



# Fire Prevention Fire Hydrant Flow Test



City of Pompano Beach • Bureau of Fire Prevention  
100 West Atlantic Boulevard, Room 220 Pompano Beach, FL 33060  
Phone: (954) 786-4695

City of Pompano Beach Fire Prevention will **WITNESS** all fire hydrant flow test that are required for fire flow purposes.

- City of Pompano Beach Code of Ordinances Title IX Chapter 95 Section 95.14(G). Fire hydrant flow tests.
- The Fire Department shall witness all hydrant flow tests as required for fire protection systems.
- All fire flow tests shall be in accordance with NFPA 291 and Broward County Amendments F-112.
- Broward County Amendments F-112(e) - The static pressure at the water main shall be determined by a recorded method for a minimum twenty-four (24) hour period.
- Morning of fire Hydrant static/residue connection contractor to provide documents of test equipment certification.

## Information:

Date:	07/30/24
Company Requesting Flow Test:	WIGINTON FIRE SYSTEMS
Contact Name:	JOSE QUINTERO
Contact Phone Number:	561-3524892
Email Address:	jfq@wiginton.net.
Associated Application Number:	
Associated Project Name:	200 SE 18th AVE.

## Proposed Date/Time for Fire Hydrant Flow Test: (8am - 9am)

- Request Hydrant Flow Test minimum 72 hours in advance.
- Connection of Fire Hydrant for 24 hour static/residual must be between 0730hrs and 0830hrs.

Requested Date:	08/19/24	Time:	8 AM
Alternate Date:		Time:	

## Fire Hydrant Flow Test Location:

Hydrant Location - Static/Residual:	200 SE 18th AVE - SGG MAP
Hydrant Location - Flow:	CORNER SE 2ND AND SE 19th AVE - SGG MAP

## Fire Hydrant Flow Test Witness Fee:

There is a \$150.00 fee for performing each flow test. All tests will be completed within 5 business days. Please include map/sketch showing streets/cross streets & locations of flow and residual fire hydrants. Return flow test application to the Bureau of Fire Prevention with form of payment for \$150.00.

Make check and money orders payable to "CITY OF POMPANO BEACH"

If mailing in application with payment send to the addressed listed below.

Pompano Beach Fire Prevention  
100 W. Atlantic Blvd. - Room 220  
Pompano Beach, FL 33060

NOTE TO TREASURY: Post to 001-0000-367.30-00

	Yes	No			
Flow Test Equipment Certification:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Date:	10/17/2024	-WFS3
H#	Pitot	GPM	Static	Residual	Tip Size
	60	1300	78	76	2.5"
Total Hydrant Flow:			1		

- Fire Flow Data to be completed and entered on site.
- Fire flow data provided to Fire Prevention at a later date, must be signed/sealed by the Engineer of Record.

Person Conducting Flow Test:

JOSE QUINTERO

Fire Inspector Witnessing Flow Test:

JIM GALLOWAY

**DRC**

Page 1 of 1

PZ24-12000011  
01/15/2025



## WATER FLOW TEST DATA SHEET

Job Number: \_\_\_\_\_

Job Name: **ATLANTIC ONE**

Job Address: **200 SE 18TH AVE, POMPANO BEACH, FL.**

Date: **8-15-24** Time: **9AM** ☒ AM ☐ PM Location: **200 SE 18TH AVE, POMPANO BEACH, FL.**

Notes: \_\_\_\_\_

Static Pressure at Test Hydrant A (psi) **78**

Residual Pressure at Test Hydrant A (psi) **76**

Flow Hydrant	Hydrant Outlet Size	No. Outlets Flowing	Pitot Pressure (psi)	Hydrant Outlet Coefficient	Theoretical Flow (Cd=1.00)	Actual Flow (gpm)
<b>B</b>	<b>2.5"</b>	<b>1</b>	<b>60</b>	<b>.9</b>	<b>1300</b>	<b>1444</b>
<b>C</b>						
<b>D</b>						

