

# Near- Infrared Analyzer Beat Sensor GP

Model BSS1700HO

**Kett**

SCIENCE OF SENSING



**Kett**

**Tomorrow's Testing, Today !**  
**1-800-438-5388**

# NIR Composition Analyzer

## Instantly Measure Multiple Organic Components

This simple-to-use instrument simultaneously measures up to three organic components. Accurate measurement is achieved without pre-processing the samples that is often required in competitive instruments. This dramatically reduces the overall test cycle, allowing you to focus on improving product quality and not on sampling and prep work.

### Simple Operation - Research Grade Results

To test a product, simply place the sample under the probe. Values are instantly displayed. Liquid and gas samples can be measured with the transmittance fixture or directly in a flow tube. Results are shown on the large integrated touchscreen display.

### Technology Overview

Measurements are made using NIR absorbance. The InGaAs light source generates an optical output signal from 900 and 1700nm. This spectra is measured in the microprocessor and the displayed (if desired) on the integrated touch panel PC display. When used with the optional Unscrambler software, the spectra fingerprint is instantly converted into component values. Up to 512 wavelengths can be used to calculate the measurement -all in one second

The BSS1700 has no moving parts (other than the cooling fan), is impervious by vibration, and independent of orientation of the instrument. This allows it to be utilized on the manufacturing floor, providing instant feedback to your staff.

### Components that can be measured

The BSS1700 can measure a variety of components. Examples are:

- Moisture • Protein • Fat/Oil • Alcohol/Solvent • Starch
- Sugar Content/Brix • Fiber Content • BTU • Product Identification
- Contaminants • Purity

### An unlimited number of applications can be evaluated, measured, monitored and controlled

- Food Products - Dairy, Meat, Fish, Grains, Fruits, Vegetables, Beverages
- Wood Products - Fiber, Binders, Resins
- Packaging - Coatings, UV Cure, Adhesives
- Pharmaceutical Products - Bulk, Dose, Tablets, Capsules
- Minerals - Product Identification, Blending, Contaminants
- Textiles - Web, Fiber, Samples, Tow, Finish
- Chemicals - Liquids, Solids, Gases, Process Optimization

### Product Features

Notable features in the BSS1700 include:

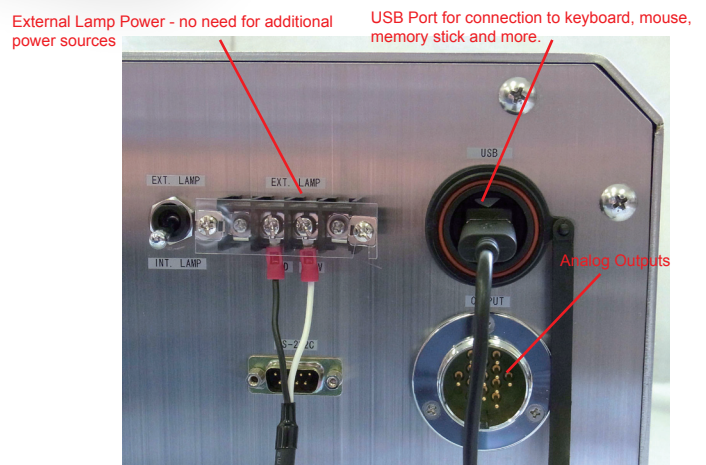
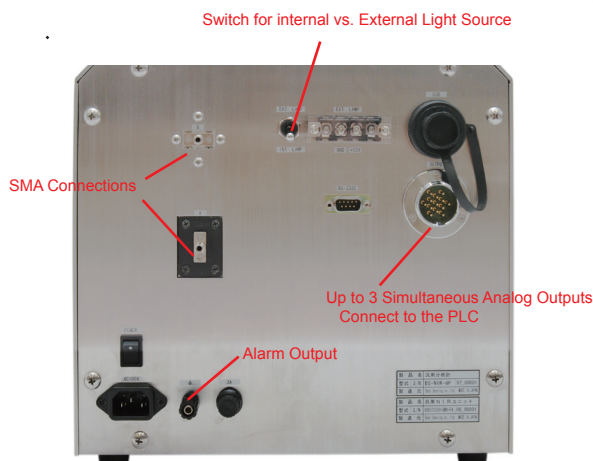
Integrated Panel PC with touch screen - allows for use in any environment - compact footprint allows it to fit anywhere

Analog Outputs - up to three outputs can be sent to PLC inputs, allowing processes to be optimized with only one measurement instrument

