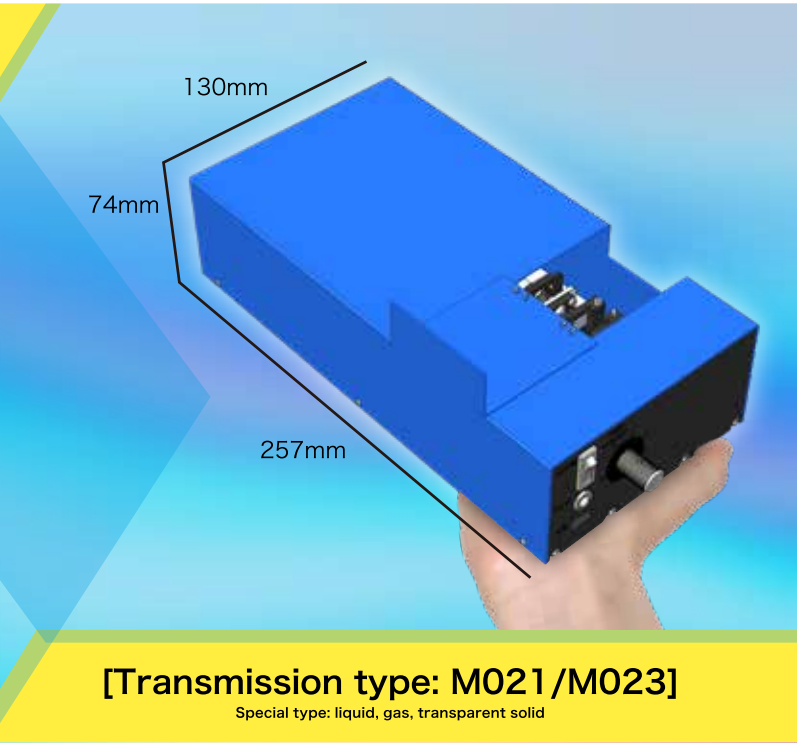
Potable [Near Infrared] Component Analyze

Newly developed [reflection] and [transmission] types enable to broaden its application!

[Reflection type: M020/M022]

Universal type: powder, solid, living tissue, liquid, film* (* transmitted reflection type used)



[Transmission type: M021/M023]

Special type: liquid, gas, transparent solid

*Above product images are portraits.

Free to use! Infinite possibilities!

Near infrared light enables to identify target substance and analyze internal structure nondestructively

For example, you can do,

- Judgement of type and quality degradation of plastic materials
- Quantification of lipids in fish/meat
- Monitoring fermentation process of alcohol
- Qualification of main ingredients in wheat, soybeans, and rice
- Nondestructive evaluation of sugar, internal defects, and maturity of fruits
- Nondestructive detection of fruits fly egg and larva
- Component analysis of soil
- Component evaluation of chocolate and butter
- Quality evaluation of coffee beans and tea leaves
- Judgement of meat type

Should you look for any solution, please feel free to contact us at,

OMT OMT Optomechatronix

7F Hamamatsu Act Tower 111-2 Itaya-cho, Naka-ku, Hamamatsu city, 430-7707, Japan

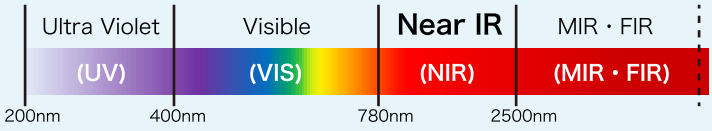
TEL: 053-401-2070 FAX: 053-401-2071 info@opt-mt.com www.opt-mt.com

Main features

- Nondestructive measurement
- Compact design by integration of light source and spectroscope in one unit
- Relieved customization and maintenance thanks to domestic production
- Ability to select [reflection] or [transmission] type depend on samples
- No limitation of place to use thanks to compact design
- Ability to adjust light power easily depends on your requirement
- Variety of sample holders available depends on samples (option)
- Applicable to optical measurement in range of 1100nm-2500nm
- USB2.0 interface for outstanding versality data output
- Measurement software available under Windows operating system

About near infrared

The near infrared light in region of 780-2500nm has relatively less molecular absorption coefficient than one of middle and far infrared which makes possible to measure substance without dilution nondestructively.