### TEST OF CITY WATER SUPPLY

To obtain factual information about the water supply that is available for fire protection at any given location:

1. Consult a map which shows the location and size of the water mains and hydrants in the area of property to be protected.
2. Make an actual Water Flow Test

The proper method of making a Water Flow Test of the city water supply is to use 2 or more hydrants in the vicinity of the property. The static and residual pressures are measured at the hydrant in front of or nearest to the property (designate hydrant as Test Hydrant A). The water is allowed to flow from the hydrant next nearest the property and farthest from the source of supply (designate as Flow Hydrant B).

The Water Flow Test is conducted as follows:

1. Attach a gage to Test Hydrant A and read the static pressure.
2. Either attach a second gage to Flow Hydrant B or use a pitot gage at an outlet. With Flow Hydrant B wide open, read the pressure at both hydrants.
3. The pressure at Flow Hydrant B is used to compute the gallons flowing per minute.
4. The pressure reading at Test Hydrant A is the residual pressure.

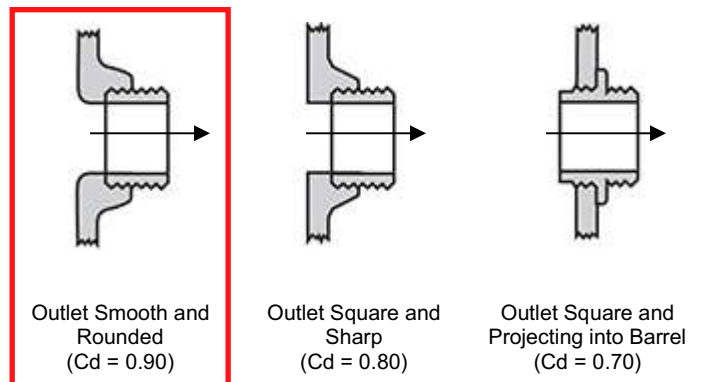
For best results, the volume of water flowing during a test should exceed the estimated demand for the system, including any allowance for hose streams. To accomplish this, it may be necessary to provide further tests with 2 outlets open on Flow Hydrant B, or by using additional hydrants.

The next hydrant adjacent to flowing hydrant may be opened (designate as Flow Hydrant C) and the test conducted with 2 or 4 outlets flowing. Each flowing stream must be measured with the pitot gage, and the residual pressure at Test Hydrant A must remain the same during the time all pitot gage readings are taken.

### HYDRANT OUTLET COEFFICIENT

The hydrant coefficient is the degree to which water is impeded by the hydrant parts, including the outlet. If the hydrant could be constructed to pass all of the water through without any pressure loss, the coefficient would be 1.00. Because this is not possible, the theoretical flow from a hydrant is adjusted by a factor referred to as the Hydrant Outlet Coefficient (Cd).

Before a water flow Test is made, all hydrant outlets must be checked to determine the correct coefficient.



The sketches above show 3 general types of hydrant outlets and the coefficient each gives. To determine the type on the hydrant to be flowed, feel the contour of the inner edge. Then compare the internal opening with the sketches to get the proper coefficient. If the hydrant being checked is not like the sketches, or if the inner edge is rough and deeply corroded, it may be necessary to adjust the coefficient, e.g., from 0.90 to 0.85 or from 0.80 to 0.75.

# DRC

PZ24-12000011

01/15/2025

## OUTLET SIZE

The actual size of the openings used in the Water Flow Test must be determined. Therefore, the inside diameter of hydrant outlets are measured to the nearest 1/16<sup>th</sup> of an inch.

Most hydrants encountered will have 2½" hose outlets and 4" or 4½" pumper connections. For this reason, the Theoretical Flow table below includes only these sizes. If other size outlets are used, the actual flow is calculated using the Discharge Formula.

The table is based on Theoretical Flow for a coefficient of 1.00. Discharge values given in the table must be multiplied by the Hydrant Outlet Coefficient (Cd) to arrive at the gallons flowing per minute (gpm).

