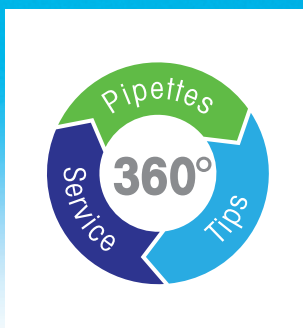


2019



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



**Pipettes, Tips and Service**  
Quality Products for Superior Performance

**METTLER TOLEDO**

## Introducing EasyDirect 2.0

### Pipette Management Simplified!

With EasyDirect™ Pipette Asset Management software and Rainin SmartStand, you have a powerful pipette tracking and calibration management system.

**Using the RFID chip embedded in every Rainin XLS-brand pipette, EasyDirect tracks a pipette's usage, location and calibration data automatically.**

- Manage an unlimited number of pipettes – across labs and locations
- Track all pipettes automatically
- Simplify calibration management and repairs
- Receive and manage calibration certificates electronically



See pages 62-63 for details!



**With  
EasyDirect,  
you're always  
audit ready!**

.....  
**See page 61  
for details.**

## Pipette Tips

Why Rainin?	4
Racked tips	6
Low retention tips	8
SpaceSaver™ and Green-Pak™ tips	10
TerraRack™ tips	12
StableStak™, StableRak™ & bulk tips	14
Specialty tips	16

<b>BioClean Ultra™</b>	18
------------------------	----

<b>LTS™ LiteTouch™ System</b>	19
-------------------------------	----

## Pipettes

Single channel manual and electronic XLS+™	20
Multichannel manual and electronic XLS+™	24
Adjustable Spacer XLS™	26
Rainin Classic™	28
Rainin Pos-D™, positive displacement	29
XLS+ Starter Kits with SmartStand	30
Pipette Stands	31
Pipette specifications	32

## High Throughput Pipetting

BenchSmart 96™ semi-automated system	34
Liquidator 96™ manual system	38

<b>PureSpeed™ Protein Purification</b>	42
--	----

<b>QuickFlow Liquid Aspiration</b>	44
------------------------------------	----

## Specialty Pipettes

Repeat dispensing with AutoRep™	46
Large volume dispensing with Disp-X™	48
Large volume pipetting with Pipet-X™	49

<b>UV/VIS Excellence Spectrophotometers</b>	50
---	----

<b>SevenExcellence™</b>	52
-------------------------	----

<b>SevenCompact™</b>	54
----------------------	----

## Pipette Service

Trust the service experts	56
Pipette service & service plans	58

<b>Pipette Stands</b>	60
-----------------------	----

<b>SmartStand</b>	61
-------------------	----

## Pipette Management


EasyDirect™ Pipette Asset Management	62
--------------------------------------	----

## 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.

**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.

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





### 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 EasyDirect 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

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

# 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.

- 50% Less Plastic
- Locking Latch
- Hinged Lid
- BioClean Ultra



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

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



### Fast loading

Robust secure racks  
make tip loading easy

### Autoclavable

Two-position lid for  
efficient sterilization

### Format options

Standard, sterilized and  
filter versions available

### Protective

Safe from dirt and  
contamination



CATALOG No.

	CATALOG No.	VOL		QTY		FEATURES			
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFTGUARD	WIDE-O	FILTER
Hinged-Lid Racks	30389163	10 µL	10	960					
	30389174	10 µL	10	960		✓			
	30389178	10 µL	10	960	✓	✓			
	30389181	10 µL	10	960	✓				
	30389172	10 µL	10	960	✓				✓
	30389175	10 µL	10	960	✓	✓			✓
	30389189	20 µL	10	960	✓				✓
	30389170	100 µL	10	960	✓				✓
	30389186	200 µL	10	960	✓				✓
	30389191	250 µL	10	960					
	30389195	250 µL	10	960			✓		
	30389193	250 µL	10	960	✓				
	30389058	300 µL	8	768					
	30389059	300 µL	8	768	✓				
	30389136	300 µL	8	768	✓				✓
	30389164	1000 µL	8	768					
	30389168	1000 µL	8	768	✓				
	30389165	1000 µL	8	768	✓				✓
	30389183	2000 µL	8	480					
	30389185	2000 µL	8	480	✓				
	30389184	2000 µL	8	480	✓				✓
	30389198	5000 µL	8	192					
	30389199	5000 µL	8	192	✓				

Wide-O = Wide Orifice

# Low Retention Tips

## Stop Wasting Valuable Sample!

Rainin LR low retention tips improve pipetting accuracy by minimizing residual volume, particularly when transferring liquids such as viscous samples and those 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 Green-Pak SpaceSaver.  
See page 11 for empty racks.



	CATALOG No.	VOL		QTY		FEATURES		
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	WIDE-O	LOW RET FILTER
 Hinged-Lid Racks	30389227	20 µL <sup>1</sup>	10	960			✓	
	30389229	20 µL <sup>1</sup>	10	960	✓		✓	
	30389226	20 µL <sup>1</sup>	10	960	✓		✓	✓
	30389244	200 µL <sup>2</sup>	10	960			✓	
	30389248	200 µL <sup>2</sup>	10	960		✓	✓	
	30389246	200 µL <sup>2</sup>	10	960	✓		✓	
	30389250	200 µL <sup>2</sup>	10	960	✓	✓	✓	
	30389240	200 µL <sup>2</sup>	10	960	✓		✓	✓
	30389241	200 µL <sup>2</sup>	10	960	✓	✓	✓	✓
	30389160	300 µL	8	768			✓	
	30389161	300 µL	8	768	✓		✓	
	30389162	300 µL	8	768	✓		✓	✓
	30389214	1000 µL	8	768			✓	
	30389216	1000 µL	8	768	✓		✓	
	30389213	1000 µL	8	768	✓		✓	✓
	30389219	1000 µL	8	768		✓	✓	
	30389221	1000 µL	8	768	✓	✓	✓	
	30389218	1000 µL	8	768	✓	✓	✓	✓
	30389233	1200 µL	8	768			✓	
	30389235	1200 µL	8	768	✓		✓	
	30389232	1200 µL	8	768	✓		✓	✓
 SpaceSaver	30389296	20 µL <sup>1</sup>	10	960			✓	
	30389298	20 µL <sup>1</sup>	10	960	✓		✓	
	30389300	200 µL <sup>2</sup>	10	960			✓	
	30389302	200 µL <sup>2</sup>	10	960	✓		✓	
	30389895	300 µL	8	768	✓		✓	
	30389293	1000 µL	8	768			✓	
	30389295	1000 µL	8	768	✓		✓	
 Bulk	17014340	20 µL		1000			✓	
	17014341	200 µL		1000			✓	
	17014342	1000 µL		1000			✓	

Residue with  
Rainin Standard  
10 µL tip  
after dispensing

Residue with  
Rainin Low Retention  
10 µL tip  
after dispensing



CATALOG No.





	CATALOG No.	VOL		QTY		FEATURES				
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFTGUARD	WIDE-O	LOW RET	FILTER
<b>Hinged-Lid Racks</b>	<b>30389180</b>	10 µL	10	960					✓	
	<b>30389182</b>	10 µL	10	960	✓				✓	
	<b>30389173</b>	10 µL	10	960	✓				✓	✓
	<b>30389177</b>	10 µL	10	960		✓			✓	
	<b>30389179</b>	10 µL	10	960	✓	✓			✓	
	<b>30389176</b>	10 µL	10	960	✓	✓			✓	✓
	<b>30389190</b>	20 µL	10	960	✓				✓	✓
	<b>30389171</b>	100 µL	10	960	✓				✓	✓
	<b>30389187</b>	200 µL	10	960	✓				✓	✓
	<b>30389188</b>	200 µL	10	960	✓		✓		✓	✓
	<b>30389192</b>	250 µL	10	960					✓	
	<b>30389196</b>	250 µL	10	960			✓		✓	
	<b>30389194</b>	250 µL	10	960	✓				✓	
	<b>30389197</b>	250 µL	10	960	✓		✓		✓	
	<b>30389137</b>	300 µL	8	768					✓	
	<b>30389138</b>	300 µL	8	768	✓				✓	
	<b>30389139</b>	300 µL	8	768	✓				✓	✓
	<b>30389167</b>	1000 µL	8	768					✓	
	<b>30389169</b>	1000 µL	8	768	✓				✓	
	<b>30389166</b>	1000 µL	8	768	✓				✓	✓
<b>SpaceSaver</b>	<b>30389284</b>	10 µL	10	960		✓			✓	
	<b>30389286</b>	10 µL	10	960	✓	✓			✓	
	<b>30389288</b>	250 µL	10	960					✓	
	<b>30389290</b>	250 µL	10	960	✓				✓	
	<b>30389280</b>	1000 µL	8	768					✓	
	<b>30389282</b>	1000 µL	8	768	✓				✓	
<b>Bulk</b>	<b>17014395</b>	10 µL		1000					✓	
	<b>17014396</b>	10 µL		1000		✓			✓	
	<b>17014397</b>	250 µL		1000					✓	
	<b>17014398</b>	1000 µL		1000					✓	
	<b>17015068</b>	1000 µL		1000			✓		✓	

Rack base not included with  
Green-Pak SpaceSaver.  
See page 11 for empty racks.



## 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™** 85% 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

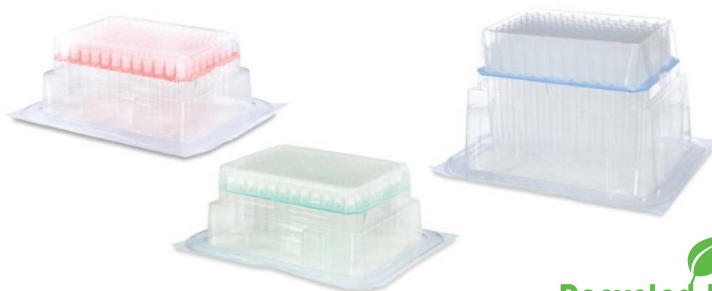
Each refill is  
completely sealed

#### Easy

Load refills without  
touching the tips

#### Eco-sensitive

Protective shell made  
from recycled PETE



  
**Recycled PET!**





CATALOG No.



