

Agilent BioTek MultiFlo FX Multimode Dispenser

Technical details

General	
Microplate Types	<p><i>Dispensing (peripump and syringe):</i> 96-, 384-, and 1536-well standard, deep, and PCR plates; 6-, 12-, 24-, and 48-well plates (dispense tip configurable)</p> <p><i>Washing:</i> 96- and 384-well standard plates; 6-, 12-, 24-, and 48-well plates (with compatible manifold configuration)</p>
Onboard Software	Create, edit, or run multiple protocols
Software (Computer Control)	Agilent BioTek Liquid Handling Control (LHC2) software Agilent BioTek LHC2 Secure software enables 21 CFR Part 11 compliance (option) Agilent BioTek LHC SiLA compliant driver (option)
Shaking	Programmable up to 60 minutes Slow, medium, fast, or variable
Soaking	Programmable up to 60 minutes
USB Ports (2)	For protocol storage/transfer and for optional external mouse or keyboard
Automation	Agilent BioTek BioStack microplate stacker and third-party automation compatible Agilent BioTek BioSpa 8 automated incubator compatible Agilent BenchCel microplate handler compatible
Washing	
Manifold Types	96- and 384-well washing: eight-tube manifold 6-, 12-, 24-, and 48-well washing: custom manifolds available
Volume Range	20–30,000 µL/well
Wash Cycles	1–10
Supply Bottle	2 L
Dispense Accuracy	± 3%
Dispense Precision	96- and 384-well plates, 300 µL/well: < 3% CV 6-well plates, 5,560 µL/well: < 5% CV
Residual Volume	96-well plate, 300 µL/well: < 2 µL/well
Wash Speed	96-wells, eight-tube manifold, 3 cycles, > 300 µL/well: < 130 s
Wash Volume	20–30,000 µL/well
Waste Bottle	2L
Flow Rates	140–422 µL/well/second
Sterilization	Chemical

Dispensing-Peristaltic Pump (Multichannel)	
Manifold Types	1 x 8 – sapphire-jeweled 316 SS, 316 SS or polypropylene tips, with 1, 5, or 10 µL tubing
Fluid Delivery	1 or 2 peristaltic pumps
Dispense Speed	96 wells, 5 µL cassette, 10 µL/well: 3 s 96 wells, 5 µL cassette, 20 µL/well: 3.5 s 384 wells, 5 µL cassette, 5 µL/well: 6.5 s 384 wells, 10 µL cassette, 10 µL/well: 8 s 384 wells, 1 µL cassette, 1 µL/well: 6 s 1536 wells, 1 µL cassette, 1 µL/well: 21 s
Volume Range	500 nL to 3,000 µL/well, selectable in 1 µL increments
Flow Rates	User-programmable rates from high to low
Dispense Performance	
Recommended Volume Range	1 µL cassette: 1–50 µL 5 µL cassette: 5–2,500 µL 10 µL cassette: 10–3,000 µL
Dispense Accuracy	1 µL cassette: ± 5% at 1 µL 5 µL cassette: ± 2.0% at 5 µL 10 µL cassette: ± 2.0% at 10 µL
Dispense Precision	1 µL cassette: ≤ 5% CV at 1 µL; ≤ 10% CV at 500 nL 5 µL cassette: ≤ 2.5% CV at 5 µL 10 µL cassette: ≤ 2.0% CV at 10 µL
Minimum Prime Volume	1 µL cassette: 1.20 mL 5 µL cassette: 4.23 mL 10 µL cassette: 7.36 mL
Recommended Cassette Replacement Interval	1 µL cassette: 1,000 384-well microplates at 5 µL/well 5 µL cassette: 1,000 96-well microplates at 50 µL/well 10 µL cassette: 1,000 96-well microplates at 100 µL/well
Sterilization	Autoclave, chemical
Dispensing-Syringe Pump	
Manifold Types	<i>96- and 384-well dispensing:</i> One 16-tube (2 x 8) manifolds–316 SS tubes Two 16-tube (1 x 16) manifolds–316 SS tubes <i>1536-well dispensing:</i> Two 32-tube (1 x 32) manifolds–sapphire-jeweled 316 SS or 316 SS tubes 6- to 48-well dispensing: custom autoclavable manifolds available
Fluid Delivery	Two positive displacement syringe drives
Dispense Speed	20 µL/well, 96 wells, 1 x 16 tubes: 5 s 20 µL/well, 384 wells, 1 x 16 tubes: 14 s 3 µL/well 1536 wells, 2 x 32 tubes: 7 s
Volume Range	3–3,000 µL/well, selectable in 1 µL increments Minimum prime volume: 12 mL
Flow Rates	User-programmable rates from high to low
Dispense Accuracy	± 1 µL at 5 µL ± 1 µL at 20 µL ± 1% at 100 µL
Dispense Precision	≤ 5% CV at 5 µL ≤ 2.5% CV at 20 µL ≤ 1% CV at 100 µL
Supply Bottle	1 L or 2 L
Sterilization	Chemical, autoclavable option
Dispensing-Random-Access Module (RAD)	
Labware Types	Single tip: 6-, 12-, 24-, 48-, 96-, and 384-well plates; low profile, standard height, and deep well formats; PCR trays and microtubes 8-to-1 tip: 6-, 12-, and 24-well plates
Manifold Types	RAD single, with plastic or steel tip with 1, 5, or 10 tubing, 7° angle RAD 8-to-1 plastic tip, with 5 µL tubing, angled bulk dispense chute
Volume Range	500 nL to 30,000 µL
Minimum Prime Volume	1 µL cassette, 18°: 90 µL; 1 µL cassette, 30°: 150 µL 5 µL cassette, 18°: 320 µL; 1 µL cassette, 30°: 530 µL 10 µL cassette, 18°: 555 µL; 10 µL cassette, 30°: 920 µL