Example: The Flow Hydrant has 2 hose outlets. These are examined and found to have square and sharp inner edges (Cd = 0.80). The outlets, when measured, are found to be exactly 2½". A Water Flow Test is made with 2 outlets flowing simultaneously. The pitot gage reading at each outlet is 14 psi.

The actual flow is: 2 x 0.80 x 698 = 119 gpm.

THEORETICAL FLOW FROM HYDRANT OUTLETS			
Discharge Coefficient = 1.00			
Pitot Gage (psi)	Inside Diameter of Outlet		
	2½"	4"	4½"
1	186	477	604
2	264	675	854
3	323	827	1046
4	373	955	1208
5	417	1067	1351
6	457	1169	1480
7	493	1263	1598
8	527	1350	1709
9	559	1432	1812
10	590	1509	1910
11	618	1583	2003
12	646	1653	2093
13	672	1721	2178
14	698	1786	2260
15	722	1848	2340
16	746	1909	2416
17	769	1968	2491
18	791	2025	2562
19	813	2080	2633
20	834	2134	2701
22	874	2239	2833
24	913	2338	2959
26	951	2434	3080
28	987	2526	3196
30	1021	2614	3309
32	1055	2700	3417
34	1087	2783	3522
36	1119	2864	3624
38	1149	2942	3724
40	1179	3019	3820
42	1209	3093	3915
44	1237	3166	4007
46	1264	3237	4097
48	1292	3307	4185
50	1318	3375	4271
52	1344	3442	4356
54	1370	3507	4439
56	1395	3572	4520
58	1420	3635	4600
60	1444	3697	4679
62	1468	3758	4756
64	1491	3818	4832
66	1515	3877	4907
68	1537	3936	4981
70	1560	3993	5054
72	1582	4050	5126
74	1604	4106	5196
76	1625	4161	5266
78	1647	4215	5335
80	1668	4269	5403
82	1688	4322	5470
84	1708	4374	5536
86	1729	4426	5602
88	1749	4477	5667
90	1769	4528	5731

## DISCHARGE FORMULA

With the size of the outlet known and the Hydrant Outlet Coefficient ascertained, the actual discharge from the Flow Hydrant can be calculated using a Discharge formula.

$$Q = 29.83 \times C_d \times D^2 \times \sqrt{P}$$

Q = Flow in gpm (gallons per minute)

Cd = Hydrant outlet coefficient

D = Diameter of hydrant outlet

P = Pressure in psi (pounds per square inch)

Example: The Water Flow test was made from 2 5/8" hose outlet and Cd = 0.90. The pitot gage reading was 22 psi.

$$Q = 29.83 \times 0.90 \times (2.625)^2 \times \sqrt{22}$$

$$Q = 29.83 \times 0.90 \times 6.89 \times 4.69$$

$$Q = 868 \text{ gpm}$$

## CAUTIONS

1. Have permission from the Water Authority before making a Water Flow Test. Whenever Possible, have a representative of Authority present to assist with and witness the test.
2. Make certain that the discharge from Flow Hydrants will not tear up roadways, lawns, or otherwise cause damage to and/or flood any property.
3. Hydrants are always opened and closed slowly.
4. Allow water to flow clear before placing gages on hydrants or taking pitot gage readings.
5. Hydrant outlets must be flowing full solid streams during all tests.

## SKETCH OF TEST LOCATION

1. Provide a layout of the underground pipe and indicate the size, length, location, and type of material (cement lined cast iron, asbestos cement, etc.).
2. Locate and identify all hydrants used in the test.
3. Establish the elevation of Test Hydrant A with respect to the property (e.g., the difference in elevation between the hydrant and the finished floor at the building).
4. Show the point of connection for the proposed system.
5. If required, provide additional information and details which will permit the test results to be adjusted to another location by means of hydraulic calculations.