Empty rack base not included  
with Green-Pak SpaceSaver



Empty rack base not included  
with Green-Pak SpaceSaver

		VOL		QTY		FEATURES		
		MAX VOLUME		RACKS/CARTON	TIPS/CARTON	STERILIZED	SHAFT-GUARD	FILTER
<b>Spacesaver</b>	<b>30389291</b>	20 µL <sup>1</sup>	10	960				
	<b>30389297</b>	20 µL <sup>1</sup>	10	960	✓			
	<b>30389299</b>	200 µL <sup>2</sup>	10	960				
	<b>30389301</b>	200 µL <sup>2</sup>	10	960	✓			
	<b>30389303</b>	300 µL	8	768				
	<b>30389304</b>	300 µL	8	768	✓			
	<b>30389292</b>	1000 µL	8	768				
	<b>30389294</b>	1000 µL	8	768	✓			
<b>Green-Pak Refills</b>	<b>30389270</b>	20 µL <sup>1</sup>	10	960				
	<b>30389275</b>	20 µL <sup>1</sup>	10	960	✓			
	<b>30389274</b>	20 µL <sup>1</sup>	10	960	✓		✓	
	<b>30389277</b>	200 µL <sup>2</sup>	10	960				
	<b>30389278</b>	200 µL <sup>2</sup>	10	960	✓			
	<b>30389276</b>	200 µL <sup>2</sup>	10	960	✓		✓	
	<b>30389271</b>	1000 µL	8	768				
	<b>30389273</b>	1000 µL	8	768	✓			
<b>Empty Racks</b>	<b>30389272</b>	1000 µL	8	768	✓		✓	
	<b>30389354</b>	20 µL	10					
	<b>30389353</b>	200 µL	10					
	<b>30397667</b>	300 µL	8					
<b>Spacesaver</b>	<b>30389351</b>	1000 µL	8					
	<b>30389283</b>	10 µL	10	960		✓		
	<b>30389285</b>	10 µL	10	960	✓	✓		
	<b>30389287</b>	250 µL	10	960				
	<b>30389289</b>	250 µL	10	960	✓			
	<b>30397665</b>	300 µL	8	768				
	<b>30397666</b>	300 µL	8	768	✓			
	<b>30389279</b>	1000 µL	8	768				
<b>Green-Pak Refills</b>	<b>30389281</b>	1000 µL	8	768	✓			
	<b>30389258</b>	10 µL	10	960				
	<b>30389265</b>	10 µL	10	960	✓			
	<b>30389263</b>	10 µL	10	960	✓		✓	
	<b>30389264</b>	10 µL	10	960	✓	✓	✓	
	<b>30389267</b>	20 µL	10	960	✓		✓	
	<b>30389266</b>	200 µL	10	960	✓		✓	
	<b>30389268</b>	250 µL	10	960				
	<b>30389269</b>	250 µL	10	960	✓			
	<b>30389259</b>	1000 µL	8	768				
	<b>30389261</b>	1000 µL	8	768	✓			
<b>Empty Racks</b>	<b>30389260</b>	1000 µL	8	768	✓		✓	
	<b>30389350</b>	10 µL	10					
	<b>30389354</b>	10 µL	10					
	<b>30389353</b>	250 µL	10					
	<b>30397667</b>	300 µL	8					
<b>Empty Racks</b>	<b>30389351</b>	1000 µL	8					



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

## TerraRack

### The Most Eco-Friendly Rack Around

Less weight, less waste, 100% recyclable

TerraRack™ is a revolutionary new 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 tips come pre-sterilized, eliminating the need to autoclave. 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 PETE, which is easily recycled and aggressively recovered from the plastic waste stream.



#### Sterilized

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



LTS



CATALOG No.

	CATALOG No.	VOL	QTY		FEATURES		
		MAX VOLUME	RACKS/CARTON	TIPS/CARTON	PRESTERILIZED	SHAFTGUARD	FILTER
TerraRack	17014960	20 $\mu$ L <sup>1</sup>	10	960	✓		
	17014961	20 $\mu$ L <sup>1</sup>	10	960	✓		✓
	17014962	200 $\mu$ L <sup>2</sup>	10	960	✓		
	17014963	200 $\mu$ L <sup>2</sup>	10	960	✓		✓
	17014964	300 $\mu$ L	8	768	✓		
	17014965	300 $\mu$ L	8	768	✓		✓
	17014966	1000 $\mu$ L	8	768	✓		
	17014967	1000 $\mu$ L	8	768	✓		✓
	17014968	1200 $\mu$ L	8	768	✓		
	17014969	1200 $\mu$ L	8	768	✓		✓

UNV



TerraRack	17014970	10 $\mu$ L	10	960	✓		
	17014971	10 $\mu$ L	10	960	✓		✓
	17014972	10 $\mu$ L	10	960	✓	✓	
	17014973	10 $\mu$ L	10	960	✓	✓	✓
	17014974	30 $\mu$ L	10	960	✓		✓
	17014975	100 $\mu$ L	10	960	✓		✓
	17014977	200 $\mu$ L	10	960	✓		✓
	17014976	250 $\mu$ L	10	960	✓		
	17014978	300 $\mu$ L	8	768	✓		
	17014979	300 $\mu$ L	8	768	✓		✓
	17014980	1000 $\mu$ L	8	768	✓		
	17014981	1000 $\mu$ L	8	768	✓		✓



TerraBase	TerraBase Accessory for TerraRack						
	17014982	TerraRack Base - short; 1 base to fit 10 - 300 $\mu$ L TerraRack racks					
	17014983	TerraRack Base - tall; 1 base to fit 1000/1200 $\mu$ L TerraRack racks					

<sup>1</sup> Fits 2, 10 and 20  $\mu$ L pipettes    <sup>2</sup> Fits 50, 100 and 200  $\mu$ L pipettes

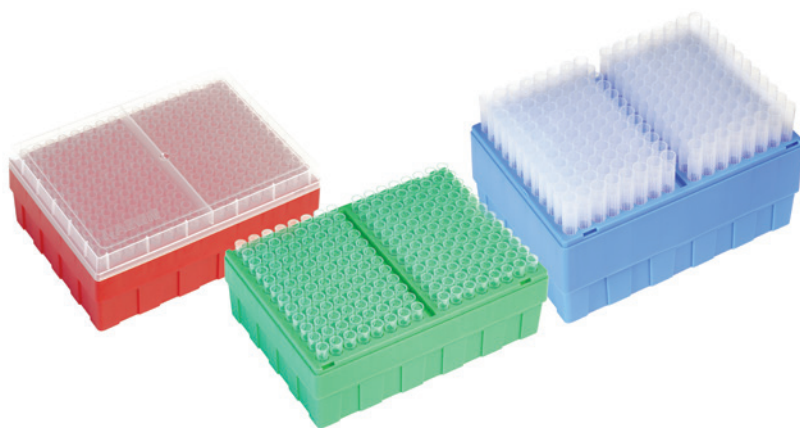
## Double-96 Racked Tips

### StableStak and StableRak

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

#### StableRak™

Individual double-96 racks with 192 tips per layer.



#### Formats

Standard, presterilized and filter versions available

#### Protective

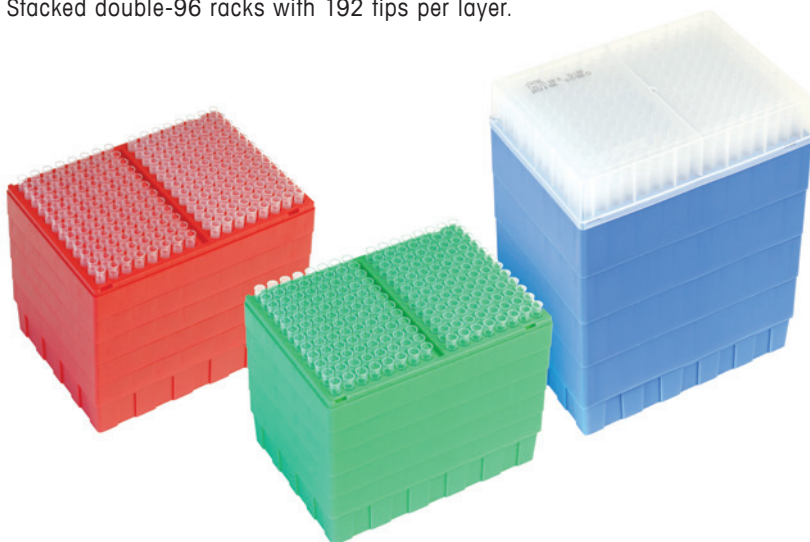
Keeps tips safe from dirt and contamination

#### Fast loading

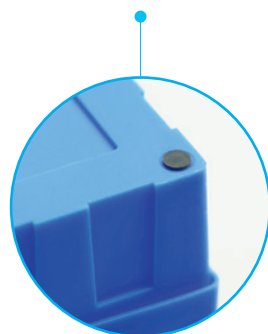
Sturdy, non-slip racks make tip loading easy

#### StableStak™

Stacked double-96 racks with 192 tips per layer.



Rubber feet grip the benchtop and won't slip.



