



T-MS4810DRS

## Moisture Analyzer

Ref:T-MS4810DRS\_IntE

### Professional for both of solids and liquids

- *Intelligent Analysis Based on Powerful CPU, Reliable, solid state design*
- *Rapid Test, Lab Accurate*
- *Proven technology, Multi-parameters Tested for Compensation*
- *100 frame Data log*
- *LCD 2x16 Display, Backlight Available*
- *RS232/485 Communication, printer supported by RS232C*
- *Full Function Keypad Operation*
- *Memo Driven Software Operation and Setup*

The LDRP Reflectance Spectrometer is a portable instrument designed for industry field and laboratory investigations of chemical composition both of liquids and solids materials.

Technically, the LDRP is a multi-band photometer rather than a spectrometer, because it does not measure reflectance across a continuum of wavelengths. Rather, it measures reflectance in separate, non-overlapping ranges of wavelength. However, this distinction is not important for most applications. The LDRP consists of lamps, a photo-detector, and an analyzer with display. These elements are arranged and coordinated with the sample and with each other to provide reproducible, easily interpretable results.

The Lamps are arranged so that their light passes are the same for each wavelength, being directed on to the surface of samples to be measured. And the diffused light after absorption by the samples was collected with focus system to the sensor.

In this configuration, the LDRP works best and most reproducibly with flat objects that have matte surfaces. Some shininess (as in most leaves) is acceptable.

Mirror-like surfaces will yield spurious readings.

For moderately rough surfaces, as small particles, the LDRP yields reasonable values for reflectance.

With very rough samples, light leaks can be a problem. Users can use the light protector sleeve to stop light leaks.

H-BD5-LDRP481X is special to samples. Users always need calibration for special applications. Internal memory capable of storing 8 separate calibrations. Use the calibrations provided by system, or create your own calibrations using the software function provided.

LDRP481X is designed for absorption bands detection, LDRS482X is designed for specific molecular absorption line analysis.



## Measure Method

Diffuse Reflectance Photometer (DRP)  
Diffuse Reflectance Spectroscopy (DRS)  
Diffuse Transmittance Photometer (DTP)  
Diffuse Transmittance Spectroscopy (DTS)

## Features

- Instant Measurement
- Non-Contact
- Non-Destructive
- Versatile usage

## Usage

Quantitative moisture analysis for solids and liquids, with high selectivity.

## Application Details

The high OH absorption coefficient in the NIR Region makes BDTI Vis/NIR analyzers an ideal tool for accurate and flexible moisture analysis in raw materials, in-process and finished product. Using NIR as opposed to traditional, lengthy, and costly traditional moisture analysis, could save significant money and time.

Nutrient With growing pressure from the Food and Drug Administration on nutriment companies to standardize ingredients and ensure product purity, NIR technology has emerged as a cost-effective means for quality control in the manufacturing process of natural supplements. With the wider spectral range of LDRP and LDRS than other NIR instruments available, BDTI is taking 100% inspection of raw materials and finished products to a higher level by providing a vehicle for more reliable spectral data collection and seamless user-friendly interfaces to available chemo metric software. Professional food Nutritional Analysis, enabling raw material testing quickly—at the dock, on the manufacturing floor, or where ever it is needed—positioning you to meet GMP and FDA requirements, quickly and easily.

### **Examples:**

**Specially designed for moisture measurement of irregular shaped materials and incompact materials**, such as botanic, floral, floristic, vegetable, vegetal; biologic, biomaterial; creatural, zoic, animal, beastie, creature, fowl, poultry; corny, frumentaceous, aquicolous, hydrophytic, aquatic, hydrophyte, water plant, tobacco, foliage, cotton, and any mixture of powder, granular, grain state of particles.

**Chemistry, pharmacy:** Powders, granules, tablets, pasta, foils Fertilizer, phosphate, salt, potash Washing-powder Styrofoam, synthetic material, PVC, acryl Pigments

**Food-and semi-luxury items:** Grain, strength, flour, malt, hop Soya, rape seed Corn, lenseis, pasta, beans Sugar beets, beet mash beet escalopes Confectionery, Cerealien, snack meal Raw coffee Food means, fish meal, dried food Potato products, -flour, -chips, -flakes Sauce powders, powdered milks, spices Nuts

### **Building-materials:**

Sand/gravel quartz powder-sand Bricks (raw material) Ceramic (raw material) Plaster

**Recycling:** Bio-, sludge, compost

**Other:** Wood shavings, wood flour Coal, coaldust Tobacco Foundry sand Glass/ceramic

- Dry process monitoring
- Chemical process measurement
- Food and pharmacy Industrial controls

## General Specifications

Moisture Range:

Solids: 0.01-100%;

