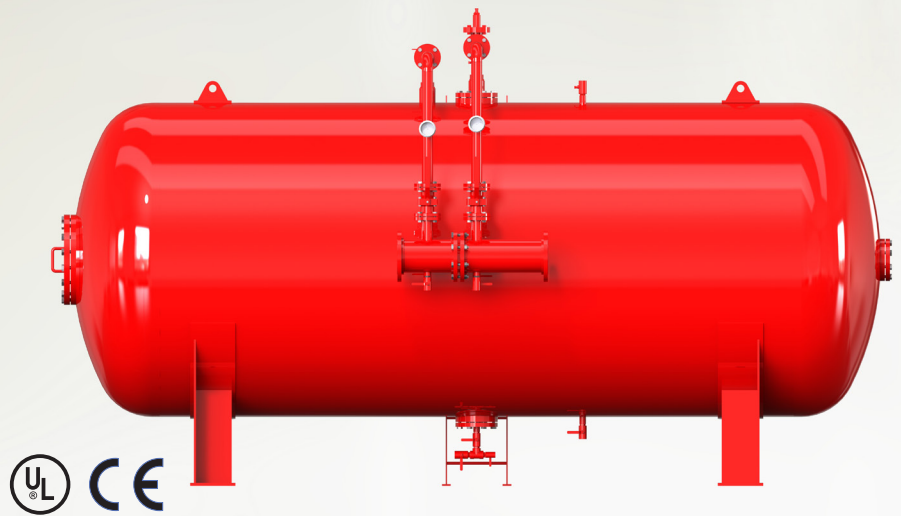


Horizontal Bladder Tank

Balanced Pressure Foam Supply Device

- Range of Capacities 200 litres - 15,000 litres
- Perfect For Low Ceiling Areas
- UL/ASME Approved
- Interior Strainers And Flow Path Devices Integral To Tank
- Compatible With All Foam Proportioners / Ratio Controllers



The Bladder Tank is an integral component of the bladder tank proportioning system, which requires no external power other than an adequate water supply. A bladder tank, with an appropriate proportioner(s), injects foam concentrate into the water supply of a fire protection system and automatically proportions over a wide range of flows and pressures.

The Angus Fire bladder tank is a steel pressure vessel fitted with an internal bladder that stores foam concentrate. During operation, water supplied to the bladder tank displaces the foam concentrate and collapses the bladder until the concentrate is depleted. The bladder tank discharges foam concentrate at approximately the same pressure as the water supplied at the water inlet connection to the tank. As the bladder tank is pressurised, the bladder cannot be refilled during operation.

Features

- Compatible with all foam concentrates
- Reliable water powered foam supply
- Supplied with ladder at 3,000 litres capacity and above
- Permanently welded lifting lugs for easy tank movement and positioning

Applications

Suitable for hazardous areas such as:

- Flammable liquid storage tanks in refineries and petrochemical units
- Chemical process plants
- Aircraft hangars
- Loading and Unloading gantries
- Oil Jetties
- Off-Shore Platforms
- Warehouses
- Foam application through spray nozzle and foam sprinklers
- Municipal applications.

Approvals and Listings

Underwriters Laboratories, Inc. (UL)
CE Marked

Technical Specifications

The bladder tank is an ASME code welded carbon steel pressure vessel with a working pressure of 175 psi (12 bar). The tank is supplied in the horizontal configuration and is mounted on two permanently attached saddle supports with holes for mounting bolts. The tank internals are coal tar epoxy coated. The tank is fitted with bladder vent and bladder drain valves, vessel vent and vessel drain valves all in chrome plated brass. A flexible, nylon reinforced nitrile rubber internal bladder separates the foam concentrate from the incoming water. The bladder is manufactured with single piece compression moulded neck flanges.

