

Specification

COMMODITY DESCRIPTION

Item No.	HSK No.	Korean Government Commodity Classification Code	Description	Unit	Q'ty
1	9027.20.0000	41115401	Near-infrared fluorescence spectroscopy system	set	1

I. End-user's Use

1. It combined steady state, fluorescence lifetime and phosphorescence lifetime spectrometer is a modular system for measuring steady state spectra in the UV/VIS spectral range together with fluorescence decays in the time range between 10ps and 1s using the method of Time Correlated Single Photon Counting and phosphorescence decays in the time range between 100ns and 20 seconds using the technique of Multi-Channel Scaling.

II. Configurations of System

1. Main equipment
 - 1) Fluorescence Lifetime Spectrometer 1 set
 - 2) Light Source Module 1 set
 - 3) TCSPC/MCS 1 set
 - 4) Diode laser 1 set
 - 5) Data processing system 1 set
 - 6) Accessories: Maintenance tool 1 set
 - N2 inlet kit 1 set
 - SS holder 1 set

III. Performance & Specification

1. Fluorescence Lifetime Spectrometer
 - 1) Xenon Lamp : 150W, ozone-free
 - 2) Monochromator: Czerny Turner spectrometers with 1200g/mm ruled grating
 - (1) Excitation 1200 grooves/mm - blaze 330 nm
 - (2) Emission 1200 grooves/mm - blaze 500 nm
 - 3) All Optical system : all reflective optics
(Do not use lenses to rule out chromatic aberrations.)
 - 4) PL integration time from 1 millisecond to 160 seconds

- 5) Water Raman SNR : 16,000:1(RMS), 13,000:1 (FSD Method)
- 6) Mechanical monochromator resolution (wavelength drive step size) 0.0525nm
- 7) Optical Resolution of 0.3 nm FWHM.
- 8) Band pass : 0.1~30nm Linear type.
- 9) detectors :
 - 1) Silicon photo diode(190~900nm)
 - 2) UV-VIS detector(185~870nm) Multi alkali
 - 3) Room temperature IR detector mode and LN2 Cooled InGaAs Detector (800nm ~1700nm)
- 10) TCSPC/MCS Module
 - Two Techniques for NIR Phosphorescence Pulsed Light Source for SST
 - TCSPC electronics dead time of 10ns or less to be able to match 100MHz repetition rate.
 - TCSPC electronics, detection and software capable of acquiring up to 1,000 entire decays per second which is essential for the kinetic study the fluorescence lifetime changes.
- 11) Pulsed laser light source Module
 - Diode Laser (370nm +/-10nm)
 - Pulsed laser diode with peak WL 370nm +/-10nm w/active temp control.
 - Includes diode conditioner.
 - Operates at repetition rate up to 100MHz.
- 12) Liquid nitrogen cooled InGaAs detector
 - DSS-IGA020L liquid nitrogen cooled InGaAs detector (800-1700nm at RT, 800-1550nm at LN2 temperature) for Fluorometer.
 - Mounted into the all-reflective-optic 1427C-AU housing.
 - Includes all electronic modules and cables and 600g/mm-1000nm blaze grating added to the emission grating turret.
 - Also includes computer controlled flipping mirror slit assembly.
 - Mounted at the second emission port of the Fluorometer.
- 13) Sample loading holder : Cuvette
- 14) Software for equipment operation (fluorescence software), 1ea
- 15) Processing and Data-management tools must be compatible with OriginPro.

2. Data Processing System and Operating Software

- 1) FluorEssence software

- 2) (Includes Origin and License)
- 3) Computer: i7, 16GB RAM, 1TB HDD, 23-inch Full HD Monitor.ight Source Module
3. Components (including accessories)
 - 1) Operating PC, 1 set
 - 2) FluorEssence software
 - 3) Quartz Cuvette 4ml, 1cm x 1cm open-top with cap.
 - 4) Tabletop size
 - * Equipment dimensions: 830mm x 480mm x 280mm
 - * Weight: 34kg
 - * Power consumption: Power: Single-phase, 220V, Heating: Single-phase, 220V, 1kW
 - 5) Maintenance tool, 1 set
 - 6) N2 inlet kit, 1 set
 - 7) SS holder, 1 set

Solid sample holder: designed for viewing front-face fluorescence of thin films, powders, pellets, paper, fibers, or microscopic slides. Includes variable alignment angle facility for the optimization of the signal.

V. Service

1. Within the warranty period, the equipment supplier must arrive on-site within seven business days of receiving the user's request in the event of an equipment defect and complete the repair work within five days of arrival.
2. The organization chart of the academic team, technical service team, and technical sales team responsible for the near-infrared fluorescence spectroscopy system must also be submitted.
3. Technical and theoretical training, as well as seminar equipment training, must be provided to at least two individuals twice a year.

VI. Remark

1. No joint contracts or subcontracting.
2. Delivery Date: Within 90 days of contract signing.
3. Delivery Location: Location designated by the requesting organization.
4. Prior to delivery and installation, an on-site inspection must be conducted to confirm the existing equipment before delivery. The supplier is responsible for any consequences resulting from failure to conduct an on-site inspection.
5. Installation and equipment usage training must be provided.
6. A one-year free warranty is provided after delivery.

7. Installation and operation training will be provided for 1-2 days by a technical engineer.
8. A second round of in-depth training and Q&A will be conducted one month later by a skilled and highly qualified application engineer.
9. All equipment must be manufactured by the same company (excluding computers and equipment combining products from other companies). Manufacturer certification must be submitted.