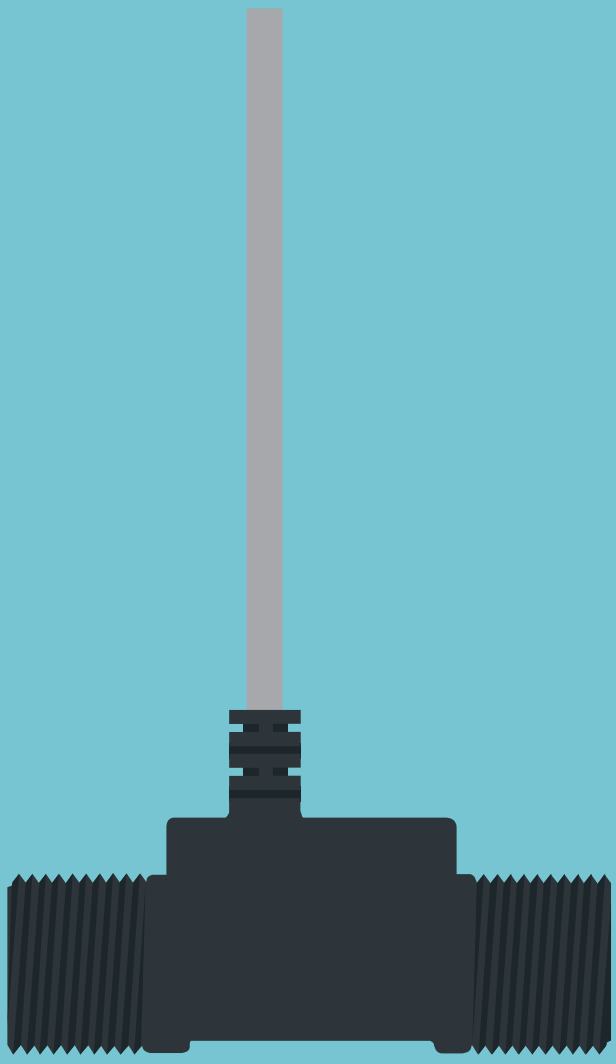
Atlas Scientific™
Environmental Robotics
V 3.1

3/8" Flow Meter

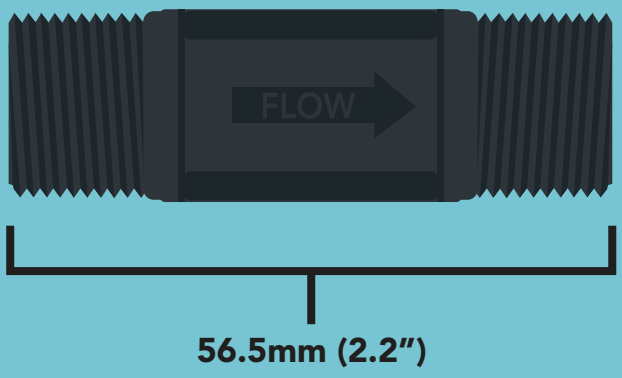
Reads	**Total flow and flow rate**
Range	**760 ml/min – 7.6 L/min**
Accuracy	**+/– 2%**
Connector	**Tinned leads**
Thread	**3/8" Male NPT**
Max pressure	**200 PSI**
Temperature range °C	**-20 – 80 °C**
Max viscosity	**81 SSU**
Cable length	**86cm (33.8")**
Voltage	**3.3V – 24 VDC**
Life expectancy	**~10 years**



RoHS COMPLIANT

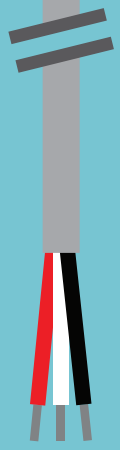
Written by Jordan Press
Designed by Noah Press

Measurements



56.5mm (2.2")

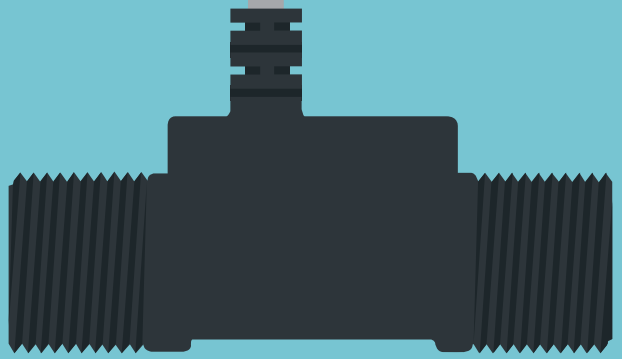
Cable Length
86cm (33.8")



