

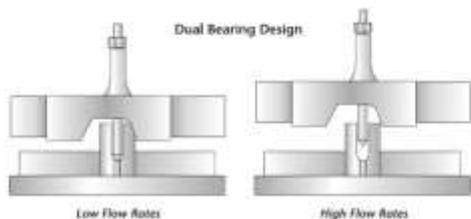
### APPLICATIONS

The Spectrum Single-Jet Meter is the widest ranged, single-measuring element meter available to U.S. utilities. The operation of the single jet element allows the meter to be applied in the vast majority of potable cold water, reclaim water and well applications. Coupled with the advanced innov8 registers, the Spectrum single-jets are the meter of choice for your revenue assurance and water loss programs.

The large Spectrum meters come in a selection of configurations for 3-inch, 4-inch and 6-inch applications. The meter has a very wide range so there is no compromise at either low or high flows. All Spectrum Model-D meters are top-loading, chamber designs which allow for field maintenance and repairs.

### OPERATIONS

Incoming water rotates a suspended impeller that is magnetically linked to the register. A low friction tungsten carbide bearing supports the impeller at low flow rates while a tungsten carbide thrust bearing provides the support at high flow rates. This unique “dual bearing” design provides unparalleled accuracy and durability at both high and low flows.



To maintain accuracy, the meter must be installed horizontally ( $\pm 10^\circ$ ) in the direction of water flow. Each of the meters come with an integral test port on the outlet flange. Although regular maintenance is not required, the Spectrum Model D meters have a top-loading measurement chamber for simple access without removing the meter from service. The chamber is bolted to the meter body and secured with a tamper seal.

All Spectrum Model D meters utilize innov8 registers. These sealed electronic registers provide a high resolution interface to the meter and have multiple cellular, AMR, AMI and SCADA outputs. All registers are attached with a robust tamper-resistant housing.



Spectrum 175D

Spectrum 500D



Spectrum 1000D

### DESIGN FEATURES

- High accuracy below AWWA standards
- Wide range—1000:1 turndown
- Superior low flow registration
- Compact and light
- Low pressure drop
- No regular maintenance
- Excellent performance in adverse water conditions
- Unaffected by sand or small debris in line
- No straight pipe requirements – upstream or downstream
- No strainer requirement
- 5-year flange-to-flange warranty
- 20-year warranty on meter body
- Compatible with all innov8 registers and associated AMR/AMI capabilities.

### MATERIALS

All Spectrum Model-D meters are designed and manufactured to meet or exceed AWWA C712 standard design and performance specifications. All Models are maintained with NSF-61G lead-free certifications.

### STANDARDS

AWWA C712 – Single-Jet Meters

NSF-61G – Drinking Water System Components Health Effects

**MECHANICAL SPECIFICATIONS**

**Spectrum 175D**

Flanges	<u>3-inch (80mm)</u>
Lay Length	Round 4-bolt 11.8" (300 mm)
Dimensions	See drawing
Weight	32lb (14.5 kg)
Z-Plate Strainer *	Available (6" LL)
SS Spacer Spools *	Hard-flanged or adjustable
Test Port	Integral 1" NPT threads

**Spectrum 500D**

Flanges	<u>3-inch (80mm)</u>	<u>4-inch (80 mm)</u>
Lay Length	Round 4-bolt 13.75" (349 mm)	Round 8-bolt 13.75" (349 mm)
Dimensions	See drawing	See drawing
Weight	41lb (18.6 kg)	48lb (21.7 kg)
Z-Plate Strainer *	Available (6" LL)	Available (7.5" LL)
SS Spacer Spools *	Hard-flanged or adjustable	Hard-flanged or adjustable
Test Port	Integral 1" NPT threads	Integral 1" NPT threads

**Spectrum 1000D**

Flanges	<u>4-inch (100mm)</u>	<u>6-inch (150 mm)</u>
Lay Length	Round 8-bolt 17.75" (349 mm)	Round 8-bolt 17.75" (349 mm)
Dimensions	See drawing	See drawing
Weight	78lb (35.4 kg)	89lb (40.4 kg)
Z-Plate Strainer *	Available (7.5" LL)	Available (8.9" LL)
SS Spacer Spools *	Hard-flanged or adjustable	Hard-flanged or adjustable
Test Port	Integral 1" NPT threads	Integral 1" NPT threads

\* Contact Metron for information on stainless steel spools and brass strainers

**MATERIALS**

Body & Top-plate:	ASTM C875 - Lead Free Bronze
Impeller:	Polypropylene
Impeller Bearings:	Tungsten Carbide
Impeller Shaft:	AISI 303, Tungsten Carbide tip
Register Housing:	Thermoplastic