Dispense Speed (High Flow)	1 µL cassette, 1 µL/well: 19 s (96 wells), 55 s (384 wells) 1 µL cassette, 10 µL/well: 33 s (96 wells), 112 s (384 wells) 5 µL cassette, 5 µL/well: 19 s (96 wells), 58 s (384 wells) 5 µL cassette, 100 µL/well: 76 s (96 wells), 286 s (384 wells) 10 µL cassette, 10 µL/well: 21 s (96 wells), 66 s (384 wells) 10 µL cassette, 100 µL/well: 70 s (96 wells), 259 s (384 wells)
Dispense Performance	
Dispense Accuracy	1 µL cassette (medium), 1 µL/well: ± 10% 1 µL cassette (medium), ≥ 2 µL/well: ± 5% 5 µL cassette (high), 5 µL/well: ± 4% 5 µL cassette (high), ≥ 10 µL/well: ± 2% 10 µL cassette (high), 10 µL/well: ± 4% 10 µL cassette (high), ≥ 20 µL/well: ± 2% 8-to-1 cassette (high), 40 µL/well: ± 4% 8- to-1 cassette (high), ≥ 80 µL/well: ± 2%
Dispense Precision	1 µL cassette (medium), 0.5 µL/well: 10% CV 1 µL cassette (medium), 1 µL/well: 10% CV 1 µL cassette (medium), ≥ 2 µL/well: 5% CV 5 µL cassette (high), 5 µL/well: 5% CV 5 µL cassette (high), ≥ 10 µL/well: 2.5% CV 10 µL cassette (high), 10 µL/well: 4% CV 10 µL cassette (high), ≥ 20 µL/well: 2% CV 8-to-1 cassette (high), ≥ 10 µL/well: 2.5% CV
Media Exchange – Automated Media Exchange (AMX) Module	
Microplate Types	96- and 384-well standard (ANSI/SBS)
Manifold Types	Two eight-channel autoclavable manifolds, tube-in-tube design
Cassettes	Autoclavable cassettes with with 5 µL tubing
Dispense Precision	≤ 5% CV
Dispense Accuracy	≤ 5%
Aspiration Uniformity	≤ 5%
Sterilization Method	Cassettes and manifolds: chemical and autoclavable
Physical Characteristics	
Power	100–240 volts AC at 50–60 Hz
Dimensions	Base instrument: 17.19" W x 11.75" D x 8" H (43.51 x 29.21 x 20.32 cm)
Weight	Base instrument: 19.5 lb (8.8 kg)

Configurations

Part Number	Description
MFXP1	MultiFlo FX with one module arm, one peristaltic dispense pump, one peripump cassette with plastic tips.
MFXP2	MultiFlo FX with two module arms, one peristaltic dispense pump. Includes one peripump cassette with plastic tips.
MFXP2R	MultiFlo FX with RAD single channel dispenser. Includes two module arms, two peristaltic dispense pumps, one RAD manifold, and tubing.

Optional Modules Part Number	Compatible With	MFXP1	MFXP2	MFXP2R
7210010	Secondary peripump module. Includes module and choice of one peri-pump cassette with plastic tips.	•	•	
7210008	Dual-syringe pump module (autoclavable). Includes module with two syringe pumps, two autoclavable bottles (part number 7140511) and one autoclavable tubing set (part number 7183006). Manifold(s) are required and must be purchased separately.	•	•	•
7210009	Dual-syringe pump module (nonautoclavable). Includes module with two pumps, two nonautoclavable bottles (part number 4070515) and one nonautoclavable tubing set (part number 7183002). Manifold(s) are required and must be purchased separately.	•	•	•
1260023	Wash module. Includes pump, bottles, tubing, and one 96-/384-wash manifold. Other manifolds available, order separately.		•	•
1260041	Automated media exchange module (AMX). Includes secondary peri pump module, AMX dispense and aspirate manifolds. Two cassettes (part number 1260035) are required, order separately.		•	•

The AMX module is compatible with MFXP2R, but requires part numbers other than 1260041 for ordering. Please check with bio.customercare@agilent.com for more information about purchasing AMX for use with MFXP2R.

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