Configuring SpectraMax® and FlexStation® Multi-Mode Microplate Readers for IMAP® Assays

Set Up Guide

January 2024

MOLECULAR DEVICES

Instrument settings for IMAP Fluorescence Polarization (FP) with FAM-labeled substrates

Parameter	SpectraMax i3x*	SpectraMax Paradigm*	SpectraMax iD5*	SpectraMax M5/M5e FlexStation 3
Optical Configuration	FP-FLUO	FP-FLUO	N/A	N/A
Detection Cartridge (if required)	Fluorescence Polarization Detection Cartridge (Fluorescein)	Fluorescence Polarization Detection Cartridge (Fluorescein)	N/A	N/A
Read Mode	FP	FP	FP	FP
Read Type	Endpoint	Endpoint	Endpoint	Endpoint
Wavelengths	Excitation: 485 nm Emission: 535 nm	Excitation: 485 nm Emission: 535 nm	Excitation: ☑ Use Filter 485 nm Emission: ☑ Use Filter 535 nm	Excitation: 485 nm Emission: 525 nm Cutoff: 515 nm
Plate Type	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm
Read Area	[user-defined]	[user-defined]	[user-defined]	[user-defined]
PMT and Optics	On the Fly Detection: Off – Stop and Go Integration Time: 100–500 ms Read Height: [user-optimized]**	On the Fly Detection: Off – Stop and Go Integration Time: 100–500 ms Read Height: [user-optimized]**	PMT Gain: Automatic or Medium Integration Time: 100–500 ms Read Height: [user-optimized]**	PMT Gain: High or Medium Flashes per read: 100
More Settings	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	☑ Calibrate ☑ Settling Time: 100 ms
G factor (set in Data Reduction)	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]

*See also the section “Accessories required for IMAP detection with SpectraMax readers” on page 6.

**Optimize microplate and read height by checking the box next to “Show Pre-Read Optimization Options” in More Settings; after clicking Read, follow the instructions as prompted.

Instrument settings for IMAP FP with TAMRA-labeled substrates

Parameter	SpectraMax i3x*	SpectraMax Paradigm*	SpectraMax iD5*	SpectraMax M5/M5e FlexStation 3
Optical Configuration	FP-RHOD	FP-RHOD	N/A	N/A
Detection Cartridge (if required)	Fluorescence Polarization Detection Cartridge (Rhodamine)	Fluorescence Polarization Detection Cartridge (Rhodamine)	N/A	N/A
Read Mode	FP	FP	FP	FP
Read Type	Endpoint	Endpoint	Endpoint	Endpoint
Wavelengths	Excitation: 535 nm Emission: 595 nm	Excitation: 535 nm Emission: 595 nm	Excitation: ☑ Use Filter 535 nm Emission: ☑ Use Filter 595 nm	Excitation: 530 nm Emission: 590 nm Cutoff: 570 nm
Plate Type	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm
Read Area	[user-defined]	[user-defined]	[user-defined]	[user-defined]
PMT and Optics	On the Fly Detection: Off – Stop and Go Integration Time: 100–500 ms Read Height: [user-optimized]**	On the Fly Detection: Off – Stop and Go Integration Time: 100–500 ms Read Height: [user-optimized]**	PMT Gain: Automatic or Medium Integration Time: 100–500 ms Read Height: [user-optimized]**	PMT Gain: High or Medium Flashes per read: 100
More Settings	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	☑ Calibrate ☑ Settling Time: 100 ms
G factor (set in Data Reduction)	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]

*See also the section "Accessories required for IMAP detection with SpectraMax readers" on page 6.

**Optimize microplate and read height by checking the box next to "Show Pre-Read Optimization Options" in More Settings; after clicking Read, follow the instructions as prompted.

Instrument settings for IMAP TR-FRET with FAM-labeled substrates

Parameter	SpectraMax i3x*	SpectraMax Paradigm*	SpectraMax iD5*	SpectraMax M5/M5e FlexStation 3
Optical Configuration (Cartridge)	[Custom Order]	[Custom Order]	N/A	N/A
Detection Cartridge (if required)	[Custom Order]	[Custom Order]	N/A	N/A
Read Mode	TR-FRET	TR-FRET	TR-FRET	TRF
Read Type	Endpoint	Endpoint	Endpoint	Endpoint
Wavelengths	Excitation: 340 nm Emission 1: 490 nm Emission 2: 520 nm	Excitation: 340 nm Emission 1: 490 nm Emission 2: 520 nm	Excitation: ☑ Use Filter 340 nm Emission: ☑ Use Filter 490 nm ☑ Use Filter 520 nm	Excitation: Lm1: 330 nm Lm2: 330 nm Emission: Lm1: 490 nm Lm2: 520 nm Cutoff: Lm1: 475 nm Lm2: 515 nm
Plate Type	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm
Read Area	[user-defined]	[user-defined]	[user-defined]	[user-defined]
TRF Settings				Integration Delay: 200 µs Integration Time: 1000 µs
PMT and Optics	On the Fly Detection: Off – Stop and Go Number of Pulses: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1 ms Read Height: [user-optimized]**	On the Fly Detection: Off – Stop and Go Number of Pulses: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1 ms Read Height: [user-optimized]**	Flashes per read: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1.0 ms Read Height: [user-optimized]**	Flashes per read: 100
More Settings	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	☑ Calibrate
G factor (set in Data Reduction)	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]	1.0 [or user-defined]

*See also the section "Accessories required for IMAP detection with SpectraMax readers" on page 6.

**Optimize microplate and read height by checking the box next to "Show Pre-Read Optimization Options" in More Settings; after clicking Read, follow the instructions as prompted.