**TAMPER FEATURES**

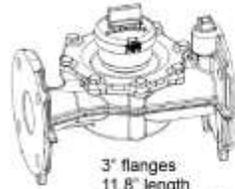
Meter Body	Wire +Lead seal between meter body and top-plate
Register	Tamper-resistant screw

**MARKINGS**

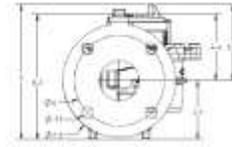
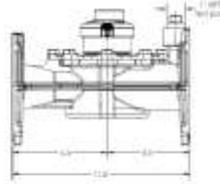
Engraved on Meter Body:	Model
	Serial Number
	Date of Manufacture
	NSF-61G
	Direction of Flow

**DIMENSIONS**

**Spectrum 175D  
3-Inch Model**



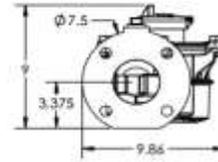
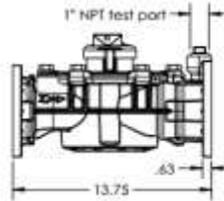
3" flanges  
11.8" length  
1" NPT test port  
weight: 32 lbs



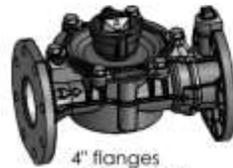
**Spectrum 500D  
3-Inch Model**



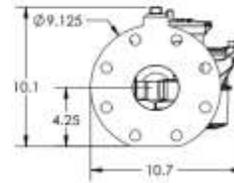
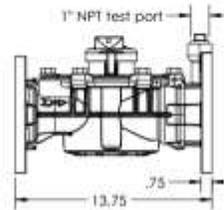
3" flanges  
13.75" length  
1" NPT test port  
weight: 41.1 lbs



**Spectrum 500D  
4-inch Model**



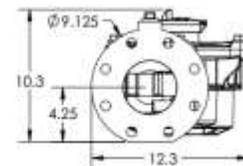
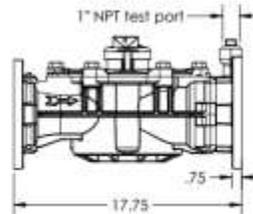
4" flanges  
13.75" length  
1" NPT test port  
weight: 47.8 lbs



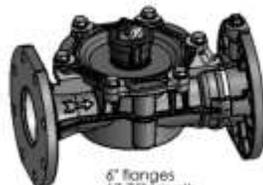
**Spectrum 1000D  
4-inch Model**



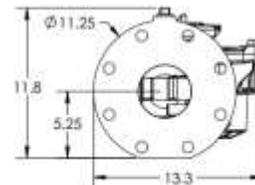
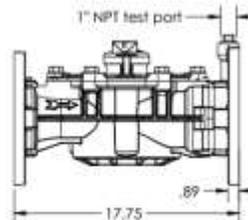
4" flanges  
17.75" length  
1" NPT test port  
weight: 77.8 lbs



**Spectrum 1000D  
6-inch Model**



6" flanges  
17.75" length  
1" NPT test port  
weight: 88.9 lbs



**FLOW & PRESSURE SPECIFICATIONS**

**Spectrum 175D – 3” Model**

Operating Range (98.5 to 101.5%)	0.75 to 350 gpm	(0.34 to 113.5 m3/hr)
Low Flow (95% min)	0.5 gpm	(0.17 m3/hr)
Max Continuous Flow <sup>2</sup>	175 gpm	(79.5 m3/hr)
Max Intermittent Flow <sup>3</sup>	245 gpm	(113.5 m3/hr)
Peak Test Flow <sup>4</sup>	350 gpm	(136 m3/hr)
Pressure Loss at Max Continuous	7.25 psi	(0.5 bar)
Max Operating Pressure	230 psi	(15.9 bar)
Max Operating Temperature	120 °F	(48.9 °C)

**Spectrum 500D – 3” / 4” Models**

Operating Range (98.5 to 101.5%)	1.5 to 500 gpm	(0.34 to 113.5 m3/hr)
Low Flow (95% min)	0.75 gpm	(0.17 m3/hr)
Max Continuous Flow <sup>2</sup>	350 gpm	(79.5 m3/hr)
Max Intermittent Flow <sup>3</sup>	500 gpm	(113.5 m3/hr)
Peak Test Flow <sup>4</sup>	600 gpm	(136 m3/hr)
Pressure Loss at Max Continuous	7.25 psi	(0.5 bar)
Max Operating Pressure	230 psi	(15.9 bar)
Max Operating Temperature	120 °F	(48.9 °C)

