

# Product Catalog

**RAININ**  
Pipetting 360+

2024



Ergonomic Pipettes  
LTS LiteTouch System  
High-Throughput Systems  
BioClean Ultra Tips  
Pipette Management  
Good Pipetting Practice  
Global Service Network



## Pipettes, Tips and Service

Quality Products for Superior Performance

**METTLER TOLEDO**





**Werner Maas**  
General Manager

**Rainin** is very pleased to introduce EarthRack – an industry-leading advance in greener lab technology. Because different labs have different needs, EarthRack is the latest addition to our line of earth-friendlier, more sustainable liquid-handling solutions (see page 44).

We have – for decades – sought to reduce waste and promote reuse. Our GreenPak SpaceSaver refill system, introduced in 1995 and copied by practically every pipette tip manufacturer worldwide, reduces plastic rack waste by up to 85%. TerraRack is notable not just because it's made from 50% less plastic, but is mostly made from highly recyclable #1 PET (like water bottles) rather than traditional, seldom-recycled #5 polypropylene. And with EarthRack we've now replaced most plastic rack components with purified and wholly compostable plant fiber.

Reducing waste, promoting reuse and using less energy in our own operations is also critically important to us. Through our Zero Waste initiative we are close to becoming a zero landfill waste operation by the end of 2024. We sent nothing to landfill for two months in 2023, so I am confident that we will achieve zero waste every day by 2025.

More and more technologies and materials are becoming greener and you can count on Rainin to continue to innovate in this vitally important area. I encourage you to periodically visit our sustainability site – [www.mt.com/greenerpipetting](http://www.mt.com/greenerpipetting) – to keep abreast of our current endeavors and latest accomplishments.



**Doing our part!**

We're committed to achieving zero waste in our manufacturing and operations by 2025.

► [mt.com/GreenerPipetting](http://mt.com/GreenerPipetting)





# EarthRack™

## Introducing EarthRack!

Made mostly from purified cellulose fiber, EarthRack's base and lid can be composted, placed bins with paper recycling and will biodegrade with no net increase in carbon when landfilled.

See pages 46.



## Greener Products

A range of options to reduce plastic waste.

Starts on page 44.

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## Why Rainin?

### Quality, Performance and Purity!

**Professional labs around the world rely on Rainin for their liquid-handling protocols.**

Whether your goal is to be first to market or first to publish, the accuracy, precision and ergonomics of your equipment can hugely help – or hinder – your success. Choose Rainin!



#### Quality

From rugged construction and innovative features to exceptional comfort and ergonomic design, Rainin quality is recognized worldwide.

#### Performance

Rainin pipettes are renowned for precision and accuracy. Rainin multichannels offer industry-leading channel-to-channel consistency.

- ▶ There's a reason Rainin multichannel pipettes outperform all other multichannels worldwide – exceptional comfort and handling, and industry leading channel-to-channel consistency.

#### Purity

BioClean Ultra is the industry's most comprehensive standard for tip purity. We test every lot and guarantee every tip for purity and performance.





### Innovation

For more than 40 years, Rainin has been advancing the art of liquid handling.



### Pipettes

Rainin pipettes offer exceptional performance, comfort and durability.



### Tips

The Rainin LiteTouch System dramatically reduces the amount of force required to load and eject tips.



### Service

We offer a global network of factory-trained technicians.



### Good Pipetting Practice

Free assessment tools and onsite training to build your team's pipetting skills.



### Pipette Management

Our PipetteX pipette management software puts robust pipette tracking and SOP compliance at your fingertips.



### Mettler Toledo

METTLER TOLEDO is the global leader in precision instruments across many industries.



### BioClean Ultra / BioClean Green

From pure virgin polypropylene and precision engineering to meticulously-clean manufacturing, Rainin tips deliver outstanding quality and performance.



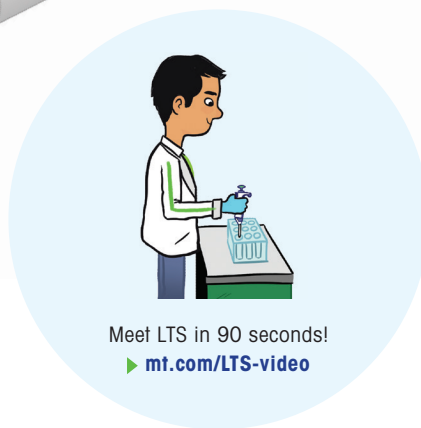
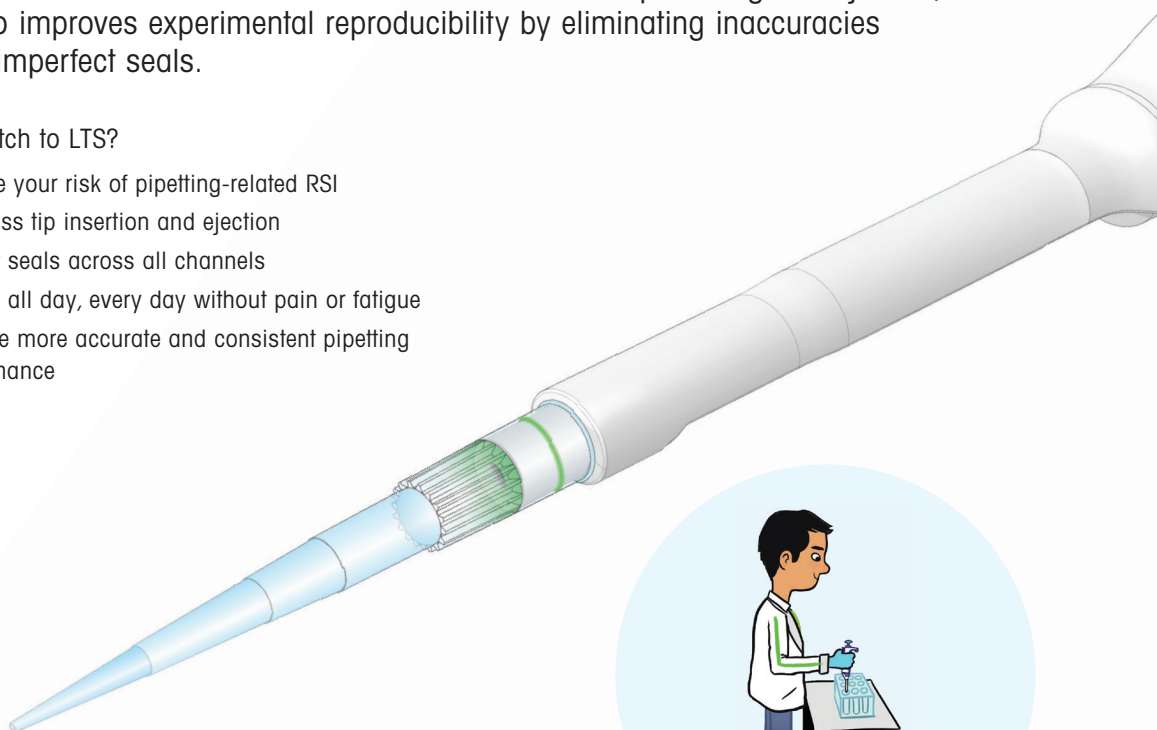
## The Rainin LTS LiteTouch System

### Because Pipetting Shouldn't Hurt

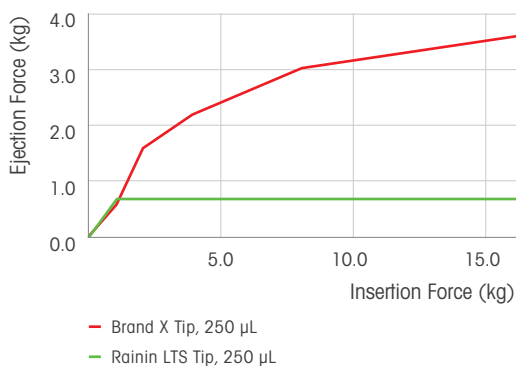
Rainin revolutionized pipetting with the LiteTouch™ System. LTS™ not only virtually eliminates the harmful forces associated with tip loading and ejection, but also improves experimental reproducibility by eliminating inaccuracies due to imperfect seals.

#### Why switch to LTS?

- Reduce your risk of pipetting-related RSI
- Effortless tip insertion and ejection
- Perfect seals across all channels
- Pipette all day, every day without pain or fatigue
- Achieve more accurate and consistent pipetting performance



#### Good ergonomics = better, more consistent results



Accuracy requires consistency, yet consistency is difficult to maintain when a user's hands are fatigued or in pain. Pipetting is highly repetitive and the effects of pipetting forces – jamming tips onto shafts, then struggling to eject them – are cumulative, hence the documented relationship between pipetting accuracy and the effects of pipetting forces.

At 0.6 kg, LTS all but eliminates tip loading/ejecting forces, so users face none of the debilitating issues one experiences when working with standard tips.

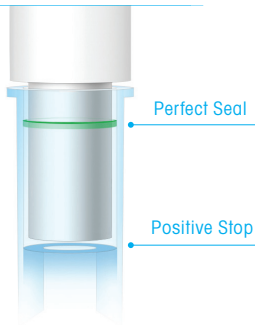




Typical Shaft/Tip



LTS Shaft/Tip



### Effortless tip loading and ejection

Achieving a reliable seal with standard tips relies heavily on the strength (and persistence) of the user. Conventional pipette shaft-ends and tips are cone-shaped, so a tight seal relies on the strength of the user and pliability of the tip material. What's more, tip geometries vary from manufacturer to manufacturer, affecting the seal consistency and the accuracy of dispensed volumes.

LTS shafts and tips are cylindrical with a unique sealing ring inside the tip. Tips slide easily onto the shaft, stop when properly seated and make a perfect seal every time. Once seated, LTS tips won't fall off, yet slide off easily when pushed by the ejector.

### Are you at risk?

- **Pipetting** is one of the most repetitive tasks in the laboratory.
- **More than 30%** of all workplace injuries are musculoskeletal disorders, including repetitive strain injuries and cumulative trauma disorders (injuries associated with repetition, excessive force and poor posture).
- Pipettes without LTS require up to **12 kg\* of force** to complete a pipetting cycle.
- Forces should not exceed 30% of maximum average strength capacity:



- You are at risk if:
  - You pipette more than **an hour a day** or **300 hours a year**.
  - You use non-LTS pipettes that can require up to **12 kg\* of force**.
- Prevention is the key to reducing musculoskeletal disorders and repetitive strain injuries.

### \*What is 12 kg of force is equal to?



Download our pipetting ergonomics white paper

► [mt.com/pipetting-ergo](http://mt.com/pipetting-ergo)



# Rainin Pipet-Lite XLS+

## Performance You Can Feel

Rainin Pipet-Lite™ XLS+ raises the bar on comfort, performance and control. Many volume sizes available in both LTS  and universal  formats.

### Smooth operation

The sealing system on XLS+ pipettes delivers a plunger stroke that is smooth, precise and requires less force than before. Perfect for pipetting applications that require delicate control!

### Highly accurate

Built to last and manufactured with premium quality materials, XLS+ pipettes are designed to deliver superior performance, year after year.

### Autoclavable

XLS+ single-channel pipettes are designed for easy autoclaving where it counts: the complete liquid end, including the seals and piston. Autoclaving won't compromise performance or feel.

### Total comfort

With sure-fit handles, contoured fingerhooks, lighter springs and low-drag seals, you can comfortably use Pipet-Lite XLS+ pipettes all day.

### A better tip ejector

The tip ejector is made from a high density polymer that is corrosion free, autoclavable and highly resistant to chemicals. The ejector slides off in a single easy motion for cleaning.



CATALOG No. VOLUME RANGE

	CATALOG No.	VOLUME RANGE
Pipet-Lite XLS+	17014413	0.1–2 µL
	17014409	0.5–10 µL
	17014412	2–20 µL
	17014408	10–100 µL
	17014411	20–200 µL
	17014414	20–300 µL
	17014407	100–1000 µL
	17014410	200–2000 µL
	17011801	500–5000 µL
	17011795	1–10 mL

Universal pipettes use universal tips. For pipette specifications, see page 22.





#### Advanced asset management

The RFID tag on board every Rainin XLS+ pipette stores calibration data that is electronically read by the Rainin SmartStand and PipetteX software. [See page 67](#) for details.



#### Secure volume lock

The snag-proof lock design on XLS+ pipettes prevents accidental volume drift while allowing for rapid volume adjustment, even while wearing gloves.

LTS

CATALOG No.

VOLUME RANGE

	CATALOG No.	VOLUME RANGE
Pipet-Lite XLS+	17014393	0.1–2 $\mu$ L
	17014388	0.5–10 $\mu$ L
	17014392	2–20 $\mu$ L
	17014384	10–100 $\mu$ L
	17014391	20–200 $\mu$ L
	17014405	20–300 $\mu$ L
	17014382	100–1000 $\mu$ L
	17014390	200–2000 $\mu$ L
	17011790	500–5000 $\mu$ L
	17011783	1–10 mL
	17011788	2–20 mL

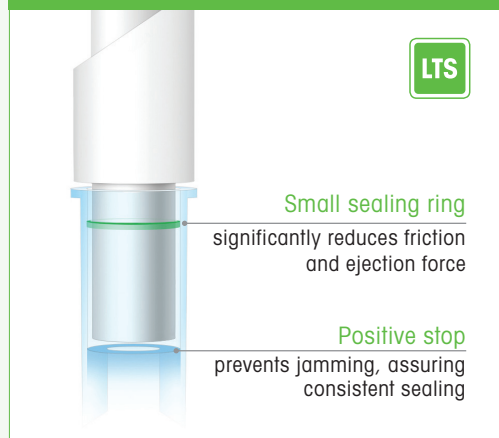
LTS pipettes use LTS tips.  
For pipette specifications, see page 22

## You Deserve LTS

### Happy Hands Yield Better Results!

Minimize fatigue and risk of repetitive strain injury (RSI) with the Rainin LTS™ LifeTouch™ tip ejection system.

#### The LTS difference





The Rainin LifeTouch System dramatically reduces the amount of force required to load and eject tips. LTS pipettes work in concert with LTS tips to deliver a perfect seal every time.

- LTS tips slide easily over the shaft to create a firm, air-tight fit with minimal force.
- A thin sealing ring near the top of an LTS tip virtually eliminates friction between the tip and shaft, minimizing ejection force.
- Positive stop prevents over insertion of the tip and assures an airtight seal.



## Rainin E4 XLS+

### Simple, Versatile and Secure

Our easiest to use, most richly featured and secure electronic pipette. Many volume sizes available in both LTS  and universal  formats.

**The E4 XLS+ is easily configured to be as simple or elaborate as your work requires.**

- The large color screen, joystick control and graphic interface make moving between functions and operating the pipette easy and effortless.
- Highly customizable functions with multiple protocols that can be stored onboard for later use.

Your data is everything – trust the E4 XLS+ to deliver!



• **A “smart” charging stand!**

SmartStand charges up to four E4s simultaneously and offers a simple yet sophisticated way to track and manage every XLS brand pipette in your lab. See page 69.

#### Performance

An advanced microprocessor-guided stepper motor has 4,000 discrete steps for extremely accurate liquid dispensing.

#### The app master

For serial dilutions, filling plates, pipetting unusual liquids and performing complex pipetting steps, the E4's versatile range of pipetting modes offer maximum convenience.

#### Save your protocols

Store multiple custom protocols in the onboard memory. Simultaneously review and select your protocols with a simple movement of the joystick. No more re-entering protocols over and over again!

#### Highly configurable

With E4's Admin Mode, you can configure the pipette any way you want. For convenience or security, remove unwanted modes or lock in preferred settings.



#### GLP/GMP security

Minimize deviations to your pipetting SOPs by locking protocol settings. Onboard service data is extremely secure and quick to access. Avoid calibration compliance errors by password protecting access to service interval alarms.



	CATALOG No.	VOLUME RANGE
<b>E4 XLS+</b>	<b>17014484</b>	0.5–10 µL
	<b>17014487</b>	2–20 µL
	<b>17014483</b>	10–100 µL
	<b>17014486</b>	20–200 µL
	<b>17014488</b>	20–300 µL
	<b>17014482</b>	100–1000 µL
	<b>17014485</b>	200–2000 µL
	<b>17012312</b>	500–5000 µL
	<b>17012313</b>	1–10 mL
	<b>17012314</b>	2–20 mL

LTS pipettes use LTS tips. Li-Ion battery and wall power supply are included. For more information about LTS, see page 6. For pipette specifications, see page 22.



	CATALOG No.	VOLUME RANGE
<b>E4 XLS+</b>	<b>17014491</b>	0.5–10 µL
	<b>17014494</b>	2–20 µL
	<b>17014490</b>	10–100 µL
	<b>17014493</b>	20–200 µL
	<b>17014495</b>	20–300 µL
	<b>17014489</b>	100–1000 µL
	<b>17014492</b>	200–2000 µL
	<b>17012353</b>	500–5000 µL
	<b>17012354</b>	1–10 mL

Universal pipettes use universal tips. Li-Ion battery and wall power supply are included. For pipette specifications, see page 22.



## Rainin XLS+ Multichannels

Performance You Can Feel!

8 or 12 channels; volumes from 0.5–1200 µL.

Available only in LTS. 

