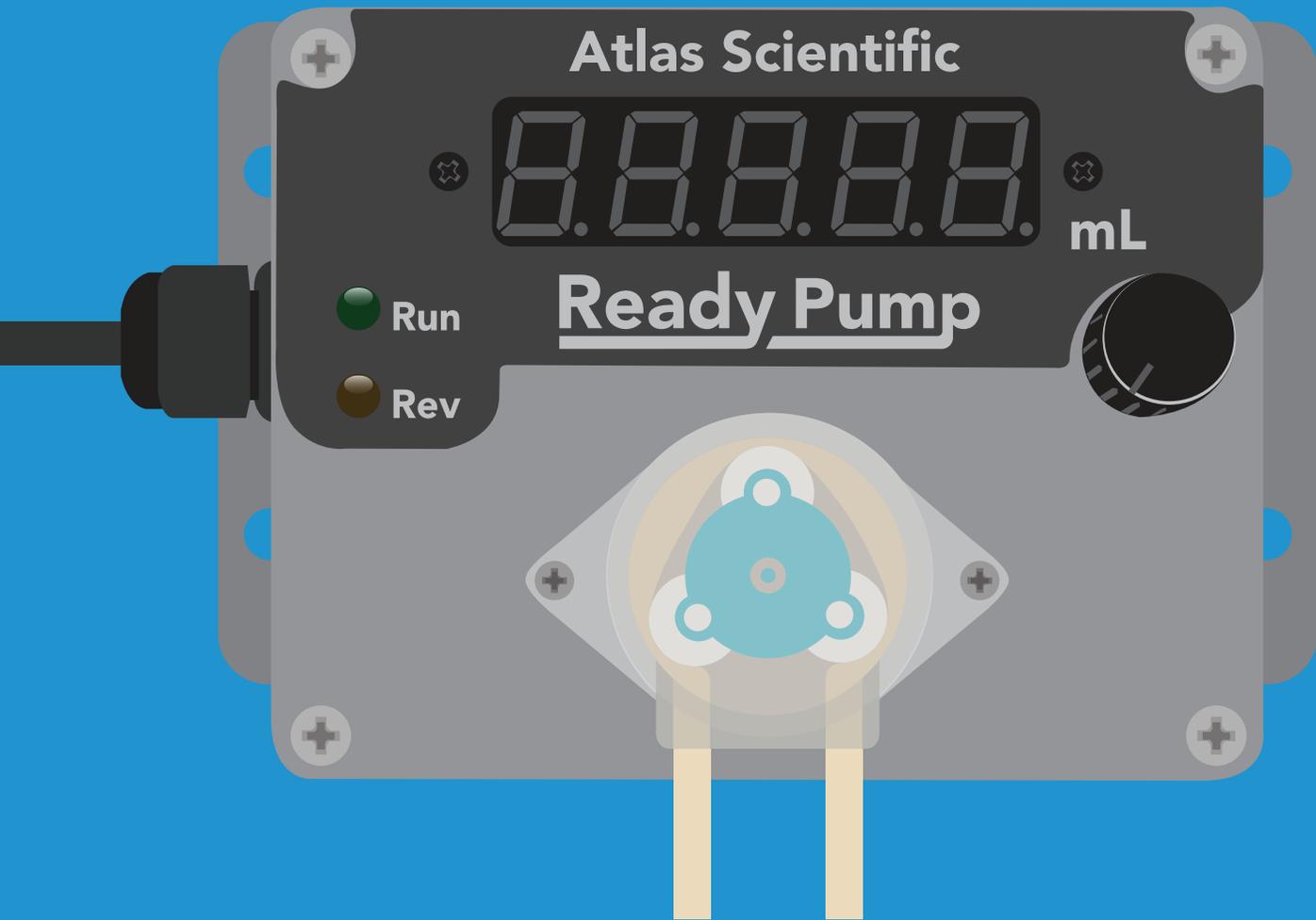


Ready Pump™

A small volume peristaltic dosing pump that works right out of the box.

AtlasScientific™
Environmental Robotics



Ready Pump™ can be used by a person or connected to a machine for auto dosing.

Two modes of operation:

Continuous dispensing **105ml/min *water**

Programmable dosing **0.5mL – 10 liters**

Resolution **0.1ml**

Food safe **NSF/ANSI 51 Compliant**

High accuracy **+/- 1%**

Easy to use

*105ml/min was calculated when pumping water. Flow rate may be lower with higher viscosity fluids.



Written by Jordan Press
Designed by Noah Press

Attention

**Atlas Scientific does not make consumer electronics.
Ready Pump™ is professional equipment.**

Ready Pump™ is versatile peristaltic pump that is used to move precise amounts liquids.

Ready Pump™ may be embedded into any commercial product or machine of your choice. It is not necessary to contact Atlas Scientific™ for licensing or written permission.

NSF/ANSI 51 Compliant

Ready Pump™ is food safe and can be used for food or cosmetics production.

