RAININ
Pipetting 360°

High Throughput

Liquidator™ 96

- Pipette 96 wells at once
- 0.5-20 and 5-200 µL volumes
- Ideal for genomics and proteomics
- Fast, easy, ergonomic

Manual 96-channel Pipetting

Faster, Better Workflows

METTLER TOLEDO

20 µL and 200 µL Liquidator 96
Fast, Versatile Lab Assistants

Put the speed and simplicity of Liquidator 96 to work on your 96- and 384-well applications

METTLER TOLEDO has designed its 20 µL and 200 µL Rainin Liquidators for speed, accuracy and ease of use. By understanding how researchers work and how high-throughput pipetting fits into a lab's overall workflow, we designed Liquidator to deliver extraordinary accuracy and precision, with exceptionally good ergonomics and requiring virtually no training.

- Two volume ranges – both 0.5-20 µL and 5-200 µL Liquidator 96 models offer excellent accuracy and precision.
- Simultaneous 96-well pipetting – compared to single- and multi-channel pipettes, Liquidator fills 96 wells in a single pass, 384 wells in four, and virtually eliminates the risk of skipping or repeating wells.
- Highly reproducible – Liquidator's high channel-to-channel consistency produces high quality analytical data.
- Simple – unlike automated or semi-automated pipetting stations, Liquidator 96 doesn't require programming, training or even electricity!
- Proven – validated in most common life science applications, Liquidator greatly accelerates experiments like ELISA and qPCR without sacrificing data quality.
- Reliable and affordable – manufactured by Rainin to exceptionally high quality and performance standards, Liquidator is priced well within reach of every research project.

20 µL and 200 µL Liquidators offer exceptional range and performance

Speed your Workflow

For genomic, proteomic and cell-based work, 96- and 384-well plates allow researchers to set up multiple samples in a compact format that can greatly enhance downstream assays. But despite their many benefits, working with 96- and 384-well plates can be challenging:

- Single- and multi-channel pipettes are inexpensive, but they can be slow and tedious for filling multiple plates and greatly increase the risk of skipping or repeating wells.
- Automated pipetting systems offer higher throughput, but generally have large footprints and require dedicated space and electricity, user training and fairly complex programming knowledge.

The Liquidator 96 solves these problems by streamlining 96- and 384-well plate work with simultaneous, manual 96-well filling. It is compact, requires no electricity and is available in two volume ranges – 0.5 to 20 µL and 5 to 200 µL. Fully manual, Liquidator 96 is easy to use and requires virtually no training.

Below are examples how Liquidator 96 complements protein, nucleic acid and cell-based techniques.

Technique	How Liquidator Helps
PCR and qPCR	Easily pipette PCR/qPCR reagents into 96-well plates with BioClean tips
ELISA	Add reagents quickly and start/stop reactions in all 96 wells at once
Protein crystallography	Quickly dispense buffers to plates for hanging drop method
Luminex® assays	Add buffers, antibodies and other solutions consistently to Luminex® plates
Drug compound screening	Speed and accuracy adding cells, biomolecules and compounds to 96/384-well plates
Sequencing sample prep	Dispense buffers, enzyme and nucleic acids in parallel
Sequencing sample clean-up	Speed precipitations and purification with 96-channel pipetting
Standard enzymatic assays	Pipette enzyme, buffer, and substrate into plates accurately and precisely
Cellular culture set-up	Create mother-daughter plates in seconds
Cellular culture siRNA treatment	Easily and accurately pipette siRNAs into culture plates
Cell lysis	With correct reagents, break cells via pipetting for up to 96 samples

Maximize Data Quality
Pipette 96 Channels at Once

Liquidator 96 offers many advantages over multichannel pipettes.

By pipetting 96-channels at once, Liquidator is faster than an 8- or 12-channel pipette and increases the data quality of time sensitive experiments, like ELISA. For example, here's how Liquidator 96 enhances the workflow of enzyme-based experiments:

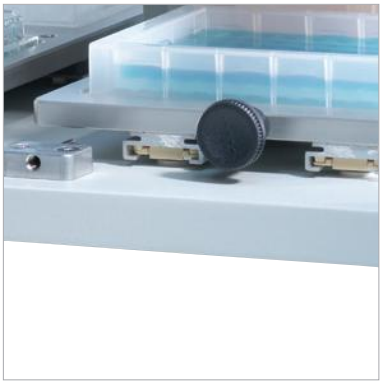
Perfectly timed reactions
Liquidator 96 enhances time-critical assays, such as ELISA, by starting and stopping reactions in all wells at the same time. Simultaneous 96-well pipetting eliminates well-to-well variability and the need to rush through an assay.

Never skip or repeat wells again
When processing 96-well plates with single or multichannel pipettes, skipping wells and double pipetting are possible. Because Liquidator fills all 96 wells simultaneously, it's impossible to skip wells or accidentally repeat a well or row.

Trust the purity of your consumables
Rest assured that Liquidator consumables are completely inert and will never affect experimental outcome in any way. BioClean tips and reservoirs are guaranteed to be free of DNA, DNase, RNase, pyrogens and ATP.