## StableRak and StableStak



## Bulk Tips LTS and UNV formats



LTS

UNV

LTS

UNV

CATALOG No.	VOL		QTY		FEATURES			
	MAX VOLUME		RACKS/CARTON	TIPS/CARTON	PRESTERILIZED	FILTER	SHAFTGARD	WIDE-O
<b>StableRak</b>	17005862	20 µL <sup>1</sup>	5	960				
	17005861	20 µL <sup>1</sup>	5	960	✓			
	17005860	20 µL <sup>1</sup>	5	960	✓	✓		
	17005864	200 µL <sup>2</sup>	5	960				
	17005863	200 µL <sup>2</sup>	5	960	✓			
	17005859	200 µL <sup>2</sup>	5	960	✓	✓		
	17005867	300 µL	4	768				
	17005866	300 µL	4	768	✓			
	17005865	300 µL	4	768	✓	✓		
	17007083	1000 µL	4	768				
	17007082	1000 µL	4	768	✓			
	17007081	1000 µL	4	768	✓	✓		
	17007086	1200 µL	4	768				
	17007085	1200 µL	4	768	✓			
	17007084	1200 µL	4	768	✓	✓		
<b>StableStak</b>	17005873	20 µL <sup>1</sup>	5	960				
	17005872	20 µL <sup>1</sup>	5	960	✓			
	17005875	200 µL <sup>2</sup>	5	960				
	17005874	200 µL <sup>2</sup>	5	960	✓			
	17005877	300 µL	4	768				
	17005876	300 µL	4	768	✓			
	17007090	1000 µL	4	768				
	17007089	1000 µL	4	768	✓			
<b>Bulk Tips</b>	17005857	300 µL	4	768				
	17001128	20 µL <sup>1</sup>		1000				
	17001118	200 µL <sup>2</sup>		1000				
	17001132	300 µL		1000				
	17001129	1000 µL		1000				
	17006324	1200 µL		1000				
	17001130	2000 µL		1000				
	17001133	5000 µL		1000				
	17001119	10 mL		200				
	17005940*	10 mL		75	✓			
	17001131	20 mL		100				
	17005941*	20 mL		50	✓			
	17001124	10 µL		1000				
<b>Bulk Tips</b>	17001123	10 µL		1000			✓	
	17001116	250 µL		1000				
	17001127	250 µL		1000				✓
	17001121	1000 µL		1000				
	17001125	2000 µL		1000				
	17001126	2500 µL		1000				
	17001117	5000 µL		1000				
	17001122	10 mL		200				
	17005939*	10 mL		75	✓			

## Specialty Tips

### Unique Tips for Special Applications

LTS



#### 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.

LTS

UNV



#### 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 µL.

UNV



#### ShaftGuard™ 10µL 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.

UNV



#### Gel-Well™

Load gels in thin wells.

Dispense samples into thin wells in electrophoretic slab gel apparatus or in sample recovery. Flexible ultra-thin micro-capillary is ideal for DNA sequencing and protein separation. Autoclaving at 1 bar and 121°C up to 15 minutes is possible without significant capillary shrinkage or closure.

- Flat or round tip ends
- Certified free from RNase and DNase



	CATALOG No.	VOL		QTY		FEATURES				
		MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	WIDE-O	LOW RET	FILTER	X-LENGTH	
<b>LTS</b> Hinged-Lid Racks	<b>30389251</b>	200 µL <sup>2</sup>	8	768					✓	
	<b>30389252</b>	200 µL <sup>2</sup>	8	768	✓				✓	
	<b>30389242</b>	200 µL <sup>2</sup>	8	768	✓		✓		✓	
	<b>30389222</b>	1000 µL	8	768					✓	
	<b>30389224</b>	1000 µL	8	768	✓				✓	
	<b>30389223</b>	1000 µL	8	768	✓		✓		✓	
	<b>30389247</b>	200 µL <sup>2</sup>	10	960		✓				
	<b>30389248</b>	200 µL <sup>2</sup>	10	960		✓	✓			
	<b>30389249</b>	200 µL <sup>2</sup>	10	960	✓	✓				
	<b>30389250</b>	200 µL <sup>2</sup>	10	960	✓	✓	✓			
	<b>30389241</b>	200 µL	10	960	✓	✓	✓	✓		
	<b>30389217</b>	1000 µL	8	768		✓				
	<b>30389219</b>	1000 µL	8	768		✓	✓			
	<b>30389220</b>	1000 µL	8	768	✓	✓				
	<b>30389221</b>	1000 µL	8	768	✓	✓	✓			
	<b>30389218</b>	1000 µL	8	768	✓	✓	✓	✓		

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

	CATALOG No.	VOL		QTY		FEATURES				
		MAX VOLUME	RACKS/CARTON	TIPS/CARTON	STERILIZED	GEL-WELL	SHAFTGARD	WIDE-O	LOW RET	FILTER
<b>UNV</b> Racks	<b>30389174</b>	10 µL	10	960			✓			
	<b>30389178</b>	10 µL	10	960	✓		✓			
	<b>30389175</b>	10 µL	10	960	✓		✓			✓
	<b>30389195</b>	250 µL	10	960				✓		
	<b>30389196</b>	250 µL	10	960				✓	✓	
	<b>30389197</b>	250 µL	10	960	✓			✓	✓	
	<b>30389188</b>	250 µL	10	960	✓			✓		✓
<b>Bulk</b>	<b>17001127</b>	250 µL		1000				✓		
	<b>17015068</b>	1000 µL		1000				✓	✓	
<b>Refills</b>	<b>30389283*</b>	10 µL	10	960			✓			
	<b>30389285*</b>	10 µL	10	960	✓		✓			
	<b>30389264</b>	10 µL	10	960	✓		✓			✓
<b>Racks</b>	<b>17002375</b>	10 µL	1	200		✓	0.17 mm, flat			
	<b>17002377</b>	10 µL	1	200		✓	0.37 mm, flat			
	<b>17002380</b>	10 µL	1	200		✓	0.57 mm, round			
	<b>17002379</b>	250 µL	1	200		✓	0.57 mm, flat			
	<b>17002378</b>	250 µL	1	200		✓	0.37 mm, flat			
	<b>17002376</b>	250 µL	1	200		✓	0.17 mm, round			

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

## BioClean Ultra

### The Gold Standard for Tip Purity and Performance

Rainin carefully tests and certifies each batch of BioClean Ultra™ pipette tips, so researchers can have absolute confidence in the integrity of their experiments and the fidelity of their data.



#### Guaranteed Purity

- The industry's most comprehensive testing protocol.
- 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.

► Learn more about BioClean Ultra at [www.mt.com/BioCleanUltra](http://www.mt.com/BioCleanUltra)

## The LTS LiteTouch System

### Because Pipetting Shouldn't Hurt

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

The Rainin LTS™ LiteTouch system is available on all Rainin XLS+ single and multichannel pipettes.

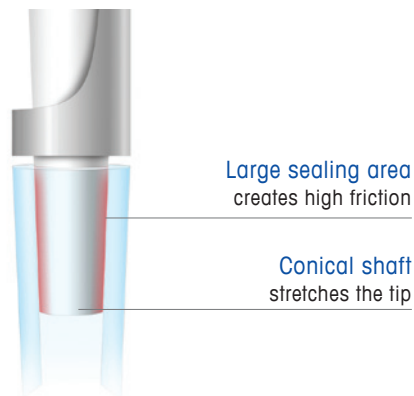
#### The LTS difference



The Rainin LiteTouch 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.

#### Universal pipetting





Universal pipettes have cone-shaped shafts that rely on friction to hold tips firmly.

- Universal tips stretch to fit around the shaft.
- Users typically apply force to the shaft to achieve a reliable friction seal.
- Due to the excessive force used to insert the tip, a high force is required to eject the tip.

## 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 chemical and physical insults. The ejector slides off in a single easy motion for cleaning.



For pipette specifications, see page 32.



• Advanced asset management

The RFID tag on board every Rainin XLS pipette stores calibration data that is electronically read by the Rainin SmartStand and EasyDirect software. See pages 57-58 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
Pipet-Lite XLS+	17014393	0.1–2 µL
	17014388	0.5–10 µL
	17014392	2–20 µL
	17014384	10–100 µL
	17014391	20–200 µL
	17014405	20–300 µL
	17014382	100–1000 µL
	17014390	200–2000 µL
	17011790	500–5000 µL
	17011783	1–10 mL
	17011788	2–20 mL



UNV

	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

Rainin LTS pipettes are designed for use with LTS tips.  
For more information, see page 18.

## 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!

Watch the E4 XLS demo ► [www.mt.com/raininE4](http://www.mt.com/raininE4)



#### • A “Smart” Charging Stand!

SmartStand charges up to four E4s simultaneously and offers a simple yet sophisticated way to track and manage every XLS pipette in your lab. See page 61.

### Performance

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

### 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 pipetting SOP deviations 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.



LTS

CATALOG No. VOLUME RANGE

E4 XLS+	17014484	0.5–10 µL
	17014487	2–20 µL
	17014483	10–100 µL
	17014486	20–200 µL
	17014488	20–300 µL
	17014482	100–1000 µL
	17014485	200–2000 µL
	17012312	500–5000 µL
	17012313	1–10 mL
	17012314	2–20 mL

Rainin LTS pipettes are designed for use with LTS tips.  
Li-Ion battery and wall power supply are included.

UNV

CATALOG No. VOLUME RANGE

E4 XLS+	17014491	0.5–10 µL
	17014494	2–20 µL
	17014490	10–100 µL
	17014493	20–200 µL
	17014495	20–300 µL
	17014489	100–1000 µL
	17014492	200–2000 µL
	17012353	500–5000 µL
	17012354	1–10 mL

Universal-Fit pipettes use universal tips.  
Li-Ion battery and wall power supply are included.  
For pipette specifications, see page 32.

# XLS+ Multichannels

## Performance You Can Feel!

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

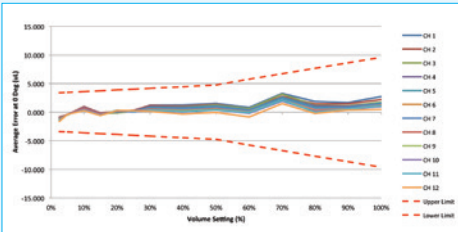
CATALOG No.		VOLUME RANGE
E4 XLS+ Multichannel	8-Channel	
	17013792	0.5–10 µL
	17013793	2–20 µL
	17013794	5–50 µL
	17013795	20–200 µL
	17013796	20–300 µL
	17014498	100–1200 µL
	12-Channel	
	17013797	0.5–10 µL
	17013798	2–20 µL
	17013799	5–50 µL
	17013800	20–200 µL
	17013801	20–300 µL
	17014499	100–1200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

Li-Ion battery and wall power supply are included.  
For pipette specifications, see page 32.  
Rainin multichannel pipettes are only available in LTS format.



