



Online spectrometer for maintenance-free analysis

Type	Part Number
FT-NIR Spectrometer	IIS-100

High reliability online FT-NIR analyzer designed for your industry

高可靠性工业在线傅里叶变换近红外光谱分析仪

Permanently aligned optical system
Heavy-duty, reliable components
Unprecedented spectral performance
First maintenance-free FT-NIR analyzer
Remote control by Ethernet
Two group of sources
Industrial structure

永久准直的光学系统
皮实稳定的部件结构
超一流的光谱性能
首家完全免维护的光谱分析仪
远程网络控制
两组近红外光源
工业化结构

IIS-100 FT-NIR spectrometer for your industry

IIS-100 is an integrated industrial FT-NIR analyzer based on the double-pivot interferometer, for a very specific purpose: process diffuse reflectance without the use of a fiber optic interface. This analyzer is a non-contact system, and is designed to be field mounted in close proximity to the sample. The large area measurement addresses the issue of the non-homogeneity of samples, which is quite regularly

associated with solid samples. This analyzer also has four high intensity NIR sources and efficient diffuse reflection collection system, provide high signal-to-noise ratio.

IIS-100作为工业在线分析定制研发的高性能傅里叶变换近红外光谱分析仪，采用独家专利的双臂干涉仪，所有部件都集成在一个机箱中，是一款高度集成化的光谱分析仪，没有分离部件，不需要光纤连接。本仪器适合安装在样品传送带上方，无需接触样品即可测量。IIS-100内置8个高强度近红外光源和高效的漫反射光收集系统，近红外测量光斑直径大，特别适合不均匀的固体样品。仪器具有非常高的信噪比。

Features

Permanently aligned optical system.

With permanently aligned optics using only fixed components along with a patented interferometer scan mechanism, the IIS-100 delivers consistent precise and reproducible results year after year and from unit to unit.

永久准直的光学系统

IIS-100光谱仪采用独家专利的一体化双臂干涉仪扫描结构，拥有永久准直的光路系统，多年来持续为各行业用户提供大量的稳定可靠的应用。

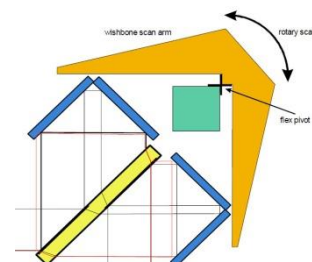
Heavy-duty, reliable components.

The modular components of the IIS-100 have been designed to provide longest product life on the market. The IIS-100's design is based on the following principles: No maintenance, no adjustments and a scan mechanism that has no wear. The reliability of the IIS-100 comes from dependable components and their integration in a system requiring minimal moving parts. Provide the ability for 7x24 online processing.

皮实稳定的部件结构

IIS-100遵照免维护、免调试、永不磨损的设计原则。系统采用模块化结构设计，使用性能稳定可靠的部件，尽量减少使用移动部件。整个系统紧密集成，从而确保了仪器的高稳定性、皮实耐用的特点。拥有7x24小时在线工作的能力。

Unprecedented spectral performance.



Permanently aligned optics with a Jacquinot stop in the interferometer output beam ensures an accurate and stable line shape as well as wavelength and resolution stability. The 100% line spectral repeatability permits reliable determination of small spectral features down to below 10 micro absorbance with DTGS detectors, and below 2 micro absorbance for the optional high sensitivity InAs or InGaAs detectors. The IIS-100 is provided with a highly accurate internal wavelength calibration standard.

超一流的光谱性能

在永久准直的干涉仪系统的输出光路中采用Jacquinot stop工作模式，输出光谱线形稳定、精度高，输出的光谱具有超高的波长稳定性和超高的分辨率。使用DTGS检测器，光谱100%线精度可以达到10mAU，采用更高灵敏度的InAs或者铟镓砷（InGaAs）检测器，100%线精度可以高达2mAU。同时，IIS-100还内置高精度的波长校准标准物质，随时验证仪器的光谱性能，确保仪器的稳定性。

First maintenance-free FT-NIR analyzer

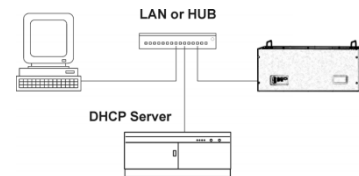
The IIS-100 contains fixed components that do not wear out with use, with the advanced VCSEL Solid state laser, meaning no components to replace or adjust. All optics are non-hygroscopic. Purging is not required for protection of optics.

独家完全免维护的光谱分析仪

IIS-100全部采用固定部件，无运动磨损，并使用最先进的VCSEL固态激光器，所有部件均不需要任何调整和更换。仪器中所有部件具有防潮功能，因此仪器内部不需要加注干燥气体和保护气体。

Remote control by Ethernet

IIS-100 connects to control computer through Ethernet, can place the computer in control center or monitor center. No Explosion-proof cabinet needs to install at production field.