IMAP TR-FRET with TAMRA-labeled substrates

Parameter	SpectraMax i3x*	SpectraMax Paradigm*	SpectraMax iD5*	SpectraMax M5/M5e FlexStation 3
Optical Configuration (Cartridge)	[Custom Order]	[Custom Order]	N/A	N/A
Detection Cartridge (if required)	[Custom Order]	[Custom Order]	N/A	N/A
Read Mode	TR-FRET	TR-FRET	TR-FRET	TRF
Read Type	Endpoint	Endpoint	Endpoint	Endpoint
Wavelengths	Excitation: 340 nm Emission 1: 545 nm Emission 2: 570 nm	Excitation: 340 nm Emission 1: 545 nm Emission 2: 570 nm	Excitation: ☑ Use Filter 340 nm Emission: ☑ Use Filter 535 nm ☑ Use Filter 595 nm	Excitation: Lm1: 330 nm Lm2: 330 nm Emission: Lm1: 545 nm Lm2: 570 nm Cutoff: Lm1: 530 nm Lm2: 550 nm
Plate Type	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm [user-optimized]**	384-well: 384 Well Corning flatbtm
Read Area	[user-defined]	[user-defined]	[user-defined]	[user-defined]
TRF Settings				Integration Delay: 200 µs Integration Time: 1000 µs
PMT and Optics	On the Fly Detection: Off – Stop and Go Number of Pulses: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1 ms Read Height: [user-optimized]**	On the Fly Detection: Off – Stop and Go Number of Pulses: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1 ms Read Height: [user-optimized]**	Flashes per read: 100 Excitation Time: 0.05 ms Measurement Delay: 0.2 ms Integration Time: 1.0 ms Read Height: [user-optimized]**	Flashes per read: 100
More Settings	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	Read Order: Row or Column Show Pre-Read Optimization Options ☑	☑ Calibrate

*See also the section "Accessories required for IMAP detection with SpectraMax readers" on page 6.

**Optimize microplate and read height by checking the box next to "Show Pre-Read Optimization Options" in More Settings; after clicking Read, follow the instructions as prompted.

Accessories required for IMAP detection with SpectraMax readers

SpectraMax i3x or SpectraMax Paradigm reader

IMAP FP

- FAM detection requires a Fluorescence Polarization (FP) (Fluorescein Detection Cartridge (Molecular Devices P/N 0200-7009)
- TAMRA detection requires a Fluorescence Polarization (FP) (Rhodamine) Detection Cartridge (Molecular Devices P/N 0200-7010)

IMAP TR-FRET

- FAM or TAMRA detection requires a custom order. A custom detection cartridge request form is available through sales representatives.

SpectraMax iD5 reader

IMAP FP

- Filters for FAM detection:
  - Set of 2 Fluorescence Polarization Filters 485 nm BW 25 nm Polarized Vertical & Horizontal (Molecular Devices P/N 6590-0136)
  - Set of 2 Fluorescence Polarization Filters 535 nm BW 25 nm Polarized Vertical & Horizontal (Molecular Devices P/N 6590-0137)
- Filters for TAMRA detection:
  - Set of 2 Fluorescence Polarization Filters 535 nm BW 25 nm Polarized Vertical & Horizontal (Molecular Devices P/N 6590-0137)
  - Set of 2 Fluorescence Polarization Filters 595 nm BW 25 nm Polarized Vertical & Horizontal (Molecular Devices P/N 6590-0139)

IMAP TR-FRET

- Enhanced TRF Module (Molecular Devices P/N 0200-7030)
- Filters for FAM detection:
  - Time Resolved Filter with holder 340nm BW 70nm (Molecular Devices P/N 6590-0080)
  - Time Resolved Filter with holder 490nm BW 10nm (Molecular Devices P/N 6590-0095)
  - Time Resolved Filter with holder 520nm BW 15nm (Molecular Devices P/N 6590-0098)
- Filters for TAMRA detection:
  - Time Resolved Filter with holder 340nm BW 70nm (Molecular Devices P/N 6590-0080)
  - Fluorescence Filter with holder 535nm BW 25nm (Molecular Devices P/N 6590-0099)
  - Fluorescence Filter with holder 595nm BW 35nm (Molecular Devices P/N 6590-0105)

IMAP® microplate reader compatibility

Product Name	Part Number	SpectraMax® M5/M5e	FlexStation®	SpectraMax iD5	SpectraMax i3x	SpectraMax Paradigm	SpectraMax M4
Demo Kit							
IMAP® Evaluation Demo Kit	R8166	✓	✓	✓	✓	✓	(TR-FRET only)
Evaluation Kits							
IMAP FP Evaluation Kit	R8155	✓	✓	✓	✓	✓	
IMAP TR-FRET Evaluation Kit	R8161	✓	✓	✓	✓	✓	✓
IMAP PDE FP Evaluation Kit	R8175	✓	✓	✓	✓	✓	
IMAP PDE TR-FRET Evaluation Kit	R8176	✓	✓	✓	✓	✓	✓
Screening Express Kits							
IMAP FP Screening Express Kit	R8127	✓	✓	✓	✓	✓	
IMAP TR-FRET Screening Express Kit	R8160	✓	✓	✓	✓	✓	✓

Contact Us

Phone: +1.800.635.5577
Web: www.moleculardevices.com
Email: info@moldev.com
Check our website for a current listing of worldwide distributors.

Regional Offices

USA and Canada	+1.800.635.5577	Taiwan/Hong Kong	+886.2.2656.7585
United Kingdom	+44.118.944.8000	Japan	+81.3.6362.9109
Europe*	00800.665.32860	South Korea	+82.2.3471.9531
China	+86.4008203586	India	+91.73.8661.1198

**Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, Switzerland and United Kingdom*

1/24
Printed in USA