



*Potable Water System Report for
Town of Windermere, Orange County, FL*

*Windermere Downtown Property
Potable Water Analysis
Orange County, FL*

Prepared by:

Kimley-Horn and Associates, Inc.
Orlando, Florida
February 10, 2023



Potable Water System Report for
Town of Windermere, Orange County, FL

Windermere Downtown Property
Orange County, FL

Prepared for:

Windermere Downtown Property, LLC

Prepared by:

Kimley-Horn and Associates, Inc.
189 South Orange Avenue, Suite 1000
Orlando, Florida 32801
149973004

February 10, 2023

Marcus I. Geiger, P.E.
FL P.E. # 89199

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1 PROJECT DESCRIPTION

The Windermere Downtown Property is a proposed ±2.17-acre project. The project will contain one (1) restaurant and one (1) commercial building. The site is located at the intersection of W. 6th Ave and Main St in the Town of Windermere, Florida.

2 POTABLE WATER DISTRIBUTION SYSTEM

The proposed potable water system will connect to an existing an 8-inch public water main located on Main Street.

A combined system will be utilized to provide potable water service, as well as fire protection. A Fire Line Master Meter and Backflow Preventer will be provided at the point of connection to the OCU Utility System.

2.1 POTABLE WATER HYDRAULIC ANALYSIS SUMMARY

A complete water distribution system analysis has been performed for the proposed Windermere Downtown Property. The project development program consists of one (1) restaurant and one (1) commercial building.

Estimated domestic potable water Average Daily Flows (ADF), Max Daily Flows (MDF), and Peak Hourly Flows (PHF) for the proposed site are shown in Section 2.2. The MDF was determined by multiplying the ADF by a peaking factor of 2, while the PHF uses a peaking factor of 4.

Needed Fire Flow (NFF) calculations for buildings within the site were determined per Orange County Fire Rescue Fire Flow Worksheet for NFPA Method. The NFF Calculations are summarized in Section 2.3.

The domestic water distribution system has been modeled in WaterCAD V8i.

The model has been analyzed to ensure adequate flows and pressures are provided within the system during potential worst-case scenarios. Two (2) scenarios were analyzed within the WaterCAD model. One (1) scenario is comprised of the MDF plus the required fire flow through hydrants H-1. The remaining scenario analyzed was the PHF.

Orange County Utilities has provided a static pressure of 85 PSI and a residual pressure of 78 PSI per a hydrant flow test performed on November 4, 2021. The results of the hydrant flow test, performed by Orange County, can be found in Appendix A. This data was used to generate a rating curve based on the hydrant flow results shown above. Two data points were used to build the rating curve: a static pressure of 85 PSI, a residual pressure of 78 PSI. See the Orange County Utilities flow test results for the associated flows.

Per the Orange County Utilities Standards and Construction Specifications Manual (Ch.2, Section 2210, Part4, Sub-Section C), the system must provide a peak hour level of service of 35 PSI. The lowest pressure in the system during Peak Hour Flow is 70 PSI. During any Fire Flow scenario, the potable system must maintain a minimum pressure of 20 PSI at all nodes per Orange County Utilities Standards and Construction Specifications Manual (Ch.2, Section 2210, Part4, Sub-Section C). The minimum system pressure measured during the Fire Flow scenarios was 64 PSI (MDF+FF [H1]). The proposed system meets or exceeds all of the Orange County Utilities Standards and Construction Specifications Manual (Ch.2, Section 2210, Part4, Sub-Section C). Please see the WaterCAD results in Section 2.5 for more details regarding the flows and pressures provided during each scenario.

2.2 POTABLE WATER DEMAND DETERMINATION



189 S. Orange Ave., Suite 1000
Orlando, Florida 32801

Made By: RAR DATE: 10/14/2021
Checked By: MIG DATE: _____
KHA Project Number: 149973004

Windermere Downtown Property

Potable Water Service Demand Determination
(per O.C.U. Standards and Construction Specifications Feb. 2011 rev. 7/16/2014)

Building	UNITS / AREA(SF)	LEVEL OF SERVICE		ERC per UNIT	TOTAL ERCs	GPD			GPM		
						ADF	MDF	PHF	ADF	MDF	PHF
Commercial											
BLDG-1 (RESTAURANT)	100	1	per seat	0.167	17	5,845	11,690	23,380	4.1	8.1	16.2
BLDG-2 (OFFICE SPACE)	5,945	1,000	per SF	0.334	2	695	1,390	2,780	0.5	1.0	1.9
Total						6,540	13,080	26,160	4.5	9.1	18.2

ERU is 350 gallons per day
Average Daily Flow (ADF)
Max Daily Flow (MDF) = ADF x 2.0
Peak Hour Flow (PHF) = ADF x 4.0

2.3 NEEDED FIRE FLOW DETERMINATION

Windermere Downtown Property
Commercial Shopping Plaza
Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2021 Edition

Building 1

*Building Fire Area=	<input type="text" value="12,575"/>	SF
Building Type (per NFPA 220) =	<input type="text" value="V(000)"/>	
Associated Min. Required Fire Flow= (per Table H.5.1 of the NFPA 1 Uniform Fire Code Handbook)	<input type="text" value="3,000"/>	GPM
Fire Sprinkler - Yes or No=	<input type="text" value="Yes"/>	
Calculated Fire Flow= (with 75% fire sprinkler credit, if applicable)	<input type="text" value="750"/>	GPM
Minimum Fire Flow Required=	<input type="text" value="2,000"/>	GPM
Fire Flow Provided= 2,000 GPM		

Windermere Downtown Property
Commercial Shopping Plaza
Needed Fire Flow (NFF)