Alarm Output - guarantee process compliance

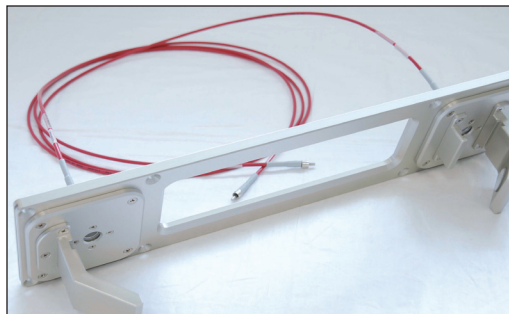
Internal and External light source option

External Trigger - discrete measurements scheduled remotely - automated batch/sample assessment



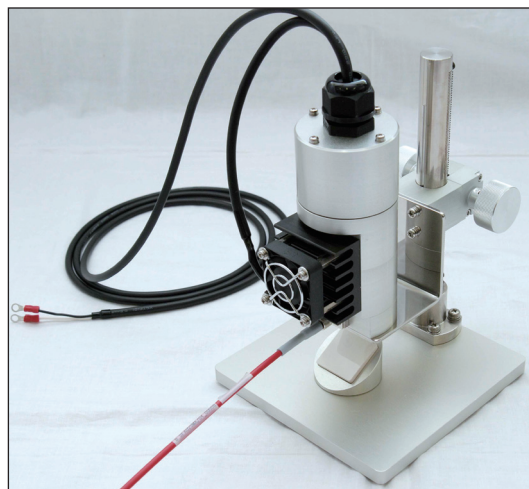
## *Unsurpassed Measurement Flexibility*

Investment in this type of instrumentation demands that it pay off with long-term flexibility. What needs to be tested today may be different than what is measured six months, one year, or five years from now. In today's cost-conscious environments, it's important to consider the long-term versatility of the analyzer. The GP stands for General Purpose. We offer a wide array of measurement fixtures. In addition, it's easy to add custom 3rd party or internal test figures due to the industry-standard SMA fittings.



### *Gas Measurement*

Fixture can be placed in any gas to provide instant, sampling or continuous measurement of gas concentrations and identification of impurities.



### *Solid Measurement*

High intensity light source illuminates solids. This provided improved signal generation so the PSS can detect miniscule components and offer enhanced precision.



### *Liquid Measurement*

Sample cells are placed into fixture. The transmittance measurement is instantly made - without sample preparation, alteration or contamination.

### *Kett Durability*

Kett stands behind the BSS systems with a full **One-Year** manufacturer's warranty on parts and labor. Kett's dependability and reliability allow you to productively focus on improving your product's quality and not waste time calibrating and verifying our gauges. Kett is recognized as a worldwide leader in measurement instrumentation. With almost 60 years of design and manufacturing excellence, the BSS like all Kett instruments, is the standard by which others are judged.

### *Tomorrow's Testing, Today!*

In addition to our unique BSS1700 Kett manufactures almost 200 different instruments. Available for portable handheld, laboratory desktop or online process applications, if you have a measurement requirement, we offer solutions....today! If you need to measure whiteness - - accurately, quickly, and simply, wish to place an order, or require additional guidance on model selection, please call Kett toll-free!