### E4 XLS+ Electronic Multichannel

Nothing compares with the functionality, speed and accuracy of E4 XLS+

- Same functionality and ease of use as single-channel models
- E4 does the work with Multidispense and Autopace
- Consistent sample loading across all channels with low tip ejection forces

 LTS

	CATALOG No.	VOLUME RANGE
<b>E4 XLS+ Electronic Multichannel</b>	<b>8-Channel</b>	
	17013792	0.5–10 µL
	17013793	2–20 µL
	17013794	5–50 µL
	17013795	20–200 µL
	17013796	20–300 µL
	17014498	100–1200 µL
	<b>12-Channel</b>	
	17013797	0.5–10 µL
	17013798	2–20 µL
	17013799	5–50 µL
	17013800	20–200 µL
17013801	20–300 µL	
17014499	100–1200 µL	



E4 XLS+ Electronic



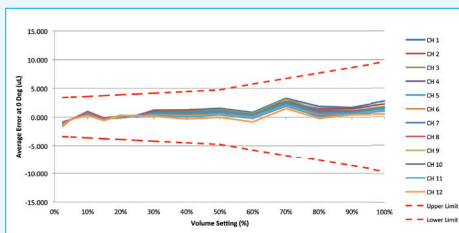
Pipet-Lite XLS+ Manual

LTS pipettes use LTS tips. Li-Ion battery and wall power supply are included. For more information about LTS, see page 6. For pipette specifications, see page 23.



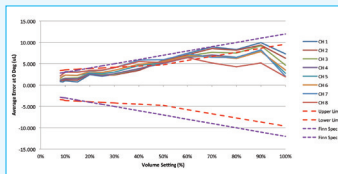
## Industry-leading Channel-to-Channel Consistency

There's a reason Rainin multichannel pipettes are the market leader: ease-of-use and exceptional channel-to-channel consistency.

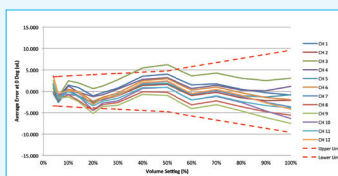


Rainin XLS+ 1200 µL

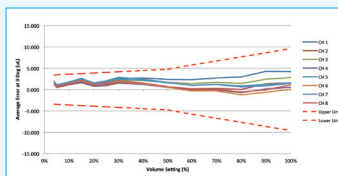
VS.



Competitor A • 1200 µL



Competitor B • 1200 µL



Competitor C • 1200 µL

### Pipet-Lite XLS+ Manual Multichannel

**Ergonomic design and exceptional performance**

- Balanced, lightweight, reduced loading and ejection forces
- Easy quick-lock volume setting – no drift
- Rugged and durable

LTS

CATALOG No.

VOLUME RANGE


	CATALOG No.	VOLUME RANGE
Pipet-Lite XLS+ Manual Multichannel	<b>8-Channel</b>	
	17013802	0.5–10 µL
	17013803	2–20 µL
	17013804	5–50 µL
	17013805	20–200 µL
	17013806	20–300 µL
	17014496	100–1200 µL
	<b>12-Channel</b>	
	17013807	0.5–10 µL
	17013808	2–20 µL
	17013809	5–50 µL
	17013810	20–200 µL
17013811	20–300 µL	
17014497	100–1200 µL	

LTS pipettes use LTS tips.  
For more information about LTS, see page 6.  
For pipette specifications, see page 23.



## Rainin Adjustable Spacer Pipettes

### Tubes to Plates with Just a Twist!

Adjust from standard 9 mm spacing to 14 mm or 19 mm; manual or electronic 6- and 8-channel versions. Available only in LTS. 

### Pipet-Lite XLS Adjustable Manual Multichannel

One-hand adjustable spacing.

#### Fast, convenient

Quickly change from format to format in a single step

#### Nozzle spacing ranges

6-channel: 9–19 mm

8-channel: 9–14 mm

#### Multiple formats

Use with 24-, 48- and 96-well plates and a variety of tube formats

#### Applications

Ideal for genomic, proteomic and cellular assay applications



	CATALOG No.	VOLUME RANGE
Pipet-Lite XLS Adjustable	<b>6-Channel</b>	
	17011841	20–300 µL
	17011840	100–1200 µL
	<b>8-Channel</b>	
	17011844	5–50 µL
	17011843	20–300 µL
17011842	100–1200 µL	

LTS pipettes use LTS tips.

For more information about LTS, see page 6.

For pipette specifications, see page 23.

## E4 XLS Adjustable Electronic Multichannel

Different formats? No problem!

### Easy, accurate and repeatable spacing

Just set the limiter dial and quickly move between formats by twisting the spacing control. Marks on the liquid end give fast visual confirmation of nozzle spacing. Ideal for routine micro-well work when you need to change formats quickly.



LTS		CATALOG No.	VOLUME RANGE
E4 XLS Adjustable	<b>6-Channel</b>		
	17012327		20–300 µL
	17012328		100–1200 µL
	<b>8-Channel</b>		
	17012329		5–50 µL
	17012330		20–300 µL
17012331		100–1200 µL	

LTS pipettes use LTS tips. Li-Ion battery and wall power supply are included. For more information about LTS, see page 6. For pipette specifications, see page 23.

## Rainin NanoRep

### Electronic Repeater Pipette

Automatically dispense of up to 1,000 aliquots  
– with no contact necessary from vessel to vessel.

- Lightweight, comfortable grip
- Transfer volatile, viscous and dense liquids
- No Touch Off dispense
- Aliquots as low as 100 nL, with increments as low as 10 nL – down to 1/10,000<sup>th</sup> the nominal volume of any syringe tip
- Up to 1,000 aliquots from one aspiration



Conserve samples, reagents and syringe tips with up to 1,000 aliquots per tip: 100 µL (shown), 10 mL, 50 mL

Avoid contact contamination with No Touch Off™ dispense – down to 100-nanoliter aliquots

	CATALOG No.	DESCRIPTION
<b>NanoRep</b>	<b>30568171</b>	Electronic NanoRep repeater pipette (includes: charging cable, Hang-Up and 10 mL syringe tip)
	<b>17012878</b>	Wall Power Supply
	<b>30584027</b>	Hang-Ups (for pipettes with fingerhook)
	<b>30575784</b>	NanoRep stand







### NanoRep syringe tips | Specifications

Tip Vol. mL	Systematic Error			
	1%	10%	50%	100%
<b>0.1</b>	1 $\mu$ L $\pm$ 8% (0.080 $\mu$ L)	10 $\mu$ L $\pm$ 1.6% (0.16 $\mu$ L)	50 $\mu$ L $\pm$ 0.90% (0.45 $\mu$ L)	100 $\mu$ L $\pm$ 0.90% (0.90 $\mu$ L)
<b>10</b>	100 $\mu$ L $\pm$ 2% (2.0 $\mu$ L)	1 mL $\pm$ 0.40% (4.0 $\mu$ L)	5 mL $\pm$ 0.40% (20 $\mu$ L)	10 mL $\pm$ 0.30% (30 $\mu$ L)
<b>50</b>	500 $\mu$ L $\pm$ 2% (10 $\mu$ L)	5 mL $\pm$ 0.25% (12.5 $\mu$ L)	25 mL $\pm$ 0.25% (62.5 $\mu$ L)	50 mL $\pm$ 0.25% (125 $\mu$ L)

Tip Vol. mL	Random Error			
	1%	10%	50%	100%
<b>0.1</b>	1 $\mu$ L $\leq$ 12% (0.12 $\mu$ L)	10 $\mu$ L $\leq$ 2.5% (0.25 $\mu$ L)	50 $\mu$ L $\leq$ 0.80% (0.40 $\mu$ L)	100 $\mu$ L $\leq$ 0.50% (0.50 $\mu$ L)
<b>10</b>	100 $\mu$ L $\leq$ 3% (3.0 $\mu$ L)	1 mL $\leq$ 0.35% (3.5 $\mu$ L)	5 mL $\leq$ 0.20% (10 $\mu$ L)	10 mL $\leq$ 0.15% (15 $\mu$ L)
<b>50</b>	500 $\mu$ L $\leq$ 3.5% (17.5 $\mu$ L)	5 mL $\leq$ 0.45% (22.5 $\mu$ L)	25 mL $\leq$ 0.20% (50 $\mu$ L)	50 mL $\leq$ 0.10% (50 $\mu$ L)

#### Tip Volume

mL	Min. Aliquot*	Min. Incr.**
	$\mu$ L	$\mu$ L
<b>0.1</b>	0.1	0.01
<b>10</b>	10	1
<b>50</b>	50	5

\*Min. Aliquot = Smallest dispensable volume/tip.

\*\*Min. Increment = Lowest incremental adjustment/tip.

	CATALOG No.	MAX. VOLUME	QUANTITY	
NanoRep Syringe Tips	<b>30575705</b>	0.1 mL	100 per pkg	
	<b>30575777</b>	0.1 mL	25 per pkg	Sterile
	<b>30575707</b>	10 mL	100 per pkg	
	<b>30575779</b>	10 mL	25 per pkg	Sterile
	<b>30575789</b>	50 mL	25 per pkg	
	<b>30575781</b>	50 mL	25 per pkg	Sterile



## Rainin Classic

### Timeless Design, Exceptional Performance

An economical pipette with advanced ergonomic features not found on other pipettes in its class. Available in universal  formats.

An economical pipette with decades of expertise built in, Rainin Classic™ will deliver years of reproducible performance. Lighter spring forces, low-drag seals and a shock absorber make it easy on your hands.

#### Durable

Stainless steel and quality PVDF materials assure durability, fewer out-of-tolerance failures and low cost of ownership.

#### Lower plunger force

The Rainin Classic's plunger force is 25% less than similar pipettes.

#### Comfort

The fingerhook allows a lighter grip during pipetting cycles, for improved ergonomics.



### Great value – lower prices!



	CATALOG No.	VOLUME RANGE
Rainin Classic	17008648	0.1–2 µL
	17008649	0.5–10 µL
	17008650	2–20 µL
	17008651	10–100 µL
	17008652	20–200 µL
	17008653	100–1000 µL
	17008654	500–5000 µL
	17008655	1–10 mL
Starter Kit	17008708	Starter kit: PR-20, PR-200, PR-1000 and accessories

Universal pipettes use universal tips.  
For pipette specifications, see page 22.



## Rainin Pos-D

### Positive-Displacement Pipetting

The right solution for liquids with high densities, viscosities or vapor pressures.

Rainin Pos-D™ positive displacement pipettes are ideal when pipetting liquids with high densities, viscosities or vapor pressures.

#### Relax!

The ergonomically designed Pos-D rests in your hand while you work.

#### Easy to load

Pre-assembled, sterilized disposable syringe tips are packed in convenient racks.

#### No cross contamination

Positive displacement prevents aerosol formation and protects samples from contamination.



CATALOG No.	VOL		QTY		
	VOLUME RANGE	RACKS/CARTON	TIPS/CARTON	STERILIZED	
<b>Pos-D Pipettes</b>	<b>17008575</b>	0.5–10 µL			
	<b>17008576</b>	3–25 µL			
	<b>17008577</b>	20–50 µL			
	<b>17008578</b>	10–100 µL			
	<b>17008579</b>	50–250 µL			
	<b>17008580</b>	100–1000 µL			
<b>Capillaries and Pistons</b>	<b>17008604</b>	10 µL	3	180	✓
	<b>17008605</b>	25 µL	3	180	✓
	<b>17008606</b>	50 µL	3	180	✓
	<b>17008607</b>	100 µL	3	180	✓
	<b>17008608</b>	250 µL	3	180	✓
	<b>17008609</b>	1000 µL	3	180	✓
	<b>17012264</b>	10 µL	3	180	
	<b>17012265</b>	25 µL	3	180	
	<b>17012266</b>	50 µL	3	180	
	<b>17012267</b>	100 µL	3	180	
	<b>17012268</b>	250 µL	3	180	
	<b>17012135</b>	1000 µL	3	180	





# Pipette Starter Kits

## Multiple Ways to Buy New Rainin XLS+ Pipettes!

Available with SmartStand or Hang-Ups™

Starter Kits with SmartStand include PipetteX software for easy pipette management (see page 60):

- Manage calibration and service for all of your pipettes
- View pipette calibration status right at your bench
- Quick charge your E4 XLS+ electronic pipettes
- Available for LTS  and universal 

	CATALOG No.	Single Channel Manual					Multichannel Manual				Single Channel Electronic			SmartStand w/ PipetteX software	Hang-Ups	
		2 µL	10 µL	20 µL	200 µL	1000 µL	5000 µL	20 µL 8-channel	200 µL 8-channel	20 µL 12-channel	200 µL 12-channel	20 µL	200 µL			1000 µL
<b>LTS</b>	30386738	✓	✓	✓	✓										✓	
	30579469	✓	✓	✓	✓											✓
	30386597	✓		✓	✓	✓									✓	
	30579367	✓		✓	✓	✓										✓
	30386599			✓	✓	✓									✓	
	30386737				✓	✓	✓								✓	
	30386734			✓	✓	✓		✓							✓	
	30386733			✓	✓	✓			✓						✓	
	30386736			✓	✓	✓				✓					✓	
	30386735			✓	✓	✓					✓				✓	
	30386739							✓	✓						✓	
	30456871			✓	✓	✓										✓
	30579472							✓	✓						✓	✓
	30386740									✓	✓				✓	✓
	30579471									✓	✓				✓	✓
	30386731											✓	✓	✓	✓	
<b>UNV</b>	30386598	✓		✓	✓	✓								✓		
	30386730			✓	✓	✓								✓		
	30456872			✓	✓	✓									✓	
	30386732										✓	✓	✓	✓		
	17008708*			✓	✓	✓									✓	

\* Rainin Classic



# SmartStand + PipetteX software = Easy Pipette Management



OR



# Pipette Performance Specifications

## Specifications at 10%, 50% and 100% volume

**All Rainin single-channel models, including:**

**Manual pipettes**

- Pipet-Lite XLS/ XLS+
- Rainin Classic

**Electronic pipettes**

- E4 XLS/ XLS+



PIPETTE VOLUME	VOL		INCREMENT $\mu\text{L}$		SYSTEMATIC ERROR		RANDOM ERROR	
	VOLUME	MANUAL	ELECTRONIC	%	$(\pm)$ $\mu\text{L}$	%	$(\leq)$ $\mu\text{L}$	
2 $\mu\text{L}$	0.2 $\mu\text{L}$	0.002	n/a	12	0.024	6.0	0.012	
	1 $\mu\text{L}$			2.7	0.027	1.3	0.013	
	2 $\mu\text{L}$			1.5	0.030	0.70	0.014	
10 $\mu\text{L}$	1.0 $\mu\text{L}$	0.02	0.01	2.5	0.025	1.2	0.012	
	5.0 $\mu\text{L}$			1.5	0.075	0.60	0.030	
	10.0 $\mu\text{L}$			1.0	0.10	0.40	0.040	
20 $\mu\text{L}$	2 $\mu\text{L}$	0.02	0.02	7.5	0.15	2.0	0.040	
	10 $\mu\text{L}$			1.5	0.15	0.50	0.050	
	20 $\mu\text{L}$			1.0	0.20	0.30	0.060	
100 $\mu\text{L}$	10 $\mu\text{L}$	0.2	0.1	3.5	0.35	1.0	0.10	
	50 $\mu\text{L}$			0.80	0.40	0.24	0.12	
	100 $\mu\text{L}$			0.80	0.80	0.15	0.15	
200 $\mu\text{L}$	20 $\mu\text{L}$	0.2	0.2	2.5	0.50	1.0	0.20	
	100 $\mu\text{L}$			0.80	0.80	0.25	0.25	
	200 $\mu\text{L}$			0.80	1.6	0.15	0.30	
300 $\mu\text{L}$	30 $\mu\text{L}$	0.5	0.2	2.5	0.75	1.0	0.30	
	150 $\mu\text{L}$			0.80	1.2	0.25	0.375	
	300 $\mu\text{L}$			0.80	2.4	0.15	0.45	
1000 $\mu\text{L}$	100 $\mu\text{L}$	2	1	3.0	3.0	0.60	0.60	
	500 $\mu\text{L}$			0.80	4.0	0.20	1.0	
	1000 $\mu\text{L}$			0.80	8.0	0.15	1.5	
2000 $\mu\text{L}$	200 $\mu\text{L}$	2	2	3.0	6.0	0.60	1.2	
	1000 $\mu\text{L}$			0.8	8.0	0.20	2.0	
	2000 $\mu\text{L}$			0.8	16	0.12	2.4	
5000 $\mu\text{L}$	500 $\mu\text{L}$	5	5	2.4	12	0.60	3.0	
	2500 $\mu\text{L}$			0.60	15	0.20	5.0	
	5000 $\mu\text{L}$			0.60	30	0.16	8.0	
10 mL	1 mL	20	10	5.0	50	0.60	6.0	
	5 mL			1.0	50	0.20	10	
	10 mL			0.60	60	0.16	16	
20 mL	2 mL	20	20	5.0	100	0.60	12	
	10 mL			1.0	100	0.20	20	
	20 mL			0.60	120	0.16	22	



### All Rainin multichannel models, including:

#### Manual pipettes

- Pipet-Lite XLS/XLS+
- Pipet-Lite XLS Adjustable Spacer

#### Electronic pipettes

- E4 XLS/XLS+
- E4 XLS Adjustable Spacer

PIPETTE VOLUME	VOL		INCREMENT $\mu\text{L}$		SYSTEMATIC ERROR		RANDOM ERROR – MANUAL		RANDOM ERROR – ELECTRONIC	
	VOLUME	MANUAL / ELECTRONIC	%	$(\pm) \mu\text{L}$	%	$(\leq) \mu\text{L}$	%	$(\leq) \mu\text{L}$		
10 $\mu\text{L}$	1.0 $\mu\text{L}$	0.02/0.01	4.0	0.040	5.0	0.050	3.0	0.030		
	5.0 $\mu\text{L}$		1.5	0.075	1.5	0.075	0.80	0.040		
	10.0 $\mu\text{L}$		1.0	0.10	0.50	0.050	0.50	0.050		
20 $\mu\text{L}$	2 $\mu\text{L}$	0.02	7.5	0.15	4.0	0.080	3.0	0.060		
	10 $\mu\text{L}$		1.5	0.15	1.5	0.15	1.0	0.10		
	20 $\mu\text{L}$		1.0	0.20	0.5	0.10	0.30	0.060		
50 $\mu\text{L}$	5 $\mu\text{L}$	0.05	3.5	0.175	2.0	0.10	1.5	0.075		
	25 $\mu\text{L}$		1.2	0.30	0.50	0.125	0.40	0.10		
	50 $\mu\text{L}$		0.80	0.40	0.40	0.20	0.30	0.15		
200 $\mu\text{L}$	20 $\mu\text{L}$	0.2	2.5	0.50	1.2	0.24	1.0	0.20		
	100 $\mu\text{L}$		0.80	0.80	0.25	0.25	0.25	0.25		
	200 $\mu\text{L}$		0.80	1.6	0.30	0.60	0.20	0.40		
300 $\mu\text{L}$	30 $\mu\text{L}$	0.5/0.2	2.5	0.75	1.5	0.45	1.0	0.30		
	150 $\mu\text{L}$		0.80	1.2	0.30	0.45	0.25	0.375		
	300 $\mu\text{L}$		0.80	2.4	0.25	0.75	0.20	0.60		
1200 $\mu\text{L}$	100 $\mu\text{L}$	2/ 1	3.6	3.6	1.0	1.0	0.60	0.60		
	600 $\mu\text{L}$		0.80	4.8	0.30	1.8	0.20	1.2		
	1200 $\mu\text{L}$		0.80	9.6	0.20	2.4	0.15	1.8		

Specifications subject to change without notice.