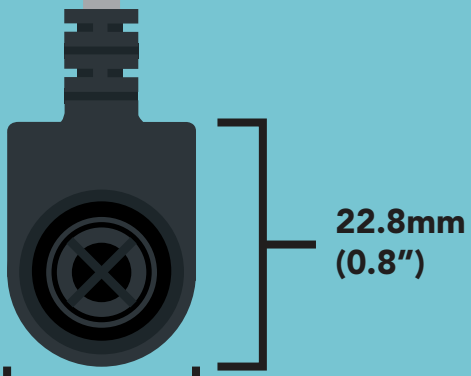
Ø 4.2mm

3/8" Male NPT

3/8" Male NPT



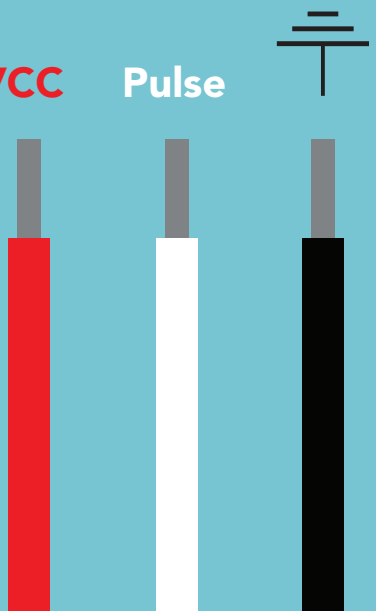
56.5mm (2.2")



22.8mm (0.8")

17.4mm (0.6")

VCC Pulse

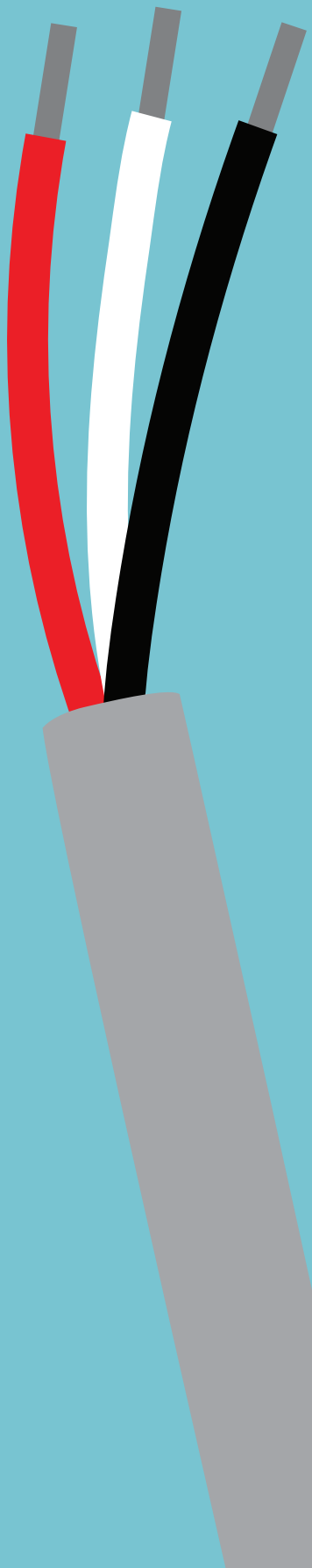


⚠ WARNING ⚠

REVERSING THE POLARITY WILL DESTROY FLOW METER.

Wiring

The Atlas Scientific 3/8" Flow Meter has an 86cm (33.8") cable that terminates with three tinned leads; Red (VCC), White (Pulse), and Black (Ground). It's very important that you do not reverse the polarity or you will destroy the flow meter.