# DRC

PZ24-12000011

01/15/2025

Model: PR325

Serial: 19165096

Date/Time (WIGINTON FIRE)-DicksonPressure\PSI

Minimum Value 73

Average Value 76.73

Maximum Value 79.9

8/14/2024	9:00:00 AM	78.6
8/14/2024	9:10:28 AM	77.5
8/14/2024	9:20:28 AM	76.9
8/14/2024	9:30:28 AM	77.4
8/14/2024	9:40:28 AM	77.8
8/14/2024	9:50:28 AM	77.9
8/14/2024	10:00:28 AM	77.2
8/14/2024	10:10:28 AM	77.7
8/14/2024	10:20:28 AM	77.4
8/14/2024	10:30:28 AM	77.8
8/14/2024	10:40:28 AM	77.3
8/14/2024	10:50:28 AM	77.9
8/14/2024	11:00:28 AM	77.4
8/14/2024	11:10:28 AM	78
8/14/2024	11:20:28 AM	77.8
8/14/2024	11:30:28 AM	77.5
8/14/2024	11:40:28 AM	78
8/14/2024	11:50:28 AM	77.1
8/14/2024	12:00:28 PM	77.2
8/14/2024	12:10:28 PM	77.2
8/14/2024	12:20:28 PM	78.2
8/14/2024	12:30:28 PM	78
8/14/2024	12:40:28 PM	77.9
8/14/2024	12:50:28 PM	77.7
8/14/2024	1:00:28 PM	78
8/14/2024	1:10:28 PM	77.9
8/14/2024	1:20:28 PM	77.2
8/14/2024	1:30:28 PM	77.7
8/14/2024	1:40:28 PM	76.9
8/14/2024	1:50:28 PM	77.2
8/14/2024	2:00:28 PM	78.3
8/14/2024	2:10:28 PM	78.1
8/14/2024	2:20:28 PM	77.1
8/14/2024	2:30:28 PM	77.8
8/14/2024	2:40:28 PM	77.4
8/14/2024	2:50:28 PM	77.5
8/14/2024	3:00:28 PM	77.8
8/14/2024	3:10:28 PM	77.8

DRC

PZ24-12000011

01/15/2025

8/14/2024	3:20:28 PM	77.4
8/14/2024	3:30:28 PM	77.5
8/14/2024	3:40:28 PM	78.2
8/14/2024	3:50:28 PM	78.3
8/14/2024	4:00:28 PM	77.4
8/14/2024	4:10:28 PM	77.6
8/14/2024	4:20:28 PM	77.5
8/14/2024	4:30:28 PM	77.3
8/14/2024	4:40:28 PM	77.5
8/14/2024	4:50:28 PM	78
8/14/2024	5:00:28 PM	77.4
8/14/2024	5:20:28 PM	77.7
8/14/2024	5:30:28 PM	78.1
8/14/2024	5:40:28 PM	78.2
8/14/2024	5:50:28 PM	78.2
8/14/2024	6:00:28 PM	78.5
8/14/2024	6:10:28 PM	78.5
8/14/2024	6:20:28 PM	78.5
8/14/2024	6:30:28 PM	77.9
8/14/2024	6:40:28 PM	78.3
8/14/2024	6:50:28 PM	78.4
8/14/2024	7:00:28 PM	78.4
8/14/2024	7:10:28 PM	77.7
8/14/2024	7:20:28 PM	77.6
8/14/2024	7:30:28 PM	77.8
8/14/2024	7:40:28 PM	77.8
8/14/2024	7:50:28 PM	78
8/14/2024	8:00:28 PM	78.5
8/14/2024	8:10:28 PM	78.5
8/14/2024	8:20:28 PM	77.6
8/14/2024	8:30:28 PM	78.3
8/14/2024	8:40:28 PM	78
8/14/2024	8:50:28 PM	78.7
8/14/2024	9:00:28 PM	78.3
8/14/2024	9:10:28 PM	78.3
8/14/2024	9:20:28 PM	75.5
8/14/2024	9:30:28 PM	75.7
8/14/2024	9:40:28 PM	75.6
8/14/2024	9:50:28 PM	75.4
8/14/2024	10:00:28 PM	76.5
8/14/2024	10:10:28 PM	75.3
8/14/2024	10:20:28 PM	75.1
8/14/2024	10:30:28 PM	75.6
8/14/2024	10:40:28 PM	75.9