All external piping is Schedule 40, and is stainless steel for foam concentrate and carbon steel for water, all hydrotested to 18 bar and externally coated with fire-red epoxy paint. Ball valves, of the locking handle type for valve supervision, are supplied. Tank includes all necessary drain and vent valves. External surfaces of tank and piping are coated red epoxy paint to RAL 3000.

Technical Information

Materials of Construction:

Tank: Carbon steel, ASME code

Bladder: Welded Seam Nylon reinforced nitrile rubber (Buna-N)

External Piping: Water Side: Carbon Steel, Sch. 40, Screwed, Fm. Conc.

Side: stainless steel

Valves: Ball valve with locking handle.

Exterior Finish: RAL 3000 fire red

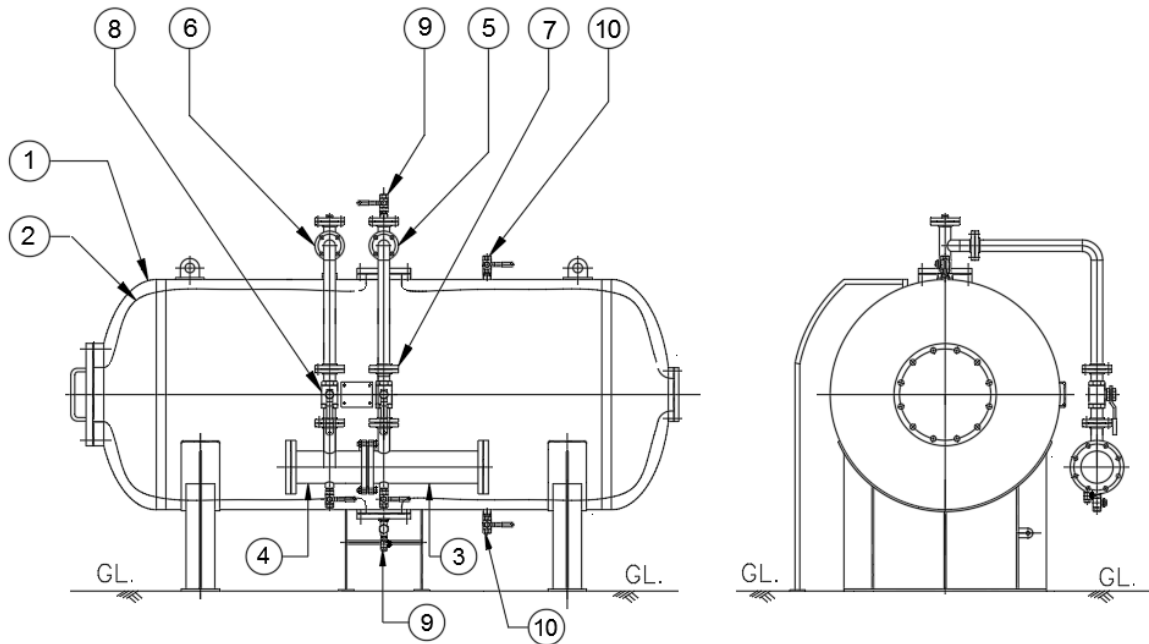
Working Pressure: 175 psi (12 bar)

Options

- Sight gauge: Tube type lever indicator
- Special finishes
- Prepiped
- Alternate discharge directions
- Option of vent and drain valves in stainless steel 316
- Pressure relief valves

Horizontal Bladder Tank

Balanced Pressure Foam Supply Device



Material of Construction

Description	Material
1 Foam Vessel	Carbon Steel
2 Foam Bladder	Nylon Reinforced Nitrile Rubber
3 Foam Proportioner	Carbon Steel with Stainless Steel Intls.
4 Spool Piece	Carbon Steel
5 Foam Piping	Stainless Steel 304
6 Water Piping	Carbon Steel
7 Foam Supply Valve	Stainless Steel 304
8 Water Charging Valve	Stainless Steel 304
9 Bladder Vent/Bladder Drain	Chrome Plated Brass
10 Vessel Vent / Vessel Drain	Chrome Plated Brass
11 Thermal Expansion Relief Valve	Copper Alloy/Stainless Steel