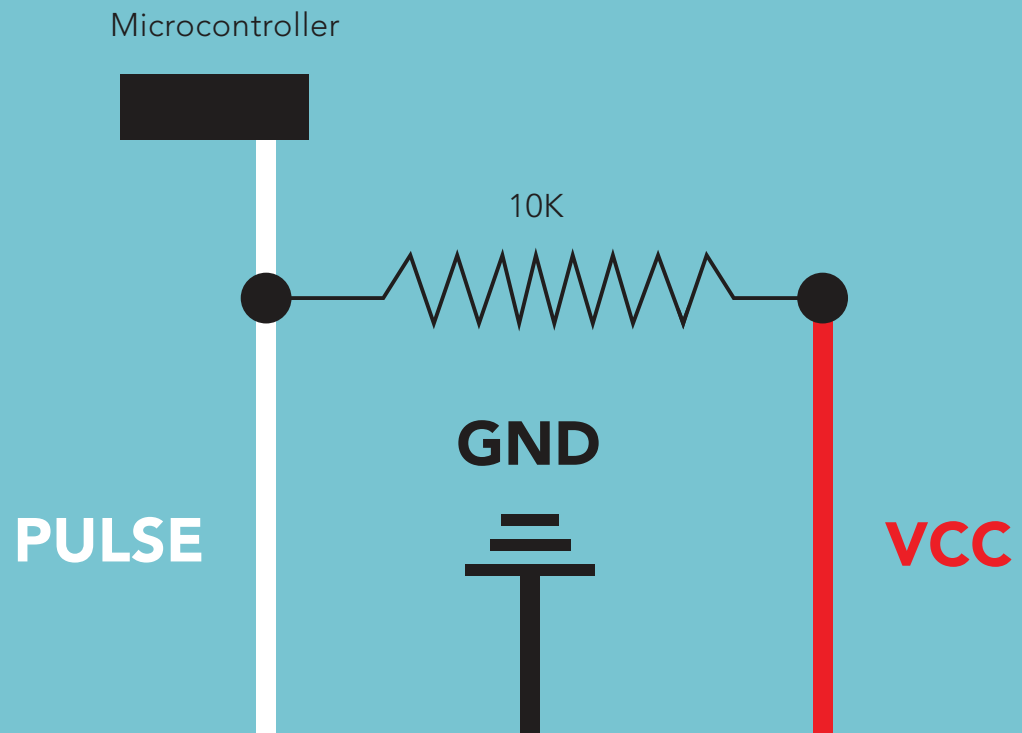
⚠ WARNING ⚠

REVERSING THE POLARITY WILL DESTROY FLOW METER.

Lead Color	Function
RED	VCC 3.3V – 24V
White	PULSE
BLACK	GND

Current consumption no load 8mA
Max current consumption 25mA

VCC and PULSE must be connected together with a 10K Pull up resistor.



Specifications

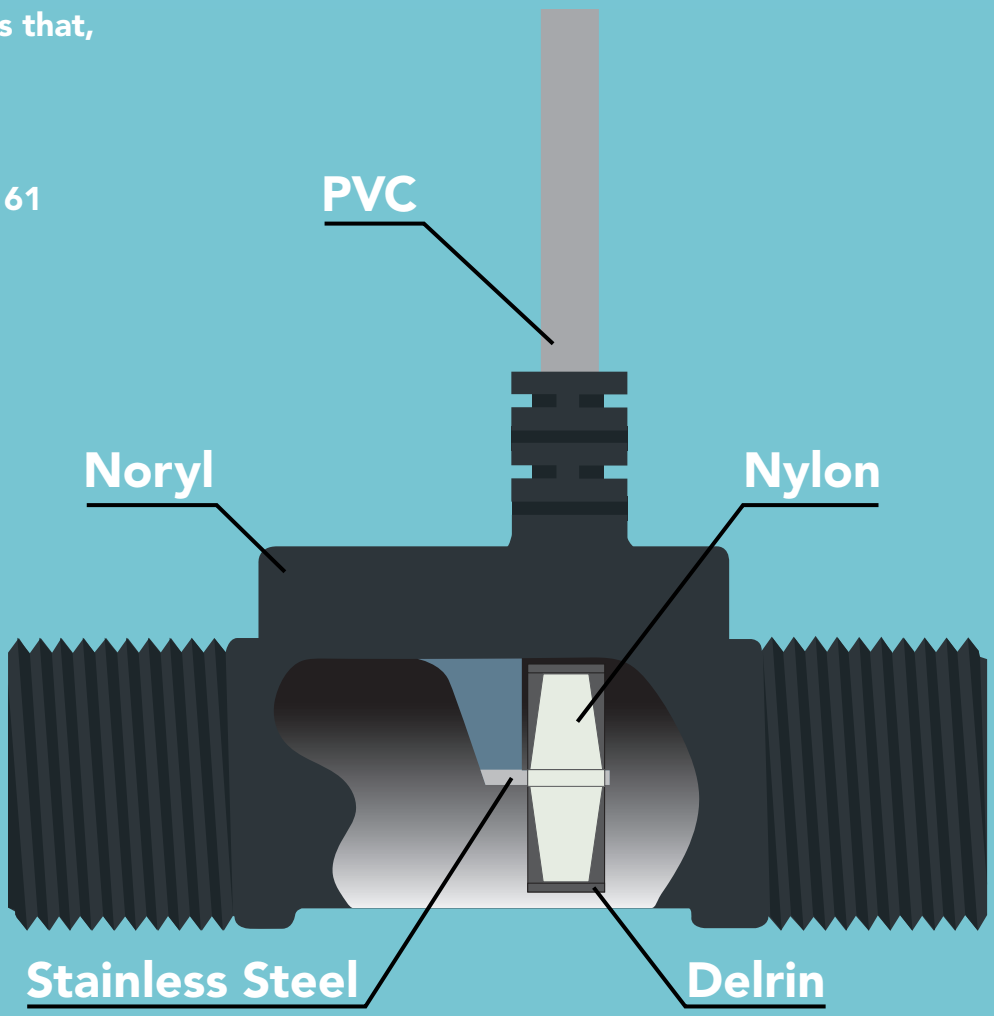
Each rotation	**367 µL**
Max pressure	**200 PSI**
Max viscosity	**81 SSU**
Cable length	**86 cm**
Weight	**101.5 grams**
Food Safe	**Yes**
Gasoline Safe	**Yes**
Diesel Safe	**Yes**
Kerosene Safe	**Yes**