Ready Pump™ is professional equipment and only comes with a 30-day warranty. Ready Pump™ is guaranteed to be free of damage and fully operational upon arrival. Ready Pump™ has been designed to work for 1,000 hours before servicing is required.

If Ready Pump™ arrives damaged, contact Atlas Scientific™ tech support with in 30 days for warranty repair: support@atlas-scientific.com

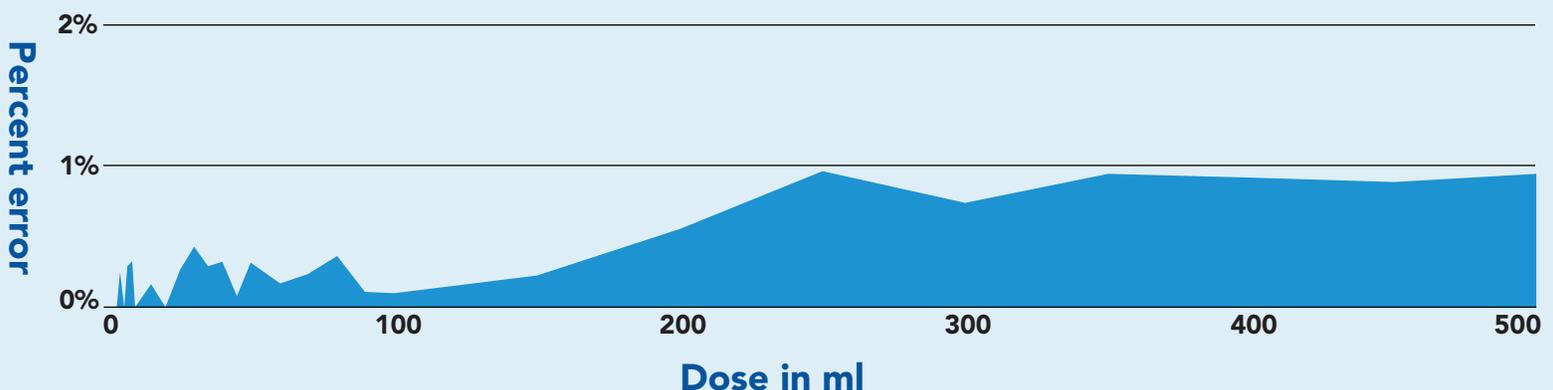
Accuracy

Uncalibrated accuracy +/- 5%

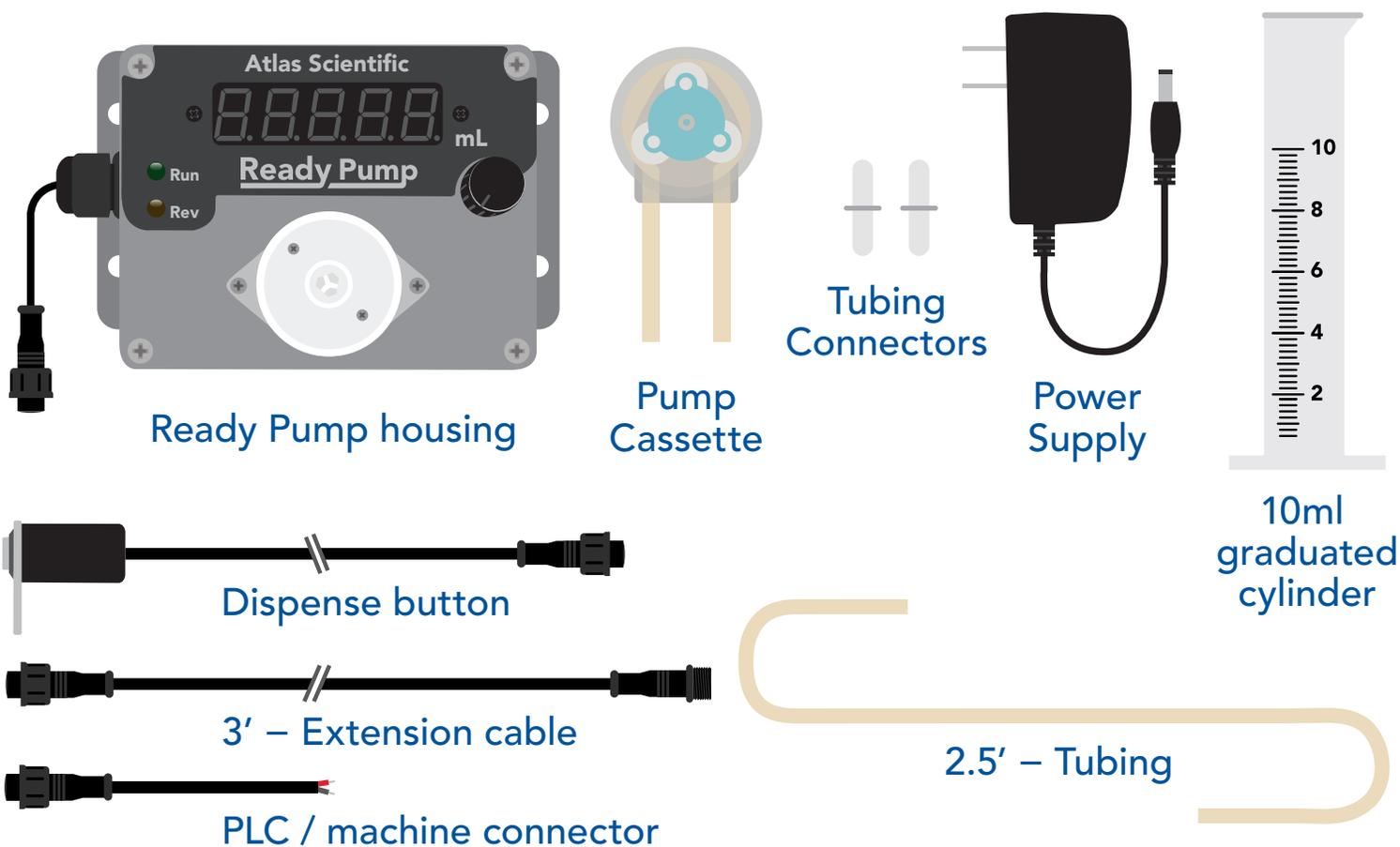
Calibrated accuracy +/- 1%

Volume dispensing mode