## 96-Channel Pipetting

### Faster, More Accurate Workflows

By making it possible to perform experiments more efficiently, accurately and reliably, 96-channel pipettors have become indispensable tools in many life science laboratories. They can significantly reduce the time and effort required to perform experiments, while providing higher accuracy and reproducibility. They are particularly useful in life science applications that involve large-scale screenings, such as drug discovery, ELISAs, proteomics and cell-based assays.

Unlike single- and multi-channel pipettes, which are more prone to human error and inconsistencies, manual and semi-automated 96-channel pipettors are ideal for research and scale-up, and can often provide more reliable and reproducible results. They also dispense small volumes of liquid with high accuracy, which is important in many life science applications that require precise measurements.

Rainin offers 96-channel pipettors to meet your exact need.

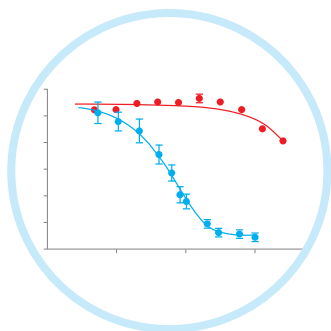
- **MicroPro** – our most compact, affordable and advanced semi-automated 96-channel pipettor.
- **BenchSmart 96** – with four plate-trays, ideal for labs that do a lot of multi-plate work.
- **Liquidator 96** – perfect for researchers who want to manually-control every aspect of their workflow.

	MicroPro	BenchSmart 96	Liquidator 96
96/384-Well Plate Applications	●	●	●
Interchangeable Heads	●	●	●
Suitable for BSL/PCR Cabinets	●	●	●
Small Footprint	●	●	●
Low Cost	●	●	●
Volume Range	0.5-20 $\mu$ L 5-300 $\mu$ L	0.5-20 $\mu$ L 5-200 $\mu$ L 100-1000 $\mu$ L	0.5-20 $\mu$ L 5-200 $\mu$ L



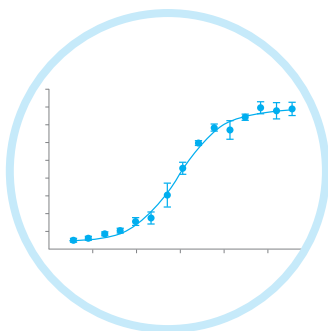


## How can a 96-channel pipettor speed your workflow?



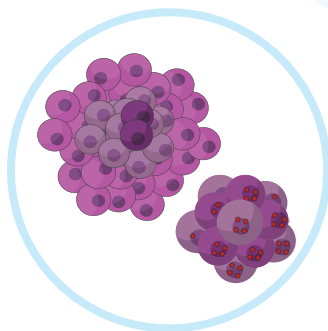
### High-Throughput Screening

A 96-channel pipettor enables you to significantly increase your screening capacity and streamline workflows. You can quickly and accurately screen large numbers of samples for various applications, such as genomic, drug screening or proteomics research.



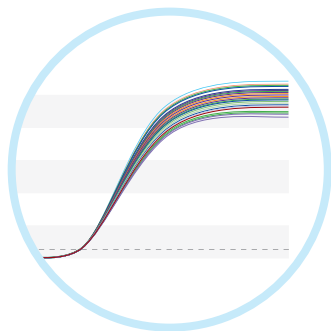
### ELISA Assays

Enzyme-Linked Immunosorbent Assays (ELISA) are a commonly method for detecting and quantifying proteins or small molecules in biological samples. Using a 96-channel pipettor, you can simultaneously transfer the reagents to multiple wells or wash wells, significantly reducing the time and effort needed to perform an ELISA assay.



### Cell-Based Assays

Cell-based assays are used to study the behavior of cells in response to various stimuli. Using a 96-channel pipettor, you can quickly and accurately transfer cells, reagents and other components to multiple wells, enabling you to perform high-throughput cell-based assays.



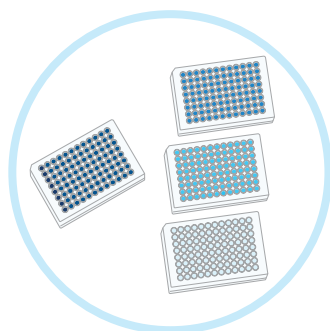
### PCR/qPCR Amplification

Polymerase Chain Reaction (PCR) is a method used to amplify DNA and RNA sequences. Using a 96-channel pipettor, you can quickly and accurately transfer the reagents needed for PCR amplification, streamlining the process and increasing the throughput.



### Plate Replication

Plate replication is commonly used in life science research to create multiple copies of a plate for analysis. Using a 96-channel pipettor, you can quickly and accurately transfer the contents of a mother plate to multiple daughter plates, increasing efficiency and reducing the chance of errors.



### DNA Sequencing

DNA sequencing is a critical technique used in genomics research. Using a 96-channel pipettor, researchers can quickly and accurately accomplish the many sample preparation steps often involved prior to DNA sequencing.

## Rainin MicroPro

### Affordable, Portable 96-Channel Pipetting

NEW

MicroPro simplifies and streamlines 96- and 384-well microplate work, from filling plates to complex, multi-step workflows.

**Compact, highly affordable and easy to use, the MicroPro wirelessly connects to a high resolution touchscreen for an intuitive and user-friendly experience.**

- 20  $\mu$ L and 300  $\mu$ L models
- Weighs just over 11 pounds!
- Save/retrieve complex workflows
- Intuitive touchscreen interface
- 10x speed control



#### Simplify your workflows

From the touchless tip ejection and programmable Pipetting Depth Recall™ to saving complex, multistep protocols, the MicroPro boosts productivity and improves reproducibility.



#### Your Research Assistant

MicroPro goes beyond simply adding and mixing reagents by offering convenient features such as aliquot dispensing, sample dilution with mixing and multi-aspirate with mixing.



#### Custom Protocols

Custom protocols are easy to create and allow you to build and save a tailored sequence of instruction and liquid handling steps that exactly match the needs of your protocols.





### MicroPro Tips

The innovative and proprietary design of the MicroPro pipette tips and tip cartridges requires minimal force for tip loading of all 96 tips. This significant force reduction allows MicroPro to be small and light in weight – currently the smallest benchtop on the market! MicroPro tips work with the Rainin MicroPro instrument only. They are available as low-retention tips in 20 µL and 300 µL volume sizes, sterilized and sterilized with filter.



### MicroPro

	CATALOG No.	MAX VOL	DESCRIPTION
<b>MicroPro</b>	<b>30835029</b>	20 µL	0.5-20 µL MicroPro 20
	<b>30835028</b>	300 µL	5-300 µL MicroPro 300
	<b>30835030</b>		Two-Tray Dual Nest, MPR 96/96

See page 32 for high-throughput MicroPro tips.

## Rainin BenchSmart 96

### Semi-Automated 96- and 384-Well Pipetting

The precision and reproducibility of automated liquid handling with the speed and flexibility of a manual system.

**The semi-automated BenchSmart™ 96 improves reproducibility by eliminating user variability when aspirating and dispensing.**

- Semi-automated high-throughput 96- and 384-well plate processing for genomics, proteomics, and cellular-based assays.
- BenchSmart gives users complete and precise control over the position of the pipetting head with 96 channels.
- The four tray positions save time and reduce your risk of error by minimizing the need to swap out trays and reservoirs.



#### Smart high-throughput

With its large touchpad, BenchSmart makes it easy to design, save and retrieve any protocol, from simple one-step procedures to complex, multi-step experiments.



#### Three pipetting heads

Get the precision you demand with the 0.5-20 µL head, the lab workhorse you need with the 5-200 µL head, and the multi-dispensing capability of the 100-1000 µL head.



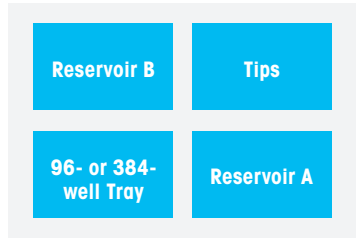
#### Save time and money

BenchSmart 96 simplifies and speeds workflows by significantly reducing, if not eliminating, the need to swap out tips and reservoirs.

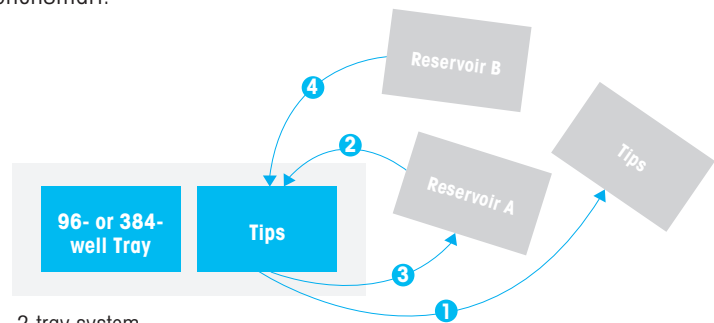


### Speed your workflow

Compared to a two-tray system where reservoirs and trays need to be swapped out, a two solution protocol needs fewer liquid handling steps with BenchSmart.



4-tray BenchSmart 96



2-tray system

### BenchSmart 96

LTS

	CATALOG No.	MAX VOL	DESCRIPTION
BST 96	30296705	20 µL	0.5-20 µL BenchSmart 96, complete
	30296706	200 µL	5-200 µL BenchSmart 96, complete
	30296707	1000 µL	100-1000 µL BenchSmart 96, complete
	30296708	20 µL	Pipetting head 0.5-20 µL, BenchSmart 96
	30296709	200 µL	Pipetting head 5-200 µL, BenchSmart 96
	30296780	1000 µL	Pipetting head 100-1000 µL, BenchSmart 96
Accs.	17010394	-	384-well adapter plate stage, white
	17010791	-	384-well adapter plate stage, black
	30321288	-	Terminal Conversion Kit

See page 32 for high-throughput LTS tips. For reservoirs, plates, mats and strips, see page 31.



## Rainin Liquidator 96

### Manual High-Throughput Pipetting

Fully manual processing of 96- and 384-well plates for genomics, proteomics and cell-based assays.

**Liquidator™ 96 streamlines application workflows for genomics, proteomics and cellular applications, simplifies plate replication, performs serial dilutions, plate washes or quickly moves samples between 96- and 384-well formats.**

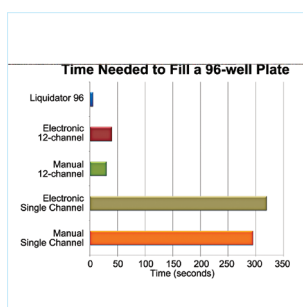
Count on Liquidator 96 to deliver the highest accuracy for PCR, qPCR, DNA sequencing and genotyping experiments. Generate precise 96-well ELISA, functional, cell viability or chemotaxis assays, all on one platform.

- Two volume ranges: 0.5-20  $\mu\text{L}$  and 5-200  $\mu\text{L}$
- No power or programming: simply set the volume and pipette
- Four-position platform: process up to 3 plates at a time without stacking



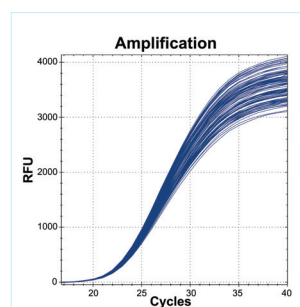
#### Easy to use

Because Liquidator doesn't require programming or significant training, anyone can be an expert in no time.



#### Save time

Liquidator processes 96-well plates in as few as six seconds each, without sacrificing data quality.



#### Reduce errors

By pipetting all 96 wells simultaneously, Liquidator eliminates the risk of skipping or repeating wells or rows.





## Liquidator 96

LTS

CATALOG No. MAX VOL DESCRIPTION

CATALOG No.	MAX VOL	DESCRIPTION
<b>LIQ 96 17014207</b>	20 µL	0.5-20 µL Benchtop Pipetting System
<b>17010335</b>	200 µL	5-200 µL Benchtop Pipetting System

Liquidator 96 is supplied with height adjustment posts, a 384-well adapter plate stage and three racks of tips to get you started.

LIQ 96 Accs.	CATALOG No.	DESCRIPTION
	<b>17014270</b>	– Height adjustment posts, 0.5-20 µL Liquidator
	<b>17010396</b>	– Height adjustment posts, 5-200 µL Liquidator
	<b>17010394</b>	– 384-well adapter plate stage, white
	<b>17010791</b>	– 384-well adapter plate stage, black
	<b>17011118</b>	– 20 µL tip tray adapter, white

## Reservoirs, plates, mats and strips

Reusable  
SBS footprint  
polypropylene  
reservoirs

CATALOG No. DESCRIPTION

CATALOG No.	DESCRIPTION	
<b>17012602</b>	Non-sterile Low-profile 96 pyramidal bottoms	5-pack
<b>17012603</b>	Sterile Low-profile 96 pyramidal bottoms	5-pack, ind. wrap
<b>17012604</b>	Non-sterile Standard profile 96 pyramidal bottoms	5-pack
<b>17012605</b>	Sterile Standard profile 96 pyramidal bottoms	5-pack, ind. wrap
<b>17012608</b>	Non-sterile Low-profile 8-channel V-bottom	5-pack
<b>17012609</b>	Sterile Low-profile 8-channel V-bottom	5-pack
<b>17012606</b>	Non-sterile Standard profile 8-channel V-bottom	5-pack
<b>17012607</b>	Sterile Standard profile 8-channel V-bottom	5-pack, ind. wrap
<b>17012612</b>	Non-sterile Low-profile 12-channel V-bottom	5-pack
<b>17012613</b>	Sterile Low-profile 12-channel V-bottom	5-pack, ind. wrap
<b>17012610</b>	Non-sterile Standard profile 12-channel V-bottom	5-pack
<b>17012611</b>	Sterile Standard profile 12-channel V-bottom	5-pack, ind. wrap
<b>17012623</b>	Non-sterile 2.2 mL 96-deepwell plate,	5-pack
<b>17012624</b>	Sterile 2.2 mL 96-deepwell plate,	5-pack, ind. wrap
<b>17012625</b>	Non-sterile Polymer sealing mat fits 96-deepwell plate	5-pack
<b>17012626</b>	Sterile Polymer sealing mat fits 96-deepwell plate	5-pack, ind. wrap
<b>17012630</b>	Sterile 1.2 mL racked microtube strips (8x12)	box of 300

Deepwell  
plates, mats,  
tube strips,  
cap strips



## Tips for 96-Channel Platforms

### High-Throughput LTS Tips

For use with BenchSmart 96 and Liquidator 96 benchtop pipettors only (1000 µL for BenchSmart only).