NSF/ANSI 61 Compliant

Atlas Scientific LLC, hereby certifies that,

3/8" Flow Meter
Part # Sen-206F

Complies with NSF/ANSI Standard 61

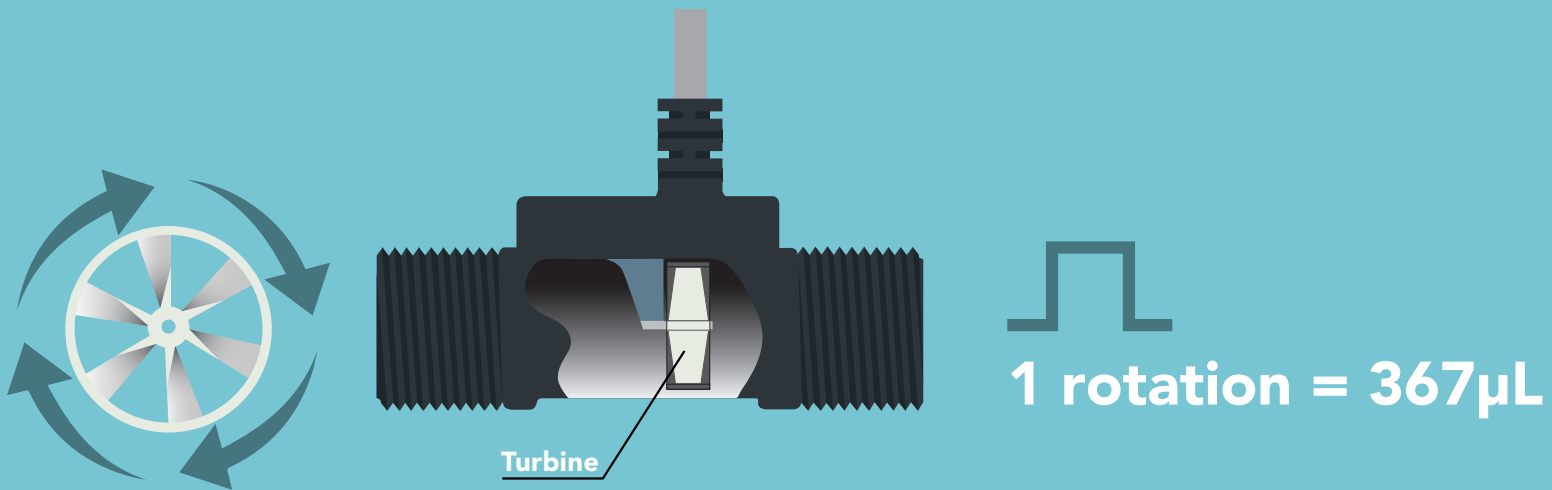


- **PVC**
  NSF-61 Compliant
- **Delin**
  NSF-61 Compliant
- **Noryl**
  NSF-61 Compliant
- **Nylon**
  NSF-61 Compliant
- **Stainless Steel**
  NSF-61 Compliant