calibrated at 10ml



Included items



Chemical compatibility

The Ready Pump™ is highly chemically resistant and can be used with many different chemicals. A liquid being dispensed with the Ready Pump™ will come in contact with the following materials:

Pump tubing = Tygon A-60-F
Tubing connectors = HDPE

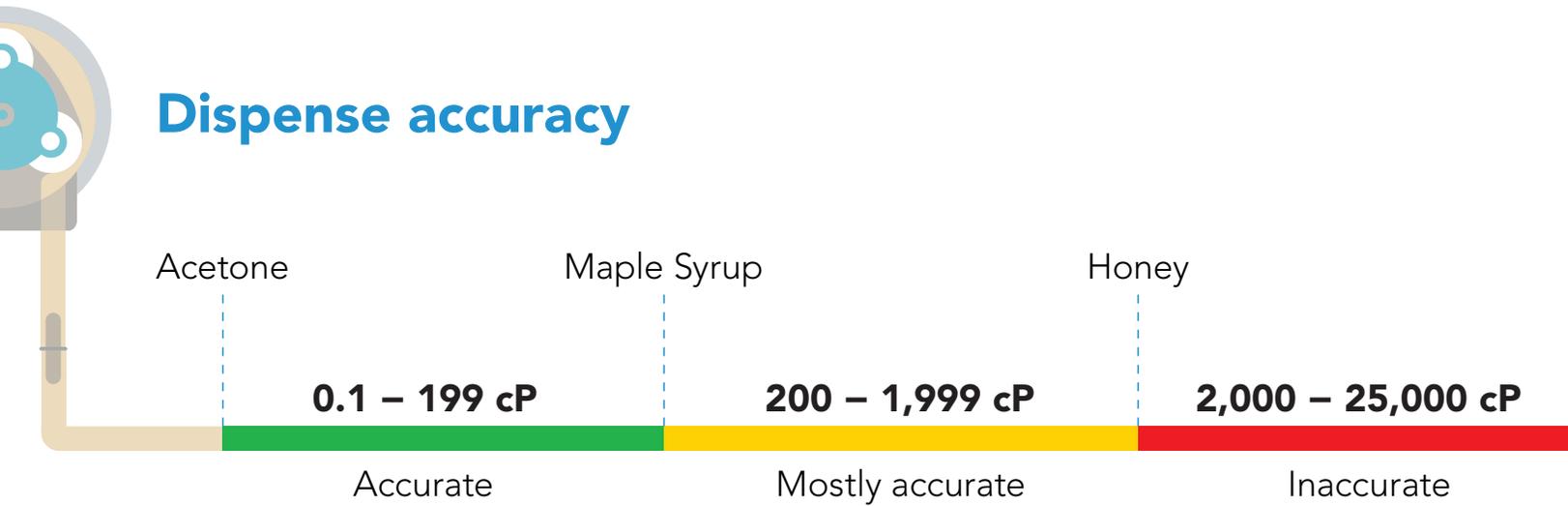
Reference a chemical compatibility chart to see if your chemical is compatible with the above mentioned materials.

Viscosity

The Ready Pump™ is capable of pumping liquids within a viscosity range of **0.1 – 2,000 cP**.