Notes:

1. All dimensions are approximate and may vary slightly.
2. Weights listed apply to empty tanks.
3. When designing a building to house bladder tanks, provisions must be made to allow for the removal of the internal piping and bladder. These items are the full length and height of tank.
4. End user shall supply a pressure relief valve to ensure pressure at inlet to bladder tank is not more than 12 bar.
5. For non-standard or special tanks, refer to the tank's specific outline assembly drawing for details.

Technical Data

1. Angus Horizontal Bladder Tank # (#indicates capacity of foam vessel in litres)
2. Capacity - 200 litres to 15,000 litres
3. Design code - Asme sec.VIII Div.I Latest edition (optional - Asme U Stamp)
4. Maximum Working Pressure - 12.06 Bar (175 psi)
5. Hydrostatic Test Pressure - 18.09 Bar (263 psi)
6. Finish a) Internal - Coal Tar Epoxy
b) External - Painted Epoxy Fire Red to Shade RAL 3000

Ordering Information

1. Size
2. Max working pressure
3. Flange drilling (Foam Proportioner)
4. Flow Direction - Left to Right/Right to Left
5. Optional requirement
6. Quantity

Horizontal Bladder Tank - Prepiped

Dimensional Data

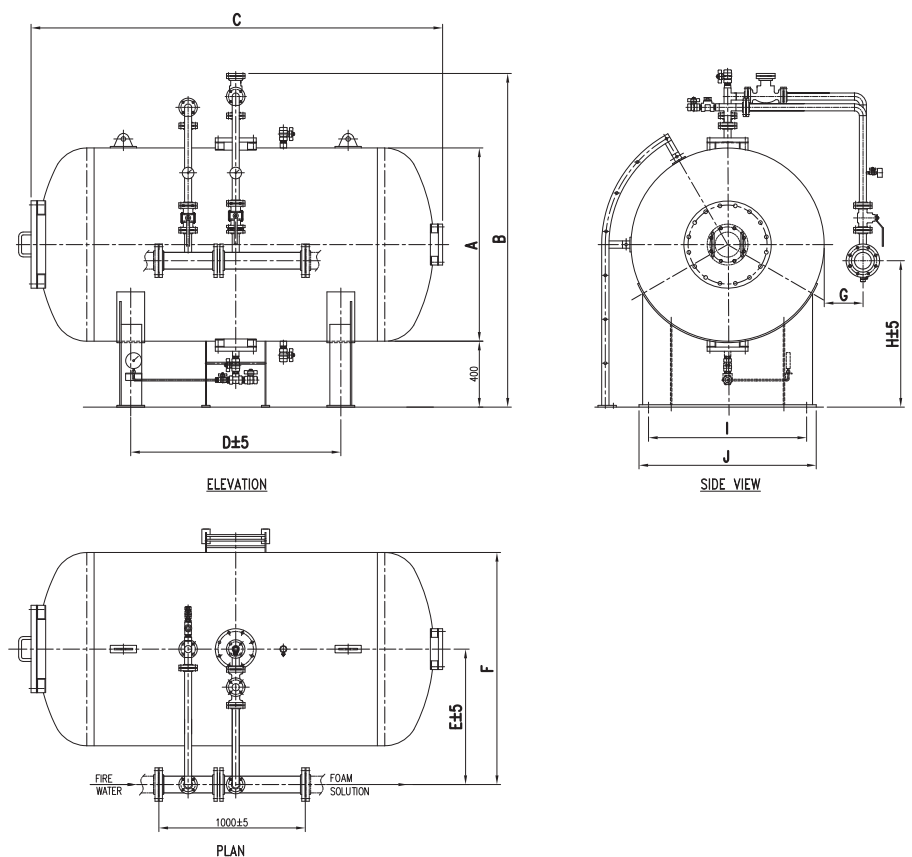
Size		A	B	C	D	Foam Proportioner															H	I	J	Empty Weight (kgs)
						50NB			80NB			100NB			150NB			200NB						
Liters	Gallons					E	F	G	E	F	G	E	F	G	E	F	G	E	F	G				
1000	264	1016	1913	1680	630	733	1241	225	743	1251	235	753	1261	245	773	1281	265	-----	-----	-----	800	830	945	870
1250	330	1016	1913	2035	905	733	1241	225	743	1251	235	753	1261	245	773	1281	265	-----	-----	-----	800	830	945	980
1500	396	1016	1913	2385	1155	733	1241	225	743	1251	235	753	1261	245	773	1281	265	-----	-----	-----	800	830	945	1050
1750	462	1120	2017	2308	1135	785	1345	225	795	1355	235	805	1365	245	825	1385	265	-----	-----	-----	800	920	1035	1250
2000	528	1120	2017	2598	1425	785	1345	225	795	1355	235	805	1365	245	825	1385	265	-----	-----	-----	800	920	1035	1340