Liquid Range: 0.01-100/1000ppm; to 100%

Accuracy:  $\leq \pm 1\%$  Rel or 0.01% abs, whichever great;

Outputs: 2x16 LCD display,

Data Transfer: Via RS-485 port for interface with PC

Calibrations Stores up to 8 calibration sets

Data Storage: Stores data for up to 100 samples

Optical Capabilities  
 Measurement Mode: Diffuse transmittance, Diffuse reflectance  
 Scan Speed: 100ms;  
 Optical Range:0 to 6 AU  
 Resolution:0.00001 AU  
 Stability:0.05 Mili-AU  
 Measurement Time: Variable (Typically under 20 seconds)

**Installation**

Position: above samples and/or flow;  
 Fittings: bolts to suitable frame;

**Sample Information**

Thickness >75 mm  
 Distance:300-400mm (from sensor to the sample surface);  
 Scanning area: φ50mm;  
 Sample size:: unlimited( but different samples must be calibrated).  
 Pre process: None;  
 Sensor Environ Temperature: 0-40°C;  
 Sensor Environ Humidity: 0-95%RH (none condensing, usually dry air blowing system needed) ;

**Physical Data**

Dimensions:  
 Analyzer: 125mm X 180mm X 60mm  
 Sensor: Ø56x350 mm  
 Weight: less than 7.5 kg

**Supply:**

**Inside Power Supply: 24V DC;**

AC Power Requirements.....120 or 240 VAC 50/60 Hz AC adapter (supplied)  
 DC Power Requirements ..... (included)  
 Power Consumption ..... 24V, MAX<10W;

**Package:** IP56

**T-MS4810 Models and Prices**

Model	Code	Measurement Property	Specifications	Applications
LDRS4812-	SWNIR2B01	Total moisture both of intra- or intermolecular water	Moisture :0.1-100% Environ temperature:0-35°C	Liquids/solids; *Not recommended for starch and alcohols;
LDRS4812-	MNIR2B01	Total moisture of absorbed and condensed	Moisture :0.05-100% Environ temperature:0-50°C Max to 60°C	Liquids/solids; * Not recommended for starch and alcohols;
LDRS4812-	MNIR2B02	Moisture both of water with one hydrogen bond and water with two hydrogen bonds	Moisture :0.05-100% Environ temperature:0-50°C	Liquids/solids
LDRS4811-	MNIR1B01	Water without hydrogen bond	Moisture :0.05-100% Environ temperature:0-50°C	Solids;
LDRS4813-	MNIR3B01	Can identify: water with no hydrogen bond (W0) water with one hydrogen bond (W1)(intra-molecular hydrogen bonds) water with two hydrogen bonds (W2) (intermolecular hydrogen bonds, Crystal water)r)	Moisture :0.1-100% Environ temperature:0-50°C	Solids
LDRS4811-	LNIR1B01	Free water molecules	Liquid moisture:0.003-3ppm, 100%	Liquids/gas

			Gas moisture:0.3-3000ppm; Environ temperature: 0-40°C WT :-40-50°C		
LDRS4811-1940	LNIR1B02	Absorbed water	Solid Moisture:0.01-100% Liquid moisture:0.003-3ppm,100% Environ temperature: 0-40°C WT :-40-50°C	Liquids/solids	
LDRS4821-1940	LNIR1B02	All state of water molecules	Solid Moisture :0.01-100% Liquid moisture:0.003-3ppm,100%; Gas moisture:0.3-3000ppm; Environ temperature: 0-40°C WT :-40-50°C	Liquids/solids	


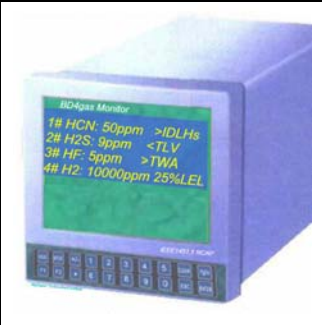

## Standard Instrument Units

Items	Model	Quat.	Information	Status
Analyzer	H-BD5	1		Included
Single 9V rechargeable battery		1	DC Power supply	Included
Charger	AC-DC Adaptor	1	Power charger: Default as 220 V AC to 12 DC; Other local supply system must order specially	Supplied
Sensor	LDRP	1		Included
Package		1		Included
Transmission reflector		1		Included

## Optional Accessories

Items	Model	Quat.	Information	Status
Automobile Charger Adapter	12V		Power charger:	Optional
Micro Printer				Optional
Print paper			20 coils / package	

## Remote Meter

		
XM3.5 Meter Simple displayer	p-BD4ms Pan installed CPU Meter	w-BD4ms Wall Fixing CPU Meter

## **BigDipper Technochem Institute**

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