

The Armstrong Series 1000 stainless steel humidifier

(physical data, dimensions and capacities)



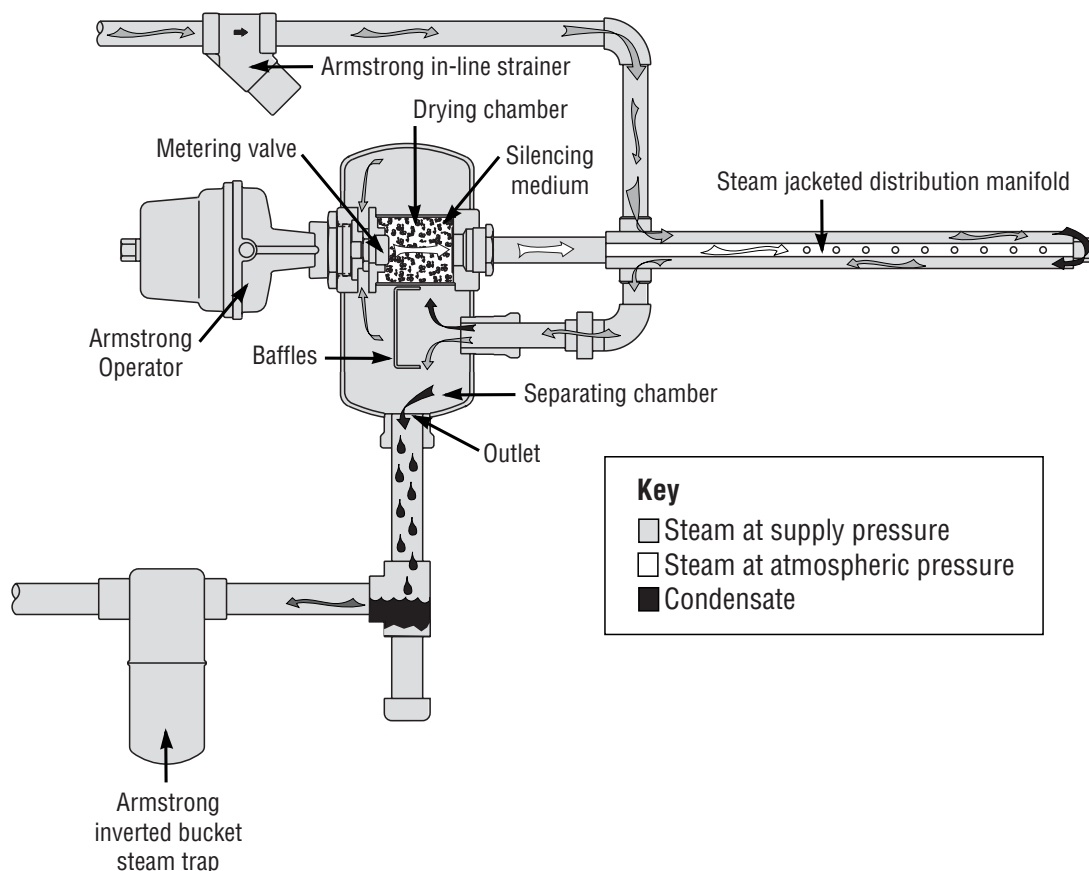
Armstrong also offers a steam separator-type humidifier for use in sensitive environments where pure demineralized, deionized or distilled water is used to generate clean steam.

All wetted parts of the humidifier package are stainless steel, so the carry-over of impurities created by this highly corrosive water is minimized. Whenever carryover of impurities is a problem in steam discharge, the Armstrong Series 1000 solves it – with precisely controlled, trouble-free steam humidification.

- **Reduced corrosion threat.** Since Armstrong uses stainless steel for all wetted parts, the Series 1000 prevents problems caused by corrosion and subsequent carry-over of corrosion by-products.
- **No condensation through radiation.** The internal plug-type metering valve is an integral part of the steam separator and is completely steam jacketed to prevent condensation through radiation. What's more, the **steam jacketed** steam distribution manifold completely surrounds the distribution pipe with steam at supply pressure, further reducing condensation due to radiation loss.

