

## **SYRINGE PUMP** **ISPLab01-Pro**



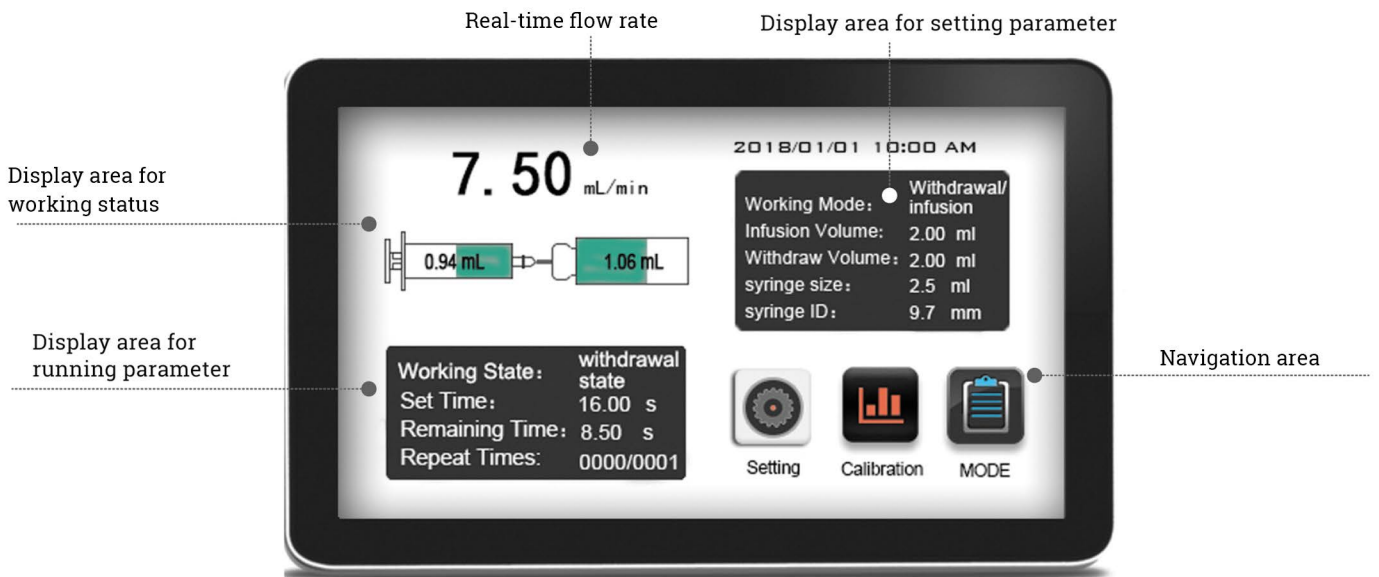
### **Introduction**

ISPLab01-Pro syringe pump with infusion/withdrawal mode, durable and available for various environments with stainless steel housing. Easy and intuitive operation with 4.3" full colour touch screen. Multiple external controls like RS232/485 (Modbus) supported. Capable of handling more types of liquids with stronger linear force. All materials and sizes of syringes supported, especially applicable for transferring micro liquids. (Non-medical use)

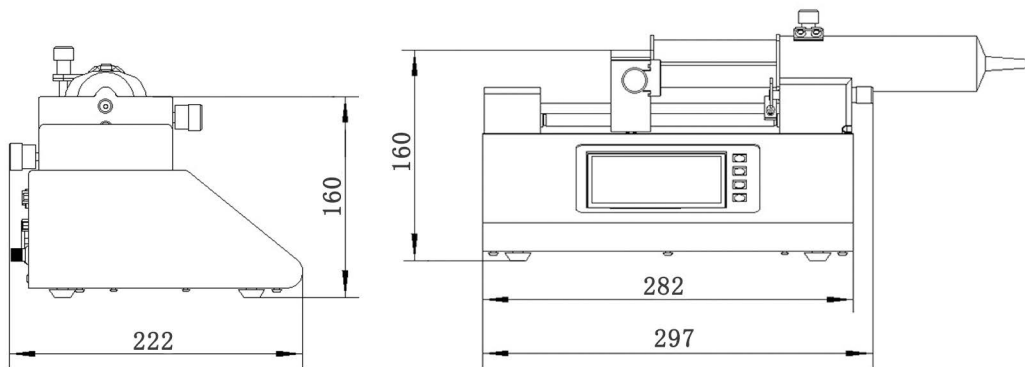
### **Features**

1. Most Advanced Syringe Loading System:
  - Accurate and effortless slider position adjustment with a knob.
  - Special structure design to minimizing the impact on the properties of solution inside the syringe.
  - Loading and replacement of syringe are super fast and convenient, can be operated with one hand.
  - Unique adaptive structure, fitting various syringe barrel shapes, syringe protectable and accuracy guaranteed.
  - Featured syringe plunger mounting design, secured syringe installation and stable operation.
  - All materials, models, and sizes of syringe from 0.5uL-150mL adapted.
2. Real Time Flow Rate Modification: Flow rate adjustable at any time without stopping, meeting the requirements of complex applications.
3. 4.3-inch full color LCD touch screen, intuitive interface, real-time display of various technical data.
4. Built-in Syringe Model List: Syringe model selectable or syringe inner diameter directly inputted.
5. Three metering methods to choose from: liquid volume-flow rate, liquid volume-time, and flow rate-time. The volume can be displayed in real time and can be calibrated.
6. Up to 45kgf linear force, more kinds of liquids handleable and a wider range of applications available.
7. Blockage Protection: During operation, if propulsion mechanism blocked, pump will stop operating and sound alarm signal.
8. Power Off Memory: The pump remains running or stop according to the setting parameters when power returns after an interruption.