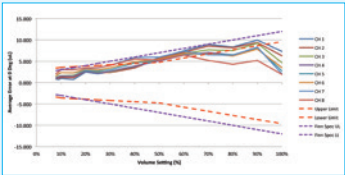
# Industry-leading Channel-to-Channel Consistency

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

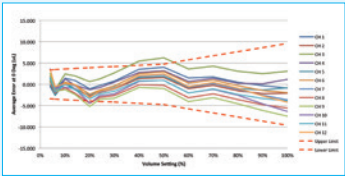


Rainin XLS+ 1200uL

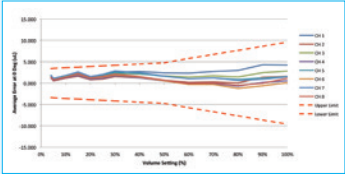
vs.



Competitor A • 1200uL



Competitor B • 1200uL



Competitor C • 1200uL

## Pipet-Lite XLS+ Manual Multichannel

Ergonomic design and exceptional performance

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




CATALOG No. VOLUME RANGE

Pipet-Lite XLS+ 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

Rainin LTS pipettes are designed for use with LTS tips.  
For pipette specifications, see page 32.  
Rainin multichannel pipettes are only available in LTS format.

# 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 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



 Pipet-Lite XLS	LTS	
	CATALOG No.	VOLUME RANGE
	<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

Rainin LTS pipettes are designed for use with LTS tips.  
For pipette specifications, see page 32.  
Adjustable spacer pipettes are only available in LTS format.

## 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	<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

Rainin LTS pipettes are designed for use with LTS tips.  
For pipette specifications, see page 32.  
Adjustable spacer pipettes are only available in LTS format.  
Li-Ion battery and wall power supply are included.

# 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 ensure fewer out-of-tolerance failures and low cost of ownership.

**Lower plunger force**

Plunger force in Rainin Classic is 25% less than in similar pipettes.

**Comfort**

The fingerhook allows a lighter grip during pipetting cycles.

Great value – lower prices!



	CATALOG No.	VOLUME RANGE
Rainin Classic Universal Fit	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

Rainin Classic pipettes use universal tips.  
For pipette specifications, see page 32.



# 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, pre-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		
	MAX VOLUME	RACKS/CARTON	TIPS/CARTON	PRESTERILIZED	
Pos-D Pipettes	17008575	0.5–10 µL			
	17008576	3–25 µL			
	17008577	20–50 µL			
	17008578	10–100 µL			
	17008579	50–250 µL			
	17008580	100–1000 µL			
Disposable Syringe Tips	17008604	10 µL	3	180	✓
	17008605	25 µL	3	180	✓
	17008606	50 µL	3	180	✓
	17008607	100 µL	3	180	✓
	17008608	250 µL	3	180	✓
	17008609	1000 µL	3	180	✓
	17012264	10 µL	3	180	
	17012265	25 µL	3	180	
	17012266	50 µL	3	180	
	17012267	100 µL	3	180	
	17012268	250 µL	3	180	
	17012135	1000 µL	3	180	

# New Pipette Starter Kits

## 14 Easy Ways to Buy New XLS+ Pipettes

Each Starter Kit includes a SmartStand\* and EasyDirect software.

- 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 

\*See page 60-61 for more about SmartStand

		Single Channel Manual						Multichannel Manual				Single Channel Electronic			SmartStand
		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	
LTS	CATALOG No.	30386738	✓	✓	✓	✓									✓
	30386597	✓		✓	✓	✓									✓
	30386599			✓	✓	✓									✓
	30386737				✓	✓	✓								✓
	30386734			✓	✓	✓		✓							✓
	30386733			✓	✓	✓		✓							✓
	30386736			✓	✓	✓			✓						✓
	30386735			✓	✓	✓				✓					✓
	30386739						✓	✓			✓				✓
	30386740								✓	✓					✓
	30386731										✓	✓	✓	✓	✓
UNV	30386598	✓		✓	✓	✓									✓
	30386730			✓	✓	✓									✓
	30386732										✓	✓	✓		✓
	17008708*			✓	✓	✓									

\* Rainin Classic



SmartStand + EasyDirect software = Easy Pipette Management

**NEW!**



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 (ACCURACY)		RANDOM ERROR (PRECISION)	
	VOLUME	MANUAL	ELECTRONIC					
					%	( $\pm$ ) $\mu\text{L}$	%	( $\leq$ ) $\mu\text{L}$
Single-channel pipettes	2 $\mu\text{L}$	0.2 $\mu\text{L}$	0.002	n/a	12.0	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	0.7	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	0.6	0.03
		10.0 $\mu\text{L}$			1.0	0.1	0.4	0.04
	20 $\mu\text{L}$	2 $\mu\text{L}$	0.02	0.02	7.5	0.15	2.0	0.04
		10 $\mu\text{L}$			1.5	0.15	0.5	0.05
		20 $\mu\text{L}$			1.0	0.2	0.3	0.06
	100 $\mu\text{L}$	10 $\mu\text{L}$	0.2	0.1	3.5	0.35	1.0	0.1
		50 $\mu\text{L}$			0.8	0.4	0.24	0.12
		100 $\mu\text{L}$			0.8	0.8	0.15	0.15
	200 $\mu\text{L}$	20 $\mu\text{L}$	0.2	0.2	2.5	0.5	1.0	0.2
		100 $\mu\text{L}$			0.8	0.8	0.25	0.25
		200 $\mu\text{L}$			0.8	1.6	0.15	0.3
	300 $\mu\text{L}$	30 $\mu\text{L}$	0.5	0.2	2.5	0.75	1.0	0.3
		150 $\mu\text{L}$			0.8	1.2	0.25	0.375
		300 $\mu\text{L}$			0.8	2.4	0.15	0.45
	1000 $\mu\text{L}$	100 $\mu\text{L}$	2	1	3.0	3.0	0.6	0.6
		500 $\mu\text{L}$			0.8	4.0	0.2	1.0
		1000 $\mu\text{L}$			0.8	8.0	0.15	1.5
	2000 $\mu\text{L}$	200 $\mu\text{L}$	2	2	3.0	6.0	0.6	1.2
		1000 $\mu\text{L}$			0.8	8.0	0.2	2.0
		2000 $\mu\text{L}$			0.8	16.0	0.12	2.4
	5000 $\mu\text{L}$	500 $\mu\text{L}$	5	5	2.4	12.0	0.6	3.0
		2500 $\mu\text{L}$			0.6	15.0	0.2	5.0
		5000 $\mu\text{L}$			0.6	30.0	0.16	8.0
	10 mL	1 mL	20	10	5.0	50.0	0.6	6.0
		5 mL			1.0	50.0	0.2	10.0
		10 mL			0.6	60.0	0.16	16.0
	20 mL	2 mL	20	20	5.0	100.0	0.6	12.0
		10 mL			1.0	100.0	0.2	20.0
		20 mL			0.6	120.0	0.16	32.0

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 $\mu$ L		SYSTEMATIC ERROR (ACCURACY)		RANDOM ERROR – MANUAL (PRECISION)		RANDOM ERROR – ELECT (PRECISION)	
	VOLUME	MANUAL / ELECTRONIC								
			%	( $\pm$ ) $\mu$ L	%	( $\leq$ ) $\mu$ L	%	( $\leq$ ) $\mu$ L	%	( $\leq$ ) $\mu$ L
Multichannel pipettes	10 $\mu$ L	1.0 $\mu$ L	0.02/0.01	4	0.04	5	0.05	3	0.03	
		5.0 $\mu$ L		1.5	0.075	1.5	0.075	0.8	0.04	
		10.0 $\mu$ L		1	0.1	0.5	0.05	0.5	0.05	
	20 $\mu$ L	2 $\mu$ L	0.02	7.5	0.15	4	0.08	3	0.06	
		10 $\mu$ L		1.5	0.15	1.5	0.15	1	0.1	
		20 $\mu$ L		1	0.2	0.5	0.1	0.3	0.06	
	50 $\mu$ L	5 $\mu$ L	0.05	3.5	0.18	2	0.1	1.5	0.075	
		25 $\mu$ L		1.2	0.3	0.5	0.125	0.4	0.1	
		50 $\mu$ L		0.8	0.4	0.4	0.2	0.3	0.15	
	200 $\mu$ L	20 $\mu$ L	0.2	2.5	0.5	1.2	0.24	1	0.2	
		100 $\mu$ L		0.8	0.8	0.25	0.25	0.25	0.25	
		200 $\mu$ L		0.8	1.6	0.3	0.6	0.2	0.4	
	300 $\mu$ L	30 $\mu$ L	0.5/0.2	2.5	0.75	1.5	0.45	1	0.3	
		150 $\mu$ L		0.8	1.2	0.3	0.45	0.25	0.375	
		300 $\mu$ L		0.8	2.4	0.25	0.75	0.2	0.6	
	1200 $\mu$ L	100 $\mu$ L	2/ 1	3.6	3.6	1	1	0.6	0.6	
		600 $\mu$ L		0.8	4.8	0.3	1.8	0.2	1.2	
		1200 $\mu$ L		0.8	9.6	0.2	2.4	0.15	1.8	

Specification subject to change without notice.