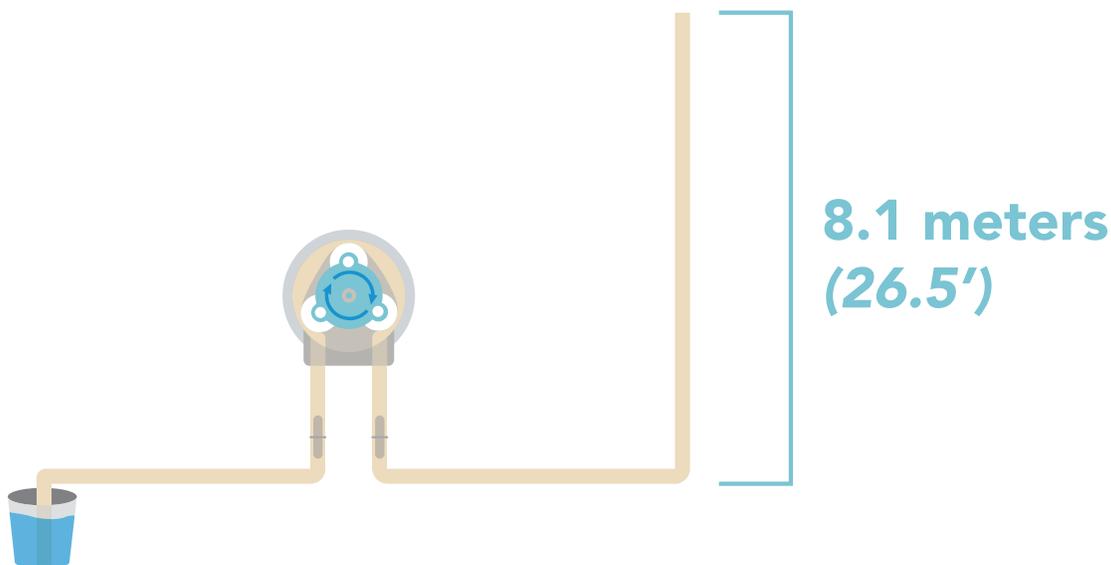
0.6	= Acetone
1	= Water
10	= Kerosene
100	= Corn Syrup
200	= Maple Syrup
2,000	= Honey
10,000	= Hershey Chocolate Syrup

Dispense accuracy

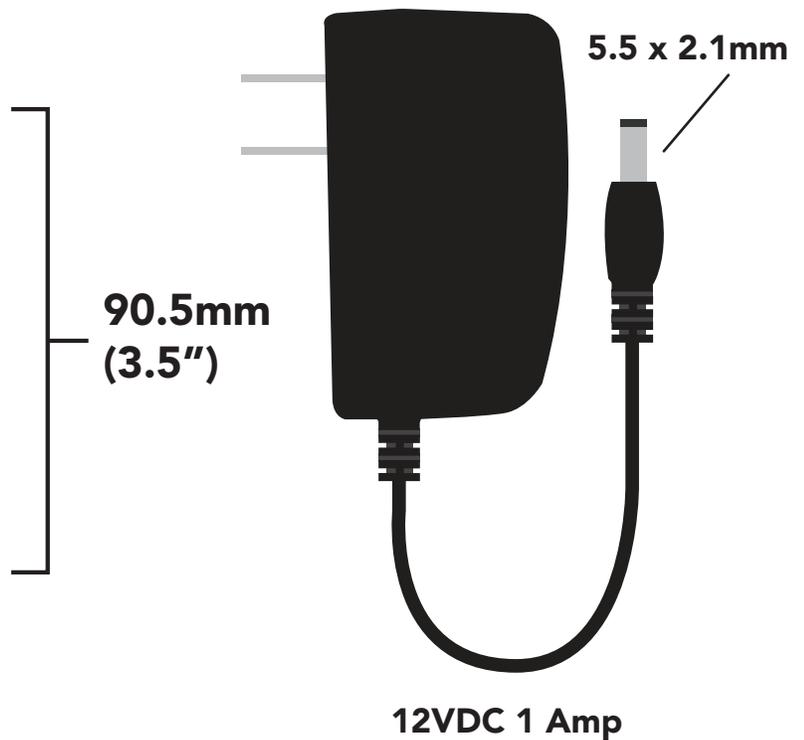
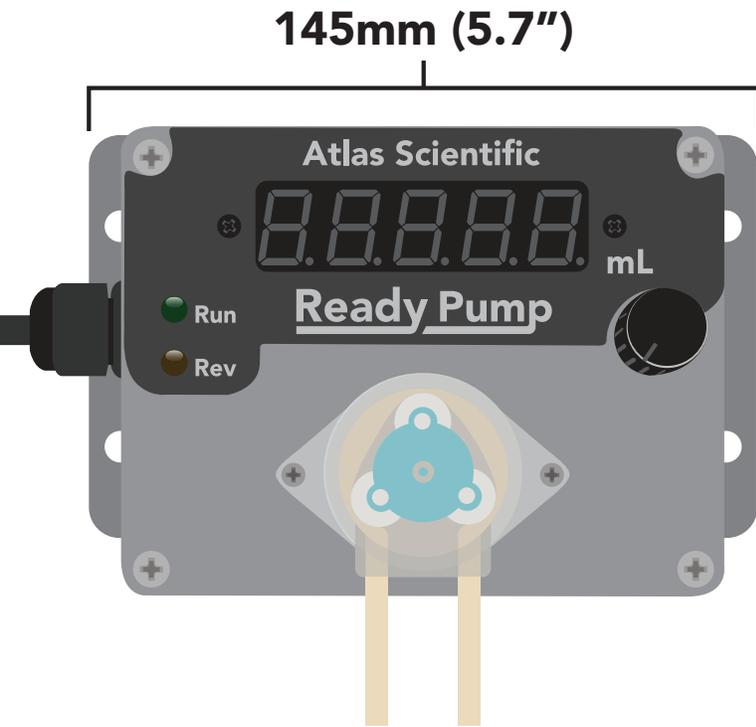
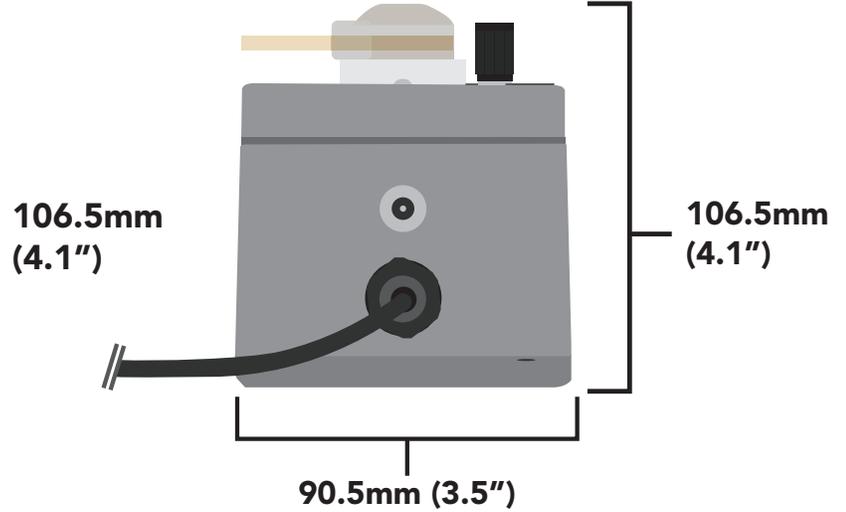
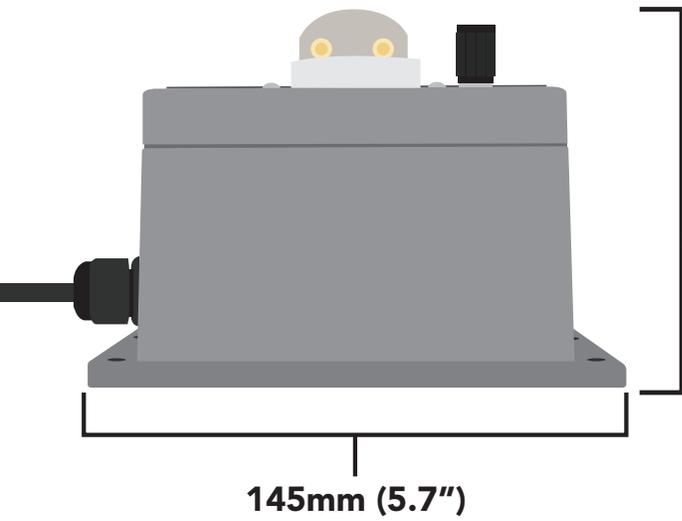