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Operating principle

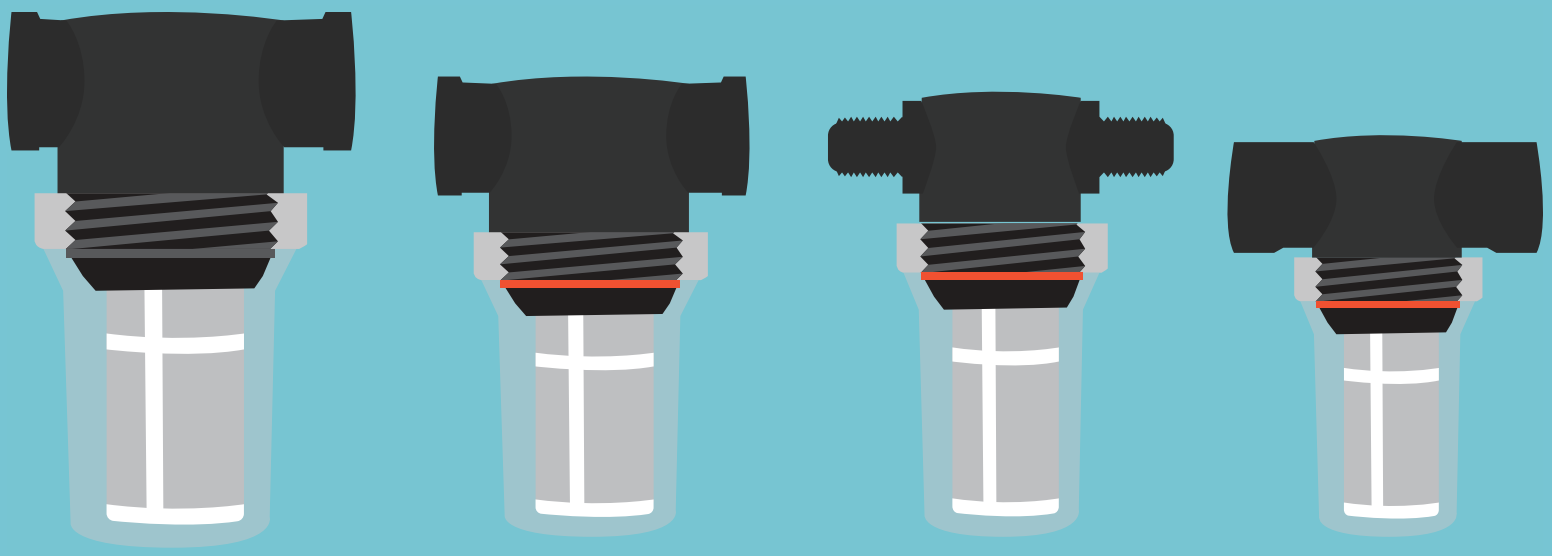
Generally speaking, turbine flow meters are the simplest to work with and offer the highest accuracy. With this type of flow meter, each rotation of the turbine represents a volume of liquid passing through the meter.



Although these flow meters are highly accurate and easy to work with, they are only cost-effective in small sizes. This flow meter is intended for low flow ranges from 760 mL/min (0.2GPM) up to 7.6 L / min (2 GPM).

Pre-filter requirements

If water with particulate matter will be passing through the flow meter, a pre-filter of at least ***80 microns*** must be used. Without the use of a pre-filter, the turbine blades can become jammed. Jammed turbine blades will not damage the flow meter; however, it will not be possible to get accurate flow readings until the blockage has been cleared.



