

Multipoint analysis system using NIR spectroscopy

Optimized process

Product quality

Delivery time

Why use the SAM-Spec® optical analyzer for your tests?

- **Multipoint analysis**
with up to 27 points measured simultaneously
- **Exceptional acquisition speed**
up to 2 ms for 12 measurements
- **Dual functionality**
testing of physical and chemical properties
- **Versatile system**
adaptable from pilot to production scale



Measure up



SAM-Spec® NIR : Multipoint spectroscopic method to bring products to market faster and more safely



An acknowledged player in spectroscopy and the owner of numerous patents, **CA INDATECH** has designed and developed the patented SAM-Spec® technology, combining NIR spectroscopy with hyperspectral imaging.

This powerful optical analyzer can be used for quick, reliable in-line testing of **powders' and solids' physical and chemical properties**.

Our analyzer can be controlled through communication protocols such as TCP IP for integration into a complete automated solution.

SAM-Spec® enables you to increase the efficiency and profitability of your process, from development through to production.

Testing for absolute quality

- Non-invasive, non-destructive **in-line testing**.
- **By analyzing 100% of your production**, you will be able to significantly reduce the risks and check for any drift affecting your product's critical properties.

Essential on continuous production lines, enabling direct control of the production facilities.

A flexible solution

- Inspection of complex **powder or solid products**.
- **Over a wide range of applications**, from raw material identification to production supervision as well as process control tests, the SAM-Spec® sensor offers the same accuracy whether used at pilot scale or in production.

Advantages

27
measurement
points

SAM-Spec® is the only multipoint measuring system capable of measuring up to **27 measurement points** simultaneously.

100
times more
volume

Exceptional in-line analysis capacity, handling up to **100 times more volume** than a classic approach.

Speed
2ms

Extremely fast acquisition: 2 ms for 12 spectra. **10 ms** with processing and decision time included.

multi
parameter
analysis

Simple, accurate acquisition of critical data for better control of your process.

Smart
acquisition

Simultaneously measures several parameters such as:

- residual moisture
- homogeneity
- hardness
- contaminant detection
- coating thickness

They trust us

SAM-Spec® Analyzer:
Innovation technology already incorporated in production and inspection equipment.



CUB-20 & CU-120

PHARMA TECHNOLOGY



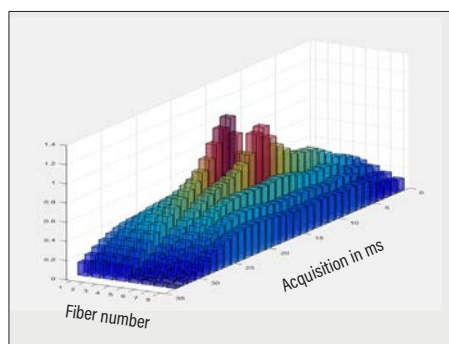
LYONSENSE® STATION

GEA

engineering for
a better world



SAM-Spec® innovative patented technology



SAM-Spec® can measure several positions from the light source at high speed

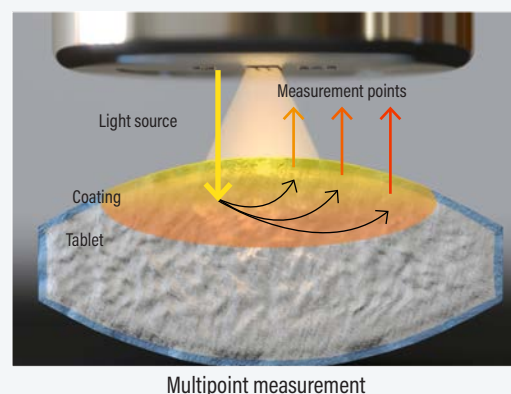
Capable of measuring up to 27 points simultaneously in less than 2 ms.

The result of several years of R&D, SAM-Spec® innovations include its design, combining the power of hyperspectral imaging (HSI) and the measurement accuracy of Near InfraRed Spatially Resolved Spectroscopy (NIR-SRS). This unique complementarity makes it possible to analyze physically and chemically dense products at high speed.



SAM-Spec® spatially advanced measurement by spectroscopy

Standard visible and Near InfraRed (NIR) spectroscopy is based on the measurement of a single spectrum per specimen. Spatially Resolved Spectroscopy (SRS) **performs multiple measurements simultaneously** at different distances from the light source.



Examples of applications

Tablets / Capsules

Precise inspection of weight and proportion of API (active pharmaceutical ingredient)

- **Quick analysis**, up to 400,000 products/hour
- **Precise data acquisition**, smart decision-making
- **Immediate detection** of contaminants and malformations
- **Checking** of dosage uniformity
- **Batch sorting**

Lyophilized products

Absolute in-line quality control

- **Accurate analysis** of residual moisture down to 0.2% water content
- **100% monitoring** of 16.25-33.00 mm flasks at a rate of up to 100 per minute
- **Comprehensive analysis** of between 25 and 200 measurement points on a vial

Powder in freedframe

Real time analysis of powder in the feedframe

- **Analysis** of API concentration of powder
- **Low dosage analysis** and concentration from 1% to 100%
- **High speed acquisition** for measurement of powder at best density

Technical specifications

- The Hy-Ternity acquisition unit, which can be configured as required for your application
- The sensor has 13 channels. Depending on the application, one or more sensors can be connected

HY-TERNITY UNIT OF MEASUREMENT	AM03	AM04
DOMAINE SPECTRAL	NIR	
Wavelength	900 to 1 650 nm	
Acquisition time	2 ms	
Detector technology	InGaAs PIN-Photodiode	
Min processing time per sample	10 ms	
Pixels	256 pixels	
Casing material	Painted steel	Stainless steel
Type of light source	Tungsten halogen	
Resolution (FWHM)	10 nm	
Temperature	5 to 40°C	
Acquisition unit dimensions (L x W x H) in mm	600 x 500 x 300	600 x 600 x 300
Power pack dimensions (L x W x H) in mm	300 x 300 x 210	
Power supply voltage	100 V to 240 V	
Certification	CE	
Number of connectable sensors	1 or more depending on the application	
Maximum number of measurement channels	27	
Process communication option	TCP-IP, OPC-UA	
Acquisition and processing software	SRS-READY	
HY-TERNITY ref.	HTY-AM03	HTY-AM04

PROBE	SPC13
Fiber type	Low-OH NIR optical fiber
Wavelength	400 to 2,200 nm
Fiber lenght	2 m typical (up to 50 m as an option)
Sensor material	Stainless steel 316L
Number of measurement channels	13
Type of connection	SMA 905
Sensor diameter (mm)	8.5
Length of the probe (mm)	130 or 25
Sensor reference	SPC13-1300H or SPC13-0250H



Services and assistance

CA Indatech accompanies you from the Proof of Concept to online activation of the system.

Depending on your needs, our experts can also help you with the factory acceptance tests - FAT/IQ/OQ. The IQ/OQ will be performed in your laboratory or on your production site.

During this phase, we will **check all the elements including calibration.**