	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES		
			MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	FILTER	LOW RET
<b>Tips in Racks</b>	<b>17011185</b>	LQR LTS 20µL 960/10	20 µL	10	960				
	<b>17011186</b>	LQR LTS 20µL S 960/10	20 µL	10	960	✓			
	<b>17011117</b>	LQR LTS 20µL F 960/10	20 µL	10	960	✓	✓		
	<b>17010645</b>	LQR LTS 200µL 960/10	200 µL	10	960				
	<b>17010647</b>	LQR LTS 200µL S 960/10	200 µL	10	960	✓			
	<b>17010646</b>	LQR LTS 200µL F 960/10	200 µL	10	960	✓	✓		
	<b>30281704</b>	LQR LTS 1000µL 960/10	1000 µL	10	960				
	<b>30296781</b>	LQR LTS 1000µL S 960/10	1000 µL	10	960	✓			
	<b>30296782</b>	LQR LTS 1000µL F 960/10	1000 µL	10	960	✓	✓		
	<b>17014399</b>	LQR LTS 20µL LS 960/10	20 µL	10	960	✓			✓
	<b>17014400</b>	LQR LTS 20µL FL 960/10	20 µL	10	960	✓	✓		✓
	<b>17014401</b>	LQR LTS 200µL LS 960/10	200 µL	10	960	✓			✓
	<b>17014402</b>	LQR LTS 200µL FL 960/10	200 µL	10	960	✓	✓		✓
	<b>30296783</b>	LQR LTS 1000µL LS 960/10	1000 µL	10	960	✓			✓
<b>30296784</b>	LQR LTS 1000µL FL 960/10	1000 µL	10	960	✓	✓		✓	
<b>Tips in Stacks</b>	<b>17011187</b>	LQS LTS 20µL 960/10	20 µL	10	960				
	<b>17011287</b>	LQS LTS 20µL S 960/10	20 µL	10	960	✓			
	<b>17010648</b>	LQS LTS 200µL 960/10	200 µL	10	960				
	<b>17010649</b>	LQS LTS 200µL S 960/10	200 µL	10	960	✓			
	<b>17014403</b>	LQS LTS 20µL LS 960/10	20 µL	10	960	✓			✓
	<b>17014404</b>	LQS LTS 200µL LS 960/10	200 µL	10	960	✓			✓



### MicroPro Tips in Racks



<b>MicroPro Tips</b>	<b>63305398</b>	MPR 20µL LS 4800/50	20 µL	50	4800	✓		✓
	<b>63305397</b>	MPR 20µL LF 4800/50	20 µL	50	4800	✓	✓	✓
	<b>63305400</b>	MPR 300µL LS 4800/50	300 µL	50	4800	✓		✓
	<b>63305399</b>	MPR 300µL LF 4800/50	300 µL	50	4800	✓	✓	✓



## Specifications for 96-Channel Platforms

MODEL/MAX. VOLUME	20 $\mu$ L	200 $\mu$ L	1000 $\mu$ L	
<b>BenchSmart 96</b>	HEAD SIZE	LOW VOLUME 0.5 – 20 $\mu$ L	MID VOLUME 5 – 200 $\mu$ L	HIGH VOLUME 100 – 1000 $\mu$ L
	<b>Systematic Error</b> (per channel)	20 $\mu$ L: $\pm$ 1.0% (0.20 $\mu$ L) 10 $\mu$ L: $\pm$ 1.2% (0.12 $\mu$ L) 2 $\mu$ L: $\pm$ 6.0% (0.12 $\mu$ L) 1 $\mu$ L: $\pm$ 12% (0.12 $\mu$ L)	200 $\mu$ L: $\pm$ 1.0% (2.0 $\mu$ L) 100 $\mu$ L: $\pm$ 1.0% (1.0 $\mu$ L) 20 $\mu$ L: $\pm$ 2.0% (0.40 $\mu$ L) 5 $\mu$ L: $\pm$ 5.0% (0.25 $\mu$ L)	1000 $\mu$ L: $\pm$ 1.0% (10 $\mu$ L) 500 $\mu$ L: $\pm$ 1.0% (5.0 $\mu$ L) 100 $\mu$ L: $\pm$ 2.5% (2.5 $\mu$ L)
	<b>Random Error</b> (per channel)	20 $\mu$ L: $\leq$ 0.80% (0.16 $\mu$ L) 10 $\mu$ L: $\leq$ 1.0% (0.10 $\mu$ L) 2 $\mu$ L: $\leq$ 5.0% (0.10 $\mu$ L) 1 $\mu$ L: $\leq$ 10% (0.10 $\mu$ L)	200 $\mu$ L: $\leq$ 0.40% (0.80 $\mu$ L) 100 $\mu$ L: $\leq$ 0.80% (0.80 $\mu$ L) 20 $\mu$ L: $\leq$ 1.5% (0.30 $\mu$ L) 5 $\mu$ L: $\leq$ 3.5% (0.175 $\mu$ L)	1000 $\mu$ L: $\leq$ 0.40% (4.0 $\mu$ L) 500 $\mu$ L: $\leq$ 0.40% (2.0 $\mu$ L) 100 $\mu$ L: $\leq$ 1.25% (1.25 $\mu$ L)
	<b>Volume Increments</b>	0.02 $\mu$ L	0.2 $\mu$ L	1 $\mu$ L

MODEL/MAX. VOLUME	20 $\mu$ L	200 $\mu$ L	
<b>Liquidator 96</b>	VOLUME RANGE	2 – 20 $\mu$ L	5 – 200 $\mu$ L
	<b>Systematic Error</b> (per channel)	20 $\mu$ L: $\pm$ 1.0% (0.20 $\mu$ L) 10 $\mu$ L: $\pm$ 1.2% (0.12 $\mu$ L) 2 $\mu$ L: $\pm$ 6.0% (0.12 $\mu$ L) 1 $\mu$ L: $\pm$ 12% (0.12 $\mu$ L)	200 $\mu$ L: $\pm$ 1.0% (2.0 $\mu$ L) 100 $\mu$ L: $\pm$ 1.0% (1.0 $\mu$ L) 20 $\mu$ L: $\pm$ 2.0% (0.40 $\mu$ L) 5 $\mu$ L: $\pm$ 5.0% (0.25 $\mu$ L)
	<b>Random Error</b> (per channel)	20 $\mu$ L: $\leq$ 0.80% (0.16 $\mu$ L) 10 $\mu$ L: $\leq$ 1.0% (0.10 $\mu$ L) 2 $\mu$ L: $\leq$ 5.0% (0.10 $\mu$ L) 1 $\mu$ L: $\leq$ 10% (0.12 $\mu$ L)	200 $\mu$ L: $\leq$ 0.50% (1.00 $\mu$ L) 100 $\mu$ L: $\leq$ 0.80% (0.80 $\mu$ L) 20 $\mu$ L: $\leq$ 1.5% (0.30 $\mu$ L) 5 $\mu$ L: $\leq$ 3.5% (0.175 $\mu$ L)
	<b>Volume Increments</b>	0.02 $\mu$ L	0.2 $\mu$ L

MODEL/MAX. VOLUME	20 $\mu$ L	300 $\mu$ L	
<b>MicroPro</b>	VOLUME RANGE	2 – 20 $\mu$ L	5 – 300 $\mu$ L
	<b>Systematic Error</b> (per channel)	20 $\mu$ L: $\pm$ 1.0% (0.20 $\mu$ L) 10 $\mu$ L: $\pm$ 1.5% (0.15 $\mu$ L) 2 $\mu$ L: $\pm$ 5.0% (0.10 $\mu$ L)	300 $\mu$ L: $\pm$ 1.0% (3.0 $\mu$ L) 150 $\mu$ L: $\pm$ 1.5% (2.25 $\mu$ L) 30 $\mu$ L: $\pm$ 1.5% (0.45 $\mu$ L) 15 $\mu$ L: $\pm$ 2.0% (0.30 $\mu$ L)
	<b>Random Error</b> (per channel)	20 $\mu$ L: $\leq$ 0.5% (0.10 $\mu$ L) 10 $\mu$ L: $\leq$ 1.0% (0.10 $\mu$ L) 2 $\mu$ L: $\leq$ 3.0% (0.06 $\mu$ L)	300 $\mu$ L: $\leq$ 1.0% (3.0 $\mu$ L) 150 $\mu$ L: $\leq$ 1.0% (1.50 $\mu$ L) 30 $\mu$ L: $\leq$ 1.0% (0.30 $\mu$ L) 15 $\mu$ L: $\leq$ 2.0% (0.30 $\mu$ L)
	<b>Volume Increments</b>	0.01 $\mu$ L	0.1 $\mu$ L



## Rainin SP and SP+ Pipette Controllers

### Easy Control at Your Fingertips

Superior ergonomics, state-of-the-art technology and a unique, extendable head to conquer your larger volume liquid handling needs with speed and ease.

#### Extendable head (SP+)

Telescoping head for added comfort, particularly when operating in a laminar flow hood.

#### Variable speed, low force

Easily adjustable aspiration/dispense speeds offer greater flexibility with various solutions and media, and protection for sensitive cells.

#### Lightweight, easy to use

The ergonomic and well-balanced design makes the instrument easy to hold and operate.

#### Powerful battery

Delivers 15 hours of operation on single charge and up to one hour after just 10 minutes.

#### Wide range of consumables

Rainin SP+ works with all types of 1 mL to 100 mL serological and micro pipettes and can transfer liquid from 0.1 mL to 100 mL.



CATALOG No.	DESCRIPTION
<b>SP+</b> 30671415	Rainin SP+ pipette controller, 0.1–100 mL
<b>SP</b> 30671413	Rainin SP pipette controller, 0.1–100 mL (China)
<b>SP</b> 30671414	Rainin SP pipette controller, 0.1–100 mL

Model availability varies by region.

► [mt.com/Rainin-SPplus](http://mt.com/Rainin-SPplus)



## Specific Applications

- Cell culture
- Bacteria and yeast culture
- Sample prep (DNA/RNA/ protein extraction)

## Environment

- On the bench
- In the biosafety – and chemical-hood

## Liquid Transfer

- Buffer
- Chemicals
- Media



CATALOG No. DESCRIPTION

ACCS.	CATALOG No.	DESCRIPTION
	<b>30621244</b>	Filter, non-sterilized
	<b>30695285</b>	Filter, sterilized
	<b>30671310</b>	Magnetic Hang-Up
	<b>30621247</b>	Pipette adaptor



# Rainin QuickFlow

## Portable Easy-to-Use Aspirator

### Smart features

- Variable speed settings
- Non-contact liquid level sensor
- 4L waste reservoir with carry handle
- Quick-snap connectors and tubing
- Autoclavable bottle and cap
- Fits in most hoods
- Single channel, 8-channel and serological adaptors

### Guaranteed safety

The robust, non-contact liquid level sensor prevents overflows with auto-stop, a flashing light and audible alarm when the reservoir is full. Simple, self-sealing snap connectors keep the contents and any contamination inside the bottle.



CATALOG No.	DESCRIPTION
<b>30519826</b>	<b>QuickFlow System – UNV</b> Includes variable speed vacuum system, 4L autoclavable reservoir with inlet/outlet snap connector cap, non-contact liquid level sensor system for reservoir, inlet and outlet vacuum tubing with snap connectors and complete handle kit.
<b>30551530</b>	<b>QuickFlow System – LTS</b> Includes variable speed vacuum system, 4L autoclavable reservoir with inlet/outlet snap connector cap, non-contact liquid level sensor system for reservoir, inlet and outlet vacuum tubing with snap connectors and complete handle kit.
<b>30519824</b>	<b>QuickFlow Handle Kit – UNV</b> Standard UNV kit includes ergonomic handle with continuous and non-continuous flow control, three adaptors (8-channel/universal tip, single-channel/universal tip, single Pasteur pipette), vacuum tubing and handle hook accessory.
<b>30551534</b>	<b>QuickFlow Handle Kit – LTS</b> LTS kit includes ergonomic handle with continuous and non-continuous flow control, three adaptors (8-channel/universal tip, single-channel/universal tip, single Pasteur pipette), vacuum tubing and handle hook accessory.

► [mt.com/QuickFlow](http://mt.com/QuickFlow)



## Upgrade Your Liquid Aspiration – It's Easy!

The Rainin QuickFlow Handle Kit – with three adapters – attaches easily to your central vacuum system





**Single channel adapter**  
Wide range of Rainin universal-fit tips to suit your application.



**Serological adapter**  
Fits standard glass or plastic Pasteur pipettes



**Continuous flow option**  
Switch suction on to reduce finger strain

8-channel adapter

### No-clog design

Unique channel design prevents blockage and delivers long-lasting performance.

### Upgrade your system

QuickFlow handle and tubing attaches easily to your vacuum system.

### Hand-saving ergonomic design

Convenient, low-force tip ejection with one hand.

### Easy cleaning

The QuickFlow handle, adapters and tube is easy to clean and autoclavable.

## Rainin AutoRep S Manual Repeater Pipette

Flexible volume ranges and a wide selection of syringes ensure precise performance.

The ergonomic AutoRep™ S manual repeater pipette is simple to operate, lightweight and easy on the hands.

Useful when working in the aliquot range from 2 µL to 5 mL, AutoRep S is an economical choice for repeat dispensing up to 49 aliquots without refilling.

The wide selection of Encode™ syringes in sizes from 0.1 mL to 50 mL is available in sterile and non-sterile.

	CATALOG No.	DESCRIPTION
AutoRep S	17013008	Manual repeater pipette volume range: 2 µL to 5 mL
	17013009	Shelf mount
	17013010	Volume table

	CATALOG No.	MAX. VOLUME	QUANTITY	
Encode Syringes	17007399	0.1 mL	100 per pkg	
	17007400	0.1 mL	100 per pkg	Sterile
	17001871	0.5 mL	100 per pkg	
	17001872	0.5 mL	100 per pkg	Sterile
	17013004	1 mL	100 per pkg	
	17013002	1 mL	100 per pkg	Sterile
	17001873	1.25 mL	100 per pkg	
	17001874	1.25 mL	100 per pkg	Sterile
	17001877	2.5 mL	100 per pkg	
	17001878	2.5 mL	100 per pkg	Sterile
	17001883	5 mL	100 per pkg	
	17001884	5 mL	100 per pkg	Sterile
	17013005	10 mL	100 per pkg	
	17013003	10 mL	100 per pkg	Sterile
	17001875	12.5 mL	100 per pkg	
	17001876	12.5 mL	100 per pkg	Sterile
	17001879	25 mL*	50 per pkg	
	17001880	25 mL*	25 per pkg	Sterile
	17001881	50 mL*	25 per pkg	
	17001882	50 mL*	25 per pkg	Sterile

\* Includes one adapter. For complete syringe offering, please visit [mt.com/rainin](http://mt.com/rainin)



## Rainin Disp-X

### Large Volume Bottle Top Dispensing

Built-in safety features prevent spills and ensure smooth, trouble-free operation.

#### Superior chemical compatibility

High-grade inert materials assure the purity of your reagents from the first aliquot to the last.

#### Safety first!

Discharge tube and closure cap prevent accidental dispensing or spilling of corrosive liquids.

#### Clear and easy control

Adjustable control knob facilitates volume setting.

#### Flexible options

Telescoping filling tubes accommodate different size bottles.



CATALOG No. DESCRIPTION

Disp-X	<b>30373527</b>	Disp-X 0.5–5 mL bottle-top dispenser		
	<b>30373528</b>	Disp-X 1–10 mL bottle-top dispenser		
	<b>30373529</b>	Disp-X 2.5–25 mL bottle-top dispenser		
	<b>30373750</b>	Disp-X 5–50 mL bottle-top dispenser		
Accessories	<b>30373751</b>	Disp-X discharge tube	5 or 10 mL	
	<b>30373752</b>	Disp-X discharge tube	25 or 50 mL	
	<b>30373753</b>	Disp-X filling tube	5 or 10 mL	125–240 mm length
	<b>30373754</b>	Disp-X filling tube	5 or 10 mL	250–480 mm length
	<b>30373755</b>	Disp-X filling tube	25 or 50 mL	170–330 mm length
	<b>30373756</b>	Disp-X filling tube	25 or 50 mL	250–480 mm length
	<b>30373757</b>	Disp-X filling valve	5 or 10 mL	
	<b>30373758</b>	Disp-X filling valve	25 or 50 mL	
	<b>30373759</b>	Disp-X discharge valve	5 or 10 mL	
	<b>30373760</b>	Disp-X discharge valve	25 or 50 mL	

## Pipette Performance Matters

### Trust METTLER TOLEDO to Deliver

Your work is too important to risk inaccurate or inconsistent data due to poor pipette performance. Pipette service by METTLER TOLEDO is rigorous and comprehensive, executed by highly trained and experienced technicians who know your pipettes. Make certain these important research tools deliver the reliability and reproducibility your work depends on – with METTLER TOLEDO Service.

Reliable pipette service is part of the Rainin 360+™ system for optimal liquid handling results. Precision pipettes, high-purity tips and expert service are all backed by innovative tools, software and training to ensure exceptional performance across your workflows.

With secure, global measurement standards and the world's largest service team, only METTLER TOLEDO offers the depth, breadth and level of process integrity and control your pipettes demand.



#### Largest Service Team

We have built the world's largest pipette service organization – including the largest network of ISO 17025-accredited service labs and onsite service teams – to ensure consistent, reliable service performance in over 40 countries.