DRC

PZ24-12000011  
01/15/2025



8/14/2024	10:50:28 PM	76.1
8/14/2024	11:00:28 PM	75.4
8/14/2024	11:10:28 PM	75.3
8/14/2024	11:20:28 PM	74.9
8/14/2024	11:30:28 PM	75.2
8/14/2024	11:40:28 PM	75.5
8/14/2024	11:50:28 PM	75.1
8/15/2024	12:00:28 AM	75.3
8/15/2024	12:10:28 AM	75.6
8/15/2024	12:20:28 AM	74.7
8/15/2024	12:30:28 AM	74.7
8/15/2024	12:40:28 AM	74.2
8/15/2024	12:50:28 AM	74.5
8/15/2024	1:00:28 AM	73.7
8/15/2024	1:10:28 AM	73.7
8/15/2024	1:20:28 AM	73.3
8/15/2024	1:30:28 AM	72.7
8/15/2024	1:40:28 AM	73.5
8/15/2024	1:50:28 AM	75.9
8/15/2024	2:00:28 AM	76.5
8/15/2024	2:10:28 AM	76.7
8/15/2024	2:20:28 AM	75.6
8/15/2024	2:30:28 AM	77.2
8/15/2024	2:40:28 AM	77.2
8/15/2024	2:50:28 AM	77.1
8/15/2024	3:00:28 AM	76.9
8/15/2024	3:10:28 AM	76.5
8/15/2024	3:20:28 AM	73.5
8/15/2024	3:30:28 AM	73.4
8/15/2024	3:40:28 AM	74.4
8/15/2024	3:50:28 AM	73.9
8/15/2024	4:00:28 AM	74.4
8/15/2024	4:10:28 AM	73.3
8/15/2024	4:20:28 AM	73
8/15/2024	4:30:28 AM	73.8
8/15/2024	4:40:28 AM	73.7
8/15/2024	4:50:28 AM	74.2
8/15/2024	5:00:28 AM	75.1
8/15/2024	5:10:28 AM	75.2
8/15/2024	5:20:28 AM	73.8
8/15/2024	5:30:28 AM	74.5
8/15/2024	5:40:28 AM	75.9
8/15/2024	5:50:28 AM	76
8/15/2024	6:00:28 AM	76.3