- **Effective silencing.** Thanks to a drying chamber that is jacketed by the separating chamber and filled with a stainless steel silencing medium, most of the noise of escaping steam is absorbed.
- **Dry steam discharge.** Steam entering the drying chamber is at supply temperature and essentially atmospheric pressure, so any remaining mist is re-evaporated.
- **Maximum separation.** The interior baffle **conditions** the steam by forcing it to make two 180° turns, assuring optimum velocity reduction and maximum separation.
- **Dependable inverted bucket drainage.** With only two moving parts, the reliable, energy saving inverted bucket steam trap provides reliable drainage with a design that allows failure open – important on open-end service.

For Series 1000 humidifier capacities, see Pages 55 and 56.



Humidifier Operators.

Pneumatic Modulating
Electric Modulating
Electronic Modulating

Standard Package.

All Armstrong conditioned-steam humidifiers are supplied in standard "packages" which include the following.

Pneumatically controlled (AM) models:

1. Humidifier.
2. Distribution manifold of length specified.
3. "Y" type strainer.
4. Armstrong inverted bucket trap.

Electric motor controlled (EM) models:

1. Humidifier with integral operator.
2. Distribution manifold of length specified.
3. "Y" type strainer.
4. Armstrong inverted bucket trap.

Recommended option: A pneumatic or an electric temperature switch is offered as an optional extra and is recommended in any system where the steam supply to the manifold jacket and humidifier body may be interrupted or turned off.

Table 70-1. List of Materials

Steam Chamber	T-316 CF8M Stainless Steel
Bonnet & Assembly	18-8 Stainless Steel
Valve & stem	
Valve Seat	
Manifold & Fittings	See Specifics
Operator	
Strainer	
IB Steam Trap	ASTM 351 (T-316 SS)
	T-304 Stainless Steel

Figure 72-1. Dimensions

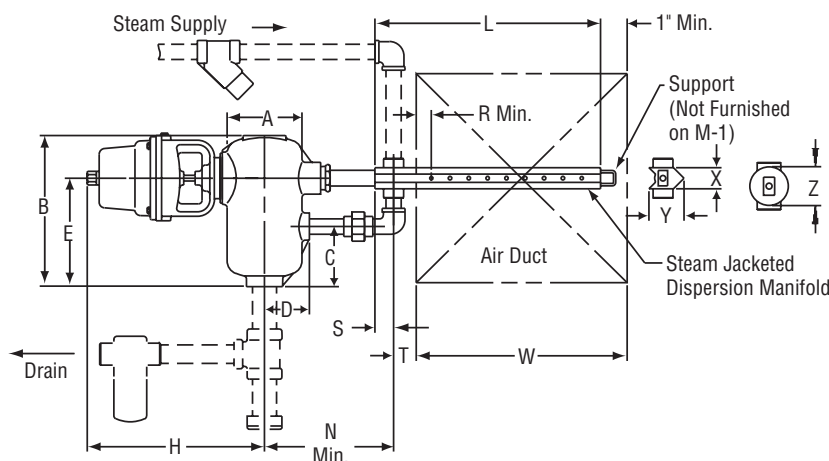


Table 70-2. Dimensions

Model No.	Dimensions, Inches											
	A	B	C	D	E	N	R	S	T	X	Y	Z
1100	4-1/8	8-5/16	3-5/16	2-15/32	6	5-11/16	2	1	1	1-1/4	1-7/8	1-13/16
1200	4-1/2	10-5/16	3-3/4	3-13/16	6-11/16	8-9/16	2	1	1	1-3/4	2-5/8	2-1/16
1300	6-5/8	16-1/4	6	5-9/16	10-5/16	9-1/16	2	1-5/8	1-5/8	2-1/8	3-1/8	—
1400	10-3/4	24-1/8	8-15/16	9-5/16	14-11/16	13-1/2	2	1-5/8	1-5/8	3-1/4	4-1/4	—

Table 70-3. Dimensions, Continued

Model No.	Connection Sizes			Drain Trap Model	Weight, lbs. † (less operator and manifold)
	Inlet	Drain	Trap		
1100	1/2" NPT	1" NPT	3/4" NPT	1811	35
1200	3/4" NPT	1" NPT	3/4" NPT	1811	30
1300	1-1/4" NPT	1-1/4" NPT	3/4" NPT	1811	32
1400	2" NPT	2" NPT	3/4" NPT	1812	80-1/4

†Weight includes drain trap, strainer and fittings.