Start and stop assay reactions simultaneously

Eliminate the risk of skipping or repeating wells

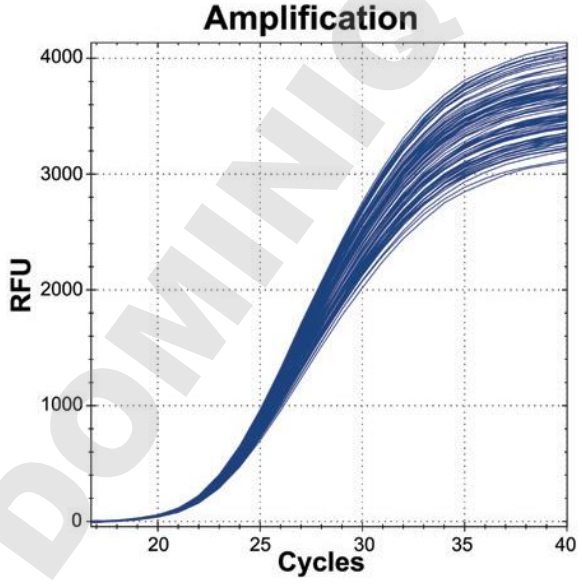


Get guaranteed purity with BioClean consumables

20 µL Liquidator 96 is accurate to 0.5 µL

Tackle your most demanding applications with confidence

As a highly accurate and precise pipetting station, Liquidator 96 can be used to quickly and easily set up your most demanding applications. For example, because small errors when pipetting template can produce large differences in Cq values between replicates, qPCR requires uniform pipetting of nucleic acid templates into reactions.



Testing scientific hypotheses requires minimal qPCR error, so Rainin tested Liquidator's ability to generate high-quality qPCR data. The 20 µL Liquidator was used in all pipetting steps for qPCR, including a 2 µL template addition step.

The data at left show the superimposition of 96 qPCRs set up in parallel using the 20 µL Liquidator 96, which has a range of 0.5 to 20 µL. The mean Cq value of this data was 22.24 ± 0.04. The data obtained demonstrate Liquidator's excellent reproducibility in micro-volume pipetting applications.

Faster, Better Workflows
Liquidator 96 in Real Life

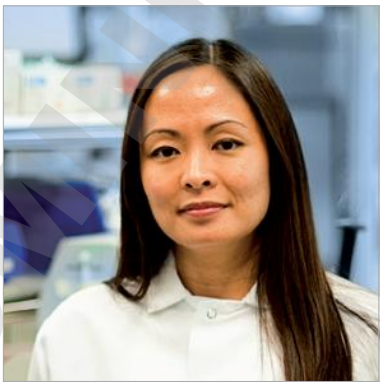
From sequencing sample preparation to immunological assays to cell-based experiments, Liquidator 96 is helping researchers around the world to streamline their workflows and get faster, better results.

Ali Vahedi
Scientist, Singulex, Inc.

Singulex, Inc. scientist Ali Vahedi supports customers who use the company's immunoassays to conduct research on low abundance biomarkers. Singulex's Erenna® System uses single molecule technology to detect biomarkers for up to 384 samples in standard microplate formats.

Vahedi found many Singulex researchers using multichannel pipettes for assays and wondered if the Liquidator 96 could streamline their workflow. By conducting comparative experiment between a multichannel pipette and Liquidator on Singulex protocols, he demonstrated that the Liquidator provides data with as high quality as a multichannel pipette while making the workflow 5-10 times faster. The company has since invested in multiple Liquidators and scientists at Singulex are satisfied with the increased productivity.

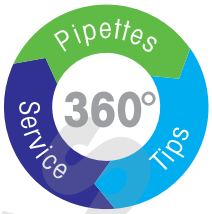
Erenna is a registered trademark of Singulex, Inc.



Kay Mekaru
Researcher, Affymetrix

Affymetrix Research Services researcher Kay Mekaru needed a faster way for her team to prepare high-quality, genotyping-quality DNA using PCR. Two time-consuming steps in the protocol were setting up three replica plates from a master plate, then pipetting PCR mastermix into the individual wells prior to thermal cycling. Mekaru's team had been using multichannel pipettes for the steps, but incorporating the Liquidator 96 into their protocol saves them 30-45 minutes for every two PCR plates they prepare.

"We use the Rainin Liquidator 96 for high-throughput applications," says Mekaru. "Finding it versatile for many application areas, we replaced lower capacity pipettes with Liquidator 96 in PCR, purification and hybridization processes."



Quality Consumables and Service

Rainin offers a complete line of high-quality consumables and services specifically designed for 20 µL and 200 µL Liquidator 96 workstations. BioClean Liquidator tips, reservoirs and other vessels are precision engineered and certified to be free of detectable biologic contaminants. Highly-trained METTLER TOLEDO service technicians and a variety of service plans are available to ensure that your Liquidator delivers years of accurate, precise and trouble-free performance.

