

## Intelligent diagnosis and maintenance prompt provide guarantee for safe operation

- Intelligent diagnosis for presence of syringes and syringe leakage
- Real-time monitoring of pump running status providing information such as alarms, regular maintenance, predictive maintenance



### Extensive Applications

- ✓ Electrospraying
- ✓ Microfluidics/Microfluidic Chips
- ✓ Animal experiment
- ✓ Toxicology Studies
- ✓ Capillary Electrophoresis
- ✓ Drug Discovery
- ✓ Cell Injections
- ✓ Microcapsule
- ✓ Catalyzer
- ✓ Neuroscience
- ✓ Organic Synthesis
- ✓ Nutrition science

### Specification

	dLSP 510	dLSP 520	dLSP 510 Pro	dLSP 520 Pro
Work mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/ infusion, auto repeated, programming (on dedicated PC software)			
Number of channel	1	2	1	2
Pusher advance per microstep	0.03255 $\mu$ m/ $\mu$ step		0.015625 $\mu$ m/ $\mu$ step	
Linear speed	0.0833 $\mu$ m/min-180mm/min		0.04 $\mu$ m/min-86.4mm/min	
Step speed	23.4375 sec/ $\mu$ step-10.85 $\mu$ sec/ $\mu$ step			
Flow rate of 0.5uL syringe	0.0007nL/min-0.0014mL/min		0.0003nL/min-0.0007mL/min	
Flow rate of 10mL syringe	18.028nL/min-38.956mL/min		8.657nL/min-18.699mL/min	
Flow rate of 60mL syringe(510 series)	55.554nL/min-120.044mL/min		26.677nL/min-57.621mL/min	
Linear travel accuracy (Rated)	$\pm$ 0.5%		$\pm$ 0.35%	
Linear travel CV(Rated)	$\pm$ 0.05%			
Linear force (Rated)	40lbs/18kg@100% force selection			
Motor and drive	1.8° step motor with 1/64 microstepping			
Syringe	0.5uL-60ml	0.5uL-30ml	0.5uL-60ml	0.5uL-30ml
User-defined syringe	Travel $\leq$ 108mm, OD $\leq$ 31.5mm	Travel $\leq$ 108mm, OD $\leq$ 26mm	Travel $\leq$ 108mm, OD $\leq$ 31.5mm	Travel $\leq$ 108mm, OD $\leq$ 26mm
Display	7Inch, 1024x600, IPS HD LCD			
Language	Chinese or English, set as needed			
Control mode	Touch screen control, dedicated PC or Android App control, footswitch control, RS485 communication control			
Calibration	Improve flow rate/ dispensing volume precision and accuracy			
Real time clock	Date and time can be set			
Voice reminder	N/A		For working progress, alarm, diagnosis	
Intelligent diagnosis	N/A		For presence of syringes, syringe leakage	
Screen lock	To prevent misoperation			
Electronic signature and audit trail	N/A		Meet the requirement of 21CFR Part 11 (on dedicated PC software)	
Support 3Q(IQ/OQ/PQ)	Meet GMP requirement			
EMC	CE (TUV) certified			
Deminsion(L×W×H)	Drive unit: 260mm×185mm×180mm, Controller: 190mm×123mm×33mm			
Power supply	AC 100V-240V/30W 50/60Hz		AC 100V-240V/20W 50/60Hz	
Operating condition	Temperature: 5°C-40°C, Relative humidity<85%			
IP rating	IP31			
Weight	Drive unit: 3.49kg, Controller: 0.37kg			

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**LONGER**  
PRECISION FLUID TRANSFER

## dLSP 500

Minimum pumping volume: 15pL\*

Minimum pumping flow rate: 0.3pL/min\*

## Digital Lab Syringe Pump

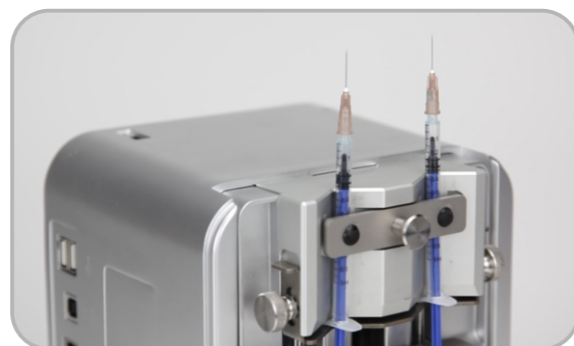
- ▶ Intelligent control of working progress and pump status in real time
- ▶ Good stability, High-Precision to achieve the stable liquid transferring



\*The minimum pumping volume and flow rate of Pro series

## 7-inch high-resolution touchscreen , Easy-to-use

- Intuitive graphic interface for fantastic interactive experience
- Visual display of various status prompts, alarm information and diagnostic results



The pump can be placed on its side to conserve valuable benchtop space and meet the needs of a variety of applications