Notes: 1. For manifold lengths and duct widths with which they may be used, see Table 71-2, Page 71.
3. All wetted parts are 300 Series stainless steel.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

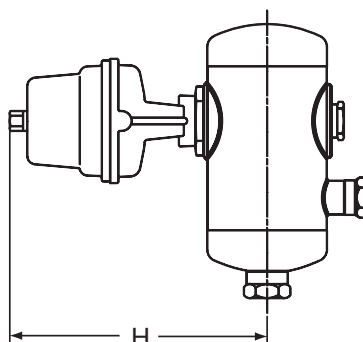


Table 71-1. Dimensions with Operators Installed

Mode of Control	Pneumatic Modulating			Electric Modulating			Electric On-Off
	Armstrong C-1801	Honeywell MP953D	Invensys MK4411 & MK4421	Honeywell M9182A	Belimo AF24SR	Belimo NVF24-MFT-US-E	ASCO
"H" - 1100	9-3/8"	8"	12-1/2"	13"	16-1/16"	14-9/16"	4-3/8"
1200	9-9/16"	8-3/16"	12-9/16"	13-3/16"	16-1/4"	14-3/4"	4-9/16"
1300	10-3/4"	9-1/4"	13-3/4"	14-1/4"	17-5/16"	15-13/16"	5-5/8"
1400	—	11-5/16"	15-3/4"	16-5/16"	19-3/8"	—	—
Weight of Operator	7-3/4 lbs.	6 lbs.	6-1/4 lbs.	12 lbs.	13 lbs.	4-1/4 lbs.	3/4 lbs.

Table 71-2. Manifold Lengths and Duct Widths with which they may be used

Manifold Model No.		M-1	M-1.5	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-10	M-11	M-12
L (Length)		12"	18"	24"	36"	48"	60"	72"	84"	96"	108"	120"	132"	144"
W-Duct Width	(Min.)	8"	15"	21"	31"	43"	53"	65"	77"	89"	101"	113"	125"	137"
	(Max.)	14"	20"	30"	42"	52"	64"	76"	88"	100"	112"	124"	136"	148"
Shipping Weight, lbs. Approx.	1100	3	4	5	6	8	10	12	14	15	17	19	21	23
	1200	4	5	6	9	11	13	16	18	21	22	25	28	30
	1300	6	8	10	13	17	21	24	29	32	37	41	43	46
	1400	Consult Factory				24	30	34	40	45	51	55	60	64

Note: Insulated manifolds are available. Consult factory.

How To Order.

- Mode of control:
pneumatic modulating—AM
electric modulating—EM
- Size of humidifier for duct installation —1100, 1200,1300 or 1400.
- Manifold length from Table 71-2.
- Specify steam pressure and capacity required in accordance with appropriate table on Pages 55 and 56.
- For electrically operated models, state electrical characteristics (control signal and power supply voltage).

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



Physical data, dimensions and capacities for Armstrong humidifiers in metric units

Table M54-1 and M72-2. Physical Data

Humidifier Model Number	Dimensions, mm						Connection Sizes			Drain Trap Model	Weight, kgs. † (less operator and manifold)
	A	B*	C	D	E	F	Inlet	Drain	Trap		
90	105	225	48	60	62	71	DN 15	DN 25	DN 15	800	6
91	115	218	86	78	154	97	DN 15	DN 25	DN 20	800	11
92	141	218	86	97	154	97	DN 20	DN 25	DN 20	800	14
93	171	302	117	121	229	121	DN 32	DN 32	DN 20	811	24
94	276	435	175	203	321	203	DN 50	DN 50	DN 20	812	66
1100	105	211	84	63	153	—	DN15	DN25	DN20	1811	14
1200	114	262	101	97	170	—	DN 20	DN 25	DN 20	1811	14
1300	168	417	152	141	262	—	DN 32	DN 32	DN 20	1811	15
1400	273	613	227	236	373	—	DN 50	DN 50	DN 20	1812	36

†Weight includes drain trap, strainer, and fittings. *Add height and weight of operator for overall data. All dimensions are in millimeters.