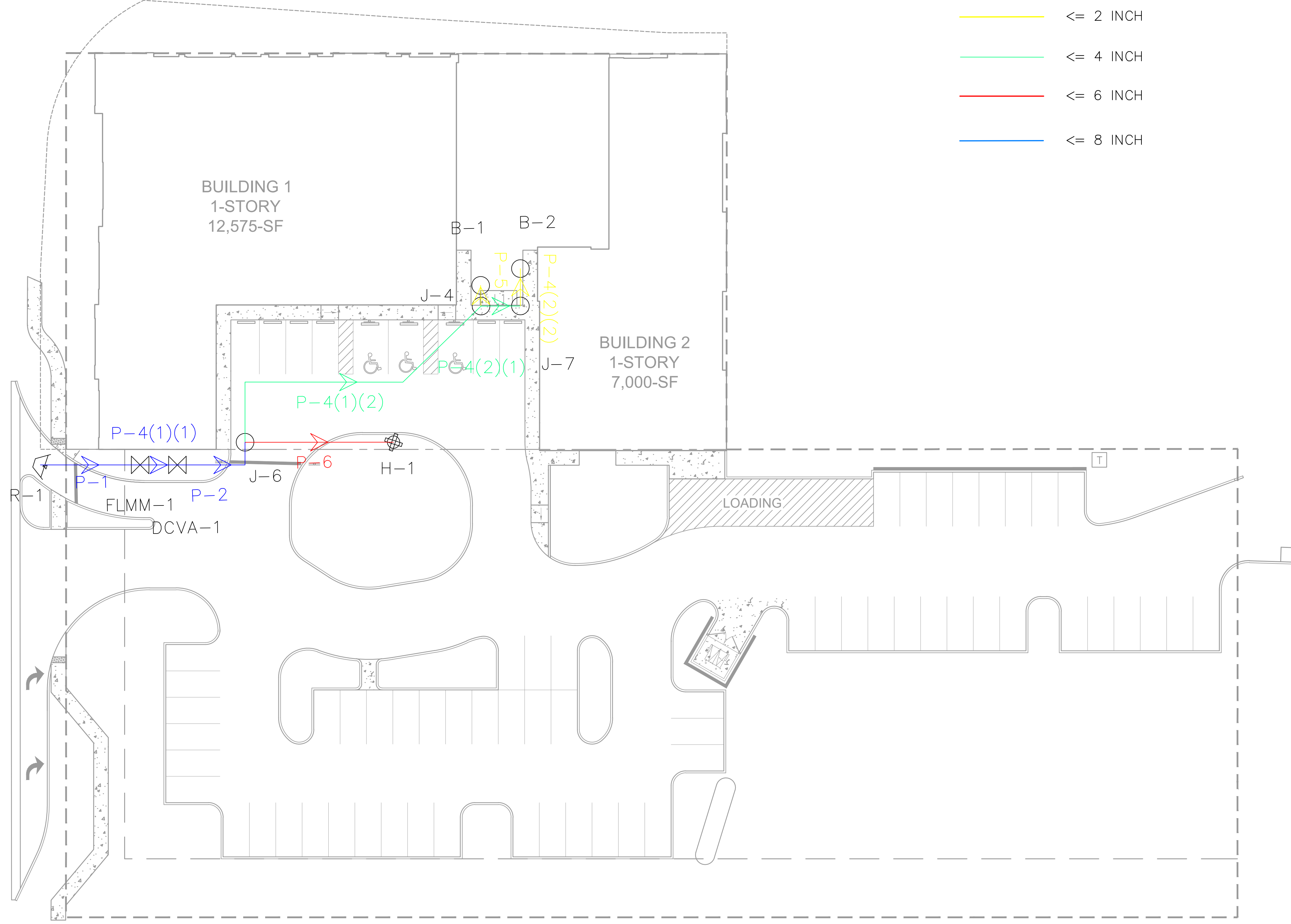
per NFPA 1 Uniform Fire Code Handbook, 2021 Edition

Building 2

*Building Fire Area=	<input type="text" value="7,000"/>	SF
Building Type (per NFPA 220) =	<input type="text" value="V(000)"/>	
Associated Min. Required Fire Flow= (per Table H.5.1 of the NFPA 1 Uniform Fire Code Handbook)	<input type="text" value="2,250"/>	GPM
Fire Sprinkler - Yes or No=	<input type="text" value="Yes"/>	
Calculated Fire Flow= (with 75% fire sprinkler credit, if applicable)	<input type="text" value="563"/>	GPM
Minimum Fire Flow Required=	<input type="text" value="2,000"/>	GPM
Fire Flow Provided= 2,000 GPM		

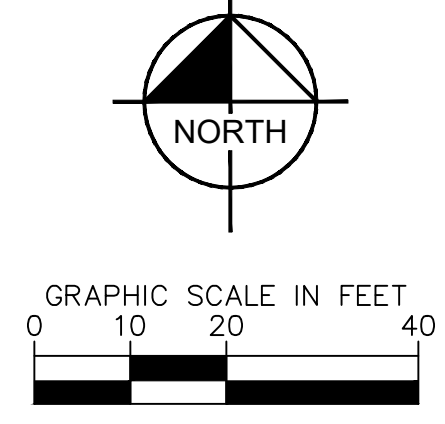
2.4 WATERCAD SCHEMATIC DIAGRAM

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LEGEND

- <= 2 INCH
- <= 4 INCH
- <= 6 INCH
- <= 8 INCH



**WINDERMERE
DOWNTOWN
PROPERTY**

**WATERCAD
SCHEMATIC**

LICENSED PROFESSIONAL

KHA PROJECT

DATE

SCALE AS SHOWN

DESIGNED BY

DRAWN BY

CHECKED BY

DATE:

LICENSED PROFESSIONAL

Kimley»Horn

189 S ORANGE AVE. SUITE 1000, ORLANDO, FL 32801
PHONE: 407-898-1511
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SHEET NUMBER
EX-01

REVISIONS

DATE

BY

2.5 WATERCAD RESULTS

PEAK HOURLY FLOW (PHF) ANALYSIS

Windermere Downtown Property

Scenario: PHF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	302.58	<None>	1,268	302.58

Windermere Downtown Property

Scenario: PHF

Hydrant Table - Time: 0.00 hours

Label	Hydrant Status	Length (Hydrant Lateral) (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Closed	20	125.91	1,250	273.66	64

Windermere Downtown Property

Scenario: PHF

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	Minor Loss Coefficient (Local)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
FLMM-1	125.74	6.0	0.000	NEPTUNE 8" FLMM	1,268	300.44	292.27	8.17
DCVA-1	125.74	6.0	0.000	WATTS 8" DCVA	1,268	291.91	284.98	6.93

Windermere Downtown Property

Scenario: PHF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
B-1	122.25	<Collection: 1 item>	16	283.19	70
J-4	122.02	<Collection: 1 item>	0	283.30	70
J-6	121.63	<Collection: 1 item>	0	283.34	70
J-7	121.37	<Collection: 1 item>	0	283.30	70
B-2	121.35	<Collection: 1 item>	2	283.30	70

Windermere Downtown Property

Scenario: PHF

Pipe Table - Time: 0.00 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Derived)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-1	34	R-1	FLMM-1	8.0	PVC	130.0	1,268	1.150	8.09	0.063
P-2	13	FLMM-1	DCVA-1	8.0	PVC	130.0	1,268	0.000	8.09	0.028
P-4(1)(1)	31	DCVA-1	J-6	8.0	PVC	130.0	1,268	0.750	8.09	0.053
P-4(1)(2)	112	J-6	J-4	4.0	PVC	130.0	18	1.350	0.46	0.000
P-4(2)(1)	13	J-4	J-7	4.0	PVC	130.0	2	0.350	0.05	0.000
P-4(2)(2)	13	J-7	B-2	2.0	PVC	130.0	2	1.280	0.19	0.000
P-5	7	J-4	B-1	2.0	PVC	130.0	16	1.280	1.65	0.015
P-6	51	J-6	H-1	6.0	PVC	130.0	1,250	1.280	14.18	0.191

**NEEDED FIRE FLOW (NFF) ANALYSIS
MDF+FF (H1)**

Windermere Downtown Property

Scenario: NFF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	302.58	<None>	1,268	302.58

Windermere Downtown Property

Scenario: NFF

Hydrant Table - Time: 0.00 hours

Label	Hydrant Status	Length (Hydrant Lateral) (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Closed	20	125.91	1,250	273.66	64

Windermere Downtown Property

Scenario: NFF

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	Minor Loss Coefficient (Local)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
FLMM-1	125.74	6.0	0.000	NEPTUNE 8" FLMM	1,268	300.44	292.27	8.17
DCVA-1	125.74	6.0	0.000	WATTS 8" DCVA	1,268	291.91	284.98	6.93

Windermere Downtown Property

Scenario: NFF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
B-1	122.25	<Collection: 1 item>	16	283.19	70
J-4	122.02	<Collection: 1 item>	0	283.30	70
J-6	121.63	<Collection: 1 item>	0	283.34	70
J-7	121.37	<Collection: 1 item>	0	283.30	70
B-2	121.35	<Collection: 1 item>	2	283.30	70

Windermere Downtown Property

Scenario: NFF

Pipe Table - Time: 0.00 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Derived)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-1	34	R-1	FLMM-1	8.0	PVC	130.0	1,268	1.150	8.09	0.063
P-2	13	FLMM-1	DCVA-1	8.0	PVC	130.0	1,268	0.000	8.09	0.028
P-4(1)(1)	31	DCVA-1	J-6	8.0	PVC	130.0	1,268	0.750	8.09	0.053
P-4(1)(2)	112	J-6	J-4	4.0	PVC	130.0	18	1.350	0.46	0.000
P-4(2)(1)	13	J-4	J-7	4.0	PVC	130.0	2	0.350	0.05	0.000
P-4(2)(2)	13	J-7	B-2	2.0	PVC	130.0	2	1.280	0.19	0.000
P-5	7	J-4	B-1	2.0	PVC	130.0	16	1.280	1.65	0.015
P-6	51	J-6	H-1	6.0	PVC	130.0	1,250	1.280	14.18	0.191

2.6 METER SPECIFICATIONS

High Performance Protectus III Fire Service Meter

Sizes: 4", 6", 8", and 10"

The High Performance Protectus III Fire Service Meter is designed to measure both domestic and fire service water usage through a single water line.



The HP Protectus III Fire Service Meter measures extremely wide flow ranges at 100% \pm 1.5% accuracy. All HP Fire Service Meters meet or exceed AWWA C703 Standard and are Underwriters Laboratory (UL) Listed and Factory Manual (FM) Approved for fire service use.

Application

The HP Protectus III Fire Service Meter is designed to measure both domestic and fire service water usage through a single water line. A typical application would be in a warehouse, hotel, or hospital where one water line may supply any number of faucets or bathrooms as well as an automatic sprinkler system.

Operation

At low flow rates, all flow is through the bypass meter. As flow increases, pressure loss through the bypass meter increases and the detector check valve automatically opens. This condition occurs, for example, when a fire sprinkler system goes into operation. This permits flow through the mainline turbine meter. As flow decreases, reduced pressure loss closes the detector check valve and flow is again directed through the bypass meter.