3/4" Pre-filter

1/2" Pre-filter

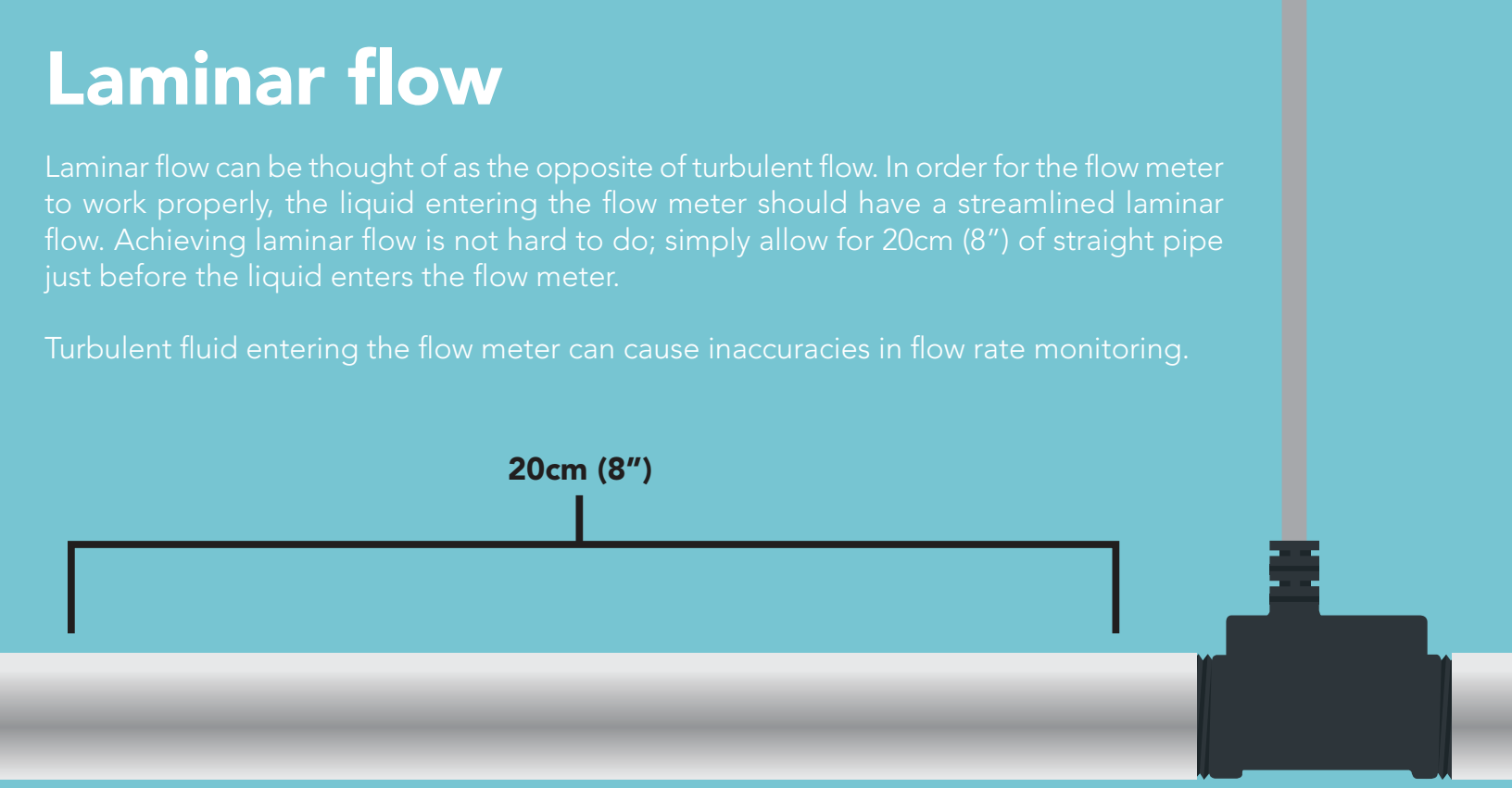
1/4" Pre-filter

3/8" Pre-filter

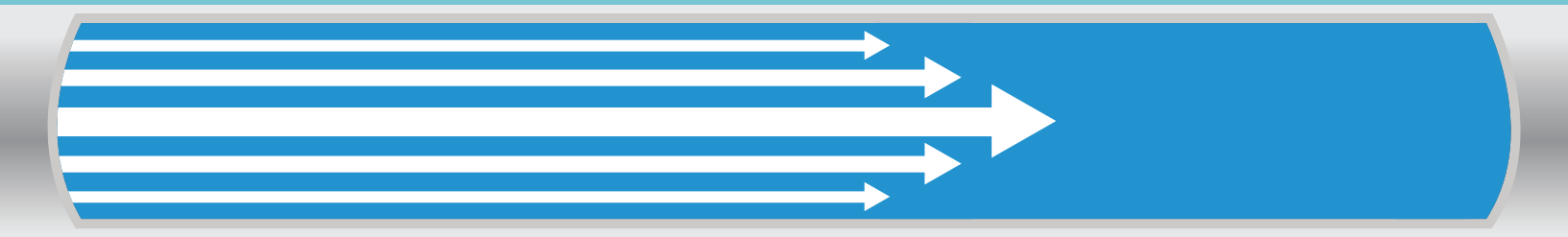
Laminar flow

Laminar flow can be thought of as the opposite of turbulent flow. In order for the flow meter to work properly, the liquid entering the flow meter should have a streamlined laminar flow. Achieving laminar flow is not hard to do; simply allow for 20cm (8”) of straight pipe just before the liquid enters the flow meter.

