

Online NIR Spectrometer

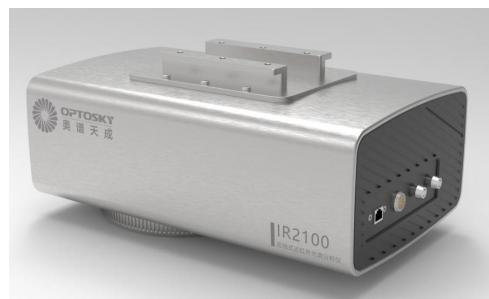
IR2100

Description

IR2100 is an online near-infrared full spectrum detection and analysis instrument developed by Optosky. It uses indium gallium arsenide diode array technology, continuous grating full spectrum scanning, parallel processing of all spectral information, online real-time accurate detection, and the detection results can be communicated with the factory system. integrated. It combines exceptional analytical accuracy with speed, ease of use and ruggedness. It is widely used. By establishing a data model, it can quantitatively detect almost all moisture, protein, fat, ash, starch and other component parameters in solid samples (granular and powdery). It is especially suitable for industries such as grain, oil, food, and chemicals online detection.

Features

- Stable optical system
- Advanced rotation system
- Fast measurement speed
- Rich software functions
- Simple installation and maintenance
- Long service life light source



Application

Grain industry	Major cereals such as wheat, soybeans, rice, corn, rapeseed, and peanuts; Small grains such as sorghum and oats; cash crops such as flax, and cauliflower seeds.
	Measurable ingredients: Protein, fat, fiber, starch, amylose, fatty acid composition, various amino acids, gluten, hardness, sedimentation value, water absorption, etc.
Flour processing industry	Wheat, flour, bran, noodles and dough, etc.
	Measurable ingredients: Moisture, protein, fiber, sedimentation value, ash, hardness, gluten, water absorption, etc.
Meat products industry	Various meats and meat products
	Measurable ingredients: Moisture, protein, fat, ash, water activity, origin traceability, etc.
Feed industry	Semi-finished or final feed products, including pet feed.
	Measurable ingredients: Moisture, protein, fat, etc.
other industry	Grain storage, starch industry, medicine, tobacco
	Measurable ingredients: Moisture, protein, fat, etc.

1. Selection Guide

Model	Features
IR2100	Basic, 900-1700nm, uncooled spectrometer
IR2100-17TC	900-1700nm, cooled InGaAs detector, higher reliability, water cooling system
IR2100-25TC	900-2500nm, cooled InGaAs detector, water cooling system

2. Parameter

Analysis Parameters		IR2100	IR2100-17TC	IR2100-25TC
1	Collection speed	greater than 40 times/second		
2	Sample volume	300g or more		
3	Products analyzed	Solid samples such as granules, flakes, powders, pastes, etc.		
4	Parameters analyzed	water, protein, fat, fiber, etc.		
5	Analysis methods	Non-contact, online scanning		
6	Spot size	About 100mm diameter		
Optical parameters				
7	Detector (InGaAs CCD)	256-pixel	512-pixel ,cooled	
8	Spectral system	Gold-plated holographic fixed grating		
8	Wavelength range	950nm-1650nm	900-1700nm	900-2500nm
9	Wavelength accuracy	less than 0.5nm		less than 1.0 nm
10	Wavelength stability	less than 0.2nm/year		less than 0.5nm/year
11	Reference standard	Built-in calibration light source		
15	Light source	life is not less than 10,000 hours		
Installation Environment				
16	Working temperature / humidity	Temperature: -10°C ~50°C, humidity: 10%~90%		
17	Working distance	250mm ± 100mm		
18	Installation method	Hoisting		
Software function				
19	Result display, record query, data statistics, model establishment and import, probe management and system settings, etc.			
General parameters				
20	Operating System	Windows		
21	Protection level	IP65		
22	Material	food grade stainless steel		
23	Communication	network port		

	interface	
24	Explosion-proof level	EX_TD_A21_IP65_T80
25	Power supply	DC 24V, 2A
26	Cooling method	Compressed air, water cooling Connector size: 6mm quick twist; Pressure: 0.1MPa~0.4MPa, Flow rate: 30L/min~60L/min
27	Dimensions	130mm(H)×360mm(W)×160mm(D)
28	Weight	10kg

3. Working Principle

In the near-infrared spectrum region, the absorption of near-infrared light is caused by the stretching vibration of hydrogen-containing atomic groups such as N-H, O-H, and C-H with higher energy in the organic matter contained in the measured substance. This principle can be used to perform corresponding Quantitative analysis of substances.

As shown in the figure below, the light emitted by the instrument through the light source is reflected by the concave reflector and hits the sample directly. The diffusely reflected light on the sample is collected by the concave mirror and enters the integrating sphere, and then transmitted to the spectrometer through the optical fiber connected to the integrating sphere. Measurement.