Pump head

Pump head refers to the maximum vertical height a pump can dispense. The Ready Pump™ has a pump head of 8.1 meters (26.5').

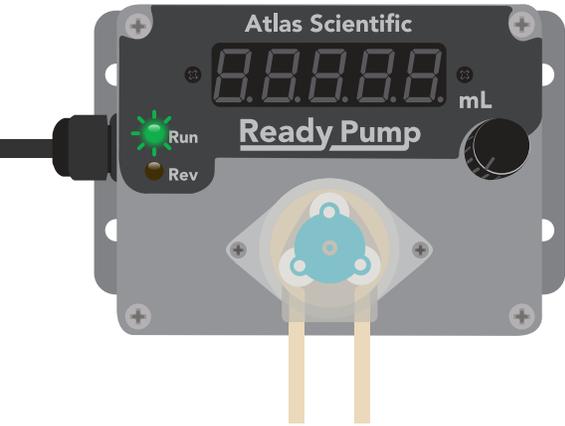


Ready Pump™ dimensions



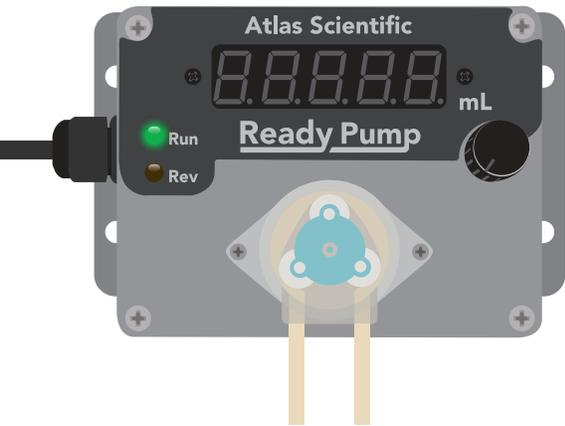
Tubing life span	+1,000 hrs.	6,300 liters / 1,700 gallons
Cassette life span	1,500 hrs.	9,500 liters / 2,500 gallons
Ingress protection	IP 61	Indoor use only