Table M55-1. Sizes 90, 91 and 1100, Continuous Discharge Capacities in kgs. of Steam Per Hour

Orifice Size (In)	Steam Pressure, Bar																		
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50	3.00	4.00
1/16	0.6	0.7	0.8	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2	2.5	2.9	3.5	3.8	4.5	5.6
5/64	1	1.2	1.4	1.6	1.8	2	2.1	2.3	2.4	2.5	2.7	2.8	3.0	3.8	4.8	5	5.6	6.7	8.6
3/32	1.4	1.7	1.9	2.3	2.6	2.8	3	3.3	3.5	3.7	3.9	4	4.3	5.4	6	6.5	7.8	9.6	11
7/64	1.9	2.2	2.6	3.1	3.6	4	4.1	4.5	4.6	5	5.2	5.4	6	7.2	8	8.6	9.5	12	15
1/8	2.5	3.1	3.3	4	4.5	5	5.5	5.9	6.3	6.3	6.8	7.2	8	10	11	13	14	16	20
5/32	3.6	4.5	5.1	6.3	7.2	7.7	8.6	9	9.5	10	11	12	13	14	16	18	20	24	29
3/16	5.5	6.8	7.7	10	11	12	12	13	14	15	16	17	18	22	24	27	29	35	42
7/32	7.5	10	11	13	15	16	17	18	19	20	21	22	24	28	32	35	38	44	64
1/4	10	13	14	17	19	21	22	24	25	27	28	29	31	37	41	46	52	61	77
9/32	12	15	16	20	21	23	25	26	28	29	30	32	34	40	48	52	57	68	84
5/16	15	17	19	23	25	27	29	31	33	35	37	39	42	48	56	61	67	90	114
11/32	16	20	22	25	30	33	35	37	39	41	43	44	49	58	67	78	86	104	126
3/8	19	23	25	30	32	35	37	42	44	48	50	52	57	68	77	86	96	115	143

Note: Capacities below darkened line pertain to Size 91 and 1100 only.

Table M55-2. Sizes 92 and 1200, Continuous Discharge Capacities in kgs. of Steam Per Hour

Orifice Size (In)	Steam Pressure, Bar																		
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50	3.00	4.00
1/8	2.2	3.2	3.6	4	4.5	5	5.5	6	6.8	7	8	9	10	11	12	13	14	16	20
5/32	3.6	4.5	5.5	6.3	7.3	7.7	8.6	9	9.5	10	11	12	13	14	16	18	20	24	29
3/16	5.4	6.8	8.2	9.5	10	11	12	13	14	15	16	17	18	21	24	27	29	35	42
7/32	7.2	9.5	11	13	15	16	17	18	19	20	21	22	24	28	32	38	41	47	61
1/4	10	11	15	17	19	21	22	24	25	27	28	29	31	37	41	46	52	61	77
9/32	12	16	19	22	24	26	29	30	32	34	36	37	40	47	53	59	69	80	97
5/16	15	20	23	27	30	32	35	37	39	42	44	45	49	57	65	72	85	96	118
11/32	18	24	28	32	35	38	41	44	46	49	52	54	59	69	78	87	101	114	142
3/8	24	27	29	35	38	42	45	47	52	54	56	58	63	74	83	93	103	122	151
7/16	34	38	41	45	49	53	56	60	62	65	68	72	77	89	102	114	126	157	190
1/2	40	43	45	47	51	55	60	64	68	72	76	79	88	104	121	136	151	181	220