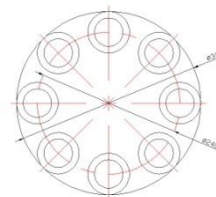


远程网络控制

IIS-100通过网络连接仪器控制电脑，电脑可以安装在控制中心或监控中心等地方，生产现场不需要安装防爆柜。

Two group of NIR sources with backup

IIS-100 has two group of sources; each group has 4 NIR lights with photoelectric sensors: one for working, the other for backup. System can automatically switch between groups to avoid to interrupt the industrial processing.



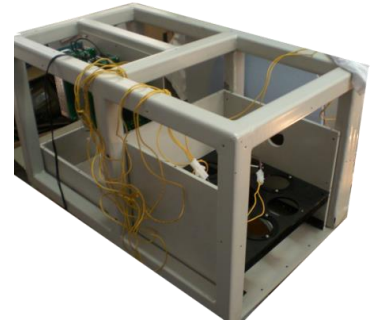
两组互为备份近红外光源

IIS-100有两组近红外光源，每组包含4个近红外灯泡，一用一备。系统带有光电传感器，实时监控光源状态，在出现故障时自动切换光源，避免中断正常生产。



Industrial structure

This analyzer follows the IP65 design guide. All components sealed into the solid cabinet, without any separate accessories, provide good dust and water-proof functions. The analyzer also provides a sweeping optional accessory, which cleans the collection windows automatically.



工业化结构

分析仪器遵从IP65设计指南，没有分离部件，所有部件都密封在坚固的机箱中，提供了优秀的防尘方式性能。分析仪还提供了可选的吹扫附件，用于自动清洁采用窗口。

Application software 应用软件

1. Operating system compatibility Win 7
Windows 7或以上操作系统
2. Processing software: NirProcessing
在线分析软件: NirProcessing
3. Calibration software: NirQuantify
建模软件: NirQuantify



Specifications

SPECTROSCOPIC PERFORMANCE 整机性能

1. Spectral range with InGaAs detector 3,900 to 11,000 cm⁻¹
光谱采集范围：3,900 to 11,000 cm⁻¹
2. Resolution better than 0.7 cm⁻¹, Apodized resolution adjustable 1 cm⁻¹ to 64 cm⁻¹
最高分辨率：优于0.7cm⁻¹，在1cm⁻¹到64cm⁻¹之间可调。
3. Signal-to-noise ratio (root-mean-square, 60s, 16 cm⁻¹, at peak response) : > 600 000: 1
信噪比（扫描时间：60秒，分辨率：16cm⁻¹）：大于600,000 : 1
4. Signal sampling: 24-bit ADC
信号采样：24位高精度模数转换器
5. Short-term stability (@ 8000 cm⁻¹): < 0.09 %
短期稳定性（8000cm⁻¹）：< 0.09%
6. Temperature stability (@ 8000 cm⁻¹): < 1 % per °C
温度稳定性（8000cm⁻¹）：< 1%/°C
7. Frequency repeatability (@ 7300 cm⁻¹): < 0.006 cm⁻¹
频率重现性（7300cm⁻¹）：< 0.006 cm⁻¹
8. Frequency accuracy (@ 7300 cm⁻¹): < 0.06 cm⁻¹
频率准确度（7300cm⁻¹）：< 0.06 cm⁻¹
9. Absorbance reproducibility (toluene): < 0.002 AU
吸收重复性（甲苯）：< 0.002 AU
10. Hardware Port Ethernet, 10/100 Mbps with OPC supported
通讯方式：10/100M网络，支持OPC通信

Optical bench 光学指标

1. Beamsplitter material ZnSe (non-hygroscopic)
分束器材料：硒化锌（防水）
2. Patented double pivot interferometer mechanism. High throughput Michelson interferometer with protective cover. Optical path fully purgeable
独家专利的高光通量迈克尔逊双臂干涉仪，自带防护外壳，测量光路完全可以使用高压空气清洁
4. 4 x 2 Quartz Halogen Source with electronic stabilization, expected half life 5000 Hours
两组8个自带电子稳压系统的高可靠石英卤素光源，最大寿命5000小时

6. Metrology: VCSL laser (no scheduled maintenance required)
完全免维护的半导体激光装置
7. Detector module: High sensitive InGaAs with integrated cooling
内置制冷装置的高灵敏度铟镓砷检测器
9. High efficient diffused reflection near infrared collection device, effective spot diameter 200mm
高效率漫反射近红外集光装置，有效光斑直径：200mm

Environmental 环境适应性

1. Universal power supply: 100-240 VAC, 50/60 Hz
电源要求：100-240 VAC, 50/60 Hz
2. Power consumption: 100 W
工作功率：100W
3. Operating temperature: 10 °C to 50 °C
温度范围：10 °C - 50°C
4. Operating relative humidity: 5% to 80%, non-condensing
湿度范围：5% - 80%，非冷凝
5. IP65 compatible.
符合IP65标准

Mechanical Specifications 安装规格

1. Dimensions(approximate): 60 cm (d) x45 cm (w) x 35 cm (h)
尺寸（近似）：60cm (长) x 45 cm (宽) x 35 cm (高)
2. Weight (approximate): 50kg
重量（近似）：50kg
3. 8 anchor points
固定方式：8个安装孔



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