Features of near infrared spectroscopic system

1.Nondestructive measurement is possible

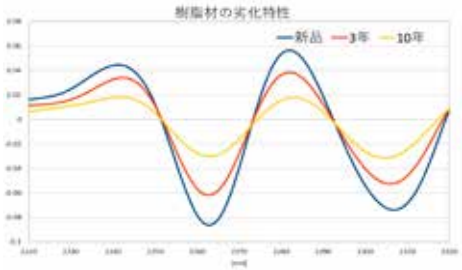
Since the near infrared light has relatively lower energy compared to one of UV light which makes higher penetration power, the nondestructive measurement is possible making less damage on samples.

2.Unlimited measurement target

Any kind of sample form including solid, liquid, paste, and fiber can be measured. Thus, it is applicable to food thanks to nondestructive measurement.

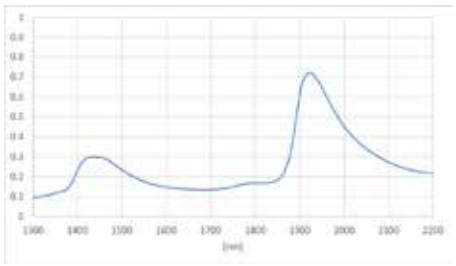
Application examples: please refer to below as actual measurement.

Degradation measurement of resin materials for construction



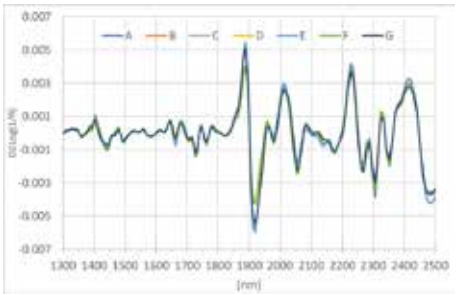
3 type of resin materials (new, 3 years aged, 10 years aged) are measured. Referring to the second derivative data, one can confirm the strength depends on aging. This suggests that the degradation judgement is feasible.

Identification of substances by absorption spectrum



Confirming the peak absorption wavelength by target substance can indicate an existence of substance. This sample shows that the water is contained by observing the absorption peak at 1450 and 1920nm.

Measurement of component in tea leaf



The second derivative of absorbance can compare the difference of absorption for each ingredient. This utilizes the absorption wavelength differs from ingredient. If the multiple ingredients intricately mixture, the mathematical method such as the multivariate analysis can be applied

[Basic specification]

Product	Detection mode	Wavelength range (nm)	Wavelength resolution (FWHM)	Wavelength repeatability	Spectroscopic method	Dimension (exclude protrusion)
M020-01	Reflection mode	1350～1650	less than 18nm	±2 nm	FPI	64×140×130 mm
M020-02		1550～1850	less than 20nm			
M020-03		1750～2150	less than 22nm			
M020-04		2100～2450	less than 28nm			
M022		1100～2500	less than 8nm	±0.5 nm	FTIR	64×190×130 mm
M021-01	Transmission mode	1350～1650	less than 18nm	±2 nm	FPI	130×74×257 mm
M021-02		1550～1850	less than 20nm			
M021-03		1750～2150	less than 22nm			
M021-04		2100～2450	less than 28nm			
M023		1100～2500	less than 8nm	±0.5 nm	FTIR	

Item	Specification	
	Reflection mode (M020/M022)	Transmission mode (M021/M023)
Detector	Near infrared spectroscopy	
Light source	5W Lens lamp (x2)	0.9W Lens lamp (x1)
Intensity adjustment	Continuously variable	
A/D resolution	16 bit	
Interface	USB2.0 × 1	
Software	Included analysis software under Windows10 and 64 bits	
Power supply	Input:100-240V, 50-60Hz /Output:5V	
Operating temperature	+5 ～ +35 ℃	
Operating humidity	30 ～ 80% (no condensation)	
Remarks	Cooling fan for light source	—

OMT can provide other solutions including customization of data handing, calibration curve and mode. Please do not hesitate to contact us at any time.

Jun2022