## 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 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 costs

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



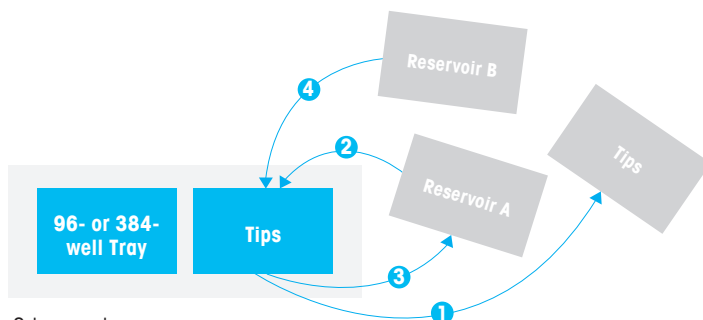


## Speed your workflow

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

HEAD SIZE		LOW VOLUME 0.5-20 µL	MID VOLUME 5-200 µL	HIGH VOLUME 100-1000 µL
Performance Specifications	<b>Systematic Error</b> (Channel Accuracy)	20 µL: ± 1% ( 0.2 µL) 10 µL: ±1.2% (0.12 µL) 2 µL: ± 6% (0.12 µL) 1 µL: ± 12% (0.12 µL)	200 µL: ± 1% ( 2 µL) 100 µL: ± 1% ( 1 µL) 20 µL: ± 2% ( 0.4 µL) 5 µL: ± 5% (0.25 µL)	1000 µL: ± 1% ( 10 µL) 500 µL: ± 1% ( 5 µL) 100 µL: ± 2.5% ( 2.5 µL)
	<b>Random Error</b> (Channel Precision)	20 µL: ≤0.8% (0.16 µL) 10 µL: ≤1.0% ( 0.1 µL) 2 µL: ≤ 5% ( 0.1 µL) 1 µL: ≤ 10% (0.12 µL)	200 µL: ≤0.4% ( 0.8 µL) 100 µL: ≤0.8% ( 0.8 µL) 20 µL: ≤1.5% ( 0.3 µL) 5 µL: ≤3.5% (0.18 µL)	1000 µL: ≤ 0.4% ( 4 µL) 500 µL: ≤ 0.4% ( 2 µL) 100 µL: ≤1.25% (1.25 µL)
	<b>Volume Increments</b>	0.02 µL	0.2 µL	1 µL

## BenchSmart 96

### Simplicity for Superior Performance

So intuitive, anyone in the lab can use it!

BenchSmart's wide range of application modes – from basic pipetting to advanced features like multi-dispense – make setup a snap.



### BenchSmart's Application Modes Simplify Operation



#### Basic pipetting

Transfer individual liquid samples quickly, reproducibly and with minimal effort – everything you need for routine, everyday pipetting.



#### Advanced pipetting

Take greater control of your workflow by making fine adjustments – with advanced features like setting a fixed volume, volume sequencing and mixing.



#### Multi-dispense

Dispense multiple aliquots from a single aspirated volume – set a series of fixed volume aliquots or sequence of different volumes.



#### Dilute

Simplify in-tip dilution of multiple sample volumes with BenchSmart's fixed or volume sequencing features.



#### Reverse pipetting

Automates a procedure commonly used with viscous liquids – positioning the piston past the first stop, aspirating, then depressing only to the first stop to dispense the aliquot.

## BenchSmart 96

LTS

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

## High-throughput LTS Tips

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

LTS

LTS

CATALOG No.

		VOL	QTY	FEATURES				
		MAX VOLUME	RACKS/CARTON	STACKS	TIPS/CARTON	PRESTERILIZED	FILTER	LOW RET
Tips in Racks	17011185	20 µL	10		960			
	17011186	20 µL	10		960	✓		
	17011117	20 µL	10		960	✓	✓	
	17010645	200 µL	10		960			
	17010647	200 µL	10		960	✓		
	17010646	200 µL	10		960	✓	✓	
	30281704	1000 µL	10		960			
	30296781	1000 µL	10		960	✓		
	30296782	1000 µL	10		960	✓	✓	
	17014399	20 µL	10		960	✓		✓
	17014400	20 µL	10		960	✓	✓	✓
	17014401	200 µL	10		960	✓		✓
	17014402	200 µL	10		960	✓	✓	✓
	30296783	1000 µL	10		960	✓		✓
30296784	1000 µL	10		960	✓	✓	✓	
Tips in Stacks	17011187	20 µL		10	960			
	17011287	20 µL		10	960	✓		
	17010648	200 µL		10	960			
	17010649	200 µL		10	960	✓		
	17014403	20 µL		10	960	✓		✓
	17014404	200 µL		10	960	✓		✓

See page 41 for BenchSmart reservoirs, plates, mats and strips.

## Liquidator 96

### Manual High-Throughput Pipetting

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

- **Two volume ranges: 0.5-20  $\mu$ L and 5-200  $\mu$ L**
- **No power or programming: simply set the volume and pipette**
- **Four-position platform: process up to 3 plates at a time with no stacking**

A fast and highly intuitive pipetting system. 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.





• **Increase speed**

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

**Accurate and reproducible**

Both 20  $\mu$ L and 200  $\mu$ L Liquidator models offer superior accuracy and precision.

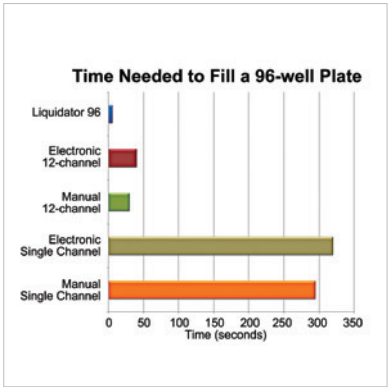
**Liquidator 96 specifications**

	ACCURACY	PRECISION
20 $\mu$ L	20 $\mu$ L: $\pm$ 1.0%	20 $\mu$ L: $\leq$ 0.8%
	10 $\mu$ L: $\pm$ 1.2%	10 $\mu$ L: $\leq$ 1.0%
	2 $\mu$ L: $\pm$ 6%	2 $\mu$ L: $\leq$ 5%
	1 $\mu$ L: $\pm$ 12%	1 $\mu$ L: $\leq$ 10%

Volume range: 0.5-20  $\mu$ L  
Volume increment: 0.02  $\mu$ L

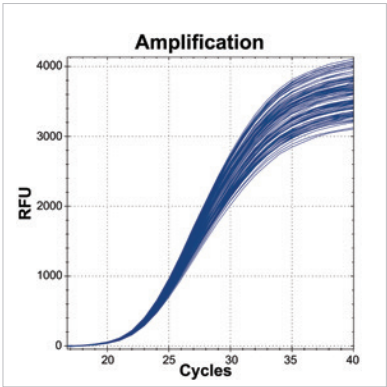
200 $\mu$ L	200 $\mu$ L: $\pm$ 1.0%	200 $\mu$ L: $\leq$ 0.5%
	100 $\mu$ L: $\pm$ 1.0%	100 $\mu$ L: $\leq$ 0.8%
	20 $\mu$ L: $\pm$ 2.0%	20 $\mu$ L: $\leq$ 1.5%
	5 $\mu$ L: $\pm$ 5.0%	5 $\mu$ L: $\leq$ 3.5%

Volume range: 5-200  $\mu$ L  
Volume increment: 0.2  $\mu$ L



**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

Liquidator 96

	CATALOG No.	DESCRIPTION
LTS	LIQ 96	
	17014207	0.5-20 µL Benchtop Pipetting System
	17010335	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 Accessories	17014270	Height adjustment posts, 0.5-20 µL Liquidator
	17010396	Height adjustment posts, 5-200 µL Liquidator
	17010394	384-well adapter plate stage, white
	17010791	384-well adapter plate stage, black
	17011118	20 µL tip tray adapter, white
	17011119	20 µL tip tray adapter, black

High-throughput LTS Tips

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

	CATALOG No.	VOL		QTY		FEATURES		
		MAX VOLUME		RACKS/CARTON	STACKS	TIPS/CARTON	PRESTERILIZED	FILTER
Tips in Racks	17011185	20 µL	10		960			
	17011186	20 µL	10		960	✓		
	17011117	20 µL	10		960	✓	✓	
	17010645	200 µL	10		960			
	17010647	200 µL	10		960	✓		
	17010646	200 µL	10		960	✓	✓	
	17014399	20 µL	10		960	✓		✓
	17014400	20 µL	10		960	✓	✓	✓
	17014401	200 µL	10		960	✓		✓
	17014402	200 µL	10		960	✓	✓	✓
Tips in Stacks	17011187	20 µL		10				
	17011287	20 µL		10		✓		
	17010648	200 µL		10				
	17010649	200 µL		10		✓		
	17014403	20 µL		10		✓		✓
	17014404	200 µL		10		✓		✓

High-throughput LTS tips are for use with Rainin BenchSmart 96 and Liquidator 96 benchtop pipetting systems only.



Reservoirs, plates, mats and strips for BenchSmart 96 and Liquidator 96

Reusable  
SBS footprint  
polypropylene  
reservoirs

Deepwell  
plates, mats,  
tube strips,  
cap strips

CATALOG No.		DESCRIPTION		
Reservoirs	17012602	Non-sterile	Low-profile 96 pyramidal bottoms	5-pack
	17012603	Sterile	Low-profile 96 pyramidal bottoms	5-pack, indiv. wrap
	17012604	Non-sterile	Standard profile 96 pyramidal bottoms	5-pack
	17012605	Sterile	Standard profile 96 pyramidal bottoms	5-pack, indiv. wrap
	17012608	Non-sterile	Low-profile 8-channel V-bottom	5-pack
	17012609	Sterile	Low-profile 8-channel V-bottom	5-pack
	17012606	Non-sterile	Standard profile 8-channel V-bottom	5-pack
	17012607	Sterile	Standard profile 8-channel V-bottom	5-pack, indiv. wrap
	17012612	Non-sterile	Low-profile 12-channel V-bottom	5-pack
	17012613	Sterile	Low-profile 12-channel V-bottom	5-pack, indiv. wrap
	17012610	Non-sterile	Standard profile 12-channel V-bottom	5-pack
	17012611	Sterile	Standard profile 12-channel V-bottom	5-pack, indiv. wrap
Accessories	17012623	Non-sterile	2.2 mL 96-deepwell plate,	5-pack
	17012624	Sterile	2.2 mL 96-deepwell plate,	5-pack, indiv. wrap
	17012625	Non-sterile	Polymer sealing mat fits 96-deepwell plate	5-pack
	17012626	Sterile	Polymer sealing mat fits 96-deepwell plate	5-pack, indiv. wrap
	17012627	Non-sterile	1.2 mL racked microtube strips (8x12)	5-pack
	17012628	Sterile	1.2 mL racked microtube strips (8x12)	5-pack
	17012629	Non-sterile	Microtube 8-cap strips, box of 300	
	17012630	Sterile	Microtube 8-cap strips, box of 300	25 indiv. bags of 12 strips

Enhance ELISA Data Quality

ELISA data quality can be significantly improved if reagents are added simultaneously and process time is reduced. Our free white paper shows how Liquidator® 96 used for ELISA workflows is able to generate more linear ELISA standard curves.

