKI series offers 1,000 internal memory slots, each storing distance, azimuth, inclination, and horizontal/vertical values. You can review stored data directly on the device’s display (e.g., “SD 03: 6571.5m”). Back at the office, connect the included data cable to a PC for batch download. This eliminates manual transcription, reduces mistakes, and speeds up reporting. For teams performing repeated measurements over weeks (e.g., construction progress monitoring), the memory function allows instant comparison with previous records without returning to base.

Section 5: All-Weather Durability with Ergonomic Design

Professional users often work in rain, dust, extreme cold, or on vibrating machinery. Standard consumer rangefinders fail quickly under such conditions. The FKI series is built with a rubber-armored, anti-slip housing that meets dustproof, waterproof, and shockproof standards. It operates reliably from -20° C to +50° C, and the 18650 lithium battery provides stable power for hundreds of measurements per charge. The ergonomic dual-grip design and clearly separated key zones (MEAS, MODEL, STROBE, LIGHT) allow gloved operation. The device withstands accidental drops from vehicle tailgates or scaffolding, and the sealed optics prevent internal

fogging. For contractors, rangers, and first responders, this durability translates into lower total cost of ownership and zero downtime due to equipment failure.

Applications & Pain Points Solved

Scenario	Customer Pain Point	How FKI Series Solves It
Construction & Civil Engineering	Measuring distances on active sites with dust, moving machinery, and partial obstructions; need horizontal distance even when line-of-sight is sloped.	Gating function ignores foreground distractions; automatic horizontal distance calculation eliminates manual trig; 1,000-point memory allows daily progress logs.
Outdoor Mountaineering & Climbing	Assessing avalanche risk, cliff height, and route distance; carrying multiple tools (compass, altimeter, rangefinder) adds weight.	3-in-1 measurement (distance + azimuth + inclination) reduces gear load; lightweight 1kg design; low-dispersion optics work at dawn/dusk.
Hunting & Wildlife Management	Estimating target range quickly in forest or hilly terrain; need silent operation and resistance to fog/rain.	Fast 10-20 measurements per minute, ±0.5m accuracy; strobe mode avoids false readings through brush; waterproof housing for wet hunts.
Forestry & Power Line Inspection	Measuring tree height, clearance under cables, and tower-to-tower distance from a distance; safety hazard of climbing.	Vertical distance mode directly gives tree/tower height; azimuth helps locate assets along a right-of-way; 10,000m max range for long-span transmission lines.
Military & Tactical Observation	Need to range targets in low-visibility conditions (smoke, light fog) and record coordinates without writing; ruggedness required.	Gating reduces fog/backscatter interference; internal memory stores 1000 targets; -20° C operation and shockproof for field use.

Q&A

Q1: What is the maximum measurement range for each model in real-world conditions?
A: The maximum range is specified under standard visibility (clear air, high-reflectivity target). For typical natural targets (trees, rock faces), expect about 70-80% of the maximum. For example, F6KI (6,000m max) reliably measures forests up to ~4,500m. The gating function helps extend effective range by eliminating noise.

Q2: Can I use the FKI series while wearing eyeglasses?
A: Yes. The eyepiece has a diopter adjustment ring that allows you to focus the internal display and reticle without glasses. Both myopic and hyperopic users (up to ±5 diopters) can view clearly with naked eyes. The long eye relief also accommodates most spectacle wearers.

Q3: How many measurements can I store, and how do I export them?
A: The device stores up to 1,000 complete data sets (each includes distance, azimuth, inclination, horizontal/vertical distance). You can review them on the built-in display using the menu. Export

is via the included data cable (USB to PC) – no special software required; the device appears as a mass storage drive or uses standard serial protocol.

Q4: Is the battery replaceable in the field?
A: Yes, the FKI series uses a single standard 18650 lithium-ion cell (3.7V, 3400mAh included). These are widely available. A fully charged battery supports approximately 2,000~3,000 single measurements. The device also has an external charging port on the connector socket.

Q5: Does rain or fog affect the laser measurement?
A: Heavy fog or rain can attenuate the laser beam and reduce maximum range. However, the FKI's high output energy (≥ 5mJ) and narrow 1.064 μm wavelength help penetrate light precipitation. For challenging weather, use the range gating feature to exclude reflections from rain droplets closer than your target. The device is IP-rated waterproof, so rain will not damage it.

Package Contents

- FKI Series Binocular Laser Rangefinder (model variant as ordered)
- Hard carrying toolbox
- 18650 rechargeable lithium battery (3.7V / 3400mAh)
- Battery charger / power cable
- External trigger cable
- USB data cable
- Printed user manual (multi-language)
- Lens cleaning cloth
- Neck strap

Note: Product specifications may be subject to improvement without notice. Contact TFN for custom configurations or OEM inquiries.