The combined readings of the mainline turbine and the bypass meter indicate total consumption through the HP Protectus III meter.

Construction

- Epoxy-coated steel mainline body
- Integral detector check valve (stainless steel spring-loaded type)
- Epoxy-coated steel strainer body with stainless steel basket
- HP Turbine measuring element
- All bronze bypass assembly
- Ball valves used on bypass
- Check valve used on bypass
- 1" T-10 meter (on 4" size)
- 1 1/2" T-10 or 1 1/2" HP Turbine meter (on 6" size)
- 2" T-10 or 2" HP Turbine meter (on 8" and 10" sizes)

Warranty

Neptune provides a limited warranty with respect to its HP Protectus III Fire Service Meter for performance, materials, and workmanship.

When desired, owner maintenance is easily accomplished by in-line replacement of the UME.

Key Features

■ Compact Size

- Standard laying length fits existing installations
- Lightweight
- Lowers new installation and replacement costs

■ Wide Operating Range

- Measures extremely wide flow ranges at 98.5%–101.5% accuracy
- Combines low-flow sensitivity of disc meter with high-flow capacity of turbine meter
- Registers leaks or unauthorized use of water from fire service lines

■ Component Repair and Maintenance

- Owner maintenance easily accomplished by replacement of major components
- Calibration vane allows in-field calibration of Unitized Measuring Element (UME)

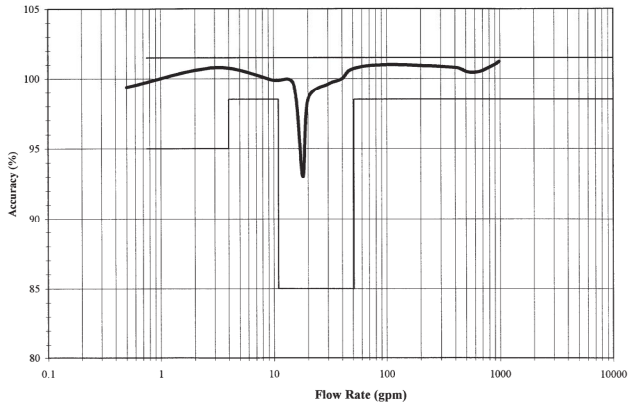
■ Roll-Sealed Registers

- Eliminates leaking and fogging
- In-line serviceability
- Magnetic driven, low torque registration
- Tamperproof seal design

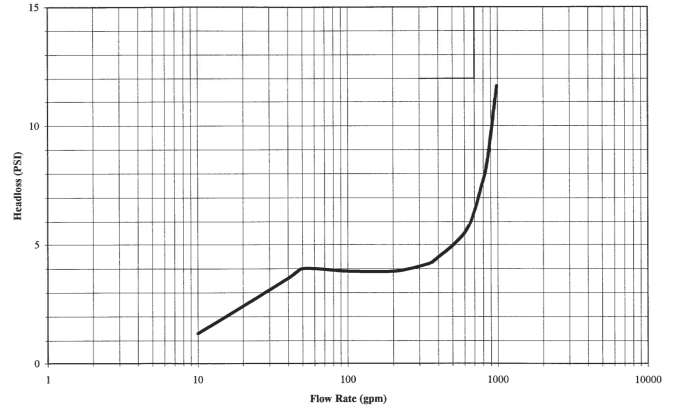
High Performance Protectus III Fire Service Meter

Sizes: 4", 6", 8", and 10"