2500	660	1320	2270	2392	1120	885	1545	225	895	1555	235	905	1565	245	925	1585	265	960	1620	300	1000	1080	1210	1695
3000	793	1320	2270	2807	1435	885	1545	225	895	1555	235	905	1565	245	925	1585	265	960	1620	300	1000	1080	1210	1840
3500	925	1320	2270	3222	1750	885	1545	225	895	1555	235	905	1565	245	925	1585	265	960	1620	300	1000	1080	1210	1980
4000	1057	1570	2520	2696	1190	1010	1795	225	1020	1805	235	1030	1815	245	1050	1835	265	1085	1870	300	1000	1285	1425	2050
4500	1189	1570	2520	2988	1430	1010	1795	225	1020	1805	235	1030	1815	245	1050	1835	265	1085	1870	300	1000	1285	1425	2170
5000	1321	1570	2520	3281	1625	1010	1795	225	1020	1805	235	1030	1815	245	1050	1835	265	1085	1870	300	1000	1285	1425	2285
5500	1453	1570	2520	3566	1760	1010	1795	225	1020	1805	235	1030	1815	245	1050	1835	265	1085	1870	300	1000	1285	1425	2380
6000	1585	1824	2775	3000	1365	1137	2049	225	1147	2059	235	1157	2069	245	1177	2089	265	1212	2124	300	1000	1500	1650	2875
7000	1849	1824	2775	3436	1700	1137	2049	225	1147	2059	235	1157	2069	245	1177	2089	265	1212	2124	300	1000	1500	1650	3120
8000	2114	1824	2775	3866	2030	1137	2049	225	1147	2059	235	1157	2069	245	1177	2089	265	1212	2124	300	1000	1500	1650	3360
9000	2378	1824	2775	4301	2365	1137	2049	225	1147	2059	235	1157	2069	245	1177	2089	265	1212	2124	300	1000	1500	1650	3605
10000	2642	1824	2775	4731	2695	1137	2049	225	1147	2059	235	1157	2069	245	1177	2089	265	1212	2124	300	1000	1500	1650	3845
11000	2906	2078	3029	4115	2250	1265	2303	225	1275	2313	235	1285	2323	245	1305	2343	265	1340	2378	300	1000	1700	1875	4620
12000	3170	2078	3029	4450	2485	1265	2303	225	1275	2313	235	1285	2323	245	1305	2343	265	1340	2378	300	1000	1700	1875	4860
13000	3435	2078	3029	4785	2720	1265	2303	225	1275	2313	235	1285	2323	245	1305	2343	265	1340	2378	300	1000	1700	1875	5105
14000	3699	2078	3029	5120	2955	1265	2303	225	1275	2313	235	1285	2323	245	1305	2343	265	1340	2378	300	1000	1700	1875	5355
15000	3963	2078	3029	5450	3185	1265	2303	225	1275	2313	235	1285	2323	245	1305	2343	265	1340	2378	300	1000	1700	1875	5590

