

# JASCO® Model FT/IR-400Plus Series

## Fourier Transform Infrared Spectrometer



The new FT/IR-400Plus series has been designed for efficient and user-friendly routine analysis. The innovative hardware technology incorporated into this range of products realizes a remarkable increase in the S/N ratio. In addition, the user friendly features of the FT/IR-400Plus allow the operator to measure samples quickly and easily using the JASCO Quick Start System. The addition of a Quick Start button together with JASCO's Quick Start Measurement software allow the user to perform routine measurement as well as automatic data processing functions all at a single push of a button.

### Features

#### High S/N Ratio

Due to improvements in components and also in production efficiency a remarkably high S/N ratio is achieved: 15000 : 1 for the FT/IR-460Plus, 22000 : 1 for the FT/IR-470Plus and 24000 : 1 for the FT/IR-480Plus. Further, a peltier element has been added to the DLATGS detector to maintain optimum temperature in order to ensure maximum sensitivity.

#### Newly developed KRS-5 windows

Newly developed KRS-5 materials have been used for the windows of the DLATGS detector and of the interferometer, making the new FT/IR-400Plus series even more stable and robust without sacrificing performance.

#### Quick Start button

All models in the FT/IR-400Plus series have a Quick Start button which, when used with the Quick Start program, allows the user to perform measurement easily and quickly. This new feature is ideal for routine analysis and QC operation required when measuring multiple samples.

#### Auto Recognition Accessory System

This series includes a new Auto Recognition Accessory System. Once an accessory has been registered, the system recognizes the accessory as soon as it is attached and its measurement parameters are automatically set. The Auto Recognition Accessory feature removes the necessity for repetitive and troublesome parameter settings and can help avoid mistakes made due to incorrect parameter settings.

The accessories that can be recognized by the system are not limited to those made by JASCO. By registering attachments beforehand, accessories made by other companies can also be recognized by the system.

#### Validation Software

JASCO's Validation software suite for FT/IR is supplied on a CD-ROM enabling laboratories to check instrument performance with tests for wavenumber accuracy, wavenumber repeatability, %T change, %T repeatability and resolution on a routine basis.

#### Simple operation mode

Having considered how our customer's use our instruments, JASCO now offers two different operation modes. For high-level research analysis, JASCO's cross platform software suite, Spectra Manager, provides a wide range of advanced features and functions that allow precise measurement and detailed data analysis. For routine and QC operations, JASCO's new Quick Start System has been added which allows quick, easy-to-use measurement and data analysis.

With the new JASCO Quick Start System you can:

- Start measurement with a single push of a button. After pre-setting a measurement sequence, measurement can be performed by simply pushing the Quick Start button on the instrument or clicking the Start button on the tool bar of the Quick Start Measurement program.
- Perform measurement and data analysis with no previous knowledge of the instrument and/or minimal computer expertise. Using the mouse, simply select the measurement, data analysis, print and/or save items you require for your measurement sequence and you are ready to start measurement.
- Set a password to prevent unauthorized people from accessing and changing parameter settings.

When JASCO Quick Start is used together with JASCO's new Auto Recognition Accessory System, accessories can be changed over and measurement performed more quickly and easily than ever before.

#### Tutorial software

Tutorial software that instructs inexperienced operators on the correct way to measure samples is now available. The tutorial provides step-by-step explanations of measurement methods such as DR and ATR. This is supplied on a CD-ROM.