LED definition



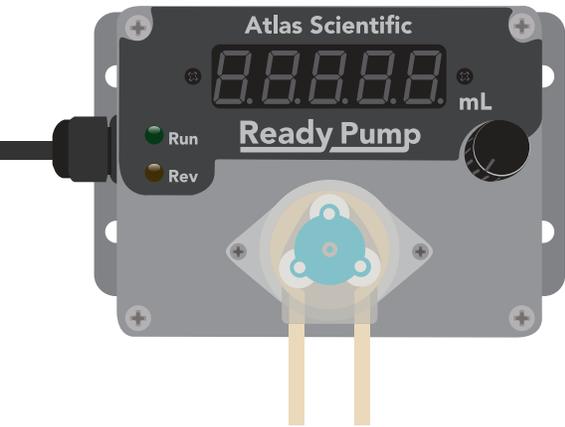
**Green
LED blinking**

Ready to pump



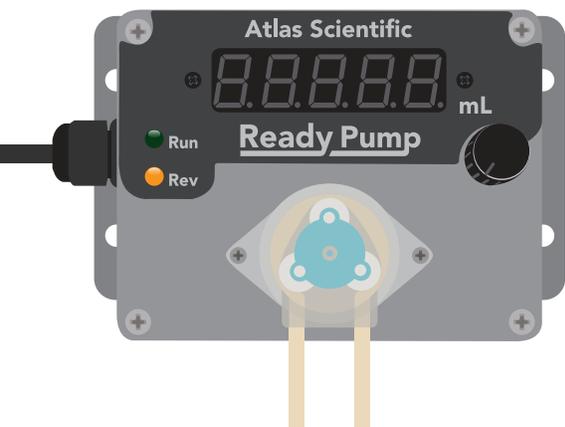
**Green
LED solid**

Pumping or pumping paused



**Green
LED off**

No recent activity, standby mode

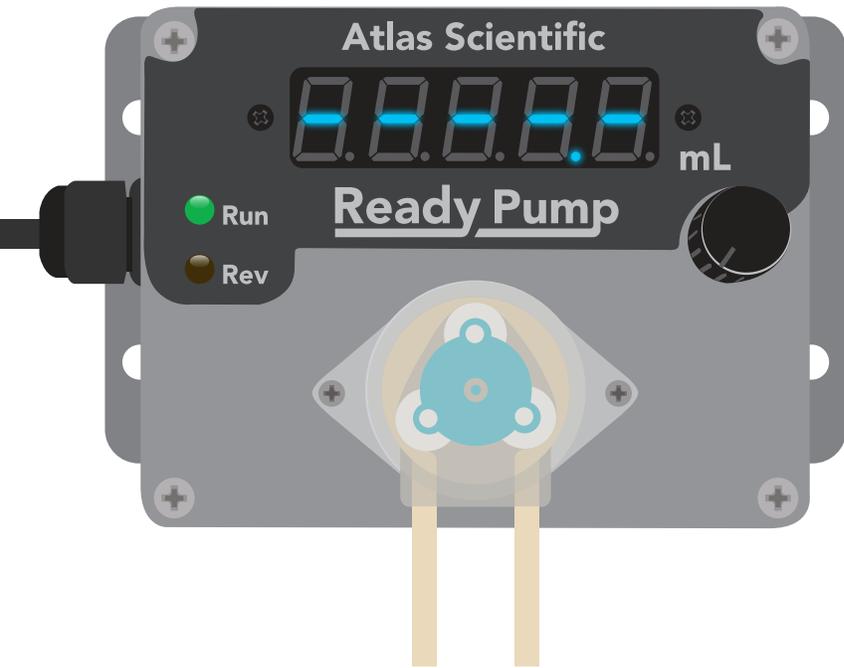


**Orange
LED solid**

Ready to pump in reverse direction

Continuous dispense mode

(default)



When the Ready Pump's display matches the above image, you are in continuous dispensing mode.

Continuous dispensing

Press button to begin pumping.

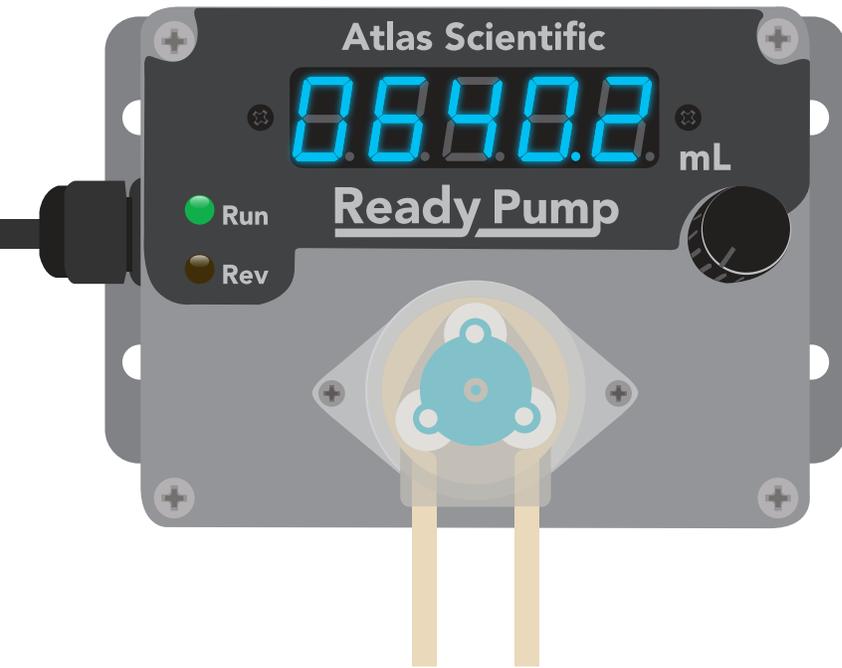
Press again to pause.