#### Factory-Trained Technicians

Every pipette calibration technician is factory trained and equipped with state-of-the-art METTLER TOLEDO balances to assure accurate gravimetric measurements and provide a thorough and reliable pipette service experience.



#### Global Data Governance

Our proprietary Global Pipette Service Solution – GPSS – securely records measurement data directly from the balance to eliminate any potential for recording inaccurate results. Adhering to a single, global standard, it also links directly to PipetteX for electronic calibration certificate delivery. 24 CFR Part 11 compliant.







### OEM Parts & Specifications

Maintenance and repairs are performed according to every major pipette manufacturer's specifications – from OEM parts to the recommended greases – to ensure that your instruments continue to perform with precision and accuracy.



### Plans to Meet Your Needs

Whether you prefer onsite or mail-in service, we offer a wide range of service plans. With fast turnaround and the capacity to meet any laboratory's need – including ISO 8655 calibration service – METTLER TOLEDO has the capacity and expertise to meet your exacting needs.



### Your Pipette Service Partner

We offer an experienced team of service professionals who can help you determine which calibration intervals and interim pipette verification tests best suit your needs and workflows.



## RaininService

### Guaranteed Quality

When it comes to calibration services, one size does not fit all – so we offer a variety of service plans.

#### Mail-in

- Convenient mail-in service
- ISO 17025 accredited
- Tight temperature, humidity, vibration controls
- 6- and 7- place METTLER TOLEDO balances
- METTLER TOLEDO MCP multichannel balances

#### Onsite\*

- Perfect for labs with chain-of-custody concerns
- ISO 17025 accredited
- METTLER TOLEDO balances
- Minimal downtime
- Pipettes are calibrated in the environment where they are used
- METTLER TOLEDO onsite technicians

\* Not available in all countries

#### Service Plans

All plans include:

- Full preventive maintenance (PM) with seal replacement or restoration
- Liquid leak test on all nozzles
- Adjustment to manufacturer's tolerances
- Calibration certificate with detailed results
- Calibration label

	Standard* Plan	Advanced* Plan	Accredited Plan	Accredited+ Plan
	Labs with basic service needs  Perfect for Academic R&D Research Labs	When prior performance matters  Pharma Biotech Clinical Research Labs	For complete ISO 17025 documentation  GLP/GMP, Regulated Labs	ISO 8655 and 17025 compliance  GLP/GMP, Regulated Labs
<b>Preventive Maintenance</b>	✓ Yes	✓ Yes	✓ Yes	✓ Yes
<b>As Found Calibration</b>	N/A	4 Test weighings @ 10, 100 %	10 Test weighings @ 10, 50, 100 %	10 Test weighings @ 10, 50, 100 %
<b>As Left Calibration</b>	4 Test weighings @ 10, 100 %	4 Test weighings @ 10, 100 %	10 Test weighings @ 10, 50, 100 %	10 Test weighings @ 10, 50, 100 %
<b>Certificate</b>	Standard	Standard	ISO 17025	ISO 17025
<b>Compliance</b>	Rainin Method*	Rainin Method*	ISO 8655-7:2022	ISO 8655-6:2022

\* Rainin Method follows ISO 8655-7 Annex A



## Good Pipetting Practice

### Better Results through Better Understanding

The performance of any instrument is improved in the hands of a skilled operator. Through GPP™, labs can reduce errors and improve the reliability and repeatability of their results. The key: better understanding the factors that affect experiments and learning application-specific techniques.

You can improve data quality with Good Pipetting Practice™ – METTLER TOLEDO's comprehensive, systematic approach to maximizing pipetting accuracy and repeatability.

#### Routine Operation

Care for pipettes in the lab and know when to send pipettes for service.

#### Calibration

Recognize the risks associated with out-of-calibration pipettes and learn how using Quick Check can help assess a pipette's accuracy between calibrations.



#### Evaluation

Evaluate the variables, tolerances and other aspects of your application.

#### Selection

Maximize your potential to produce accurate and reproducible data by selecting the right tools for a specific application.

#### Training

Optimize workflows and improve outcomes with application-specific pipetting techniques. Also, learn how to minimize pipetting discomfort and injury through better ergonomics.

► See how much GPP has to offer at [www.mt.com/gpp](http://www.mt.com/gpp)



## Reduce Plastic Waste with Rainin

### Greener Tip Rack Solutions

Rainin offers a number of waste-saving pipette tip rack options to help meet your sustainability objectives. We've taken a three-pronged approach to reducing plastic rack waste:

- Reducing the amount of plastic – particularly #5 polypropylene that, when recycled, downcycles into lower-quality products (e.g., doormats, crates, etc.).
- Replacing polypropylene with PET, which is more widely-recycled and recycled PET can be made into the same or similar products (water bottles, TerraRacks, etc.).
- Avoiding plastic components, instead using natural, compostable materials like plant fiber.

Plastic savings shown below are calculated using our current standard 1000  $\mu$ L polypropylene tip rack as the baseline. Components used for the calculation include the rack base, lid, tip deck, sleeve (refills) and any plastic wrapping – tips are not included. Actual plastic savings percentages vary slightly by rack size (10  $\mu$ L racks are smaller than 1000  $\mu$ L racks). Our current standard rack, which we introduced in 2018, uses 20% less polypropylene than the rack it replaced, so the amount of plastic saved shown below is on top of the already-reduced plastic rack.



#### Bulk Tips

The most sustainable rack is the rack you don't use, which makes manually refilling spent racks and wafers with BioClean Ultra tips in bulk a reasonable option for some labs.

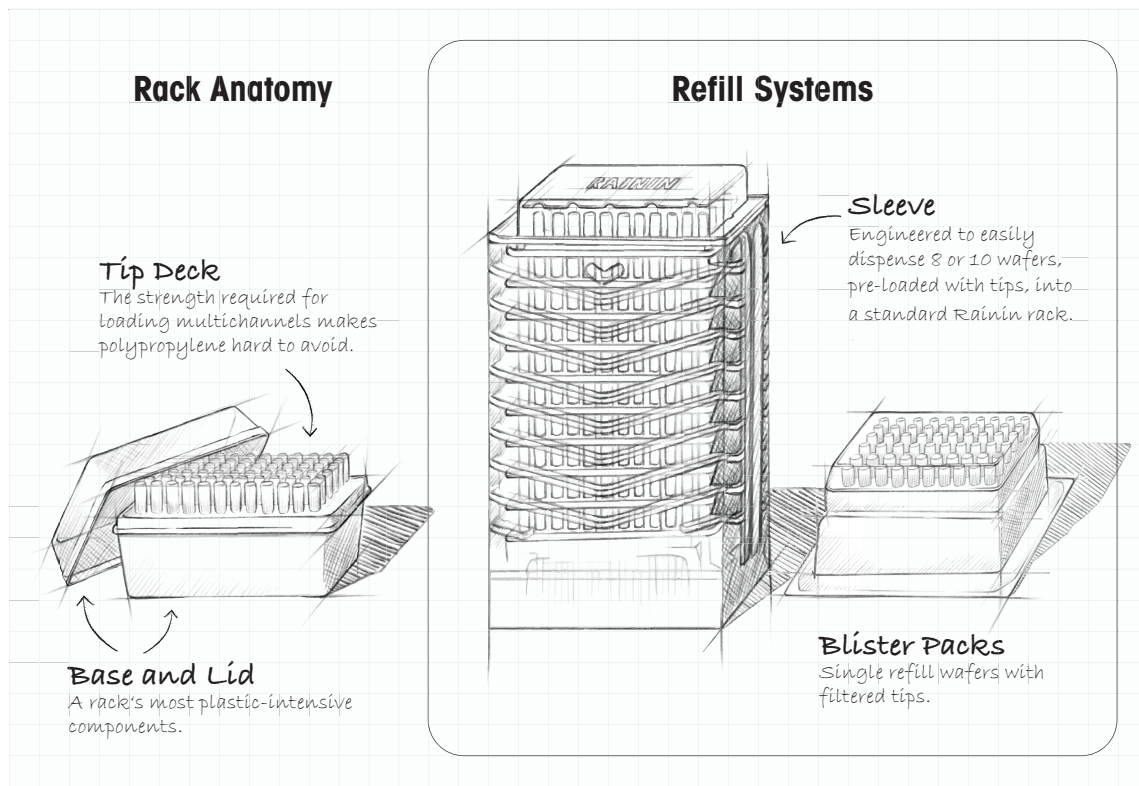
#### EarthRack

EarthRack eliminates plastic waste almost entirely. Other than the thin polypropylene tip deck, EarthRack is made entirely from compostable, rapidly renewable plant fiber. EarthRack uses up to 82% less plastic than the Rainin standard rack.

#### Green-Pak

Green-Pak and Green-Pak SpaceSaver refill systems for Rainin standard racks reduce plastic waste by up to 80%. Green-Pak's SpaceSaver sleeve and Green-Pak sealed refill packs are both made from highly-recyclable #1 PET.





### StableStak

Rainin StableStak multilayer system is designed for high-production multichannel work. With five layers mounted on a sturdy base and 192 tips per layer, each StableStak is equivalent to 10 96-tip racks.



### TerraRack

Not only composed of 50% less plastic than the Rainin standard rack, TerraRack is made almost entirely from #1 PET – the same plastic as in water bottles and the most commonly recycled plastic worldwide. Easy to disassemble and compress, TerraRacks take up considerably less volume as waste.



### Rainin Standard Rack

Like most pipette tip racks, Rainin standard racks are 100% polypropylene (#5), which is prized for strength and durability. This rack was reengineered in 2018 to reduce the amount of polypropylene it contains by 20%.



## Rainin EarthRack


### Compostable, Biodegradable Tip Rack

EarthRack is made primarily from refined cellulose that is easy to compost and is biodegradable. Because the small, recyclable polypropylene tip deck is the only plastic component, EarthRack significantly reduces plastic use and waste.

Available in 20 µL, 200 µL and 1000 µL.

Rainin LTS LifeTouch System only. 



CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES	
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	FILTER
 <b>EarthRack</b> 30807966	ER LTS 20µL F 960G/10	20 µL		10	960	✓	✓
<b>EarthRack</b> 30807967	ER LTS 200µL F 960G/10	200 µL		10	960	✓	✓
<b>EarthRack</b> 30808038	ER LTS 1000µL F 768G/8	1000 µL		8	768	✓	✓

[mt.com/EarthRack](http://mt.com/EarthRack)



## EarthRack is **BioClean Green™**

Rainin EarthRack products are certified to be BioClean Green – a comprehensive testing process and specifications developed specifically for cellulose-based tip racks.

Because EarthRack is derived from natural, plant-based materials, BioClean Green employs a broader, more intrusive quality testing procedure to assure the absence of biological contaminants. For example, the use of cellulose requires an additional test for chloroplast DNA. Testing for DNase and RNase has been expanded to include three separate tests for each nuclease for complete assurance of tip performance.

### Specifications

#### BioClean Green Test Limits of Detection (LODs)

Human DNA	<0.32 pg
Bacterial DNA	<0.032 pg
Plant (chloroplast) DNA	<0.032 pg
DNase (three tests)	
• Gel electrophoresis	$\leq 10^{-7}$ KU/ $\mu$ L
• Kunitz Assay	$\leq 10^{-4}$ KU/ $\mu$ L
• qPCR	$\leq 10^{-5}$ KU/ $\mu$ L
RNase (three tests)	
• Gel electrophoresis	$\leq 10^{-5}$ KU/ $\mu$ L
• Kunitz Assay	$\leq 10^{-5}$ KU/ $\mu$ L
• RT-qPCR	$\leq 10^{-5}$ KU/ $\mu$ L
Endotoxin (LPS)	$\leq 0.01$ EU/mL
Protein	<2 ng/tip
Protease	<500 ng/mL
PCR inhibitors	None detected



### Earth Friendly

EarthRack's lid and base are composed of a biodegradable bamboo and sugar cane cellulose material that can be composted at municipal facilities. If deposited in a landfill, they will biodegrade.



### Reduces Plastic Waste

With up to 75% less plastic than conventional racks, adopting EarthRack can help organizations meet their sustainability objectives.



### Less Carbon

When composted, incinerated or deposited into a landfill, EarthRack's cellulose components contribute no net increase in atmospheric CO<sub>2</sub>. Carbon absorbed during initial plant growth is simply returned to the atmosphere.



## TerraRack

### The Most Eco-Friendly Rack Around

Less weight, less waste, 100% recyclable

TerraRack™ is a revolutionary concept in tip racks. Sturdy as conventional racks, yet made with less than half the plastic of standard racks and completely recyclable. In fact, the hinged TerraRack shell is made from PET, which is easily recycled.

For convenience and complete cleanliness, TerraRacks with BioClean Ultra tips come sterilized (they are not autoclavable).

Many volume sizes available in both LTS  and universal  formats.



#### Less waste

With 50% less plastic than conventional racks, TerraRacks are also extremely compressible, so racks occupy significantly less space in a waste or storage container.



#### 100% recyclable

In addition to being completely recyclable, much of each TerraRack is composed of PET, which is easily recycled and aggressively recovered from the plastic waste stream.

  
Recycled PET!



#### Sterilized

TerraRacks are sterilized so you can be certain that you're working with a fresh, clean rack every time.







CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES			
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFT-GUARD	FILTER	
<b>LTS</b>	<b>TerraRack</b>	<b>17014960</b>	TR LTS 20µL S 960A/10	20 µL <sup>1</sup>	10	960	✓		
		<b>17014961</b>	TR LTS 20µL F 960A/10	20 µL <sup>1</sup>	10	960	✓		✓
		<b>17014962</b>	TR LTS 250µL S 960A/10	200 µL <sup>2</sup>	10	960	✓		
		<b>17014963</b>	TR LTS 200µL F 960A/10	200 µL <sup>2</sup>	10	960	✓		✓
		<b>17014964</b>	TR LTS 300µL S 768A/8	300 µL	8	768	✓		
		<b>17014965</b>	TR LTS 300µL F 768A/8	300 µL	8	768	✓		✓
		<b>17014966</b>	TR LTS 1000µL S 768A/8	1000 µL	8	768	✓		
		<b>17014967</b>	TR LTS 1000µL F 768A/8	1000 µL	8	768	✓		✓
		<b>17014968</b>	TR LTS 1200µL S 768A/8	1200 µL	8	768	✓		
		<b>17014969</b>	TR LTS 1200µL F 768A/8	1200 µL	8	768	✓		✓
<b>UNV</b>	<b>TerraRack</b>	<b>17014970</b>	TR UNV 10µL S 960A/10	10 µL	10	960	✓		
		<b>17014971</b>	TR UNV 10µL F 960A/10	10 µL	10	960	✓		✓
		<b>17014972</b>	TR UNV 10µL GS 960A/10	10 µL	10	960	✓	✓	
		<b>17014973</b>	TR UNV 10µL GF 960A/10	10 µL	10	960	✓	✓	✓
		<b>17014974</b>	TR UNV 20µL F 960A/10	20 µL	10	960	✓		✓
		<b>17014975</b>	TR UNV 100µL F 960A/10	100 µL	10	960	✓		✓
		<b>17014977</b>	TR UNV 200µL F 960A/10	200 µL	10	960	✓		✓
		<b>17014976</b>	TR UNV 250µL S 960A/10	250 µL	10	960	✓		
		<b>17014978</b>	TR UNV 300µL S 768A/8	300 µL	8	768	✓		
		<b>17014979</b>	TR UNV 300µL F 768A/8	300 µL	8	768	✓		✓
		<b>17014980</b>	TR UNV 1000µL S 768A/8	1000 µL	8	768	✓		
		<b>17014981</b>	TR UNV 1000µL F 768A/8	1000 µL	8	768	✓		✓
<b>TerraBase</b>	TerraBase Accessory for TerraRack								
	<b>17014982</b>	TerraRack Base - short; 1 base to fit 10 - 300 µL TerraRack racks							
	<b>17014983</b>	TerraRack Base - tall; 1 base to fit 1000/1200 µL TerraRack racks							

<sup>1</sup> Fits 2, 10 and 20 µL pipettes    <sup>2</sup> Fits 50, 100 and 200 µL pipettes



## Eco-Friendly Refills

### Less Waste, More Space

Space-saving rack refill options enhance your workflow and minimize plastic waste. Order empty racks if you don't already have them. Many volume sizes available in both LTS  and universal  formats.

**Green-Pak® SpaceSaver®** 80% less waste than conventional racks

#### Fast

Refill a rack in seconds

#### Clean

Protects tips from contamination

#### Convenient

Dispensing sleeve is easy to use

#### Save space

Each sleeve contains 8 or 10 refills



**Green-Pak** Individually sealed refills

#### Filter tips

A great refill option for filter tip users

#### Clean

Each refill is completely sealed

#### Easy

Load refills without touching the tips

#### Reduce waste

75% less plastic than a regular rack





Rack base not included with SpaceSaver.



Rack base not included with SpaceSaver.