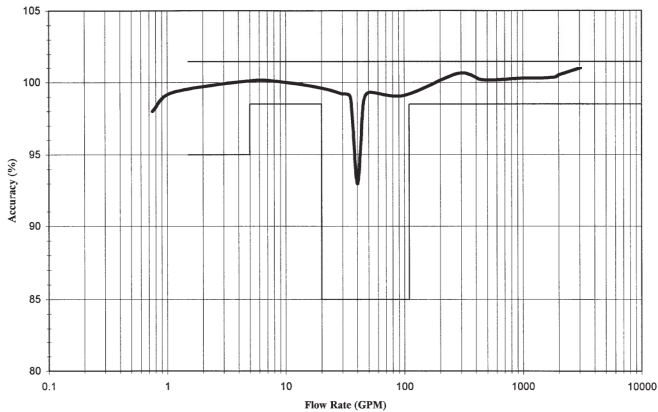
4" Accuracy



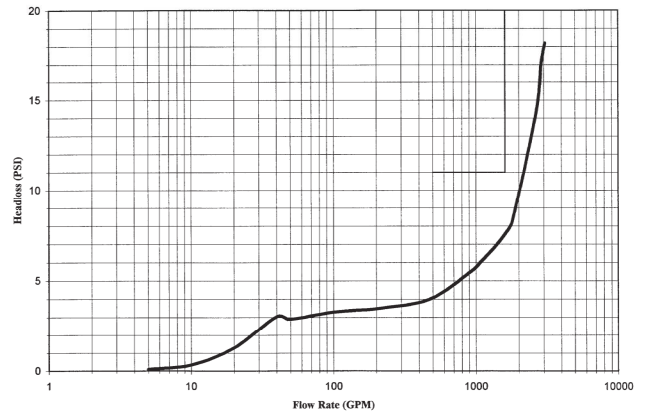
4" Headloss



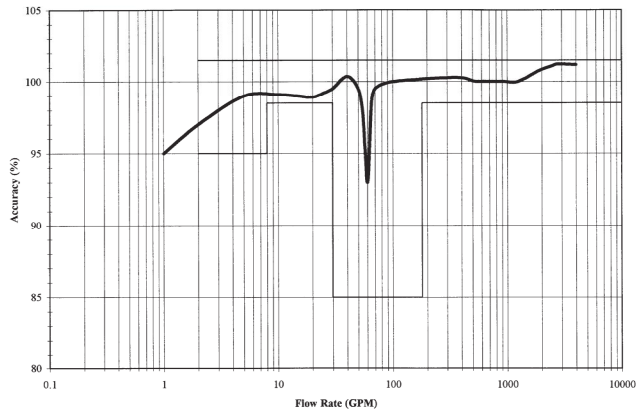
6" Accuracy



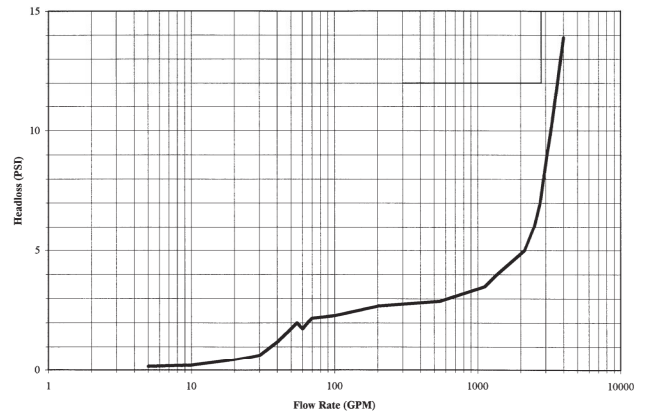
6" Headloss



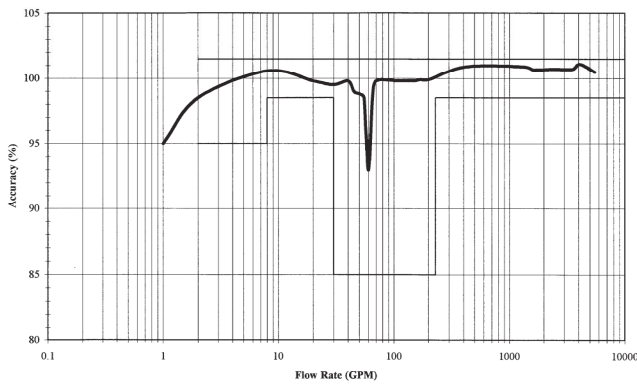
8" Accuracy



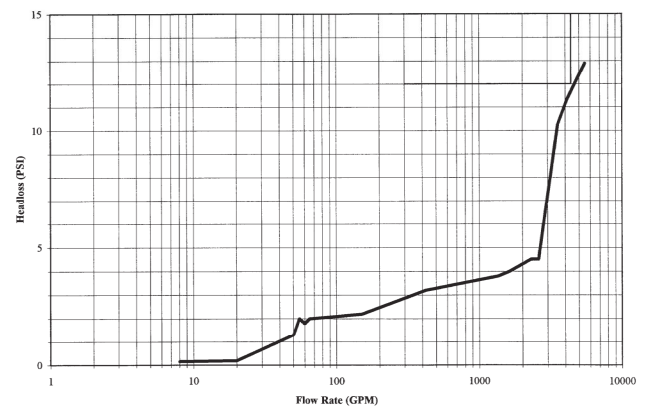
8" Headloss



10" Accuracy



10" Headloss



These charts show typical meter performance. Individual results may vary.

Operating Characteristics

Meter Size	Normal Operating Range* @100% Accuracy (±1.5%)	AWWA Standard	Low Flow @95% Accuracy	Maximum Intermittent Flow Rate
4"	3/4 to 1200 US gpm 0.171 to 272.55 m ³ /h	2 to 700 US gpm 0.45 to 159 m ³ /h	3/8 US gpm 0.09 m ³ /h	1500 US gpm 340.7 m ³ /h
6"	1 1/2 to 2500 US gpm 0.34 to 567.81 m ³ /h	4 to 1600 US gpm 0.91 to 363 m ³ /h	3/4 US gpm 0.17 m ³ /h	3100 US gpm 704.1 m ³ /h
8"	2 to 4000 US gpm 0.45 to 908.5 m ³ /h	7 to 2800 US gpm 1.6 to 636 m ³ /h	1 US gpm 0.23 m ³ /h	5000 US gpm 1135.6 m ³ /h
10"	2 to 6500 US gpm 0.45 to 1476.31 m ³ /h	12 to 4400 US gpm 2.7 to 999 m ³ /h	1 US gpm 0.23 m ³ /h	8000 US gpm 1817 m ³ /h

Registration

Registration (per sweep hand revolution)		Disc Side			Turbine Side		
		1"	1 1/2"	2"	4"	6"	8" & 10"
1,000	US Gallons					✓	✓
100	Gallons		✓	✓	✓		
100	Cubic Feet					✓	✓
10	US Gallons	✓					
10	Cubic Feet		✓	✓	✓		
1	Cubic Foot	✓					
10	Cubic Metres					✓	✓
1	Cubic Metre			✓	✓		
0.1	Cubic Metre	✓	✓				
Register Capacity (6 active wheel odometer)		Disc Side			Turbine Side		
		1"	1 1/2"	2"	4"	6"	8" & 10"
1,000,000,000	Gallons					✓	✓
100,000,000	Gallons		✓	✓	✓		
100,000,000	Cubic Feet					✓	✓
10,000,000	Gallons	✓					
10,000,000	Cubic Feet		✓	✓	✓		
10,000,000	Cubic Metres					✓	✓
1,000,000	Cubic Metres			✓	✓		
1,000,000	Cubic Feet	✓					
100,000	Cubic Metres	✓	✓				

Dimensions

Meter Size	A	B	C	D	E	F	G	H	I	J	Weight lbs/kg
	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	
4"	33 838	10 254	10 3/4 273	17 1/2 445	22 559	15 1/4 387	6 3/4 171	12 305	2 51	2 51	215 98
6"	45 1143	11 1/16 281	11 3/8 289	21 1/4 540	29 737	19 1/2 495	9 1/2 241	16 406	2 51	3 76	570 258
8"	53 1346	11 13/16 300	13 29/64 342	25 7/8 657	34 1/4 870	21 3/4 552	12 1/2 318	17 432	3 76	3 76	765 347
10"	68 1727	14 13/16 376	15 381	30 1/16 764	36 1/4 921	22 1/2 572	13 3/4 349	18 457	3 76	3 76	900 408

Guarantee Systems Capability

All HP Protectus III Fire Service meters are guaranteed adaptable to our ARB®V, ProRead AutoDetect, TRICON®/S, TRICON/E3®, and Neptune meter reading systems without removing the meter from service.