**Spectrum 1000D – 4” / 6” Models**

Operating Range (98.5 to 101.5%)	2.0 to 1000 gpm	(0.34 to 113.5 m3/hr)
Low Flow (95% min)	1.0 gpm	(0.17 m3/hr)
Max Continuous Flow <sup>2</sup>	600 gpm	(79.5 m3/hr)
Max Intermittent Flow <sup>3</sup>	1000 gpm	(113.5 m3/hr)
Peak Test Flow <sup>4</sup>	1100 gpm	(136 m3/hr)
Pressure Loss at Max Continuous	7.25 psi	(0.5 bar)
Max Operating Pressure	230 psi	(15.9 bar)
Max Operating Temperature	120 °F	(48.9 °C)

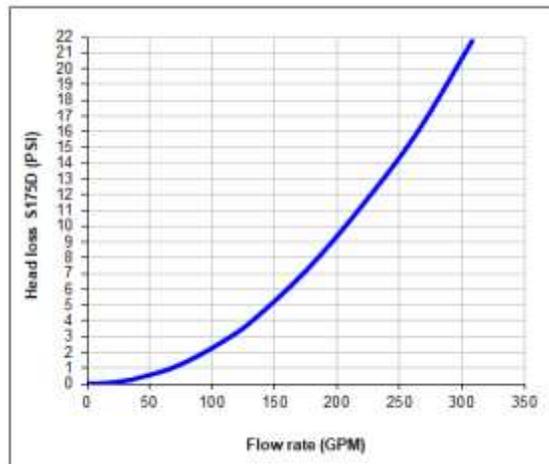
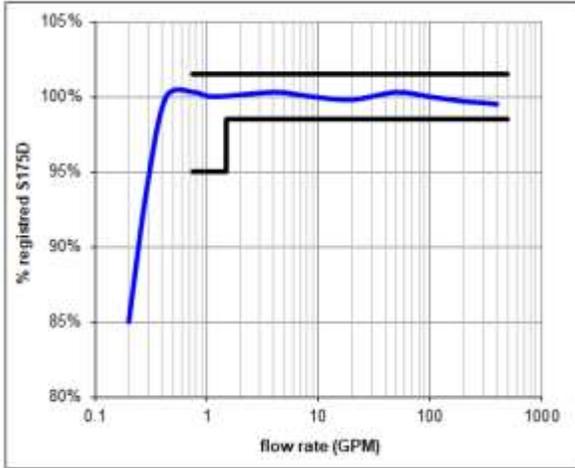
**Notes**

- 1 Max Continuous defined by AWWA as flow rate which can be maintained 24 hrs/day x 7 days/week
- 2 Max Intermittent defined as flow rate which can be maintained 1 hr/day average
- 3 Peak Test flow defined as absolute max flow rate which can be maintained for brief periods under stable conditions while maintaining a minimum of 20 psi downstream of the meter.

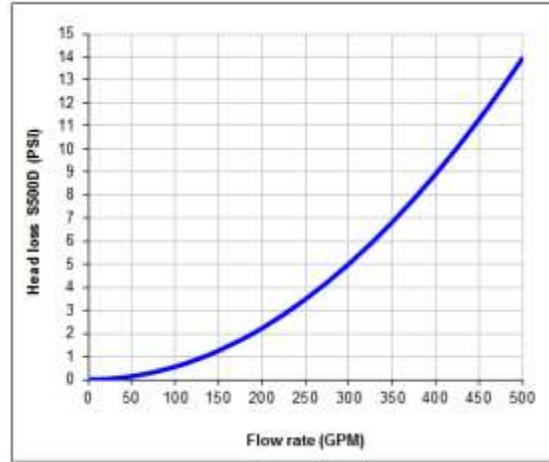
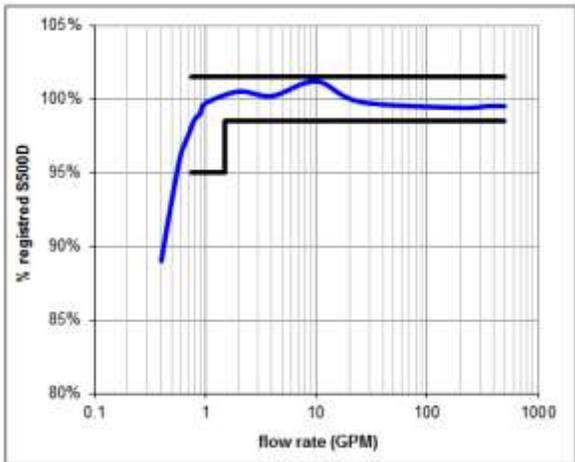
FLOW ACCURACY