	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES		
			MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFT/GARD	FILTER	
<b>SpaceSaver</b>	30389291	GPS LTS 20µL 960A/10	20 µL <sup>1</sup>	10	960				
	30389297	GPS LTS 20µL S 960A/10	20 µL <sup>1</sup>	10	960	✓			
	30389299	GPS LTS 250µL 960A/10	200 µL <sup>2</sup>	10	960				
	30389301	GPS LTS 250µL S 960A/10	200 µL <sup>2</sup>	10	960	✓			
	30389303	GPS LTS 300µL 768A/8	300 µL	8	768				
	30389304	GPS LTS 300µL S 768A/8	300 µL	8	768	✓			
	30389292	GPS LTS 1000µL 768A/8	1000 µL	8	768				
30389294	GPS-LTS 1000µL S 768A/8	1000 µL	8	768	✓				
<b>Green-Pak</b>	30389270	GP LTS 20µL 960A/10	20 µL <sup>1</sup>	10	960				
	30389275	GP LTS 20µL S 960A/10	20 µL <sup>1</sup>	10	960	✓			
	30389274	GP LTS 20µL F 960A/10	20 µL <sup>1</sup>	10	960	✓		✓	
	30389277	GP LTS 250µL 960A/10	200 µL <sup>2</sup>	10	960				
	30389278	GP LTS 250µL S 960A/10	200 µL <sup>2</sup>	10	960	✓			
	30389276	GP LTS 200µL F 960A/10	200 µL <sup>2</sup>	10	960	✓		✓	
	30389271	GP LTS 1000µL 768A/8	1000 µL	8	768				
	30389273	GP LTS 1000µL S 768A/8	1000 µL	8	768	✓			
30389272	GP LTS 1000µL F 768A/8	1000 µL	8	768	✓		✓		
<b>Empty Racks</b>	30389354	Tip Racks GPR LTS 20µL 0/10	20 µL	10					
	30389353	Tip Racks GPR XXX 250µL 0/10	200 µL	10					
	30397667	Tip Racks GPR XXX 300µL 0/8	300 µL	8					
	30389351	Tip Racks GPR XXX 1000µL 0/8	1000 µL	8					
<b>SpaceSaver</b>	30389283	GPS UNV 10µL G 960A/10	10 µL	10	960		✓		
	30389285	GPS UNV 10µL GS 960A/10	10 µL	10	960	✓	✓		
	30389287	GPS UNV 250µL 960A/10	250 µL	10	960				
	30389289	GPS UNV 250µL S 960A/10	250 µL	10	960	✓			
	30397665	GPS UNV 300µL 768A/8	300 µL	8	768				
	30397666	GPS UNV 300µL S 768A/8	300 µL	8	768	✓			
	30389279	GPS UNV 1000µL 768A/8	1000 µL	8	768				
	30389281	GPS UNV 1000µL S 768A/8	1000 µL	8	768	✓			
<b>Green-Pak</b>	30389258	GP UNV 10µL 960A/10	10 µL	10	960				
	30389265	GP UNV 10µL S 960A/10	10 µL	10	960	✓			
	30389263	GP UNV 10µL F 960A/10	10 µL	10	960	✓		✓	
	30389264	GP UNV 10µL FG 960A/10	10 µL	10	960	✓	✓	✓	
	30389267	GP UNV 20µL F 960A/10	20 µL	10	960	✓		✓	
	30389262	GP UNV 100µL F 960A/10	100 µL	10	960	✓		✓	
	30389266	GP UNV 200µL F 960A/10	200 µL	10	960	✓		✓	
	30389268	GP UNV 250µL 960A/10	250 µL	10	960				
	30389269	GP UNV 250µL S 960A/10	250 µL	10	960	✓			
	30389259	GP UNV 1000µL 768A/8	1000 µL	8	768				
	30389261	GP UNV 1000µL S 768A/8	1000 µL	8	768	✓			
	30389260	GP UNV 1000µL F 768A/8	1000 µL	8	768	✓		✓	
<b>Empty Racks</b>	30389350	Tip Racks GPR UNV 10µL 0/10	10 µL	10					
	30389354	Tip Racks GPR LTS 20µL 0/10	10 µL	10			✓		
	30389353	Tip Racks GPR XXX 250µL 0/10	250 µL	10					
	30397667	Tip Racks GPR XXX 300µL 0/8	300 µL	8					
	30389351	Tip Racks GPR XXX 1000µL 0/8	1000 µL	8					

<sup>1</sup> Fits 2, 10 and 20 µL pipettes <sup>2</sup> Fits 50, 100 and 200 µL pipettes



## Double-96 Racked Tips StableStak and StableRak

Ideal for high production environments. Perfect for multichannel pipetting!  
Available in both LTS  and universal  formats.

### StableStak™

Stacked double-96 racks  
with 192 tips per layer.



### StableRak™

Individual double-96 racks  
with 192 tips per layer.



#### Formats

Standard, sterilized  
and filter (StableRak only)

#### Protective

Keeps tips safe from debris, dust  
and contamination

#### Fast-loading

Sturdy, non-slip racks make  
tip loading easy

**LTS**  
StableRak and  
StableStak



**UNV**

**LTS**

Bulk Tips  
LTS and UNV  
formats



**UNV**

CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES			
		MAX VOLUME		PACKS/CARTON	TIPS/CARTON	STERILIZED	FILTER	SHAFT/GARD	WIDE-O
<b>17005862</b>	SR LTS 20µL 960A/5	20 µL <sup>1</sup>		5	960				
<b>17005861</b>	SR LTS 20µL S 960A/5	20 µL <sup>1</sup>		5	960	✓			
<b>17005860</b>	SR LTS 20µL F 960A/5	20 µL <sup>1</sup>		5	960	✓	✓		
<b>17005864</b>	SR LTS 250µL 960A/5	200 µL <sup>2</sup>		5	960				
<b>17005863</b>	SR LTS 250µL S 960A/5	200 µL <sup>2</sup>		5	960	✓			
<b>17005859</b>	SR LTS 200µL F 960A/5	200 µL <sup>2</sup>		5	960	✓	✓		
<b>17005867</b>	SR LTS 300µL 768A/4	300 µL		4	768				
<b>17005866</b>	SR LTS 300µL S 768A/4	300 µL		4	768	✓			
<b>17005865</b>	SR LTS 300µL F 768A/4	300 µL		4	768	✓	✓		
<b>17007083</b>	SR LTS 1000µL 768A/4	1000 µL		4	768				
<b>17007082</b>	SR LTS 1000µL S 768A/4	1000 µL		4	768	✓			
<b>17007081</b>	SR LTS 1000µL F 768A/4	1000 µL		4	768	✓	✓		
<b>17007086</b>	SR LTS 1200µL 768A/4	1200 µL		4	768				
<b>17007085</b>	SR LTS 1200µL S 768A/4	1200 µL		4	768	✓			
<b>17007084</b>	SR LTS 1200µL F 768A/4	1200 µL		4	768	✓	✓		
<b>17005873</b>	SS LTS 20µL 960A/5	20 µL <sup>1</sup>		5	960				
<b>17005872</b>	SS LTS 20µL S 960A/5	20 µL <sup>1</sup>		5	960	✓			
<b>17005875</b>	SS LTS 250µL 960A/5	200 µL <sup>2</sup>		5	960				
<b>17005874</b>	SS LTS 250µL S 960A/5	200 µL <sup>2</sup>		5	960	✓			
<b>17005877</b>	SS LTS 300µL 768A/4	300 µL		4	768				
<b>17005876</b>	SS LTS 300µL S 768A/4	300 µL		4	768	✓			
<b>17007090</b>	SS LTS 1000µL 768A/4	1000 µL		4	768				
<b>17007089</b>	SS LTS 1000µL S 768A/4	1000 µL		4	768	✓			
<b>17005857</b>	SR UNV 300µL 768/4	300 µL		4	768				
<b>17001128</b>	RC LTS 20µL 1000A/1	20 µL <sup>1</sup>			1000				
<b>17001118</b>	RC LTS 250µL 1000A/1	200 µL <sup>2</sup>			1000				
<b>17001132</b>	RC LTS 300µL 1000A/1	300 µL			1000				
<b>17001129</b>	RC LTS 1000µL 1000A/1	1000 µL			1000				
<b>17006324</b>	RC LTS 1200µL 1000A/1	1200 µL			1000				
<b>17001130</b>	RC LTS 2000µL 1000A/1	2000 µL			1000				
<b>17001133</b>	RC LTS 5000µL 1000A/1	5000 µL			1000				
<b>17001119</b>	RC LTS 10mL 200A/1	10 mL			200				
<b>17005940*</b>	RC LTS 10mL S 75A/*	10 mL			75	✓			
<b>17001131</b>	RC LTS 20mL 100A/1	20 mL			100				
<b>17005941*</b>	RC LTS 20mL S 50A/*	20 mL			50	✓			
<b>17001124</b>	RC UNV 10µL 1000A/10	10 µL			1000				
<b>17001123</b>	RC UNV 10µL G 1000A/10	10 µL			1000			✓	
<b>17001116</b>	RC UNV 250µL 1000A/1	250 µL			1000				
<b>17001127</b>	RC UNV 250µL W 1000A/1	250 µL			1000				✓
<b>17001121</b>	RC UNV 1000µL 1000A/1	1000 µL			1000				
<b>17001125</b>	RC UNV 2000µL 1000A/1	2000 µL			1000				
<b>17001126</b>	RC UNV 2500µL 1000A/1	2500 µL			1000				
<b>17001117</b>	RC UNV 5000µL 1000A/1	5000 µL			1000				
<b>17001122</b>	RC UNV 10mL 200A/1	10 mL			200				
<b>17005939*</b>	RC UNV 10mL S 75A/*	10 mL			75	✓			

\*individually wrapped Wide-O = Wide Orifice <sup>1</sup> Fits 2, 10 and 20 µL pipettes <sup>2</sup> Fits 50, 100 and



# Racked Tips

## SBS Standard Tip Packaging

### Removable-cover Racks

Removable-cover racks – easy, practical, convenient packaging. Many volume sizes available in both LTS and universal formats.



- 20% less plastic than the original RT rack<sup>1</sup>
- Locking latch
- Removable hinged lid
- BioClean Ultra-certified
- Use with Green-Pak and SpaceSaver refills
- Available with Low Retention tips (see page 56)



CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES			
		MAX VOLUME	UNITS	RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFTGUARD	WIDE-O	FILTER
<b>30389200</b>	RT LTS 20µL 960A/10	20 µL <sup>1</sup>	10	960					
<b>30389228</b>	RT LTS 20µL S 960A/10	20 µL <sup>1</sup>	10	960	✓				
<b>30389225</b>	RT LTS 20µL F 960A/10	20 µL <sup>1</sup>	10	960	✓			✓	
<b>30389243</b>	RT LTS 250µL 960A/10	200 µL <sup>2</sup>	10	960					
<b>30389247</b>	RT LTS 250µL W 960A/10	200 µL <sup>2</sup>	10	960			✓		
<b>30389245</b>	RT LTS 250µL S 960A/10	200 µL <sup>2</sup>	10	960	✓				
<b>30389249</b>	RT LTS 250µL SW 960A/10	200 µL <sup>2</sup>	10	960	✓		✓		
<b>30389239</b>	RT LTS 200µL F 960A/10	200 µL <sup>2</sup>	10	960	✓			✓	
<b>30389253</b>	RT LTS 300µL 768A/8	300 µL	10	768					
<b>30389255</b>	RT LTS 300µL S 768A/8	300 µL	8	768	✓				
<b>30389254</b>	RT LTS 300µL F 768A/8	300 µL	8	768	✓			✓	
<b>30389211</b>	RT LTS 1000µL 768A/8	1000 µL	8	768					
<b>30389217</b>	RT LTS 1000µL W 768A/8	1000 µL	8	768			✓		
<b>30389215</b>	RT LTS 1000µL S 768A/8	1000 µL	8	768	✓				
<b>30389220</b>	RT LTS 1000µL SW 768A/8	1000 µL	8	768	✓		✓		
<b>30389212</b>	RT LTS 1000µL F 768A/8	1000 µL	8	768	✓			✓	
<b>30389230</b>	RT LTS 1200µL 768A/8	1200 µL	8	768					
<b>30389234</b>	RT LTS 1200µL S 768A/8	1200 µL	8	768	✓				
<b>30389231</b>	RT LTS 1200µL F 768A/8	1200 µL	8	768	✓			✓	
<b>30389236</b>	RT LTS 2000µL 480A/8	2000 µL	8	480					
<b>30389238</b>	RT LTS 2000µL S 480A/8	2000 µL	8	480	✓				
<b>30389237</b>	RT LTS 2000µL F 480A/8	2000 µL	8	480	✓			✓	
<b>30389256</b>	RT LTS 5000µL 192A/8	5000 µL	8	480					
<b>30389257</b>	RT LTS 5000µL S 192A/8	5000 µL	8	480	✓				

<sup>1</sup> Fits 2, 10 and 20 µL pipettes

<sup>2</sup> Fits 50, 100 and 200 µL pipettes





**Fast loading**

Robust secure racks make tip loading easy

**Autoclavable**

15 psi, 121°C,  
20 minutes

**Format options**

Standard, sterilized and filter versions available

**Protective**

Safe from dirt and contamination



CATALOG No. DESCRIPTION



	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES			
			MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFTGUARD	WIDE-O	FILTER
<b>Racked Tips</b>	<b>30389163</b>	RT UNV 10µL 960A/10	10 µL	10	960					
	<b>30389174</b>	RT UNV 10µL G 960A/10	10 µL	10	960		✓			
	<b>30389178</b>	RT UNV 10µL GS 960A/10	10 µL	10	960	✓	✓			
	<b>30389181</b>	RT UNV 10µL S 960A/10	10 µL	10	960	✓				
	<b>30389172</b>	RT UNV 10µL F 960A/10	10 µL	10	960	✓				✓
	<b>30389175</b>	RT UNV 10µL FG 960A/10	10 µL	10	960	✓	✓			✓
	<b>30389189</b>	RT UNV 20µL F 960A/10	20 µL	10	960	✓				✓
	<b>30389170</b>	RT UNV 100µL F 960A/10	100 µL	10	960	✓				✓
	<b>30389186</b>	RT UNV 200µL F 960A/10	200 µL	10	960	✓				✓
	<b>30389191</b>	RT UNV 250µL 960A/10	250 µL	10	960					
	<b>30389195</b>	RT UNV 250µL W 960A/10	250 µL	10	960			✓		
	<b>30389193</b>	RT UNV 250µL S 960A/10	250 µL	10	960	✓				
	<b>30389058</b>	RT UNV 300µL 768A/8	300 µL	10	768					
	<b>30389059</b>	RT UNV 300µL S 768A/8	300 µL	10	768	✓				
	<b>30389136</b>	RT UNV 300µL F 768A/8	300 µL	8	768	✓				✓
	<b>30389164</b>	RT UNV 1000µL 768A/8	1000 µL	8	768					
	<b>30389168</b>	RT UNV 1000µL S 768A/8	1000 µL	8	768	✓				
	<b>30389165</b>	RT UNV 1000µL F 768A/8	1000 µL	8	768	✓				✓
	<b>30389183</b>	RT UNV 2000µL 480A/8	2000 µL	8	480					
	<b>30389185</b>	RT UNV 2000µL S 480A/8	2000 µL	8	480	✓				
<b>30389184</b>	RT UNV 2000µL F 480A/8	2000 µL	8	480	✓				✓	
<b>30389198</b>	RT UNV 5000µL 192A/8	5000 µL	8	480						
<b>30389199</b>	RT UNV 5000µL S 192A/8	5000 µL	8	480	✓					

Wide-O = Wide Orifice



# Low Retention Tips

## Stop Wasting Valuable Sample!

Superhydrophobic Rainin LR low retention tips minimize residual volume, particularly when transferring viscous samples and liquids with low surface tension. A great option for pipetting valuable molecular biology reagents and expensive samples.

Available in both LTS and universal formats.



<sup>1</sup> Fits 2, 10 and 20 µL pipettes

<sup>2</sup> Fits 50, 100 and 200 µL pipettes



Rack base not included with SpaceSaver. See page 51 for empty racks.