Press and hold for 3 sec to clear volume and start over.



Programmable dosing mode

Dispense a preset volume with each button press.



↑
100

↑
5

↑
0.1

Pressing the knob will allow the user to adjust the starting digit.

increment/decrement 100, 5, 0.1



Programmable dosing

Turn the knob to set volume.

Press button to begin pumping.

Press again to pause.

Press and hold 3 sec to start over at the previously set value.

To re-enter continuous dispense mode turn the knob towards 0.

Programmable dosing display

By default the display will count up from 0 (like a gas pump).

Turn the knob to count down from preset volume to 0.

Turn the knob again to show preset volume.

Settings mode

To enter the settings mode, press and hold the knob for 2 seconds.
To exit the settings mode, press the knob or press the button.

dir = Direction

Changes the dispensing direction

Press and hold the knob for 2 seconds.

Reverse LED will turn on, indicating that the Ready Pump will now run in reverse.

CAL = Calibration

▣ *CAL* = Calibrated

See page 11 for calibration instructions.

CLCLR = Clear calibration

Clears the calibration

Press and hold the knob for 2 seconds.

The screen will flash twice and then reboot.

Calibration has been cleared.

F rSt = Factory reset

Returns the Ready Pump™ to its original settings

Press and hold the knob for 2 seconds.

The screen will flash twice and then reboot.

All factory settings have been restored, calibration has been cleared.

Calibration

Uncalibrated accuracy +/- 5%
Calibrated accuracy +/- 1%

Calibrating the Ready Pump™ is only required if your dosing accuracy needs to be greater than +/- 5%.

Calibration frequency

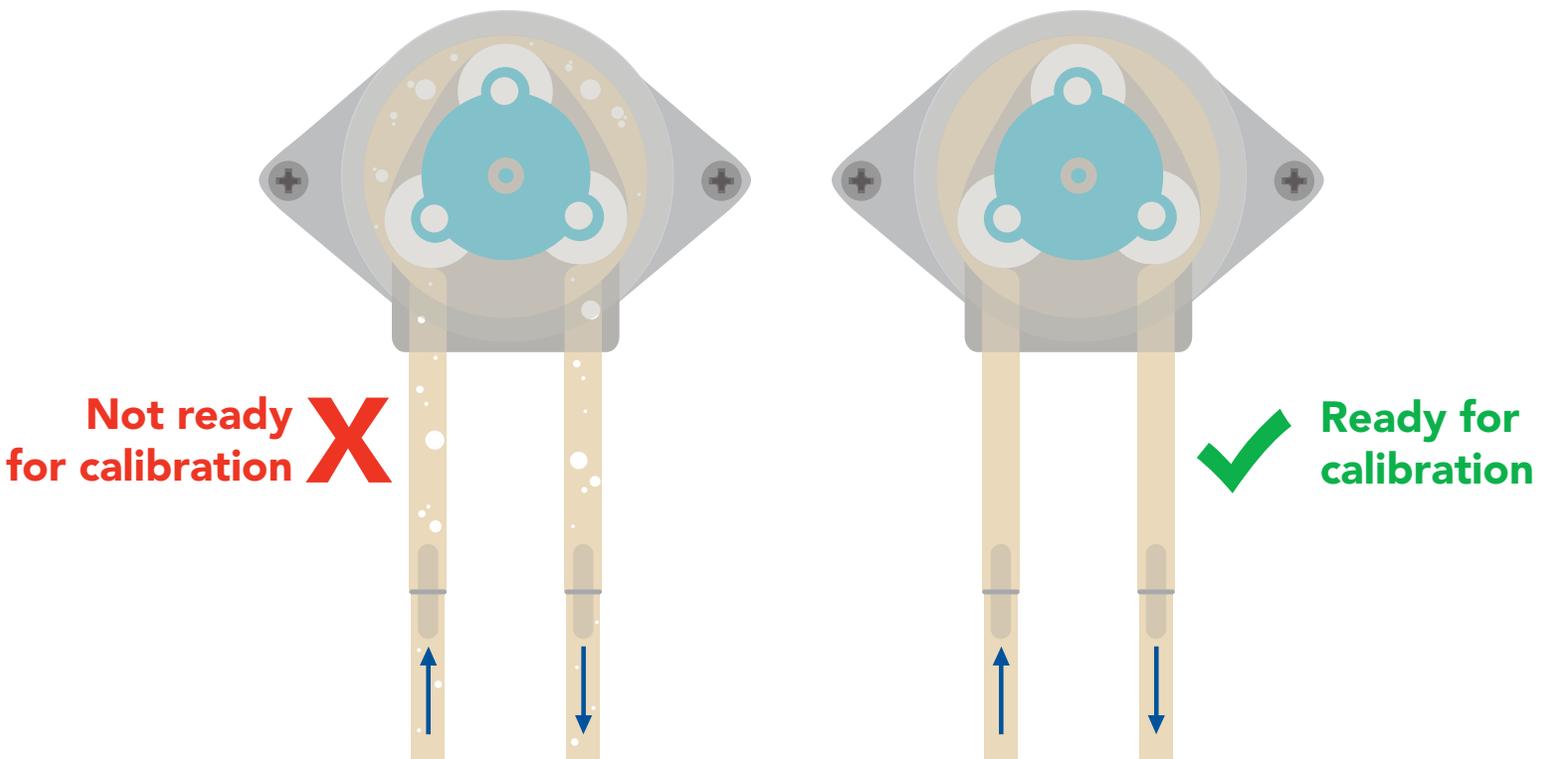
Once.
Recalibration is only needed if your dispensing a liquid with different viscosity than what was used to calibrate the Ready Pump™.