PRESSURE DROP

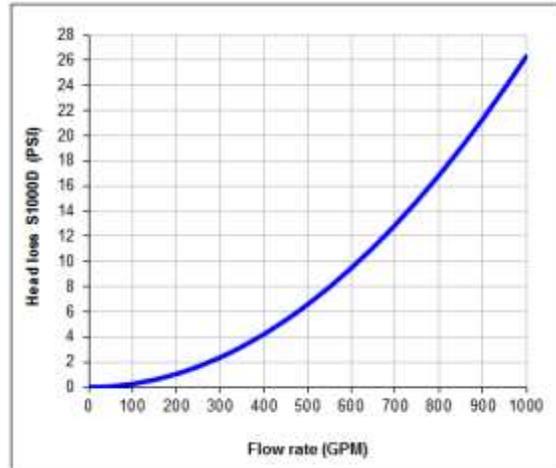
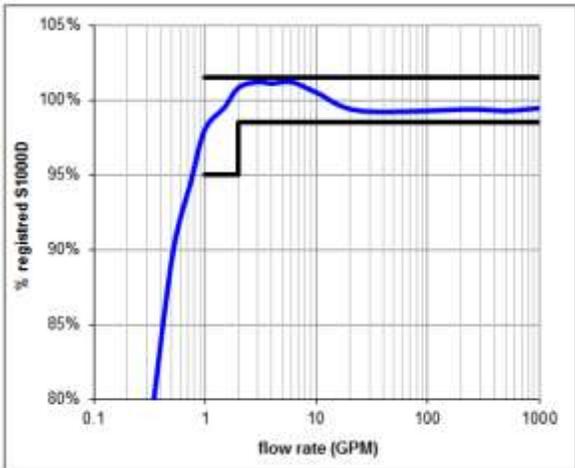
Spectrum 175D



Spectrum 500D

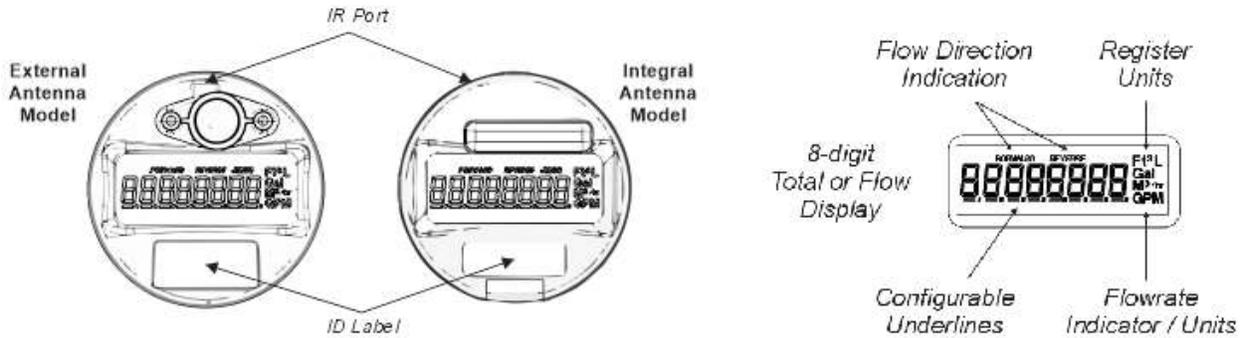


Spectrum 1000D



**REGISTERS**

The innov8 electronic register is the water industry’s new standard for register performance. The innov8 offers maximum resolution, a multitude of standard features, on-board datalogging and a variety of cellular, AMI, AMR and SCADA output options. The innov8 is designed for all environments and incorporates the largest battery available for utility applications. The innov8 can be deployed on any Metron Spectrum or Enduro Model D water meter.



<p><b>USG Configuration</b> 1 Gallon Resolution</p>	<p>USG - Commercial Meters (x1)</p>	<p>USG Flowrate - All Meters (x0.01)</p>
<p><b>Ft3 Configuration</b> 0.1 Ft3 Resolution</p>	<p>Ft3 - Commercial Meters (x0.1)</p>	<p>Ft3 Flowrate - All Meters (x0.01)</p>
<p><b>m3 Configuration</b> 0.01 m3 Resolution</p>	<p>m3 - Commercial Meters (x0.01)</p>	<p>m3 Flowrate - All Meters (x0.001)</p>

**WARRANTY**

Please contact your Metron representative for formal warranty certificates.

**LEGAL**

Due to updated regulations and product improvements, Metron-Farnier reserves the right to change the product specifications without notice.

DS version Apr-2020A