# DRC

PZ24-12000011

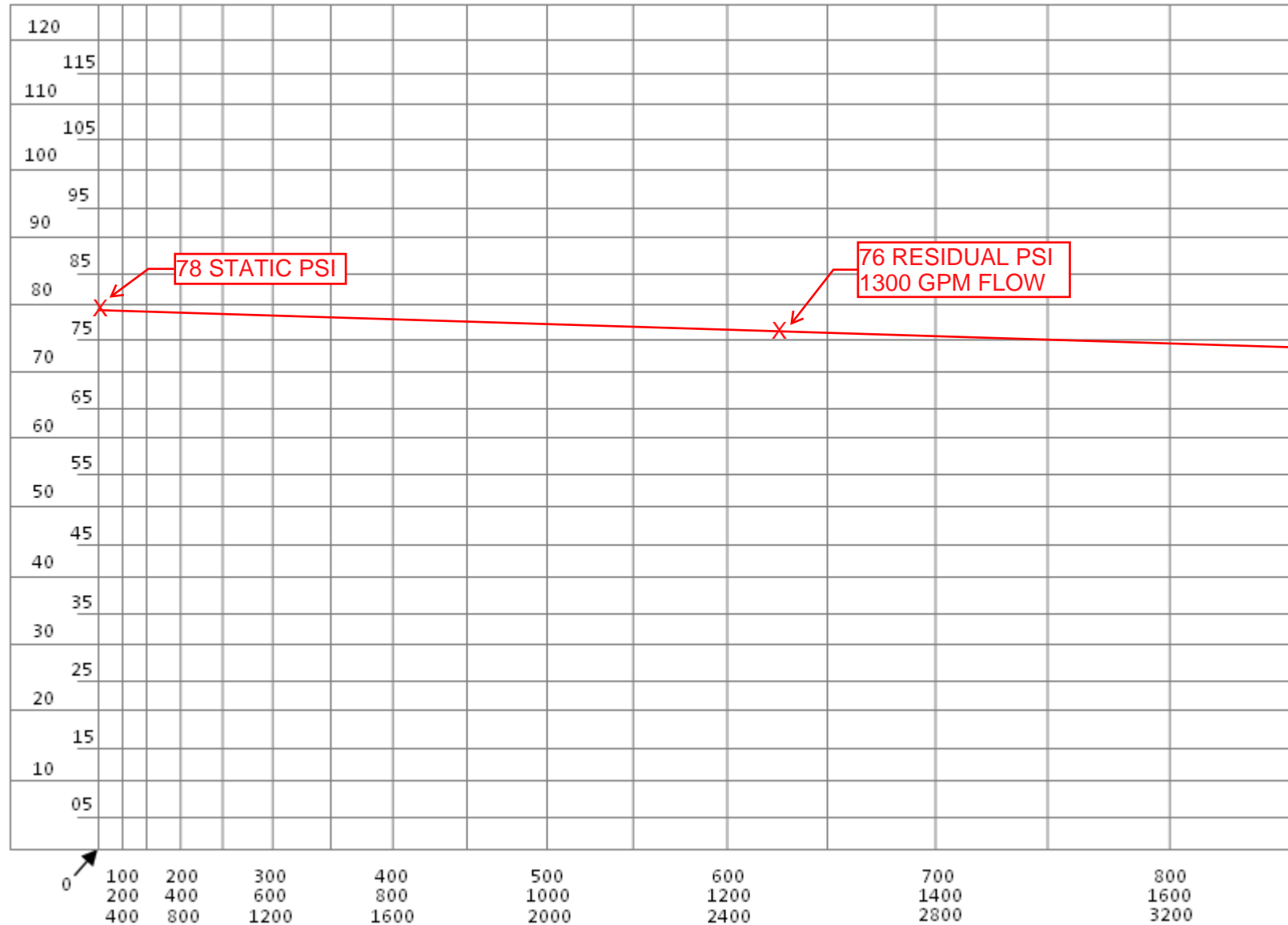
01/15/2025

8/15/2024	6:10:28 AM	76.3
8/15/2024	6:20:28 AM	75.5
8/15/2024	6:30:28 AM	76.6
8/15/2024	6:40:28 AM	77.3
8/15/2024	6:50:28 AM	77.2
8/15/2024	7:00:28 AM	77.1
8/15/2024	7:10:28 AM	76.8
8/15/2024	7:20:28 AM	77.6
8/15/2024	7:30:28 AM	77.2
8/15/2024	7:40:28 AM	78
8/15/2024	7:50:28 AM	77.8
8/15/2024	8:00:28 AM	77.5
8/15/2024	8:10:28 AM	77.9
8/15/2024	8:20:28 AM	78.5
8/15/2024	8:30:28 AM	79.9
8/15/2024 8:35		0.9
		76.73191



Date	08-15-24	Static Pressure	78		
Job Number		Residual Pressure	76		
Job Name	ATLANTIC ONE	Flow (gpm)	1300		
Job Address	200 SE 18TH AVE, POMPANO BEACH	Outlet Diameter	2.5	Coefficient	.9

PRESSURE (psi)



FLOW (gpm)

TOTAL AVAILABLE FLOW  
AT 20PSI = 8008GPM

PZ24-12000011