## Ethernet and wireless (WiFi/Bluetooth) communication allows remote control and monitoring via a PC, tablet or smartphone



computer control

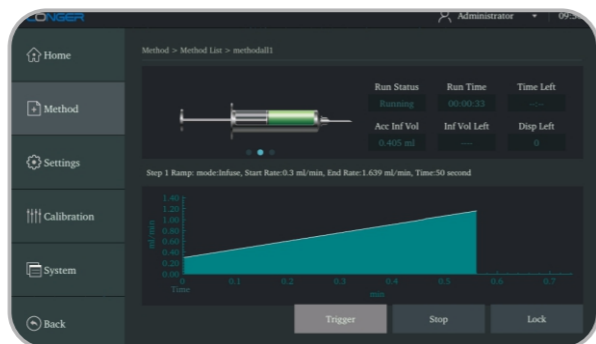


Tablet control

Dedicated Windows PC software and Android App are available

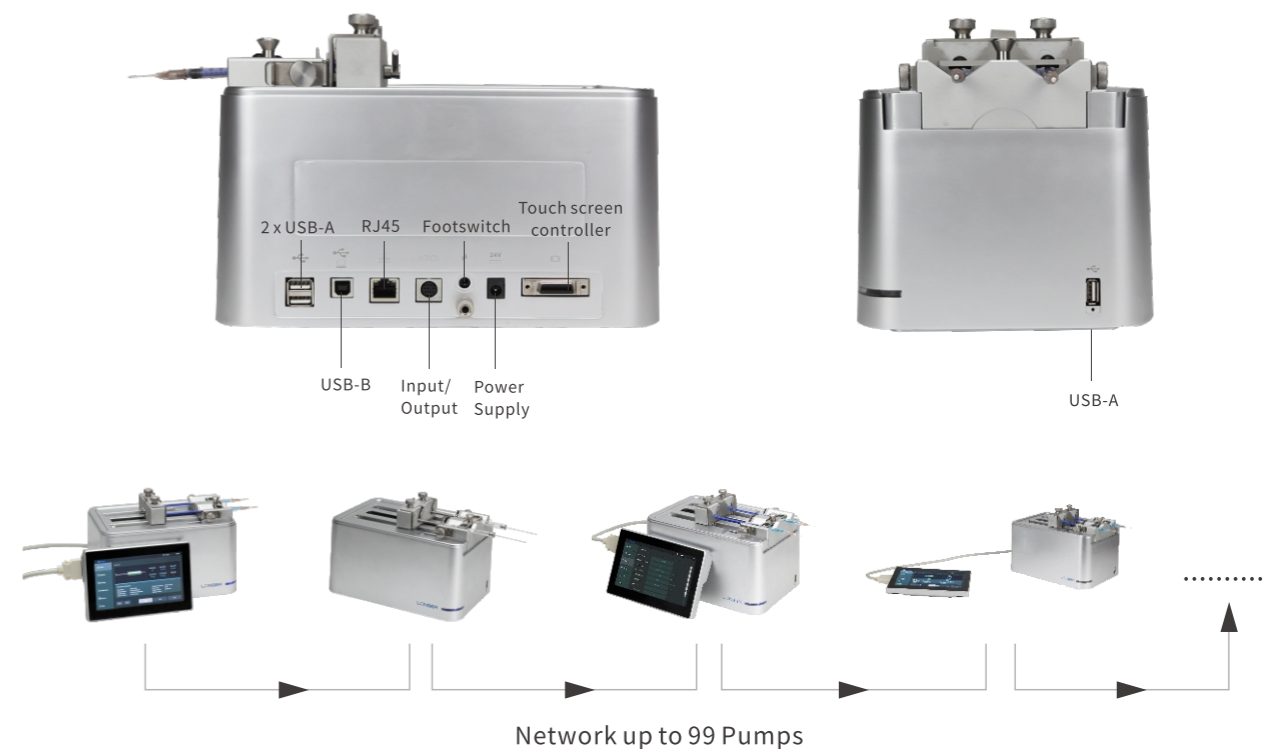
## Modular programming based on the workflow can automatically complete the switching of various working status according to the user-defined program

- The multi-step program models are ideal for complex fluid transferring, Constant rate, Ramp rate, Loop, Delay, Repeat, I/O(out)Trigger, I/O(in)Event, Touch screen Trigger
- Programs could be stored and easily recalled



Pump can automatically switch to different working status by multi-step program

## Multi-pump mode of operations are easy to run and control through the various interfaces



## The buzzer, indicator light, text, voice reminder and other alerts support the users through the operation process

- Various ways to report the pump's working status, experimental progress, alarm information and diagnostic results



Blue- Stop



Green- Running



Red- Warning

Operation Indicator light status

## Meet the requirement of 21CFR Part 11 to ensure the validity and reliability of electronic data

- Three levels of user accesses(administrator, developer, operator)
- The operation history can be saved as a log and exported directly
- The electronic signature and audit trail for the reliable and complete record of operation data