## SPECIFICATIONS

	FT/IR-460Plus	FT/IR-470Plus	FT/IR-480Plus
Measurable W.N. range	7800 - 350 cm <sup>-1</sup> , 15000 - 2200 cm <sup>-1</sup> (option, NIR model), 5000 - 220 cm <sup>-1</sup> (factory option, Far-IR model)		
Resolution	0.9, 2, 4, 8, 16 cm <sup>-1</sup>		0.5, 1, 2, 4, 8, 16 cm <sup>-1</sup>
Optical system	Single beam		
Aperture diameter	Fixed		
Sample compartment	175 (W) x 255 (D) x 170 (H) mm		
Beam diameter onto sample	4 mm		
Light path in sample compartment	Center focus, light axis 70 mmH		
Interferometer	45 deg. incident Michelson interferometer, corner cube mirror, sealed structure, purgeable		
Interferometer drive mechanism	Mechanical bearing, electromagnetic drive		
Interferometer drive speed	Variable by software		
Rapid scan	Option (10 spectra/sec., 16 cm <sup>-1</sup> resolution)		
Beam splitter	Ge coated KBr substrates, CaF <sub>2</sub> (option, NIR model), Csl (factory option, Far-IR model)		
Interferometer window material	KRS-5		
Light source	High-intensity light source, Halogen lamp (Option)		
Detector	DLATGS with Peltier element (KRS-5), MCT-N (- 750 cm <sup>-1</sup> ) option, MCT-M (- 650 cm <sup>-1</sup> ) option, MCT-W (- 450 cm <sup>-1</sup> ) option, InSb option, Silicon-photodiode (option)		
S/N ratio	15000:1	22000:1	24000:1
GAIN switching	(4 cm <sup>-1</sup> , 1 min, near 2200 cm <sup>-1</sup> , p-p measurement with KRS-5 window) Manual operation at 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048 times (12 steps) Auto gain at 1, 2, 4, 8, 16, 32, 64, 128, 256, 512 (10 steps)		
A/D converter	16 bit + gain-ranging	18 bit + gain-ranging	
100% T line flatness	less than 100 ± 1.0% (4000 - 700 cm <sup>-1</sup> , continuous measurement)		
Dimensions	590(W) x 550(D) x 257(H) mm		
Weight	Approx. 41 kg		
Power requirement	AC 100~240±10 V, 50 or 60Hz, 105VA		

## STANDARD ACCESSORIES

- Main Unit	1 set
- Spectra Manager software(CD-ROM) <sup>1)</sup>	1 set
- Tutorial Software (CD-ROM)	1 set
- Quantitative software	1 set
- Instruction manual	1 copy
- Accessories setting pin	2 pcs.
- Power cable	1 pc.
- Polystyrene film	1 pc.
- Spare fuse	4 pcs.

<sup>1)</sup> Validation software is included as standard.  
6713-F429A Cut off filter (glass sample) is optional.

## ORDERING INFORMATION

Code No.	Description
6812-J006A	FT/IR-460Plus FT/IR Spectrometer (7800 ~ 350 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-460Plus FT/IR Spectrometer, Far-IR model (5000 ~ 220 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-460Plus FT/IR Spectrometer, NIR model (15000 ~ 2200 cm <sup>-1</sup> )
6812-J007A	FT/IR-470Plus FT/IR Spectrometer (7800 ~ 350 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-470Plus FT/IR Spectrometer, Far-IR model (5000 ~ 220 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-470Plus FT/IR Spectrometer, NIR model (15000 ~ 2200 cm <sup>-1</sup> )
6812-J008A	FT/IR-480Plus FT/IR Spectrometer (7800 ~ 350 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-480Plus FT/IR Spectrometer, Far-IR model (5000 ~ 220 cm <sup>-1</sup> )
6812-JxxxA	FT/IR-480Plus FT/IR Spectrometer, NIR model (15000 ~ 2200 cm <sup>-1</sup> )

## OPTIONAL ACCESSORIES

Code No.	Description
<b>IR Microscope</b>	
6786-J007A	IRT-30-16E Infrared Microscope
6786-J008A	IRT-30-32E Infrared Microscope
<b>Optional Detector</b>	
6748-J202A	MCT detector, Mid band (field option)
6748-J203A	MCT detector, Wide band (field option)
<b>Optional Accessories</b>	
6502-M016A	DR-81 Diffuse reflection attachment
6584-J084A	DR-400C Vacuum heating diffuse reflection accessory up to 600 deg. (water-cooled)
6584-J083A	DR-400B Vacuum heating diffuse reflection accessory up to 800 deg. (water-cooled)
6584-J082A	DR-400A Vacuum heating diffuse reflection accessory up to 1000 deg. (water-cooled)
4111-0025	TC-1000 Temperature controller (for DR-400)
<b>Optional software</b>	
4880-0703A	Interval scan program
4880-0523A	Macro command program
4880-0702A	JASCO library search program



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