MT Order No.	Description	
Liquidator Models		
17014207	LIQ-96-20	0.5-20 µL 96-channel Manual Pipetting System
17010335	LIQ-96-200	5-200 µL 96-channel Manual Pipetting System
Liquidator Service IPAC		
17012282	LIQ-IPAC	IPAC Initial Qualification for Liquidator 96
BioClean Liquidator 96 Tips		
17011185	LQR-20	Liquidator 96 tips, racked, 20 µL
17011186	LQR-20S	Liquidator 96 tips, racked, presterilized, 20 µL
17011117	LQR-20F	Liquidator 96 tips, racked, filter, presterilized, 20 µL
17011187	LQS-20	Liquidator 96 tips, stacked, 20 µL
17011287	LQS-20S	Liquidator 96 tips, stacked, presterilized, 20 µL
17010645	LQR-200	Liquidator 96 tips, racked, 200 µL
17010647	LQR-200S	Liquidator 96 tips, racked, presterilized, 200 µL
17010646	LQR-200F	Liquidator 96 tips, racked, filter, presterilized, 200 µL
17010648	LQS-200	Liquidator 96 tips, stacked, 200 µL
17010649	LQS-200S	Liquidator 96 tips, stacked, presterilized, 200 µL
Accessories		
17010394	LIQ-384-PA	384-well adapter plate stage
17010791	LIQ-384-PA-B	384-well adapter plate stage – black
17014270	LIQ-AP-20	Height adjustment post for 20 µL Liquidator
17010396	LIQ-AP	Height adjustment post for 200 µL Liquidator
17011288	LIQ-MAG1	Magnetic bead separator plate, 24 posts
17011289	LIQ-MAG2	Magnetic bead separator plate, 96 posts
17012767	LIQ-96-ADP	Anodized aluminum 96-well PCR plate holder
SBS polypropylene reusable reservoirs		
17012602	LR-R1-PB-5	Low profile 96 pyramidal wells, 5-pack
17012603	LR-R1-PB-5-S	Sterile low profile 96 pyramidal wells, 5-pack
17012608	LR-R1-8V-5	Low profile 8-channel V-bottom, 5-pack
17012609	LR-R1-8V-5-S	Sterile low profile 8-channel V-bottom, 5-pack
17012612	LR-R1-12V-5	Low profile 12-channel V-bottom, 5-pack
17012613	LR-R1-12V-5-S	Sterile low profile 12-channel V-bottom, 5-pack
17012604	LR-R2-PB-5	Standard profile 96 pyramidal wells 5-pack
17012605	LR-R2-PB-5-S	Sterile standard profile 96 pyramidal wells, 5-pack
17012606	LR-R2-8V-5	Standard profile 8-channel V-bottom, 5-pack
17012607	LR-R2-8V-5-S	Sterile standard profile 8-channel V-bottom, 5-pack
17012610	LR-R2-12V-5	Standard profile 12-channel V-bottom, 5-pack
17012611	LR-R2-12V-5-S	Sterile standard profile 12-channel V-bottom, 5-pack
Deepwell plates, mats, tube strips, cap strips		
17012623	LR-P2-96P-5	2.2 mL 96-deepwell plate, square wells, SBS, 5-pack
17012624	LR-P2-96P-5-S	Sterile 2.2 mL 96-deepwell plate, square wells, SBS, 5-pack
17012625	LR-P2-96-M-5	Polymeric sealing mat for 96-deepwell plate, 5-pack
17012626	LR-P2-96-M-5-S	Sterile polymeric sealing mat for 96-deepwell plate, 5-pack
17012627	LR-T-96-5	Racked 1.2 mL microtubes, 8-tube strips (8x12), 5-pack
17012628	LR-T-96-5-S	Sterile Racked 1.2 mL microtubes, 8-tube strips (8x12), 5-pack
17012629	LR-T-CS8	8-cap strips for 1.2 mL microtubes, box of 300 strips
17012630	LR-T-CS8-S	Sterile 8-cap strips for 1.2 mL microtubes, box of 300 strips

Technical Specifications

Instrument	20 µL Liquidator 96	200 µL Liquidator 96
Volume Range	0.5-20 µL	5-200 µL
Accuracy	20 µL: ± 1.0 %	200 µL: ± 1.0 %
	10 µL: ± 1.2 %	100 µL: ± 1.0 %
	2 µL: ± 6.0 %	20 µL: ± 2.0 %
	1 µL: ± 12.0 %	5 µL: ± 5.0 %
Precision	20 µL: ≤ 0.8 %	200 µL: ≤ 0.5 %
	10 µL: ≤ 1.0 %	100 µL: ≤ 0.8 %
	2 µL: ≤ 5.0 %	20 µL: ≤ 1.5 %
	1 µL: ≤ 10.0 %	5 µL: ≤ 3.5 %
Volume Increment	0.02 µL	0.2 µL
Compatible Formats	96 and 384 wells	96 and 384 wells
Plate Positions	4	4
Pipetting Technology	Air displacement	Air displacement
Power Requirements	n/a	n/a
Dimensions (w x d x h)	Both models: 37 cm x 46 cm x 41 cm (14.5 in x 18 in x 16 in)	

www.mt.com/rainin

For more information

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