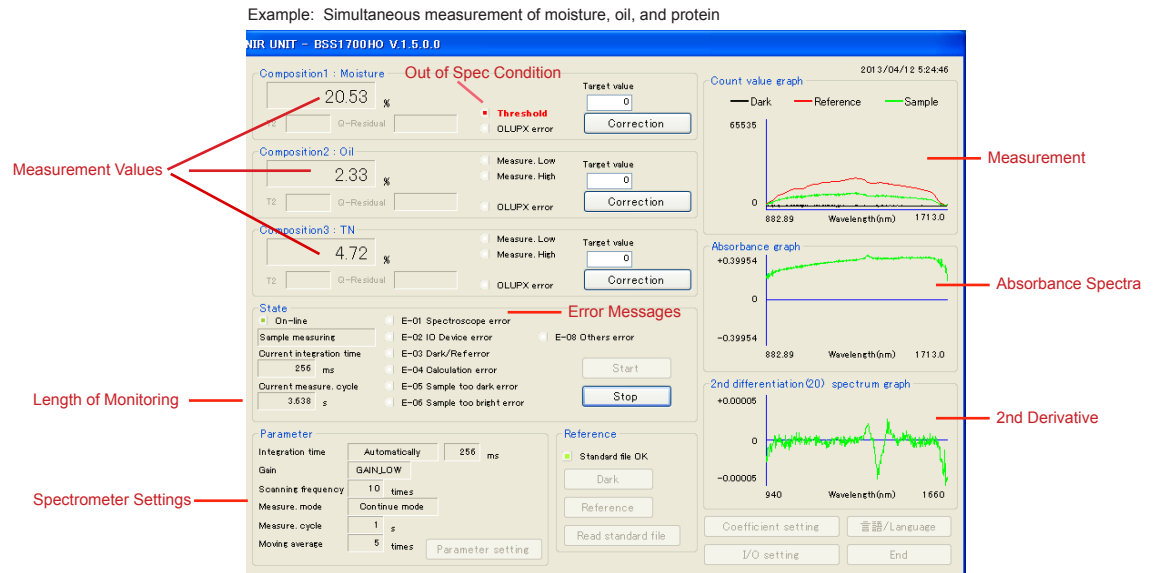


# NIR Composition Analyzer

## *Integrated Software for unsurpassed simplicity*

Unscrambler OLUPX10.2 is installed, allowing the PSS to provide real-time measurement. Industry- standard Unscrambler X 10.2 software can be loaded directly into the BSS1700. This option provides the user with an integrated solution... samples can be scanned, calibrations can be created, and then measurements can be immediately made - - realtime in one small package. No longer do you need to wait for the data to be analyzed remotely to make decisions.

The Main interface screen provides everything needed to evaluate the sample, monitor the manufacturing process and the confirm the measurement.



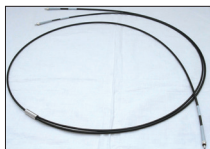
## *High Intensity Light Source*

Two measurement options are available from the same instrument. Either use the dual SMA fiber-optic cables or the optional high intensity light. Both can be interchanged in seconds...simply connect the option and flip the switch on the back of the BSS!

## *Numerous Options Available*

The open design of the BSS allows it to be used with a variety of measurement options are available from the same instrument. Some of the options we offer are shown on the next few pages. Please contact us if you need another item for your specific application.

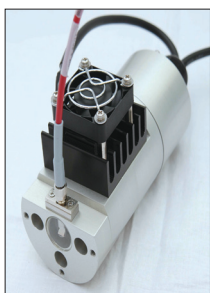
## Fiber Probes and Light Sources



Name	Reflectance 2 meter probe
Part Number	BFA022SMA
Connection	SMA
Output	5 core
Input	1 core
Core diameter	600um
Overall length	0-10mm



Name	Transmission 2 meter probe
Part Number	SFA02SMA
Connection	SMA
Core diameter	600um

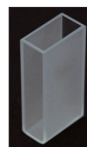
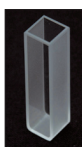


Name	Reflectance 50 mm probe
Part Number	RA050
Method of Measurement	Diffuse reflectance
Light Source	Tungsten Lamp
Fiber Optic Receiver	2m
Measurement Distance	50mm
Measurement Diameter	8mm
External Dimensions	60mm dia x 130mmH
Power Supply	12VDC

## Transmission Cells



Name	Flow-Thru Cells
Part Number	FTC753 or FTC734
Path Length	1,2,5,10,20mm
Material	Quartz Glass
Type	Z15
Note:	Use with SFA02SMA and TA020FC



Name	Transmission Cell
Part Number	TA10010 or TA10020
Path Length	10,20 mm
Material	Quartz Glass
Note:	Use with SFA02SMA and TA020FC



Name	Transmission Flow Cell
Part Number	TAO10FC or TA020FC
Measurement Method	Transmission
Measurement Cell Size	10mm 12.5Wx12.5Lx5H
10 or 20mm optical path	20mm 12.5Wx22.5Lx45H
Measurement Diameter	3mm
Probe connection	SMA
Dimensions	112.5Wx56Hx30D

## Calibration and Data Analysis Software



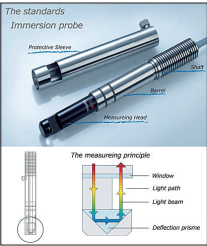
Name	Unscrambler
Version	X 10.2
Function	Multi-variate Calibration, Data Analysis
Compliance	21 CFR Part 11



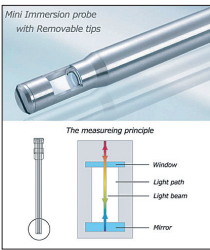
Name	Gas Fixture
Part Number	GRA500T
Measurement Method	Transmission
Mounting Method	Wall mount
Probe connection	SMA
External Dimensions	500Wx120Hx123D