Get your free white paper “Improving Quantitative ELISA Data” at:

► [tinyurl.com/liq96elisa](https://tinyurl.com/liq96elisa)



## PureSpeed Applications

### Simplify Proteomic and Genomic Experiments

PureSpeed sample preparation tips can streamline many types of experiments. Here are some examples:

#### Desalting mass spectrometry samples

PureSpeed C18 Desalting Tips offer the highest peptide capacity, 10 µg, which is critical for generating high-intensity sample spectra during mass spectrometry.

PureSpeed is an affordable, automated solution for purifying up to 12 samples at once, facilitating collection of high-quality sequence coverage data.

#### Immunoprecipitation

PureSpeed ProA and ProG pre-packed tips can be used with Rainin E4 XLS pipettes to perform direct and indirect immunoprecipitation. Compared to magnetic beads and loose agarose resin, PureSpeed offers a simpler protocol and delivers more concentrated immunoprecipitated samples.

With multichannel E4 XLS pipettes, PureSpeed can process up to 12 samples simultaneously.

#### Chromatin immunoprecipitation (ChIP)

Use PureSpeed to study the interactions between proteins and DNA in a cell. Unlike magnetic beads, loose agarose resin, spin columns and fixed staphylococcus cells, PureSpeed markedly reduces the hands-on time needed for ChIP.

For ChIP procedures, pre-packed ProA and ProG tips are able to produce highly concentrated samples. When used with the multichannel Rainin E4 XLS pipette, PureSpeed tips offer a truly parallel solution for ChIP experiments.

#### Recombinant and native protein purification

PureSpeed can simplify your method to capture, purify, and enrich recombinant proteins and native proteins, such as antibodies. Ni-IMAC, ProA and ProG resins can be completely saturated with recombinant proteins or antibodies.

Combined with high volume wash steps and low elution buffer volumes, PureSpeed delivers the highest concentration of purified material in as little as 15 minutes.

#### Ion exchange chromatography

Using the inexpensive and semi-automated PureSpeed system, it is easy to separate biomolecules based on their overall charge characteristics. Proteins, oligonucleotides, and other molecules can be resolved and purified using our pre-packed strong and weak anion- and cation-exchange tips.



## PureSpeed

200 µL pipettes are used with 200 µL tips with 5 and 20 µL resins.

1200 µL pipettes are used with 1200 µL tips with 20 and 80 µL resins.

	CATALOG No.	RESIN VOLUME	DETAILS	
<b>LTS</b>	<b>ProA Tips</b>			
	17012561	5 µL		12 x 200 µL
	17012562	20 µL		12 x 200 µL
	17012568	20 µL		12 x 200 µL
	17012569	80 µL		12 x 200 µL
<b>ProG Tips</b>	17012563	5 µL		12 x 200 µL
	17012564	20 µL		12 x 200 µL
	17012570	20 µL		12 x 200 µL
	17012571	80 µL		12 x 200 µL
<b>Ni-IMAC Tips</b>	17012566	5 µL		12 x 200 µL
	17012567	20 µL		12 x 200 µL
	17012572	20 µL		12 x 200 µL
	17012573	80 µL		12 x 200 µL
<b>Ab+ Tips</b>	30382178	20 µL		12 x 1000 µL
	30382179	80 µL		12 x 1000 µL
<b>Ion Exchange Tips</b>	17014190	20 µL	Weak Cation	12 x 1000 µL
	17014191	80 µL	Weak Cation	12 x 1000 µL
	17014186	20 µL	Weak Anion	12 x 1000 µL
	17014187	80 µL	Weak Anion	12 x 1000 µL
	17014188	20 µL	Strong Cation	12 x 1000 µL
	17014189	80 µL	Strong Cation	12 x 1000 µL
	17014184	20 µL	Strong Anion	12 x 1000 µL
	17014185	80 µL	Strong Anion	12 x 1000 µL
<b>C18 Desalting Tips</b>	17014043	LTS tips		12 x 20 µL
	17014045	LTS tips		96 x 20 µL
	17014047	LTS tips		960 x 20 µL
	17014044	Universal tips		12 x 10 µL
	17014046	Universal tips		96 x 10 µL
	17014048	Universal tips		960 x 10 µL
<b>PureSpeed Accessories</b>	17012588	Accessory Kit: Base, 96-deepwell plate, ColorTrak Guides, Adapters		
	17012584	PureSpeed Base		in Acc. Kit
	17012587	E4 XLS+ Micro SD Card with PureSpeed protocol		in Acc. Kit
	17012582	Pack of 10 adapters for 200 µL multichannel		in Acc. Kit
	17012583	Pack of 10 adapters for 1000 µL multichannel		in Acc. Kit
	17013242	Adapter for 200 µL single channel		in Starter Kit
	17013226	Adapter for 1000 µL single channel		in Starter Kit
	17012623	96-deepwell plate, 5-pack		in Acc. Kit
	17012587	E4 MicroSD Card PS Protocol PT-E4-SD		

# Rainin QuickFlow

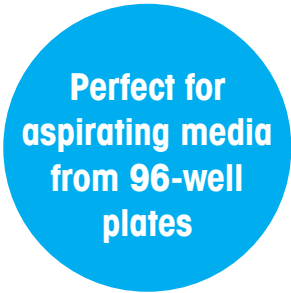
## Convenient, Trouble-free Aspiration

The Rainin QuickFlow benchtop aspirator combines exceptional ergonomics with a broad range of features and conveniences— the ability to select continuous flow instead of maintaining pressure on the activator button, a liquid-level sensor to prevent overfilling and multiple adapters for most media types. Labs with central vacuum systems can purchase the handle and adapter kit separately.



### Features

- Ergonomic design
- Simple and safe to use
- Small footprint
- Fits under cell culture hoods
- Interchangeable adapters
- Variable speed vacuum
- Non-contact liquid level sensor
- Snap connectors for easy assembly/disassembly
- Single- and multi-channel adapters use universal-fit tips



### Ordering Information

	CATALOG No.	DESCRIPTION
QuickFlow	30519826	Aspirator, QuickFlow 4L
	30519824	QuickFlow Handle Kit – Standard
	30519825	QuickFlow Handle Kit – w/Splitter

Status Indicator



### Easy Assembly

With self-sealing quick connectors, QuickFlow is designed for easy and intuitive disassembly and reassembly. All parts that come in contact with liquids are easy to clean and autoclavable.



### Liquid Level Sensor

The QuickFlow's non-contact level sensor offers exceptional performance and reliability. The sensor stops the vacuum when the bottle reaches capacity and is proven to provide a long service life.



### Speed Control

### Continuous Flow

QuickFlow's continuous mode isn't just more efficient—it's a hand saver. Repeatedly pressing the aspiration button can contribute to repetitive strain injury. QuickFlow eliminates this problem by allowing users to select continuous flow and the amount of suction.

# Electronic and Manual Repeaters

## AutoRep E and AutoRep S

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

### AutoRep S

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

Useful when working in the range from 2 µL to 50 mL, AutoRep S is an economical choice for repeat dispensing up to 49 aliquots without refilling.

The volume reference card and central volume wheel simplify volume setting. The two-sided volume card fits in a slot on the instrument head.

### AutoRep E

AutoRep E virtually eliminates all pipetting forces – a real concern with repeat pipetting. When used with Encode syringes, AutoRep E automatically senses and displays the tip volume.

Three modes:

- **Dispensing:** step counter displays volume
- **Auto dispensing:** learns your pace, so no need to program time intervals
- **Pipetting:** positive displacement

The no-memory/no-maintenance NiMH power pack charges in just three hours.



AutoRep S

AutoRep E

	CATALOG No.	DESCRIPTION	
AutoRep Repeater Pipettes	17000723	AutoRep E	Electronic repeater pipette, 1 µL – 50 mL
	17000556	AutoRep E	Charger adapter – US
	17003233	AutoRep E	NiMH battery pack
	17004324	AutoRep E	Charging base without charger adapter
	17013008	AutoRep S	Manual repeater pipette, 2 µL to 50 mL
	17013009	AutoRep S	Shelf mount
	17013010	AutoRep S	Volume table



Encode positive displacement syringes are ideal for repetitive pipetting of all liquids.

**Encode syringes**

AutoRep E displays syringe volume automatically, eliminating errors and guesswork. The wide selection of Encode™ syringes gives accurate delivery in any volume from 1 µL to 50 mL, and they are available sterile and non-sterile.

Sterile syringes are certified to be free of detectable DNA, RNase, Endotoxin and ATP. Product is sterilized with beta-radiation to obtain a SAL of 10<sup>-6</sup>. Individually wrapped.

CATALOG No.		DESCRIPTION		
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
	17001885	Encode set, non-sterile, 20 each: 0.5, 1.0, 1.25, 2.5, 5, 10, 12.5 mL		
	17000546	25/50 mL**	10/pkg	
	17000547	25/50 mL** Wrapped	5/pkg	Sterile

\* Includes one adapter. \*\* Adapter



# Large Volume Liquid Handling

## Disp-X – Dispense Safely and Easily

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

# Precise Control at Your Fingertips

## Pipet-X – Pipette Volumes to 100 mL

Ample flexibility for a wide range of liquid transfer and measurement options.

### One tool is all you need

The Pipet-X pipet controller excels at all serological pipetting applications; uses standard plastic or glass serological pipets.

### One-handed control

The ergonomic grip and buttons are designed for comfort with large or small hands.

### Smart recharging

Pipet-X uses a rechargeable NiMH battery for up to eight hours of uninterrupted use. Can be used while recharging with power cord.

