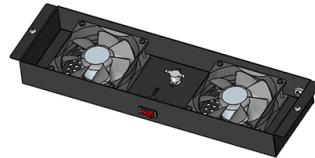


West Africa Field Spectrometer



AI Overview

The Dahra Field Spectrometer System (DAFIS) in Senegal is a key automated system for monitoring semi-arid savanna ecosystems using spectral measurements from 350–1800 nm. Overview of DAFIS The Dahra Field Spectrometer System (DAFIS) is located in Senegal, West Africa, and was established to monitor the spectro-directional reflectance properties of semi-arid savanna vegetation. It operates automatically, collecting data daily from sunrise to sunset, covering the visible (VIS), near-infrared (NIR), and shortwave-infrared (SWIR) spectral ranges (350–1800 nm). The system is designed to study surface anisotropy and phenological changes in vegetation, providing continuous time series for ecosystem monitoring.

Key Capabilities

- Spectral Measurement:** DAFIS captures reflectance data across VIS, NIR, and SWIR bands, enabling detailed analysis of vegetation and soil properties.
- Anisotropy Analysis:** The system measures directional reflectance, revealing how reflectance varies with solar angle and observation direction, which is critical for interpreting satellite data.
- Vegetation Indices:** Data from DAFIS can be used to calculate indices like NDVI and SIWSI, which are sensitive to canopy structure and view angle, aiding in vegetation health assessment.
- Remote Sensing Validation:** The system provides ground-truth data for validating satellite sensors such as MODIS, SPOT, and SEVIRI.
- Applications in West Africa**
 - Ecosystem Monitoring:** DAFIS helps track seasonal changes in semi-arid savanna vegetation, including phenology and stress responses.
 - Soil Property Assessment:** Field spectroscopy, including mid-infrared measurements, supports rapid evaluation of soil fertility, organic matter, and nutrient content, which is crucial for sustainable agriculture in the West African yam belt.
 - Forage Quality Estimation:** Spectral data can be correlated with forage biomass and metabolizable energy, supporting adaptive livestock management in tropical savannas.
 - Research and Algorithm Development:** Continuous spectral data enable t...

Article Content

Western Africa Time-of-Flight Mass Spectrometers

The Western Africa time-of-flight mass spectrometers market functions as an import-driven ecosystem where demand originates from three primary end-use clusters: analytical research

Full article: Integration of airborne gamma-ray spectrometry and

Integration of airborne gamma-ray spectrometry and remote sensing data for mapping of gold-bearing structures in the Doropo region, Northeastern Côte d'Ivoire (Southern part of West

Africa's Spectrometers and Spectrophotometers Market Report 2026 ...

This report provides a comprehensive strategic analysis of the spectrometers and spectrophotometers market across the African continent, anchored in a 2026 baseline and projecting

Quantification of soil organic carbon in particle size fractions using ...

Our objective was to evaluate the ability of an existing soil spectral library (SSL) from different regions of West Africa to predict the C amount in the fractions (gC kg⁻¹ soil) of the samples

Western Africa Fourier Transform Infrared Spectrometers

The Western Africa Fourier transform infrared spectrometers market encompasses the sale, distribution, installation, and aftermarket servicing of FTIR analytical instruments used across

Fiber Optic Spectrometers Market in Africa | Report

The Africa fiber optic spectrometers market encompasses the sale, distribution, and lifecycle support of instruments that use optical fibers to transmit light from a sample to a

An automated field spectrometer system for studying VIS, NIR and

This paper presents the Dahra field spectrometer system (DAFIS) sited in Senegal, West Africa. DAFIS is a unique system that automatically measures the spectro-directional reflectance properties of a

Western Africa Magnetic Sector Mass Spectrometers

Magnetic sector mass spectrometers are high-resolution analytical instruments that use a magnetic field to deflect ionised sample particles along curved trajectories, separating them by mass

(PDF) The West Africa Field Epidemiology and Laboratory Training ...

The West Africa Field Epidemiology and Laboratory Training Program (WA-FELTP) which was established in September 2007, is an inter-country, competency-based, in-service and

Understanding the long-term variability of African dust

Abstract The interannual variability of African dust transport over the north tropical Atlantic is monitored using in situ surface concentrations

MODIS Website

Abstract This paper presents the Dahra field spectrometer system (DAFIS) sited in Senegal, West Africa. DAFIS is a unique system that automatically measures the spectro-directional reflectance

XRF Analyzer Solutions | Innov-X Africa

Innov-X Africa supply portable and handheld XRF elemental analysis instruments for metals and alloys, mining and geology, scrap and recycling, environmental and

Soil Property Monitoring in Africa via Spectroscopy: A Review

Efficient soil fertility monitoring is essential for sustainable agriculture, food security, and environmental management across Africa, yet conventional laboratory methods remain prohibitively

The AMMA field campaigns: multiscale and multidisciplinary

AMMA—the African Monsoon Multidisciplinary Analysis—is the biggest programme of research into environment and climate ever attempted in Africa. AMMA has involved a comprehensive field

Western Africa Nuclear Magnetic Resonance Spectrometers

Nuclear magnetic resonance (NMR) spectrometers in Western Africa are primarily used for molecular structure verification in drug research and development, quality control in pharmaceutical

Petroleum geology and resources in West Africa: An overview

The passive continental margin of West Africa is becoming an attractive area for hydrocarbon exploration, and it experienced four tectonic stages, i.e

X-Ray Fluorescence Spectrometers Market in Africa | Report

The Africa X-ray fluorescence spectrometers market operates as a structurally import-dependent, capex-driven equipment segment serving industrial quality control, mineral exploration,

The Intraplate Stress Field of West Africa

The results indicate a strong influence of transpressive stress transfers from the ocean to the passive margins of West Africa. In the continental interior, especially, the West African Belt, the

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://dknconsulting.co.za>

Email: info@dknconsulting.co.za

Phone: +31 6 2948 7351

Address: Herengracht 123, 1015 BT Amsterdam, Netherlands

This document is for informational purposes only. Specifications subject to change without notice.