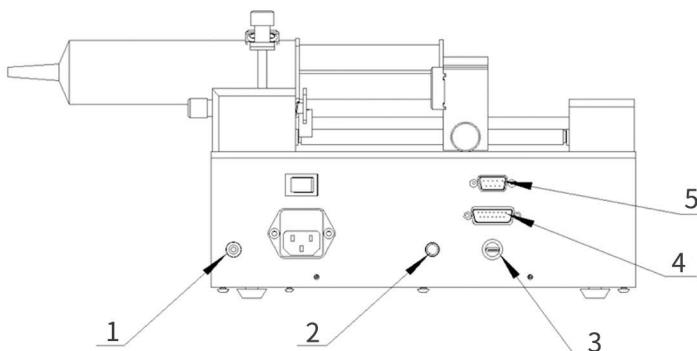
## Interface display



## Dimension Drawing (Unit: mm)



## Introduction



- 1-Grounding Post
- 2-Foot Pedal Interface
- 3-Type-C Interface
- 4-External control Interface
- 5-Communication Interface

## Technical Specifications

Working Mode	Infusion, Withdrawal, Infusion-Withdrawal, Withdrawal-Infusion, Continuous
Channel Number	Single
Applicable Syringe	0.5μL-150mL of all materials
Syringe Selection	Built in syringe model and customizable syringe inner diameter
Linear Speed Range	1μm/min-132mm/min(Flow rate=linear speed *internal cross-sectional area of syringe)
Linear Speed Resolution	1μm/min
Linear Force	12-45kgf
Max. Stroke	140mm
Stroke Resolution	0.078μm/μstep
Accuracy	Error≤±0.3%(Stroke≥30% of Max. stroke)
Reverse Distance	0.01-10mm
Common Modes	Up to 60 commonly used modes can be saved
Display	4.3" full colour LCD screen
Control	Touch screen and keypads
Power Off Memory	The pump remains running or stop according to the setting parameters when power returns after an interruption.
Output	OC gate signal output, indicating operating status and direction
External Control	Start/stop signal, fast extraction and infusion signal, active switch signal 5V-24V
	Start/stop signal, passive switch signal, e.g. foot pedal switch
Communication Interface	RS232/RS485 (Modbus, RTU)
Power Supply	AC 90-264V/65W(50-60Hz)
Condition Temperature	0-40°C
Relative Humidity	<80%
IP Rate	IP31
Dimension	282x223x160(mm)
Weight	4.85kg

## Applicable Syringes

Plastic Syringe	Internal Diameter(mm)	Reference Flow Rate ( $\mu\text{L}/\text{min}$ -mL/min)
1mL	4.70	0.0173-2.2889
2mL	8.95	0.0628-8.3002
5mL	12.36	0.1199-15.8299
10mL	14.90	0.1742-23.0046
20mL	19.20	0.2893-38.1984
30mL	22.00	0.3799-50.1520
50mL	29.20	0.6693-88.3505
60mL	29.20	0.6693-88.3505
100mL	32.00	0.8042-106.1544
150mL	40.00	1.2566-165.8712

Glass Syringe	Internal Diameter(mm)	Reference Flow Rate ( $\mu\text{L}/\text{min}$ -mL/min)
250 $\mu\text{L}$	2.30	0.0042-0.5484
500 $\mu\text{L}$	3.25	0.0083-1.095
1mL	4.60	0.0167-2.2033
2.5mL	7.28	0.0416-5.4944
5mL	10.30	0.0833-10.9986
10mL	14.57	0.1667-22.0081
25mL	23.00	0.4166-54.9859
50mL	32.57	0.8321-109.976
100mL	32.57	0.8321-109.976

Micro Syringe	Internal Diameter(mm)	Reference Flow Rate (nL/min-mL/min)
0.5 $\mu\text{L}$	0.10	0.008-1.0296
1 $\mu\text{L}$	0.15	0.018-2.3232
2 $\mu\text{L}$	0.20	0.031-4.1448
5 $\mu\text{L}$	0.35	0.096-12.6984
10 $\mu\text{L}$	0.50	0.2-25.8
25 $\mu\text{L}$	0.80	0.5-66.4
50 $\mu\text{L}$	1.10	1-125.4
100 $\mu\text{L}$	1.60	2-265.4