# NIR Composition Analyzer

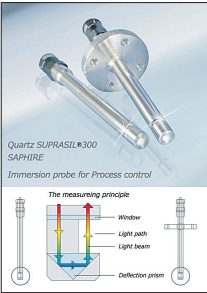
## Insertion Probes



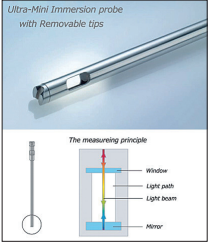
Name	Standard Immersion Probe - SMA
Part Number	661.000-NIR
Head Material	Quartz
Barrel Material	SUS
Length	180mm
Diameter	20mm
Path Length	1,2,5,10,20 mm
Maximum Temperature	150°C
Maximum Pressure	600kPa
Fiber length	2m



Name	Mini Immersion Probe - Removable Tips - SMA
Part Number	661.682-NIR
Head Material	Quartz
Barrel Material	SUS
Diameter	12mm
Overall length	260mm
Path Length	2,4,10,20,40mm
Max. Temperature	180°C
Max. Pressure	1.6Mpa
Fiber Length	1.8m

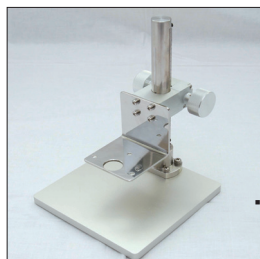


Name	Process Control Immersion Probe - SMA
Part Number	661.792NIR - Flange/ no quartz 661.793NIR - Flange/ Silica 661.2302NIR - no flange or sapphire 661.2302NIR - flange sapphire
Head Material	Quartz or Sapphire
Barrel Material	SUS
Diameter	25mm
Length	353mm
Path Length	1,2,5,10mm
Max. Temperature	260°C
Pressure	3.5Mpa
Fiber Length	2m

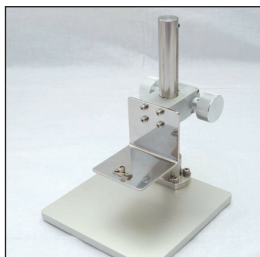


Name	Ultra Mini Immersion Probe - Removable Tips - SMA
Part Number	661.622-NIR
Head Material	Quartz
Barrel Material	SUS
Diameter	6mm
Overall Length	235mm
Optical Path	2,4,10,20,40mm
Max. Temperature	150°C
Max. Pressure	600kPa
Fiber Length	2m

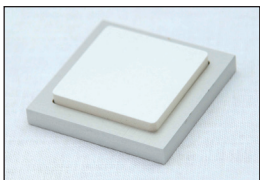
## Test Platforms and Optical Standards



<b>Name</b>	<b>RA050 Test Stand</b>
Part	FSSRA050
Dimensions(mm)	150Wx212Hx150D
Measurement Distance	50mm
Measurement Diameter	8mm



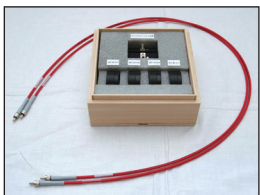
<b>Name</b>	<b>SMA Test Stand</b>
Part	FSSSMA
Dimensions (mm)	150Wx212Hx150D
Measurement Distance	0-10mm
Measurement Diameter	3-8mm



<b>Name</b>	<b>90 Degree Optical Standard</b>
Part	REF00
Spot Size (mm)	30x30
Dimensions (mm)	40Hx8Hx40D



<b>Name</b>	<b>30 Degree Optical Standard</b>
Part	REF30
Spot Size (mm)	30x30
Dimensions (mm)	40Wx8Hx40D



<b>Name</b>	<b>NIST Optical Standards</b>
Part	RSNIST4F
Reflectivity Standards	99% 50% 10% Wavelength
Fiber Length	1m

## Specifications

<b>Model</b>	<b>BSS1700HO</b>
Measurement Principle	Near-Infrared Transmittance/ Reflectance with InGaAs Array
Calculation	PLS or MLR
Light Source	Tungsten Lamp
Measurement Components	Three simultaneous analyses
Probes (incl.)	1 (2M length) - SMA
Wavelength Range	900-1700nm
Response Time	1 scan/second
Accuracy	+/- 0.01% or better - application dependent
Resolution	0.01% or better
Display	Product, Constituent, Value, Date, Time, scan
Housing	Stainless
Ambient Temperature	5-40°C
Ambient Humidity	0-80% RH (non-condensing)
Power Source	100 VAC max 200W
PC	Integrated - touch screen
Display Type	800x640 8.4" Backlit LCD
Communications	USB 0-20mA or 4-20mA (3)
Measurement Mode	Continuous, timed, trigger
Weight (kg) (Net/Shipment)	18/24
Dimensions (mm)	300Wx284Hx400(D)
Options	Numerous
Warranty	One Year Parts and Labor, Maintenance Agreements available

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