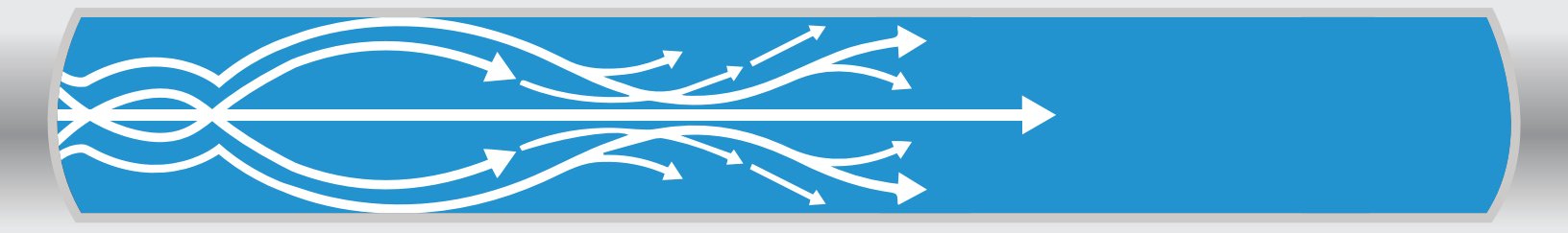
Turbulent fluid entering the flow meter can cause inaccuracies in flow rate monitoring.