	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES		
			MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	WIDE-O	LOW RET	FILTER
<b>Racked Tips</b>	<b>30389227</b>	RT LTS 20µL L 960A/10	20 µL <sup>1</sup>	10	960			✓	
	<b>30389229</b>	RT LTS 20µL LS 960A/10	20 µL <sup>1</sup>	10	960	✓		✓	
	<b>30389226</b>	RT LTS 20µL FL 960A/10	20 µL <sup>1</sup>	10	960	✓		✓	✓
	<b>30389244</b>	RT LTS 250µL L 960A/10	200 µL <sup>2</sup>	10	960			✓	
	<b>30389248</b>	RT LTS 250µL LW 960A/10	200 µL <sup>2</sup>	10	960		✓	✓	
	<b>30389246</b>	RT LTS 250µL LS 960A/10	200 µL <sup>2</sup>	10	960	✓		✓	
	<b>30389250</b>	RT LTS 250µL LSW 960A/10	200 µL <sup>2</sup>	10	960	✓	✓	✓	
	<b>30389240</b>	RT LTS 200µL FL 960A/10	200 µL <sup>2</sup>	10	960	✓		✓	✓
	<b>30389241</b>	RT LTS 200µL FLW 960A/10	200 µL <sup>2</sup>	10	960	✓	✓	✓	✓
	<b>30389160</b>	RT LTS 300µL L 768A/8	300 µL	8	768			✓	
	<b>30389161</b>	RT LTS 300µL LS 768A/8	300 µL	8	768	✓		✓	
	<b>30389162</b>	RT LTS 300µL FL 768A/8	300 µL	8	768	✓		✓	✓
	<b>30389214</b>	RT LTS 1000µL L 768A/8	1000 µL	8	768			✓	
	<b>30389216</b>	RT LTS 1000µL LS 768A/8	1000 µL	8	768	✓		✓	
	<b>30389213</b>	RT LTS 1000µL FL 768A/8	1000 µL	8	768	✓		✓	✓
	<b>30389219</b>	RT LTS 1000µL LW 768A/8	1000 µL	8	768		✓	✓	
<b>30389221</b>	RT LTS 1000µL LSW 768A/8	1000 µL	8	768	✓	✓	✓		
<b>30389218</b>	RT LTS 1000µL FLW 768A/8	1000 µL	8	768	✓	✓	✓	✓	
<b>30389233</b>	RT LTS 1200µL L 768A/8	1200 µL	8	768			✓		
<b>30389235</b>	RT LTS 1200µL LS 768A/8	1200 µL	8	768	✓		✓		
<b>30389232</b>	RT LTS 1200µL FL 768A/8	1200 µL	8	768	✓		✓	✓	
<b>SpaceSaver</b>	<b>30389296</b>	GPS LTS 20µL L 960A/10	20 µL <sup>1</sup>	10	960			✓	
	<b>30389298</b>	GPS LTS 20µL LS 960A/10	20 µL <sup>1</sup>	10	960	✓		✓	
	<b>30389300</b>	GPS LTS 250µL L 960A/10	200 µL <sup>2</sup>	10	960			✓	
	<b>30389302</b>	GPS LTS 250µL LS 960A/10	200 µL <sup>2</sup>	10	960	✓		✓	
	<b>30389895</b>	GPS LTS 300µL LS 768A/8	300 µL	8	768	✓		✓	
	<b>30389293</b>	GPS LTS 1000µL L 768A/8	1000 µL	8	768			✓	
<b>30389295</b>	GPS LTS 1000µL LS 768A/8	1000 µL	8	768	✓		✓		
<b>Bulk</b>	<b>17014340</b>	RC LTS 20µL L 1000A/1	20 µL		1000			✓	
	<b>17014341</b>	RC LTS 250µL L 1000A/1	200 µL		1000			✓	
	<b>17014342</b>	RC LTS 1000µL L 1000A/1	1000 µL		1000			✓	







**Rainin Standard**  
10 µL Tip  
after dispensing

**Rainin Low Retention**  
10 µL Tip  
after dispensing



CATALOG No. DESCRIPTION

	VOL	QTY	FEATURES								
			MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFT/GARD	WIDE-O	LOW RET	FILTER	
<b>Racked Tips</b>	<b>30389180</b>	RT UNV 10µL L 960A/10	10 µL	10	960					✓	
	<b>30389182</b>	RT UNV 10µL LS 960A/10	10 µL	10	960	✓				✓	
	<b>30389173</b>	RT UNV 10µL FL 960A/10	10 µL	10	960	✓				✓	✓
	<b>30389177</b>	RT UNV 10µL GL 960A/10	10 µL	10	960		✓			✓	
	<b>30389179</b>	RT UNV 10µL GLS 960A/10	10 µL	10	960	✓	✓			✓	
	<b>30389176</b>	RT UNV 10µL FGL 960A/10	10 µL	10	960	✓	✓			✓	✓
	<b>30389190</b>	RT UNV 20µL FL 960A/10	20 µL	10	960	✓				✓	✓
	<b>30389171</b>	RT UNV 100µL FL 960A/10	100 µL	10	960	✓				✓	✓
	<b>30389187</b>	RT UNV 200µL FL 960A/10	200 µL	10	960	✓				✓	✓
	<b>30389188</b>	RT UNV 200µL FLW 960A/10	200 µL	10	960	✓		✓		✓	✓
	<b>30389192</b>	RT UNV 250µL L 960A/10	250 µL	10	960					✓	
	<b>30389196</b>	RT UNV 250µL LW 960A/10	250 µL	10	960				✓	✓	
	<b>30389194</b>	RT UNV 250µL LS 960A/10	250 µL	10	960	✓				✓	
	<b>30389197</b>	RT UNV 250µL LSW 960A/10	250 µL	10	960	✓		✓		✓	
	<b>30389137</b>	RT UNV 300µL L 768A/8	300 µL	8	768					✓	
	<b>30389138</b>	RT UNV 300µL LS 768A/8	300 µL	8	768	✓				✓	
<b>30389139</b>	RT UNV 300µL FL 768A/8	300 µL	8	768	✓				✓	✓	
<b>30389167</b>	RT UNV 1000µL L 768A/8	1000 µL	8	768					✓		
<b>30389169</b>	RT UNV 1000µL LS 768A/8	1000 µL	8	768	✓				✓		
<b>30389166</b>	RT UNV 1000µL FL 768A/8	1000 µL	8	768	✓				✓	✓	
<b>SpaceSaver</b>	<b>30389284</b>	GPS UNV 10µL GL 960A/10	10 µL	10	960		✓			✓	
	<b>30389286</b>	GPS UNV 10µL GLS 960A/10	10 µL	10	960	✓	✓			✓	
	<b>30389288</b>	GPS UNV 250µL L 960A/10	250 µL	10	960					✓	
	<b>30389290</b>	GPS UNV 250µL LS 960A/10	250 µL	10	960	✓				✓	
	<b>30389280</b>	GPS UNV 1000µL L 768A/8	1000 µL	8	768					✓	
<b>30389282</b>	GPS UNV 1000µL LS 768A/8	1000 µL	8	768	✓				✓		
<b>Bulk</b>	<b>17014395</b>	RC UNV 10µL L 1000A/1	10 µL		1000					✓	
	<b>17014396</b>	RC UNV 10µL GL 1000A/1	10 µL		1000		✓			✓	
	<b>17014397</b>	RC UNV 250µL L 1000A/1	250 µL		1000					✓	
	<b>17014398</b>	RC UNV 1000µL L 1000A/1	1000 µL		1000					✓	
	<b>17015068</b>	RC UNV 1000µL LW 1000A/1	1000 µL		1000			✓		✓	



Rack base not included with SpaceSaver. See page 51 for empty racks.



Wide-O = Wide Orifice, Low Ret = Low Retention



## Specialty Tips

### Unique Tips for Special Applications



#### Extended-length tips

For tall narrow tube work.  
BioClean Ultra.

#### 102 mm long

Rainin extended-length LTS tips reach to the bottom of blocks, tall vials, flasks, 100 mm tubes, etc.

#### Narrow diameter

These tips will pass through 8 mm ID penetrable septa, such as on specimen collection kits.



#### Wide-orifice tips

Ideal for delicate samples.  
BioClean Ultra.

For samples with mammalian cells or high-molecular-weight DNA. 1.5 mm wide orifice minimizes shear forces on delicate samples and flow resistance for viscous samples. 200 and 1000  $\mu$ L.



#### ShaftGuard™ 10 $\mu$ L tips

Avoid cross-contamination.  
BioClean Ultra.

#### Tip protects shaft, tip ejector

Shaft and tip ejector are protected from contamination, reducing the need to decontaminate or sterilize the shaft and tip ejector when working with biological, radioactive or other critical samples.

	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES				
			MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	WIDE-O	LOW RET	FILTER	X-LENGTH	
<b>Racked Tips</b>	<b>30389251</b>	RT LTS 250µL X 768A/8	200 µL <sup>2</sup>	8	768						✓
	<b>30389252</b>	RT LTS 250µL SX 768A/8	200 µL <sup>2</sup>	8	768	✓					✓
	<b>30389242</b>	RT LTS 200µL FX 768A/8	200 µL <sup>2</sup>	8	768	✓				✓	✓
	<b>30389222</b>	RT LTS 1000µL X 768A/8	1000 µL	8	768						✓
	<b>30389224</b>	RT LTS 1000µL SX 768A/8	1000 µL	8	768	✓					✓
	<b>30389223</b>	RT LTS 1000µL FX 768A/8	1000 µL	8	768	✓				✓	✓
	<b>30389247</b>	RT LTS 250µL W 960A/10	200 µL <sup>2</sup>	10	960		✓				
	<b>30389248</b>	RT LTS 250µL LW 960A/10	200 µL <sup>2</sup>	10	960		✓	✓			
	<b>30389249</b>	RT LTS 250µL SW 960A/10	200 µL <sup>2</sup>	10	960	✓	✓				
	<b>30389250</b>	RT LTS 250µL LSW 960A/10	200 µL <sup>2</sup>	10	960	✓	✓	✓			
	<b>30389241</b>	RT LTS 200µL FLW 960A/10	200 µL	10	960	✓	✓	✓	✓		
	<b>30389217</b>	RT LTS 1000µL W 768A/8	1000 µL	8	768		✓				
	<b>30389219</b>	RT LTS 1000µL LW 768A/8	1000 µL	8	768		✓	✓			
	<b>30389220</b>	RT LTS 1000µL SW 768A/8	1000 µL	8	768	✓	✓				
	<b>30389221</b>	RT LTS 1000µL LSW 768A/8	1000 µL	8	768	✓	✓	✓			
	<b>30389218</b>	RT LTS 1000µL FLW 768A/8	1000 µL	8	768	✓	✓	✓	✓		

<sup>2</sup> Fits 50, 100 and 200 µL pipettes

	CATALOG No.	DESCRIPTION	VOL		QTY		FEATURES				
			MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFTGUARD	WIDE-O	LOW RET	FILTER	
<b>Racked Tips</b>	<b>30389174</b>	RT UNV 10µL G 960A/10	10 µL	10	960		✓				
	<b>30389178</b>	RT UNV 10µL GS 960A/10	10 µL	10	960	✓	✓				
	<b>30389175</b>	RT UNV 10µL FG 960A/10	10 µL	10	960	✓	✓				✓
	<b>30389195</b>	RT UNV 250µL W 960A/10	250 µL	10	960			✓			
	<b>30389196</b>	RT UNV 250µL LW 960A/10	250 µL	10	960			✓	✓		
	<b>30389197</b>	RT UNV 250µL LSW 960A/10	250 µL	10	960	✓		✓	✓		
<b>30389188</b>	RT UNV 200µL FLW 960A/10	250 µL	10	960	✓		✓	✓	✓		
<b>Bulk</b>	<b>17001127</b>	RC UNV 250µL W 1000A/1	250 µL		1000			✓			
	<b>17015068</b>	RC UNV 1000µL LW 1000A/1	1000 µL		1000			✓	✓		
<b>Refills</b>	<b>30389283*</b>	GPS UNV 10µL G 960A/10	10 µL	10	960		✓				
	<b>30389285*</b>	GPS UNV 10µL GS 960A/10	10 µL	10	960	✓	✓				
	<b>30389264</b>	GP UNV 10µL FG 960A/10	10 µL	10	960	✓	✓				✓

Wide-O = Wide Orifice, Low Ret = Low Retention \*Green-Pak SpaceSaver





## The Highest Standard for Tip Purity and Performance

Rainin continuously tests and certifies its BioClean Ultra™ pipette tip products. Researchers can have absolute confidence in the integrity of their experiments and the fidelity of their data.



### Why BioClean Ultra?

This table shows the thoroughness and completeness of Rainin BioClean Ultra quality testing, compared to other major tip brands. Rainin maintains the industry’s most comprehensive testing procedures.

	HUMAN DNA	BACTERIAL DNA	DNASE
<b>BioClean Ultra™</b>	< 0.32 pg	< 1 pg	≤ 10 <sup>-7</sup> KU/μL
<b>Brand – A</b>	“Free of”	–	10 <sup>-5</sup> KU/μL
<b>Brand – B</b>	< 0.40 fg	–	–
<b>Brand – C</b>	< 2 pg	< 50 fg	10 <sup>-4</sup> KU
<b>Brand – D</b>	None detected	–	None detected
<b>Brand – E</b>	< 1 pg	–	“Free of”
<b>Brand – F</b>	“Free of”	“Free of”	“Free of”
<b>Brand – G</b>	–	–	< 6.25 × 10 <sup>-5</sup> U/μL
<b>Brand – H</b>	< 30 pg	–	< 10 <sup>-7</sup> KU/μL
<b>Brand – I</b>	< 30 pg	–	< 10 <sup>-7</sup> KU/μL
<b>Brand – J</b>	“Free of”	“Free of”	“Free of”





### Tested and Certified Purity

- The industry's most comprehensive testing procedures.
- The only tips certified to be both protein- and protease-free.
- Virgin polypropylene – completely inert, with no bioactive components.



### Clean Manufacturing and Packaging

- Manufactured under Class 100,000 clean room conditions.
- Fully automated material handling – zero human contact.
- Strict conformance to ISO 9001 eliminates all external sources of contamination.

RNASE	ENDOTOXIN	PROTEIN	PROTEASE	ATP	PCR INHIBITORS
$\leq 10^{-9}$ KU/ $\mu$ L	$\leq 0.001$ EU/mL	$< 2$ ng/sample	$\leq 500$ ng/mL	$< 2 \times 10^{-12}$ mg/ $\mu$ L	None detected
$10^{-9}$ KU/ $\mu$ L	$\leq 0.05$ EU/mL	–	–	–	–
$< 8.6$ fg	$< 1$ pg	–	–	$< 1$ fg	–
$10^{-9}$ KU	$< 0.001$ EU/mL	$< 1$ ng/ $\mu$ L	–	$< 5.5 \times 10^{-12}$ mg	$< 10$ targets amplifiable
None detected	$< 0.06$ EU/mL	–	–	–	None detected
"Free of"	$< 0.05$ EU/mL	–	"Free of"	"ATP-free"	–
"Free of"	"Free of"	–	"Free of"	"ATP-free"	"Free of"
$< 3.125 \times 10^{-9}$ U/ $\mu$ L	$< 0.03$ EU/mL	–	–	–	–
$< 10^{-9}$ KU/ $\mu$ L	$< 0.06$ EU/mL	–	–	–	–
$< 10^{-9}$ KU/ $\mu$ L	$\leq 0.06$ EU/mL	–	–	$< 10^{-13}$ mg/ $\mu$ L	None detected
"Free of"	"Free of"	–	–	–	–

KU Kunitz Units EU Endotoxin Units ng nanogram (Factor:  $10^{-9}$ ) pg picogram (Factor:  $10^{-12}$ ) fg femtogram (Factor:  $10^{-15}$ )

"Non detected", "Free of" and "... Free" designations apparently indicate no observed contamination. No specifications or test methodology provided.

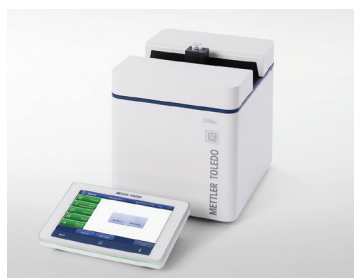
"–" no data available.



## UV/VIS Spectroscopy

### Designed for the Life Sciences

The UV5Bio and UV5Nano Excellence instruments optimize spectroscopic workflows in life sciences. FastTrack™ technology enables speedy and reliable measurements and LockPath™ technology ensures accurate micro-volume measurements.



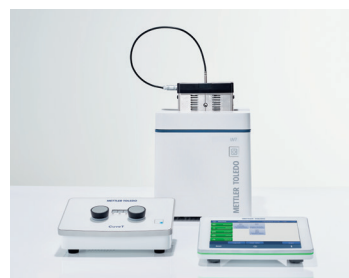
#### UV5Bio – the Life Science Expert

The UV5Bio is the ideal instrument for life science cuvette-based UV/VIS applications. Pre-programmed DNA, RNA, and protein applications are available as direct measurement routines or ready-to-use METTLER TOLEDO methods for an instant start. The OneClick™ touchscreen interface provides intuitive and efficient shortcut operation.



#### UV5Nano – the Micro Master

Measure uL volumes of precious DNA, RNA or protein samples in wide concentration ranges on the micro-volume platform. The additional cuvette measurement option doubles the application power. LockPath technology ensures exact and repeatable pathlength adjustment. No need for sample dilution – just pipette and measure.

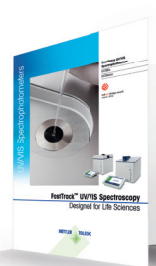


#### CuveT Thermostat for Precise Temperature Control

Life science UV/VIS applications such as DNA analyses, kinetics or protein dynamics require reproducible and accurate temperature conditions.

CuveT controls the temperature of samples in a 10 mm cuvette within a temperature range of 4°C to 95°C in 10 mm cuvettes.