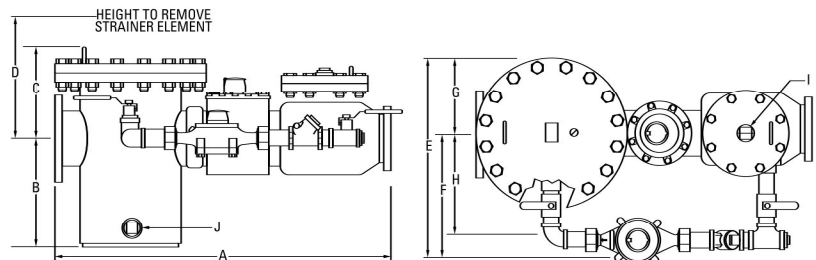
Specifications

- Application: cold water measurement of flow in one direction
- Maximum operating pressure: 175 psi (1206 kPa)
- Register: direct reading, center sweep, roll-sealed magnetic drive with low-flow indicator
- Measuring element: AWWA Class II Turbine, hydrodynamically balanced rotor, nutating disc
- Flanges: round flanged ends per AWWA C207, Class D

Options

- Sizes: 4", 6", 8", and 10"
- Units of measure: U.S. gallons, imperial gallons, cubic feet, cubic metres
- Register types:
 - Direct reading: Bronze box and cover (standard)
 - Remote reading systems*: ARB, ProRead AutoDetect Absolute Encoder, TRICON/S, TRICON/E3
 - Reclaim
- Companion flanges:
 - Cast iron
 - Bronze (4" only)

* Consult factory for meter performance specifications when fitted with ARB.



www.neptunetg.com

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PS PROTIII 12.01
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Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Series 774

Double Check Valve Assemblies

Sizes: 2½" – 12"

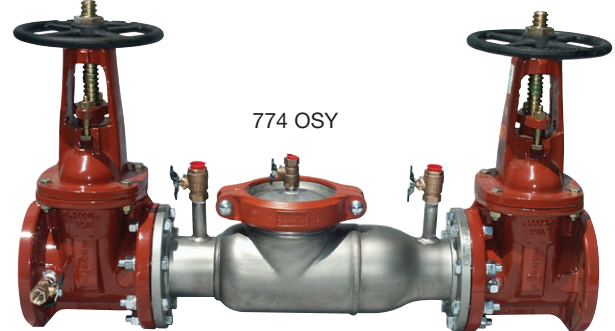
Series 774 Double Check Valve Assemblies are designed to prevent the reverse flow of polluted water from entering into the potable water system. This series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. Features short end-to-end dimensions, light weight stainless steel body, and the lowest head loss available.

Features

- Torsion spring check valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection and maximum strength
- Single top access cover with two-bolt grooved style coupling for ease of maintenance
- Thermoplastic and stainless steel check valves for trouble-free operation
- No special tools required for servicing
- Compact construction allows for smaller vaults and enclosures
- May be installed in horizontal or vertical "flow up" position

Specifications

A Double Check Valve Assembly shall be installed at each noted location to prevent the unwanted reversal of polluted water into the potable water supply. The main valve body shall be manufactured from 300 series stainless steel to provide corrosion resistance. The check valves shall be of thermoplastic construction with stainless steel hinge pins, cam arm, and cam bearing. The check valves shall utilize a single torsion spring design to minimize pressure drop through the assembly. The check valves shall be modular and shall seal to the main valve body by the use of an O-ring. There shall be no brass or bronze parts used within the check valve assembly. The valve cover shall be held in place through the use of a single grooved style two-bolt coupling. The main assembly shall consist of two independently operating torsion spring check assemblies, two resilient seated isolation valves, and four ball valve type test cocks. The assembly shall be a Watts Series 774.



Now Available WattsBox Insulated Enclosures.

For more information, send for literature ES-WB.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

NOTICE

Inquire with governing authorities for local installation requirements

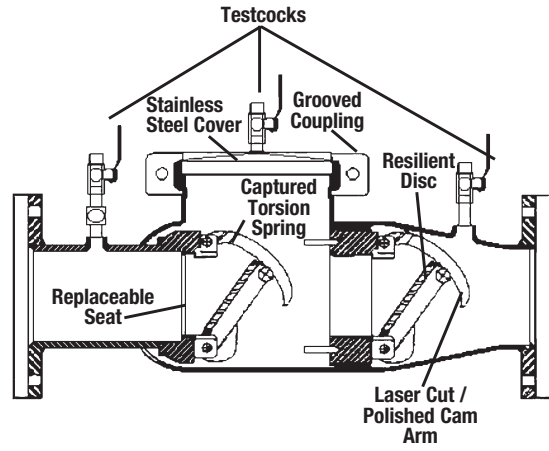
*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Available Models

Suffix:

- NRS** Non-rising stem resilient seated gate valves
- OSY** UL/FM resilient seated outside stem & yoke gate valves
- LF** Without shutoff valves
- S** Cast iron strainer
- **OSY FxG** Flanged inlet gate connection and grooved outlet gate connection
- **OSY GxF** Grooved inlet gate connection and flanged outlet gate connection
- **OSY GxG** Grooved inlet gate connection and grooved outlet gate connection

Available with grooved NRS gate valves - consult factory**
 Post indicator plate and operating nut available - consult factory**
 **Consult factory for dimensions



Materials

All internal metal parts: 300 Series stainless steel
 Main valve body: 300 Series stainless steel
 Check assembly: Noryl®
 Flange dimension in accordance with AWWA Class D

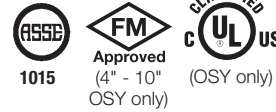
Pressure - Temperature

Temperature Range: 33°F – 110°F (0.5°C – 43°C) continuous
 Maximum Working Pressure: 175psi (12.1 bar)

Standards

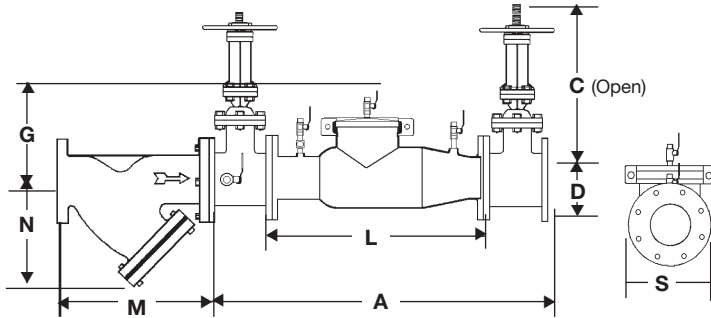
AWWA C510-92, CSA B64.5

Approvals



For 12" assembly approvals consult factory.

Dimensions - Weight

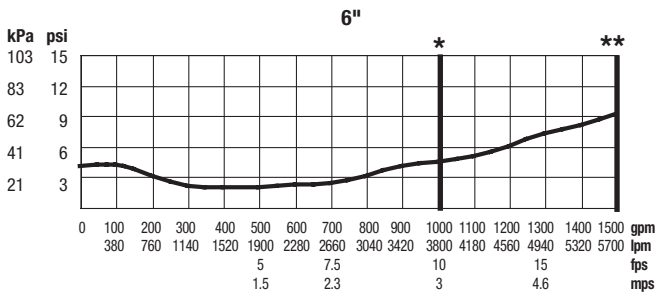
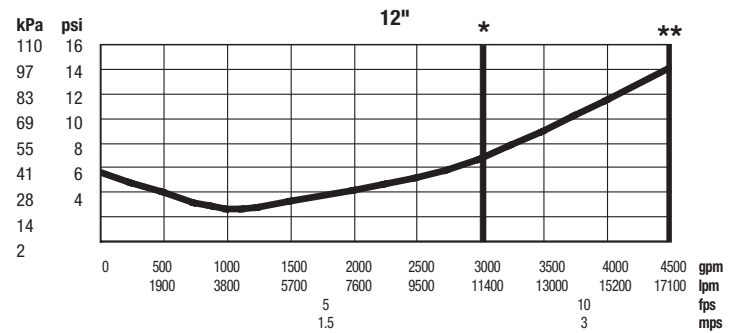
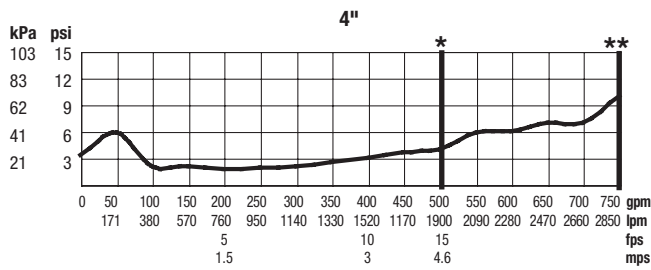
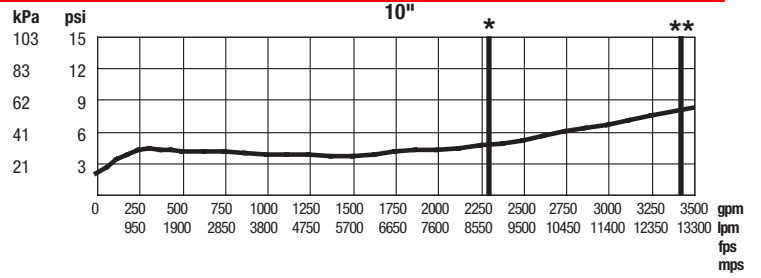
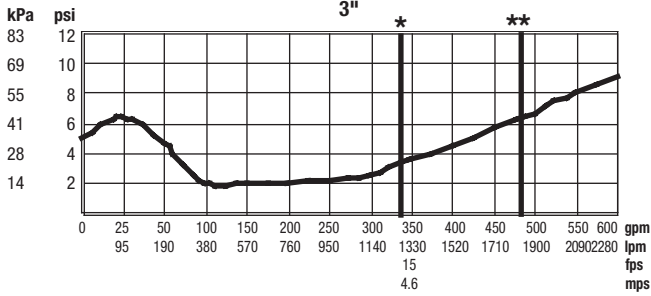
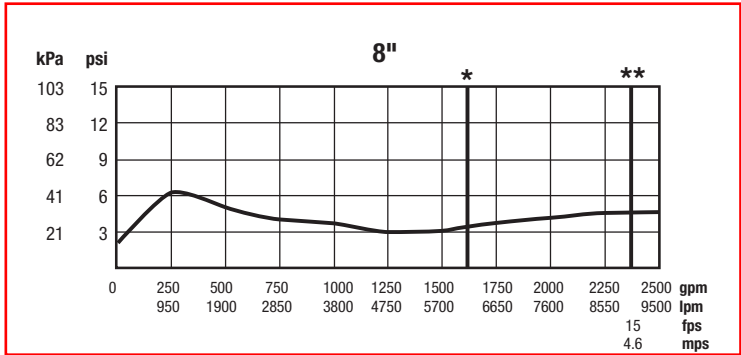
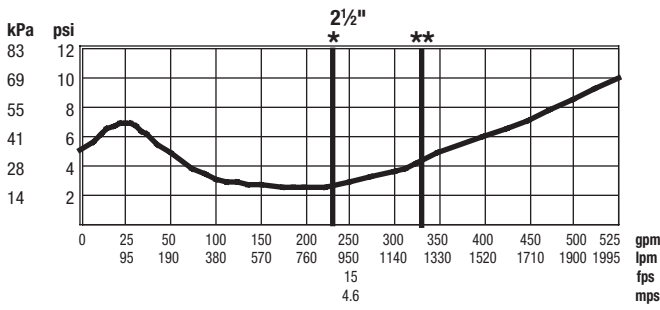