Example

Calibration was done with water; But now the Ready Pump™ is dispensing corn syrup. Because corn syrup has a higher viscosity than water, recalibration may be necessary.

Pre-calibration requirements

Before calibration is attempted all the air bubbles should be removed from the tubing. This is done by running the Ready Pump™ while tapping the tubing. If air bubbles are not removed from the tubing they will slowly group together into larger air bubbles. Over time this will lead to accuracy issues.

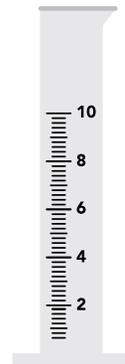


Calibration procedure

Procedure overview

- A. Dispense a preset volume
- B. Measure the volume of liquid dispensed.
- C. Tell the pump how much liquid it actually dispensed.

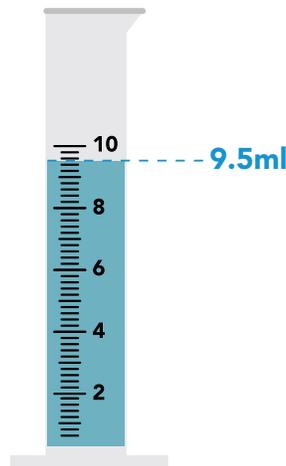
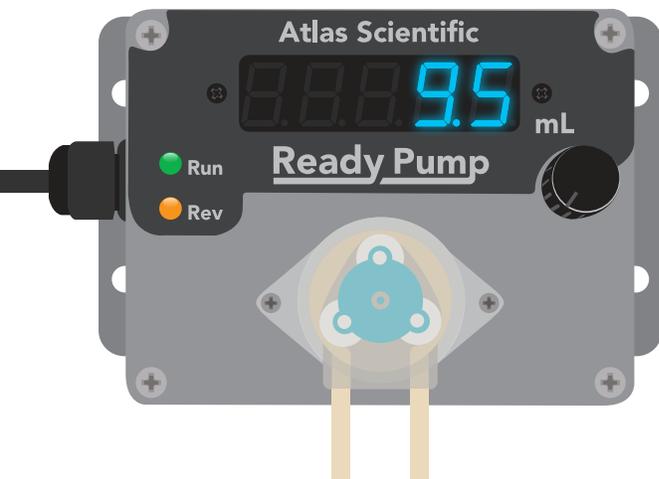
Equipment needed



A graduated cylinder 10ml or greater.

Make sure the tubing is full of liquid and has no visible air bubbles before calibrating.

1. Instruct the pump to dispense 10ml or greater.
2. Dispense the preset dose into the graduated cylinder.
Take note of the volume in the graduated cylinder.
3. Press and hold the knob for 2 seconds, navigate to **CAL**.
4. Again, press and hold the knob for 2 seconds to enter **CAL**.
(Both LED will be blinking)
5. Using the knob, enter in the actual volume that was dispensed into the graduated cylinder, then long press (2 sec) the knob to confirm your value.



6. **CAL** will flash 3 times, and Ready Pump™ will reboot.

Calibration complete



Embedding the Ready Pump™ into a machine

Use the included PLC / machine connector to control the Ready Pump™. This connector lets you automate a button press.

Programming a preset volume to dispense must be done using the encoder knob. The Ready Pump™ cannot be programmed through this cable.



Red lead = Power (~5VDC)
Black lead = Ground (GND)

When the power lead is connected to the GND lead the Ready Pump™ will detect a button press.

Short press = 100ms
Long press = 3,000ms

Timing diagram



Mounting template