► Order our UV/VIS Excellence brochure. [www.mt.com/UV-VIS](http://www.mt.com/UV-VIS)



PART No.	DESCRIPTION	UV5BIO	UV5NANO
		30254728	30254729
<b>FastTrack™ Technology</b>	Pulsed Xenon flash lamp, CCD array detector	•	•
<b>LockPath™ Technology</b>	Automatic pathlength adjustment		•
<b>Optical performance</b>	Wavelength range [nm]	190–1,100	190–1,100
	Wavelength resolution (toluene in hexane abs.)	>1.5	>1.7
	Wavelength accuracy (holmium oxide) [nm]	±1.0	±1.0
	Photometric accuracy (potassium dichromate) [A]	±0.01	±0.01
	Stray light at 198 nm (potassium chloride) [A]	>2	>1.7
<b>One Click™ UV/VIS Spectroscopy</b>	Shortcuts per user	24	24
<b>Automation</b>	Peristaltic pump FillPalMini	•	•
	InMotion™ sample changer	•	•
<b>Applications &amp; Methods</b>	Direct measurement types	4	3
	METTLER TOLEDO methods	•	•
	Method editor	•	•
	Bio-direct measurement applications	•	•
	Kinetics	•	•
	Micro-volume direct measurement applications		•
	Temperature Control	•	
Colors: Tristimulus, CIE Lab, CIE Luv, Lab according to Hunter, Chromaticity, Yellowness Index, APHA, Pt-CO, Hazen, Gardner, Saybolt, Hess-Ives, EBC, ASBC	•	•	
<b>PC Software</b>	LabX® UV/VIS software	•	•
<b>Languages</b>	English, German, French, Spanish, Italian, Chinese, Russian, Portuguese		
<b>Connectivity</b>	USB memory stick storage (reports (pdf), data (csv), methods)	•	•
	USB devices (bar-code reader, compact printer, fingerprint reader)	•	•
	Ethernet (PC, network printer (HP PCL 3, Epson protocol), reports (pdf), data (csv))	•	•



### Avoid Errors with LockPath

LockPath ensures that the available pathlengths at 0.1 mm and 1 mm are accurately defined. Thanks to the rugged design, pathlength drift is excluded to eliminate expensive re-calibration.



### Compact Modularity

In the UV7, UV5 and UV5Bio, cuvette holders, CuvetteChanger, and CuveT thermostating units are positioned in the easily accessible open sample area without compromising the instrument's footprint.



### Secure Measurement Quality

Good UV/VIS Practice™ (GUVPTM) provides comprehensive installation and qualification services that cover the entire lifecycle of the instrument. Quality is improved while risks and costs are reduced.

► [www.mt.com/GUVP](http://www.mt.com/GUVP)



## SevenExcellence Precise and Secure Instruments

SevenExcellence™ stands for convenient, user-friendly operation, combined with high measurement accuracy and outstanding flexibility. With its capacitive touchscreen and large 7 inch display and 10 available languages, operation is truly intuitive. The instrument can effectively cope with complex applications and stringent requirements in regulated markets, but it also provides added value for routine measurement tasks in the laboratory.



### Efficient Processes

SevenExcellence has been designed with the objective of optimizing the workflow and making work in the laboratory more efficient. Just one click is needed to start a sample or a series of measurements and an optional autosampler improves productivity. Once set up, data archiving is a standard procedure that will take place automatically following each analysis.



### Solid Compliance

SevenExcellence comes with security functions that support your workflow during all phases of calibration, measurement and archiving processes. It is suitable for routine tasks as well as professional measurements under stringent GLP conditions. Connected to LabX, SevenExcellence offers perfect compliance support.



### Sustainable Value

SevenExcellence offers flexibility on all levels, ranging from the number of measurement parameters to the choice of a vast collection of peripheral devices. The instrument's interfaces allow you to connect peripherals simultaneously, supporting your workflow in the best possible way.



MODEL	CHANNEL	PARAMETER	MEASURING RANGE	RESOLUTION AND ACCURACY	INLAB® SENSOR	PART No.
<b>S400-Basic</b>	<b>1</b>	pH mV ISFET pH Temp.	-2.000 ... 20.000 pH; -2000.0 ... 2000.0 mV 0.000 ... 14.000 pH -30.0 ... 130.0 °C	0.001/0.01/0.1; ± 0.002 0.1/1; ± 0.1 0.001/0.01/0.1; ± 0.05 0.1; ± 0.1	none	<b>30046240</b>
<b>S400-Kit</b>					Expert Pro-ISM	<b>30046241</b>
<b>S400-Bio</b>					Routine Pro-ISM	<b>30046242</b>
<b>S400-Micro</b>					Ultra-Micro	<b>30092982</b>
<b>S400-uMix</b>					Expert Pro-ISM and uMix stirrer	<b>30092983</b>
<b>S400-Buffer</b>					InLab Expert Pro-ISM and Buffer Sachets	<b>30393276</b>
<b>S700-Basic</b>		Conductivity Temp.	0.001 µS/cm ... 2000 mS/cm -30.0 ... 130.0 °C	0.001 ... 1; ± 0.5% 0.1; ± 0.1	none	<b>30046244</b>
<b>S700-Kit</b>					731-ISM	<b>30046245</b>
<b>S700-Trace</b>					Trace incl. flow cell	<b>30046246</b>
<b>S500-Basic</b>		pH mV Ion concentration Temp.	-2.000 ... 20.000 pH; -2000.0 ... 2000.0 mV 0 ... 999 999 mg/L, ppm -30.0 ... 130.0 °C	0.001/0.01/0.1; ± 0.002 0.1/1; ± 0.1 0.001 ... 1; ± 0.5% 0.1; ± 0.1	none	<b>30046248</b>
<b>S500-Kit</b>					Expert Pro-ISM	<b>30046249</b>
<b>S500-Bio</b>					Routine Pro-ISM	<b>30046250</b>
<b>S500-F</b>					PerfectION Fluoride	<b>30046251</b>
<b>S900-Basic</b>		Dissolved Oxygen	0.000 ... 50 mg/L, ppm	0.001 ± 0.1 mg/L from 0 ... 8 ± 0.2 mg/L from 8 ... 20 ± 10% from 20 ... 50	none	<b>30092984</b>
<b>S900-Kit</b>					OptiOx	<b>30092986</b>
<b>S900-BOD</b>		Temperature	-30.0 ... 130.0 °C	0.1; ± 0.1	OptiOx	<b>30092987</b>
<b>S600-Kit</b>		Dissolved Oxygen Temperature	0.000 ... 99 mg/L, ppm	0.001; ± 0.5% 0.1; ± 0.1	605-ISM	<b>30092985</b>
<b>S470-Basic</b>	<b>2</b>	pH mV ISFET pH Conductivity Temp.	see S400, S700	see S400, S700	none	<b>30046252</b>
<b>S470-Kit</b>					Expert Pro-ISM and 731-ISM	<b>30046253</b>
<b>S470-USP/EP</b>					Pure Pro-ISM 741-ISM	<b>30046254</b>
<b>S470-Bio</b>					Routine Pro-ISM and 731-ISM	<b>64091338</b>
<b>S475-Basic</b>	<b>3</b>	see S470, S500	see S400, S700, S500	see S400, S700, S500	none	<b>30046255</b>
<b>S479-Kit</b>		see S470, S900	see S470, S900	see S470, S900	Expert Pro-ISM 731-ISM OptiOx	<b>30092988</b>
<b>S975-uMix</b>		see S900, S700, S500	see S900, S700, S500	see S900, S700, S500	Expert Pro-ISM 731-ISM, OptiOx and uMix stirrer	<b>30092989</b>

**Basic Versions Include**

Meter, the specified expansion units, uPlace electrode holder, semi-transparent cover, operating instructions, installation and quick guide, EasyDirect™ pH PC software, declaration of conformity and test certificate. Electrode is not included.

**Kit Versions Include**

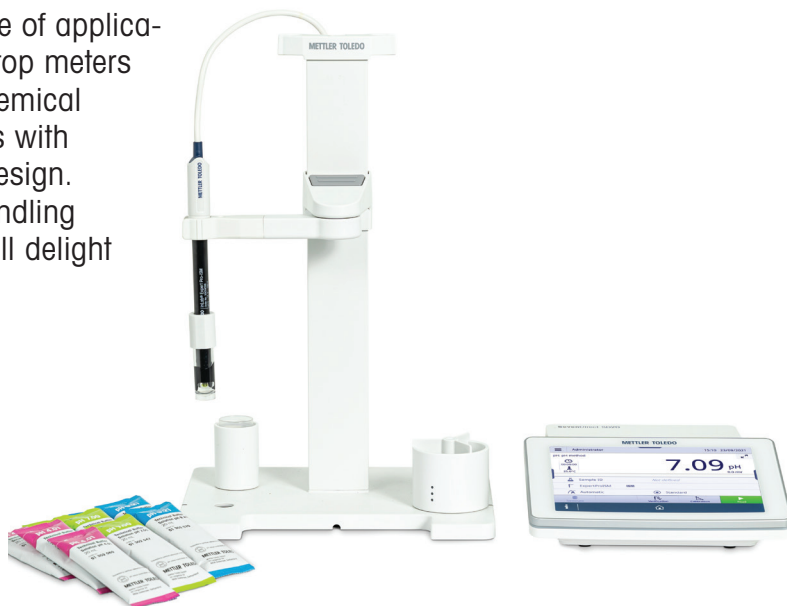
As above plus appropriate electrode, buffer sachets and guides.

► [www.mt.com/SevenExcellence](http://www.mt.com/SevenExcellence)



## SevenDirect Straight to the Point

Developed for a wide range of applications, SevenDirect™ benchtop meters combine precise electrochemical measurement technologies with flexibility and innovative design. Their ease of use, data handling options and robustness will delight discerning users.



### Mastered in No Time

The intuitive user interface of the generous 7-inch touchscreen facilitates the measurement process by avoiding unnecessary steps and focusing on the most important information. On-screen instructions guide the calibration process while the integrated help system provides immediate support.



### Tracks Your Records

The instruments support GLP compliance by storing time stamps as well as sample, sensor and user IDs with every measurement. Settings are protected from unwanted changes by a two level user management. Automatic data transfer to pC or printer minimizes transcriptions errors.



### Tough Enough

SevenDirect meters feature a closed connector compartment to prevent corrosion and a replaceable protective cover to keep the instrument safe from dust and spills even with sensors attached (IP54 in-use).

MODEL/PART No.	pH	mV	COND	IONS	TEMPERATURE
<b>SD20 Meter (30671550*)</b>	•	•			•
<b>SD30 Meter (30671552*)</b>			•		•
<b>SD50 Meter (30671551*)</b>	•	•		•	•
<b>SD23 Meter (30671553*)</b>	•	•	•		•
<b>Range</b>	-2.000...20.000	-2,000.0... 2,000.0 mV	Conductivity: 0.000 $\mu$ S/cm...2,000 mS/cm TDS: 0.00 mg/L...1,000 g/L Salinity: 0.00...80.00 psu Resistivity:0.00...100.0M $\Omega$ *cm	mmol/L, mol/L, mg/L ppm: 0...999,999 %: 0...100.000 pX:-2.000...20.000	-30.0...130.0°C
<b>Resolution</b>	0.1/0.01/0.001	1/0.1	Auto-range, max. 0.001	mmol/L, mg/L ppm: 0.001 mol/L, %:0.0001 pX:0.1/0.01	0.1°C
<b>Accuracy</b>	-0.002	$\pm$ 0.1 (-500.0...500.0mV) $\pm$ 0.2 (-2,000.0...2,000.0mV)	0.5% of measured value	mmol/L, mol/L, mg/L ppm, %: $\pm$ 0.5% of measured value pX: $\pm$ 0.002	$\pm$ 0.1 (0-100°C)
<b>Calibration methods</b>	Linear, Segmented	–	Linear, Manual cell constant	Linear, Segmented	–
<b>Calibration points</b>	1 to 5	–	1 or 2	1 to 5	–

\* Basic instrument. Application-specific kits are also available.



### Position Your Sensor Precisely

The EasyPlace™ electrode arm makes sensor handling easy. Dedicated positions for calibration, measurement, cleaning and storage simplify daily operation.



### Stirring for Reliable Results

The EasyMix™ magnetic stirrer homogenizes samples for more accurate results. Its perfect fit with the EasyPlace™ electrode arm saves bench space.



### Data Management under Control

The EasyDirect™ PC software simplifies data management. Collect data, generate reports and plots, export to a PC or print on a network printer.

► [www.mt.com/SevenDirect](http://www.mt.com/SevenDirect)

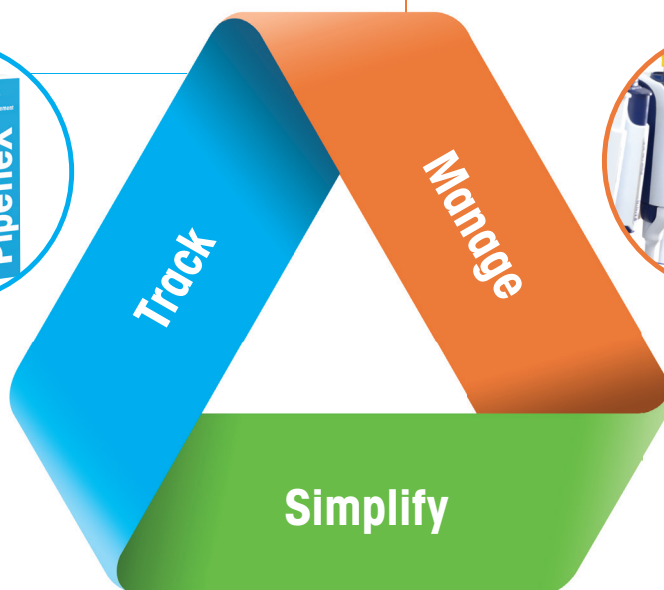


## Flexible, Integrated and Easy to Implement Pipette Management Simplified

- Assign locations, users and groups.
- Search, filter, custom reports and schedules.
- Know everything about your pipettes.



- See all calibration data.
- Schedule calibrations.
- All critical pipette data is now located in one single database.



- The Bluetooth® wireless technology-enabled SmartStand electronically transmits pipette serial numbers, calibration and other relevant data to PipetteX.
- Rainin calibration certificates are electronically transmitted and linked to your pipette.
- Eliminate time-consuming reading of serial numbers, barcodes or stickers.

	CATALOG No.	DESCRIPTION
PipetteX Software	30475913	PipetteX - Site
	30475915	PipetteX - Unlimited
	30478260	PipetteX - Site, Renewal
	30478262	PipetteX - Unlimited, Renewal



## Rainin SmartStand

### The Intelligent Pipette Stand

By reading the RFID chip that's in every Rainin XLS and XLS+ brand pipette, SmartStand instantly displays the compliance status for up to four pipettes – manual or electronic. Pick up a pipette and SmartStand's color LCD screen switches to a detailed view of that pipette's service and calibration status. Works seamlessly with PipetteX too!



CATALOG No. DESCRIPTION

Pipette Stands	CATALOG No.	DESCRIPTION
	<b>30312897</b>	SmartStand stand with PipetteX basic software
	<b>17001255</b>	Universal Carousel Stand for seven pipettes
	<b>17003024</b>	Hang-Ups, magnetic, for three pipettes
	<b>17004992</b>	Shelf Hang-Ups for three pipettes
	<b>17006638</b>	Adapters for E4XLS with Hang-Ups, carousel

## Rainin SmartCheck

### Verify the Accuracy of Any Pipette

Reduce experimental errors, between-calibration compliance failures and improve pipetting technique.

Trust your pipettes! SmartCheck is a quick and easy way to verify that your pipettes are working properly. It takes very little space on the benchtop so you can use it every day.

#### Avoid expensive rework

Reduce out-of-tolerance challenges such as having to re-do expensive experiments or incur costly downstream process waste.

#### 60 seconds or less!

Pipette verification in less than a minute: SmartCheck provides a clear Pass/Fail indication following a simple process with just four gravimetric measurements.

#### Verify any brand of pipette

Verify the performance of any brand of pipette dispensing volumes between 10 – 1000  $\mu$ L. You can verify individual channels of multichannel pipettes too.

#### Ideal for regulated environments

SmartCheck is the only verification tool that can operate within a 21 CFR Part 11 compliant process (requires PipetteX software).



	CATALOG No.	DESCRIPTION
SmartCheck	30564095	SmartCheck SLS1010S
	30448961	Function Test Kit
	30448967	EasyScan RFID LAN set



## Rainin PipetteX

### Software to Simplify Pipette Management

PipetteX™ uses the RFID tag embedded in every Rainin XLS pipette to automatically track and manage calibration data, pipette usage and location. Our simple software solution integrates with SmartStand, SmartCheck and Rainin Service to create a powerful, easy-to-use pipette tracking and calibration management system.

- Automatic transfer of calibration documentation from service center to software
- Controls all elements of calibration tracking and movement
- 21 CFR Part 11 compliant management system
- Integrated in-line pipette validations
- Manage all brands of pipettes



### A simple, unified system for tracking and managing pipettes (all manufacturers)

Place any Rainin XLS-brand pipette on a SmartStand to instantly see the pipette's calibration status and service details right at the bench. PipetteX connects to SmartStand via Bluetooth or USB drive to automatically transfer serial numbers, service and other data to the PipetteX database.

PipetteX maintains a complete history of your entire pipette inventory including calibration certificates and verification reports. This makes it easy to track the status, location, calibration and service schedule for any pipette.

**That's pipette management...simplified!**

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# Rainin EarthRack

## Biodegradable Pipette Tip Racks

**New!**

- Earth Friendly
- 75% Less Plastic Waste
- Less Carbon
- BioClean Green Tips



**Good for Your Research and the Environment**

For more information on the new EarthRack see page 46.

**METTLER TOLEDO**