### Contamination free

Built-in check valve and 0.2 micron hydrophobic membrane filter protect the Pipet-X internal components from contamination during aspiration.



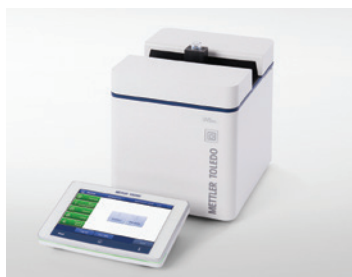
CATALOG No. DESCRIPTION

Pipet-X	17011733	Pipet-X pipet controller, 0.1–100 mL
	17011744	Pipet-X silicone adapter with check valve
	17011745	Pipet-X spare membrane filter: 0.2 µm, sterile
	17011746	Pipet-X nickel-metal hydride battery

## 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.



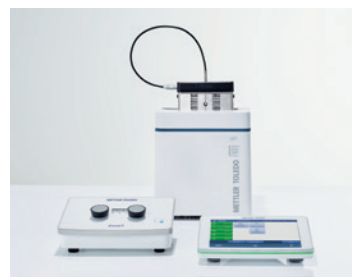
#### UV5Bio – the Life Science Expert

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.

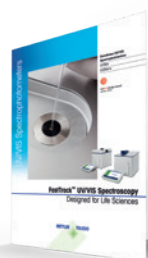


#### CuveT Thermostat for Precise Temperature Control

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	–2.000 ... 20.000 pH;	0.001/0.01/0.1; ± 0.002	none	<b>30046240</b>
<b>S400-Kit</b>		mV	–2000.0 ... 2000.0 mV	0.1/1; ± 0.1	Expert Pro-ISM	<b>30046241</b>
<b>S400-Bio</b>		ISFET pH	0.000 ... 14.000 pH	0.001/0.01/0.1; ± 0.05	Routine Pro-ISM	<b>30046242</b>
<b>S400-Micro</b>		Temp.	–30.0 ... 130.0 °C	0.1; ± 0.1	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	0.001 µS/cm ... 2000 mS/cm	0.001 ... 1; ± 0.5%	none	<b>30046244</b>
<b>S700-Kit</b>		Temp.	–30.0 ... 130.0 °C	0.1; ± 0.1	731-ISM	<b>30046245</b>
<b>S700-Trace</b>					Trace incl. flow cell	<b>30046246</b>
<b>S500-Basic</b>		pH	–2.000 ... 20.000 pH;	0.001/0.01/0.1; ± 0.002	none	<b>30046248</b>
<b>S500-Kit</b>		mV	–2000.0 ... 2000.0 mV	0.1/1; ± 0.1	Expert Pro-ISM	<b>30046249</b>
<b>S500-Bio</b>		Ion concentration	0 ... 999 999 mg/L, ppm	0.001 ... 1; ± 0.5%	Routine Pro-ISM	<b>30046250</b>
<b>S500-F</b>		Temp.	–30.0 ... 130.0 °C	0.1; ± 0.1	Perfection Fluoride	<b>30046251</b>
<b>S900-Basic</b>		Dissolved Oxygen	0.000 ... 50 mg/L, ppm	0.001	none	<b>30092984</b>
<b>S900-Kit</b>				± 0.1 mg/L from 0 ... 8 ± 0.2 mg/L from 8 ... 20 ± 10% from 20 ... 50	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	0.000 ... 99 mg/L, ppm	0.001; ± 0.5%	605-ISM	<b>30092985</b>
		Temperature		0.1; ± 0.1		
<b>S470-Basic</b>	<b>2</b>	pH	see S400, S700	see S400, S700	none	<b>30046252</b>
<b>S470-Kit</b>		mV			Expert Pro-ISM and 731-ISM	<b>30046253</b>
<b>S470-USP/EP</b>		ISFET pH			Pure Pro-ISM 741-ISM	<b>30046254</b>
<b>S470-Bio</b>		Conductivity			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)

## SevenCompact™

### Universal and Reliable Instruments

The SevenCompact™ series combines precise electrochemical measurement technologies with flexibility, innovative design and ease-of-use. It can be universally employed and continues the tradition of the Seven series from METTLER TOLEDO.



#### Large Customizable Color Display

The 4.3 inch high-resolution color display has large digits and well arranged icons making relevant information identifiable at a glance. The color and contrast can be adapted to your preferences and light conditions.



#### uFocus™ on the Essentials

The instrument gives you the choice! In the normal screen layout, all available information is visible. By switching to the uFocus™ distractions caused by less important information are eliminated.



#### uPlace™ the Sensor Perfectly

The uPlace™ electrode arm can be operated with one hand, moving straight up and down bringing the electrode into the position where it works best for your sample.



#### Total Flexibility with Data Processing

Upon endpointing, SevenCompact™ allows multiple archiving options: the data can be stored, printed or transferred to EasyDirect™. Any combination of these three options is possible, giving you total flexibility.



#### Intelligent Sensor Management for Highest Security

Upon connection of an ISM sensor, the sensor's ID is automatically identified. The most recent sensor calibration data is transferred to the meter and is used for subsequent measurements.



#### SevenCompact Duo for Truly Universal Measurements

The dual channel instrument measures conductivity and its derived values, as well as pH - either simultaneously or independently.

MODEL	PARAMETERS	MEASURING RANGE	RESOLUTION AND ACCURACY	INLAB® SENSOR	PAART No.
<b>S220-Basic (Instrument)</b>	pH/mV*/Redox/Ion concentration**/°C***	-2.000 ... 20.000 pH -2000.0 ... 2000.0 mV 1.00E-9 ... 9.99E+9 -30.0 ... 130.0 °C	pH: 0.001/0.01/0.1; ±0.002 mV: 0.1/1; ±0.1 Ions: last signifi.digit; ±0.5% °C: 0.1; ±0.1	none	<b>30019028</b>
<b>S220-Kit</b>				Expert Pro-ISM	<b>30019029</b>
<b>S220-uMix</b>				Expert Pro-ISM, uMix stirrer	<b>30096986</b>
<b>S220-Buffers</b>				InLab Expert Pro-ISM and Buffer Bottles	<b>30393277</b>
<b>S220-Bio</b>				Routine Pro-ISM	<b>30019031</b>
<b>S220-Micro</b>				Ultra-Micro-ISM	<b>30096985</b>
<b>S220-U</b>				Versatile Pro	<b>30019032</b>
<b>S230-Basic (Instrument)</b>	Cond./TDS/Salinity/ Resistivity/°C	0.001µS/cm ... 1000 mS/cm -30.0 ... 130.0 °C	0.001 ... 1; ±0.5% 0.1 °C; ±0.1 °C	none	<b>30019033</b>
<b>S230-Kit</b>				731-ISM	<b>30019034</b>
<b>S230-USP/EP</b>				741-ISM	<b>30019035</b>
<b>S213-Meter</b>	pH/mV/Redox/ °C/Conductivity/ TDS/Salinity/ Resistivity	-2.000 ... 20.000 pH -2000.0 ... 2000.0 mV 0.001mS/cm 1000mS/cm (cond) -30.0 ... 130.0 °C	pH: 0.001/0.01/0.1 ±0.002 mV: 0.1/1 ±0.1 Cond: 0.001 ... 1 ±0.5% 0.1 °C; ±0.1 °C	none	<b>30339958</b>
<b>S213-STD</b>				Expert Pro-ISM 731-ISM	<b>30339959</b>
<b>S213-Water</b>				Pure Pro-ISM 741-ISM	<b>30339980</b>

\* Instrument can also measure rel. mV

\*\* Ion concentration supports units mmol/L, mol/L, ppm, mg/L, % and pX

\*\*\* Temperature display choice between °C and °F. ATC temperature range is -5.0 ... 130.0 °C

## SevenCompact™

Seven good reasons for SevenCompact™

- **Top sensors**  
fast and accurate measurements
- **Menu guidance in 12 languages**  
user-friendly operation
- **Clear, well arranged color display**  
quick to learn
- **Many printing and data storage options**  
GLP compliant
- **Professional peripheral options**  
highly efficient
- **Intelligent sensors**  
peace of mind
- **Full fledged service offering**  
high uptime and compliance

## General Accessories for SevenCompact™

DESCRIPTION	PART No.
uPlace™: Electrode holder (included in standard delivery)	<b>30019823</b>
uMix™ magnetic stirrer	<b>30040000</b>
Protective cover (included in standard delivery)	<b>30019824</b>
RS-P25 printer (with RS232 cable)	<b>11124320</b>
Barcode reader hand scanner	<b>21901297</b>
USB cable for barcode reader (not included with barcode reader)	<b>21901309</b>
EasyDirect pH Software	<b>30323214</b>
USB A-B cable 1.8m for LabX direct PC software (not included with LabX direct PC software)	<b>51191926</b>
Guide to pH measurement (included in kit versions)	<b>51300058</b>
Guide to conductivity measurement (included in kit versions)	<b>30099121</b>
Power supply (included in standard delivery)	<b>11120270</b>

► See SevenCompact in action. [www.mt.com/SevenCompact](http://www.mt.com/SevenCompact)

## Trust the Service Experts

### Minimize Risk and Maximize Reproducibility

The METTLER TOLEDO difference: controlled laboratory environments and manufacturer authorized spare parts, certified pipette technicians and specialized calibration software.



Americas



#### Uptime

Our global network of factory-trained technicians and ISO/IEC 17025 certified service labs enables us to respond quickly to all repair and calibration needs.



#### Performance

Environmentally controlled labs and original manufacturer spare parts ensure that instruments are always returned to the highest accuracy and precision.



#### Compliance

With specialized calibration software and ISO/IEC 17025 accredited labs, METTLER TOLEDO is a partner you can trust to help maintain ISO 8655 and FDA 21 CFR part 11 standards.



#### Expertise

Our certified pipette service technicians perform more than 10 million readings each year, giving us extraordinary data analytics for understanding how all brands of pipettes perform over time.