Packing Dimensions

Size		Gross Weight (kgs)	Packing Dimensions (mm)		
			L	W	H
1000	264	1260	2000	1550	1975
1250	330	1280	2350	1550	1975
1500	396	1535	2700	1550	1975
1750	462	1715	2635	1400	2075
2000	528	1840	2925	1400	2075
2500	660	2245	2715	1600	2275
3000	793	2450	3135	1600	2275
3500	925	2650	3550	1600	2275
4000	1057	2740	3025	1850	2525
4500	1189	2905	3315	1850	2525
5000	1321	3070	3605	1850	2525
5500	1453	3210	3890	1850	2525
6000	1585	3725	3325	2100	2775
7000	1849	4050	3760	2100	2775
8000	2114	4370	4195	2100	2775
9000	2378	4695	4625	2100	2775
10000	2642	5015	5055	2100	2775
11000	2906	5810	4440	2350	3025
12000	3170	6120	4775	2350	3025
13000	3435	6430	5110	2350	3025
14000	3699	6750	5445	2350	3025
15000	3963	7050	5775	2350	3025

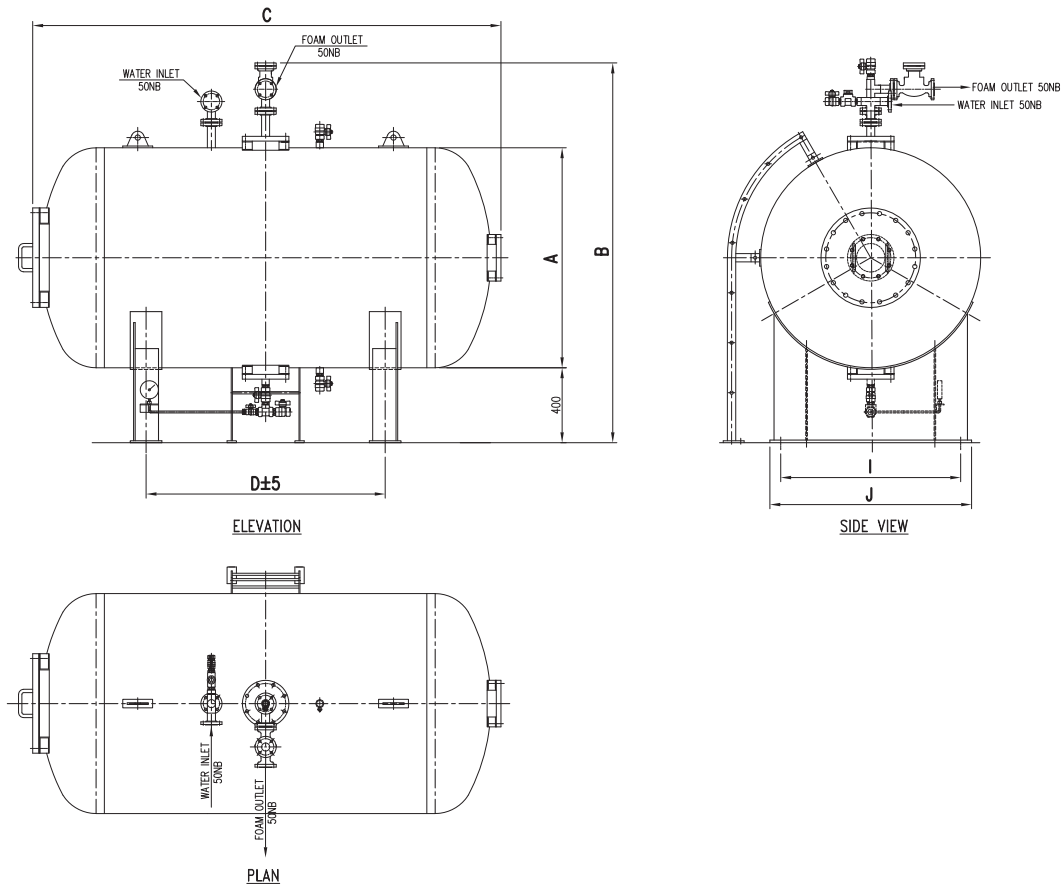
Notes:

1. All dimensions are in mm, unless otherwise specified.



Horizontal Bladder Tank - Non-Prepiped

Non-Prepiped



Dimensional Data

Size		A	B	C	D	I	J	Empty Weight (kgs)
Liters	Gallons							
1000	264	1016	1913	1680	630	830	945	735
1250	330	1016	1913	2035	905	830	945	840
1500	396	1016	1913	2385	1155	830	945	905
1750	462	1120	2017	2308	1135	920	1035	1105
2000	528	1120	2017	2598	1425	920	1035	1190
2500	660	1320	2270	2392	1120	1080	1210	1455
3000	793	1320	2270	2807	1435	1080	1210	1600
3500	925	1320	2270	3222	1750	1080	1210	1730
4000	1057	1570	2520	2696	1190	1285	1425	1810
4500	1189	1570	2520	2988	1430	1285	1425	1925
5000	1321	1570	2520	3281	1625	1285	1425	2035
5500	1453	1570	2520	3566	1760	1285	1425	2125
6000	1585	1824	2775	3000	1365	1500	1650	2630
7000	1849	1824	2775	3436	1700	1500	1650	2870
8000	2114	1824	2775	3866	2030	1500	1650	3100
9000	2378	1824	2775	4301	2365	1500	1650	3340
10000	2642	1824	2775	4731	2695	1500	1650	3575
11000	2906	2078	3029	4115	2250	1700	1875	4330
12000	3170	2078	3029	4450	2485	1700	1875	4575
13000	3435	2078	3029	4785	2720	1700	1875	4820
14000	3699	2078	3029	5120	2955	1700	1875	5070
15000	3963	2078	3029	5450	3185	1700	1875	5305