SIZE	DIMENSIONS												WEIGHT									
	A		C (open)				D		G		L		M		N		S		w/Gates		w/o Gates	
	in.	mm	OSY		NRS		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	37	940	16¾	416	9¾	238	3½	89	10	254	22	559	10	254	6½	165	7	178	140	64	53	24
3	38	965	18⅞	479	10¼	260	3¾	95	15	381	22	559	10⅞	257	7	178	7½	191	215	98	55	25
4	40	1016	22¾	578	12¾	310	4½	114	10	254	22	559	12⅞	308	8¼	210	9	229	225	102	58	26
6	48½	1232	30⅞	765	16	406	5½	140	15	381	27½	699	18½	470	13½	343	11	279	375	170	105	48
8	52½	1334	37¾	959	19⅞	506	6¾	171	15	381	29½	749	21⅞	549	15½	394	13½	343	561	254	169	77
10	55½	1410	45¾	1162	23⅞	605	8	200	15	381	29½	749	26	660	18½	470	16	406	763	346	179	81
12	57½	1461	53⅞	1349	26¾	679	9½	241	15	381	29½	749	29⅞	759	21¾	552	19	483	1033	469	209	95

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Capacity

Rated working pressure 175psi (12.1 bar) * Rated flow, ** UL Tested



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 Canada: T: (888) 208-8927 • F: (888) 479-2887 • Watts.ca
 Latin America: T: (52) 55-4122-0138 • Watts.com

APPENDICES

HYDRANT FLOW TEST RESULTS ORANGE COUNTY APPENDIX A

APPENDIX A
HYDRANT FLOW TEST RESULTS
PER ORANGE COUNTY UTILITIES

Hydrant Flow Test Report

Date: **4-Nov-21** Time: **8:30 AM** Operator: **G.Delossantos**
 Temp Conditions Work Order# **16931302**

Test Hydrant Information: Weather: **Partly Cloudy**

Hydrant Number: **H31310200** Address: **E 5th Ave**
 N.F.P.A. Colour Code: **BLUE**
 Pipe Material: **PVC-C909**
 Pipe Diameter: **8**
 Elevation: **n/a**

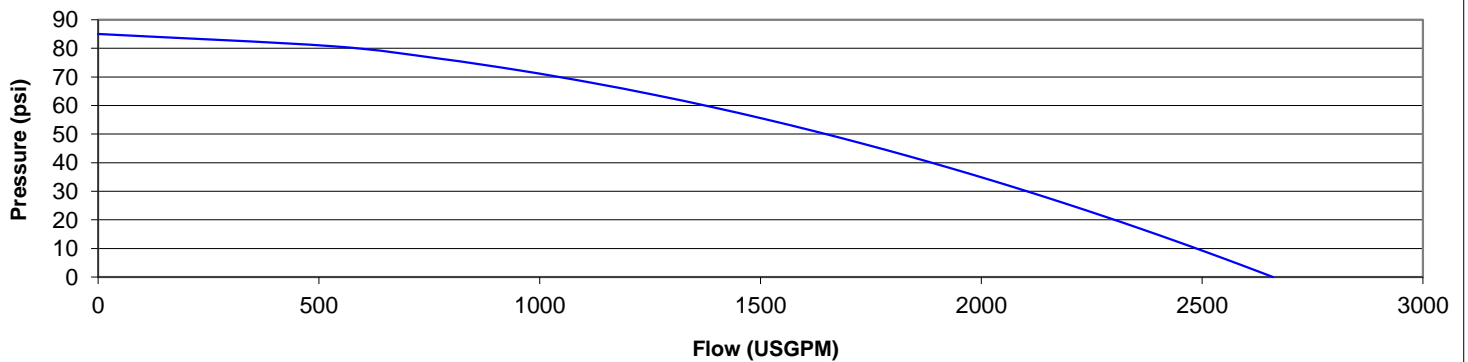
STATIC PRESSURE: **85** psi
 RESIDUAL PRESSURE: **78** psi

Available Flow At Test Hydrant at 20 psi **2302** USGPM **1903** IGPM
 Available Flow At Test Hydrant at 10 psi **2487** USGPM **2056** IGPM

Flow Hydrants Information:

Hydrant No.	Gauge No.	Outlet Dia (in.)	Coefficient (-0.9)	Pitot Guage Reading (psi)	Flow USGPM
H31310200		2.5	0.9	17	691.14
		2.5	0.9		
Total Flow (USGPM)					691.14

Test Hydrant Flow Data



Comments: _____