Laminar flow



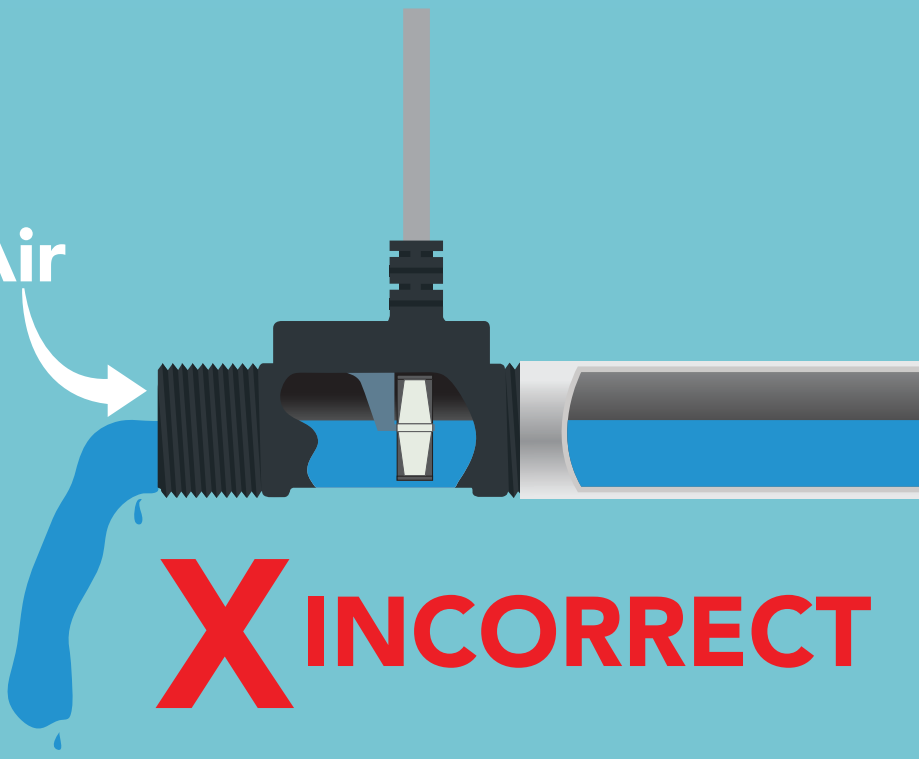
Turbulent flow



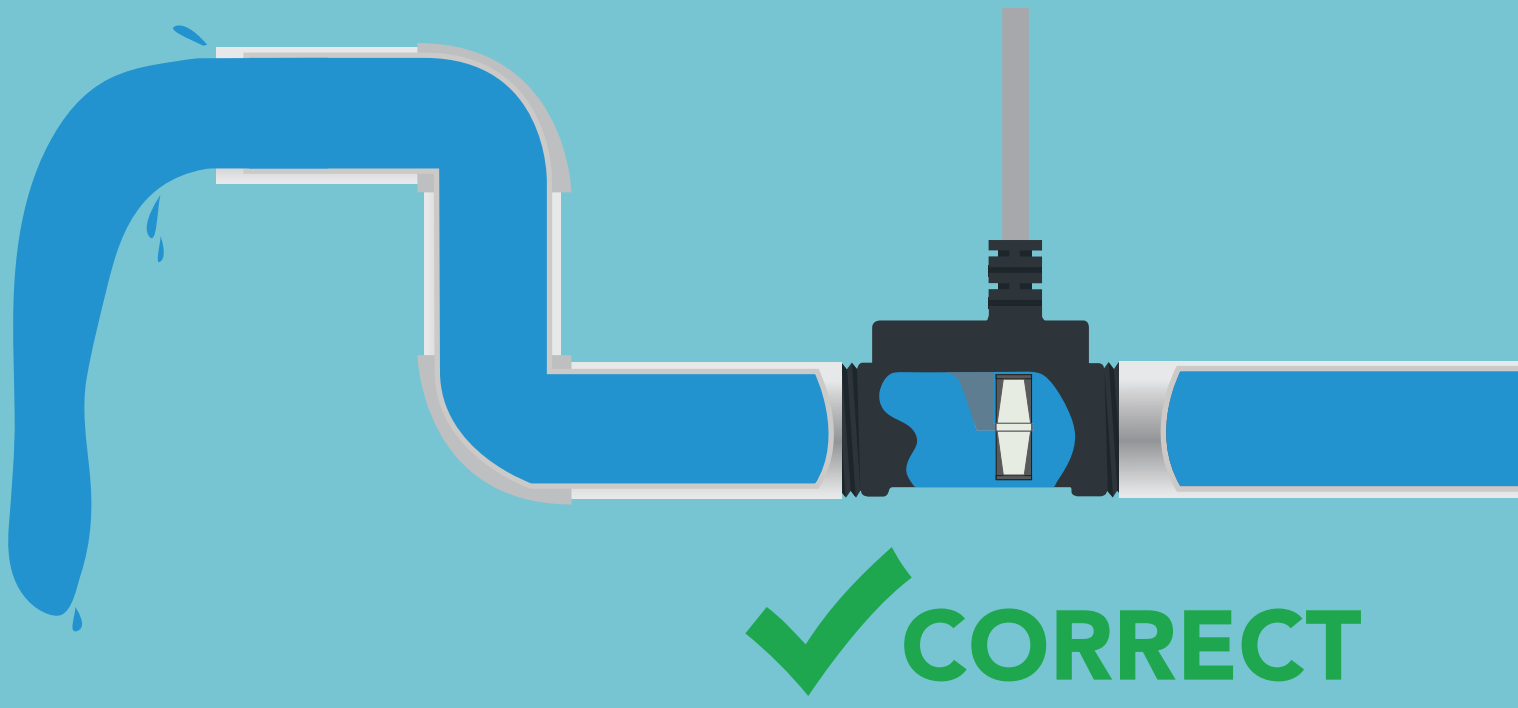
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Liquid exiting the flow meter

Liquid should not be permitted to simply fall out of the flow meter. This would let air enter the flow meter and lead to inaccurate readings.



FOR ACCURATE READINGS, YOU CANNOT HAVE AIR IN THE LINE.

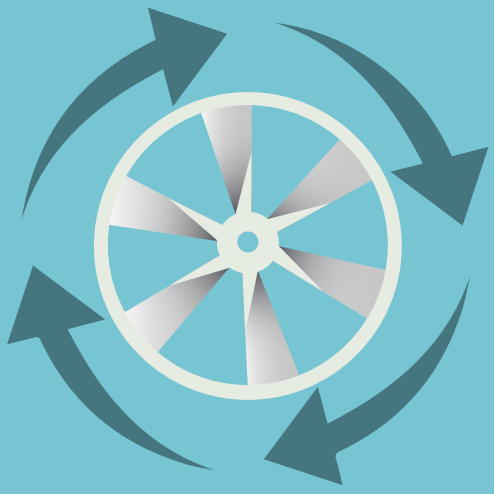


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K-factor

As stated earlier, each rotation of the turbine within this flow meter represents a volume of liquid passing through the meter. In this case each rotation is equal to 367µL. This flow meter is intended for low flow ranges from 760 mL/min (0.2GPM) up to 7.6 L / min (2 GPM).





1 rotation = 367µL

3 rotations = 1.1mL

2,724 = 1Liter

10,313 = 1 Gallon

AtlasScientific™
Environmental Robotics