► Request Rainin Service today! [www.mt.com/RaininService](http://www.mt.com/RaininService)



Europe



Asia

● Mettler Toledo Sales and Service

METTLER TOLEDO operates the world's most extensive network of ISO/IEC 17025 accredited pipette calibration laboratories.

### **Comprehensive offering**

- Calibration
- Preventive maintenance
- Service repair
- Calibration certificates

### **Global network**

With a global network of ISO/IEC 17025 accredited laboratories and one of the largest factory-trained support and service forces, we can provide you with application support and technical assistance anytime, anywhere.

Expert Calibration and Repair Services

Guaranteed Quality

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

CalibrateLab

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

CalibrateOnsite\*

- 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).
- Liquid leak test on all nozzles
- Adjustment to manufacturer's or ISO 8655 tolerances
- Calibration certificates with detailed results
- Calibration label

	Standard Plan	Advanced Plan	Accredited Plan
	<div>Labs with basic service needs</div> <div>Perfect for Academic Research R&amp;D</div>	<div>When prior performance matters</div> <div>Pharma Biotech Clinical research labs</div>	<div>For complete ISO 17025 documentation</div> <div>GLP/GMP, Regulated Labs</div>
Preventive Maintenance	✓	✓	✓
As Found	n/a	4 test weighings @ 10% and 100%	4 test weighings @ 10%, 50% and 100%
As Returned	4 test weighings @ 10% and 100%	4 test weighings @ 10% and 100%	10 test weighings @ 10%, 50% and 100%
Calibration Certificates	Standard Certificate	Standard Certificate	ISO 17025 Certificate

## 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.



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



# Pipette Stands

## Storage and Protection

Keep your pipettes charged, organized and ready to use.



**SmartStand™**  
Intelligent, easy-to-use, for manual and electronic XLS+ pipettes, single or multichannel. Charges up to four E4s.



**Universal Carousel Stand**  
Handy rotating carousel stand for up to seven manual pipettes. Weighted base – won't tip over.



**Hang-Ups™**  
Built-in magnets for ferrous surfaces, with adhesive disks for other surfaces.



**Shelf Hang-Ups™**  
Three Hang-Ups on a bracket for attachment to a shelf.

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

SmartStand

The Intelligent Pipette Stand



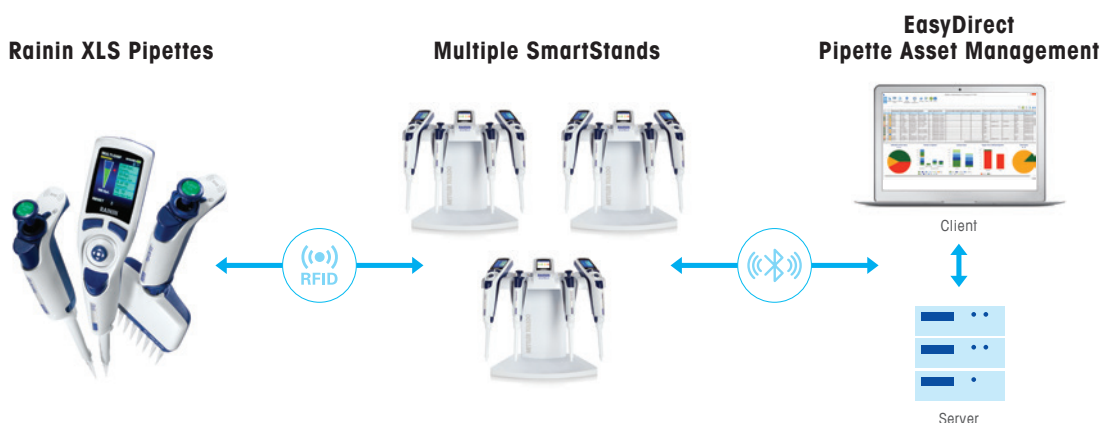
	CATALOG No.	DESCRIPTION
SmartStand	30312897	SmartStand stand with EasyDirect basic software
	30312899	Fastening kit – magnetic
	30313000	Fastening kit – shelf
	30313247	Fastening kit – bracket
	17012879	Electronic pipette power supply
	30449204	SmartStand USB Bluetooth/Adapter

## With EasyDirect, You're in Control

### Save Time and Simplify Pipette Management

With EasyDirect Pipette Asset Management and SmartStand, you have a powerful pipette tracking and calibration management system. Using the RFID chip embedded in every Rainin XLS-brand pipette, EasyDirect tracks every pipette's usage, location and service data automatically.

- Manage an unlimited number of pipettes
- Track all pipettes automatically
- Simplify calibration management and repairs



### 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. EasyDirect connects to SmartStand via Bluetooth or USB drive to automatically transfer serial numbers, service and other data to the EasyDirect database.

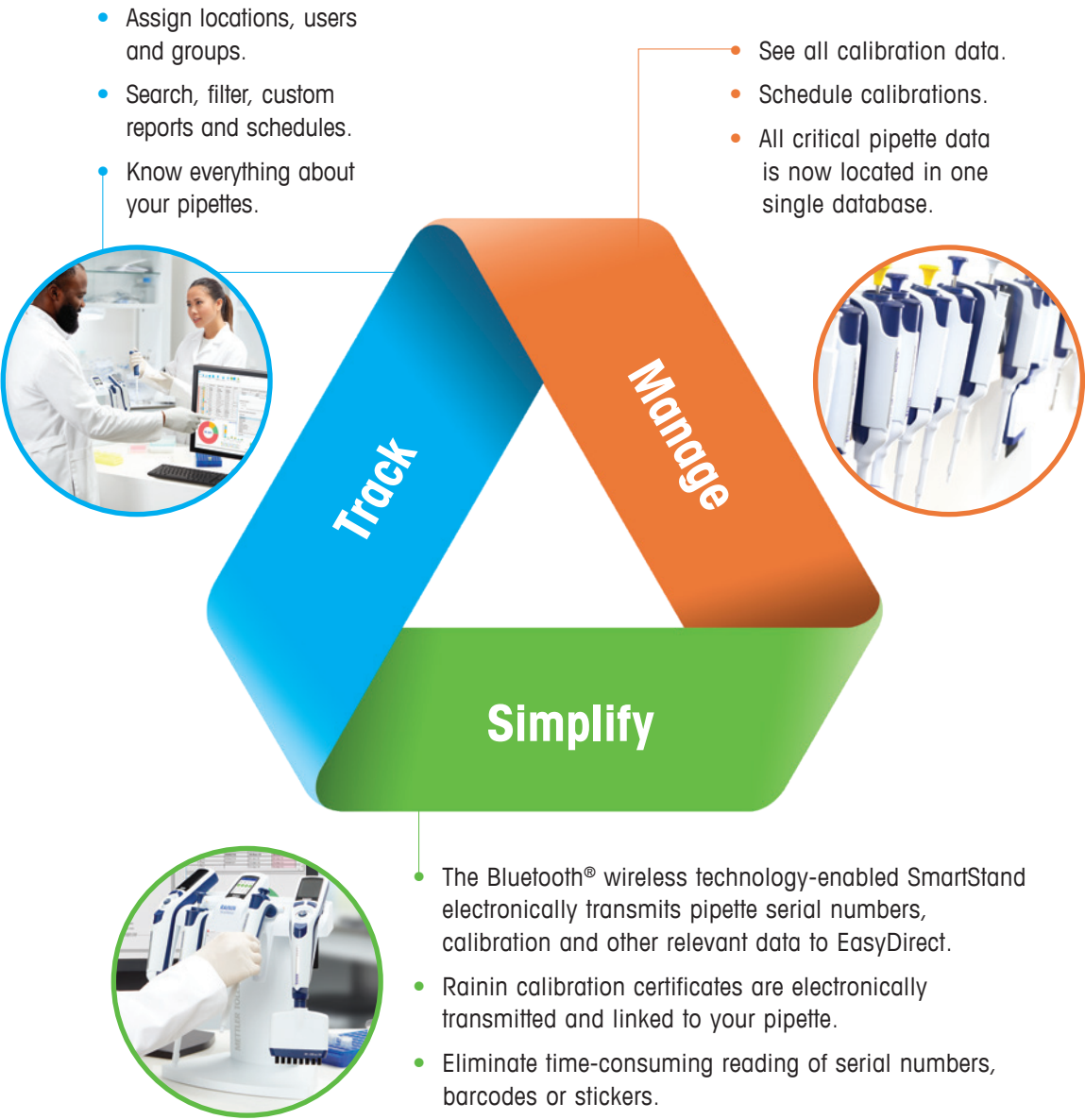
EasyDirect maintains a complete history of your entire pipette inventory including calibration certificates and verification reports. This makes it easy to track the status, location, calibration and service schedule for any pipette.

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

Specifications in this publication are subject to change without notice.

METTLER TOLEDO trademarks: Rainin, LTS, LiteTouch, TerraRack, TerraBase, Pipet-Lite, E4, XLS, XLS+, BenchSmart, Liquidator 96, EasyDirect, BioClean, BioClean Ultra, Green-Pak, SpaceSaver, Pipetting 360° and the 360° logo, Rainin Classic, Pos-D, StableStak, StableRak, Hang-Ups, FastTrack, LockPath, One Click, LabX, InMotion, Good UV/VIS Practice, GUVF, SevenExcellence, SeveCompact, uFocus, uPlace. Bluetooth is a registered trademark of Bluetooth SIG.

## Flexible, integrated and easy to implement



	CATALOG No.	DESCRIPTION
EasyDirect Software	30475913	EasyDirect – site
	30475915	EasyDirect – unlimited
	30478260	EasyDirect – Site, Renewal
	30478262	EasyDirect – Unlimited, Renewal

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

# Pipette Management... Simple

**BerTec** 伯昂  
需要訂購請撥打02-2228-1234

Which  
pipettes need  
calibration?

How many  
pipettes do we  
have now?

I need an  
easier way  
to manage  
certificates!

No time? No problem!  
Let Rainin help you take control  
of your pipette inventory.

## You're in Control with EasyDirect

Easy, automated pipette asset management

See  
page 62  
for details

**METTLER TOLEDO**