Packing Dimensions

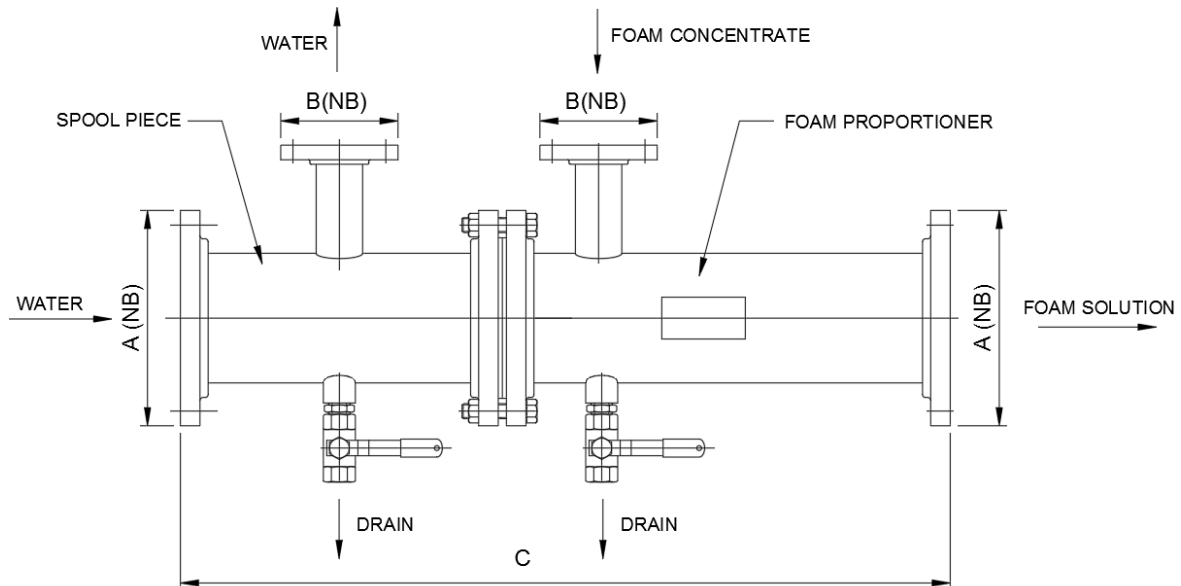
Size		Gross Weight (kgs)	Packing Dimensions (mm)		
Liters	Gallons		L	W	H
1000	264	1090	2000	1300	1975
1250	330	1240	2350	1300	1975
1500	396	1345	2700	1300	1975
1750	462	1570	2635	1400	2075
2000	528	1690	2925	1400	2075
2500	660	2005	2715	1600	2275
3000	793	2210	3135	1600	2275
3500	925	2400	3550	1600	2275
4000	1057	2500	3025	1850	2525
4500	1189	2660	3315	1850	2525
5000	1321	2820	3605	1850	2525
5500	1453	2955	3890	1850	2525
6000	1585	3480	3325	2100	2775
7000	1849	3800	3760	2100	2775
8000	2114	4110	4195	2100	2775
9000	2378	4430	4625	2100	2775
10000	2642	4745	5055	2100	2775
11000	2906	5520	4440	2350	3025
12000	3170	5835	4775	2350	3025
13000	3435	6145	5110	2350	3025
14000	3699	6465	5445	2350	3025
15000	3963	6765	5775	2350	3025

Notes:

1. All dimensions are in mm, unless otherwise specified.

Foam Proportioning Unit Bladder Type

Bladder Tank Foam Proportioner / Ratio Controller



Foam proportioner and spool piece are made of carbon steel with stainless steel internals. Optional complete stainless steel units are available. Units are fully hydrotested to 18 bar and tested for flow rates and proportioning ratios for the various flows specified below. All proportioners are internally coal tar epoxy coated and finished externally with a fire red epoxy paint. Interconnecting foam and water piping is available as an option. Please specify when ordering.

Material of Construction

Description	Material
1 Body	Carbon Steel / Stainless Steel
2 Water Nozzle	Stainless Steel
3 Foam Nozzle	Stainless Steel
4 Drain Valve	Stainless Steel

Technical Data

1. Model - AFP
2. Approval - UL Listed with AFFF 3% & AR-AFFF 3 x 3% (UL File No. EX15733)
3. Maximum Working Pressure - 12.06 Bar (175 psi)
4. Foam Proportioning Ratio - 3% with AFFF & AR-AFFF Foam Concentrate
5. Hydraulic Test Pressure - 18.09 Bar (263 psi)
6. Flange Drilling - As per ANSI B16.5 150#, RF
7. Finish - Internal - Coal Tar Epoxy
8. Finish - External - Epoxy Fire Red to Shade RAL 3000

Notes:

1. All dimensions are in mm. unless otherwise stated
2. *Flow range is nominal flow range, for flow range with specific foam concentrate.

Performance & Dimensional Data

Model Size (NB)	Nominal Flow Range lpm*	Prop. Ratio %	A (NB)	B (NB)	C
AFP-50	75 - 1000	3%	50	25	1000
AFP-80	200 - 3200	3%	80	40	1000
AFP-100	400 - 6200	3%	100	40	1000
AFP-150	1000 - 11500	3%	150	50	1000
AFP-200	3000 - 20000	3%	200	65	1000

SALES & MARKETING

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Angus Fire operates a continuous programme of product development. The right is therefore reserved to modify any specification without prior notice and Angus Fire should be contacted to ensure that the current issues of all technical data sheets are used.

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