Table M56-1. Sizes 93 and 1300, Continuous Discharge Capacities in kgs. of Steam Per Hour

Capacities when Steam Supply is Through the Manifold																			
Orifice Size (In)	Steam Pressure, Bar																		
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50	3.00	4.00
13/32	32	38	45	50	55	60	63	67	69	73	77	78	84	96	112	122	135	161	200
7/16	35	43	49	57	59	63	66	70	77	80	86	89	97	112	129	142	152	182	225
15/32	38	55	59	66	68	71	76	82	88	92	96	102	108	128	145	161	175	203	248
1/2	45	58	66	73	78	84	90	92	98	103	110	115	123	146	165	185	197	227	282
9/16	47	62	72	84	89	94	102	108	117	121	123	128	141	163	185	207	234	279	342
5/8	53	67	79	92	97	106	114	124	131	134	144	153	167	194	221	248	275	328	408
3/4	58	79	92	105	116	130	140	153	164	170	173	186	208	249	289	338	385	452	576

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Table M56-2. Sizes 93 and 1300, Continuous Discharge Capacities in kgs. of Steam Per Hour

Capacities when Steam Supply is Direct to Separator. (Manifold Trapped Separately)																	
Orifice Size (In)	Steam Pressure, Bar																
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50
13/32	32	38	45	50	55	60	63	67	69	73	77	78	84	96	112	122	135
7/16	35	43	49	57	59	63	66	70	77	80	86	89	97	112	130	142	152
15/32	38	55	59	66	68	71	76	82	88	92	96	102	108	128	145	161	175
1/2	45	58	66	73	78	84	90	92	98	103	110	115	123	146	165	185	197
9/16	47	62	72	84	89	94	102	108	117	121	123	128	141	163	185	207	234
5/8	57	73	83	95	102	112	119	129	139	142	152	162	173	209	232	261	291
3/4	62	85	100	119	122	136	152	171	186	195	210	225	238	288	336	375	422

Table M56-3. Sizes 94 and 1400, Continuous Discharge Capacities in kgs. of Steam Per Hour

Capacities when Steam Supply is Through the Manifold.																	
Orifice Size (In)	Steam Pressure, Bar																
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50
5/8	62	76	86	97	102	114	121	131	142	148	159	169	188	217	245	275	303
3/4	84	103	117	132	140	154	164	177	193	201	215	229	252	310	350	390	445
7/8	110	135	153	171	184	202	215	232	251	264	282	300	344	396	452	503	576
1	126	156	177	198	212	234	248	269	290	304	326	347	386	450	514	575	666
1-1/8	145	180	204	230	245	269	286	310	339	351	376	400	422	507	591	666	771
1-1/4	156	190	215	251	259	284	302	327	361	371	396	422	448	536	631	711	824
1-1/2	177	222	253	282	303	334	354	384	417	435	465	496	523	633	729	824	954

Table M56-4. Sizes 94 and 1400, Continuous Discharge Capacities in kgs. of Steam Per Hour

Capacities when Steam Supply is Direct to Separator. (Manifold Trapped Separately).																	
Orifice Size (In)	Steam Pressure, Bar																
	0.15	0.20	0.25	0.35	0.40	0.50	0.55	0.60	0.70	0.75	0.80	0.90	1.00	1.40	1.70	2.00	2.50
5/8	62	76	86	97	102	114	121	131	142	148	159	169	188	217	245	275	303
3/4	90	110	125	140	150	165	175	190	205	215	230	244	275	321	358	404	445
7/8	114	140	159	178	191	210	222	241	260	273	292	311	358	412	461	520	576
1	136	170	193	222	231	254	270	293	326	332	355	378	425	488	559	632	693
1-1/8	168	210	238	267	286	314	333	362	378	410	438	467	505	605	698	769	859
1-1/4	187	235	267	300	320	352	373	405	435	459	490	523	551	674	784	883	979
1-1/2	245	299	340	381	408	449	476	517	547	585	626	667	699	843	961	1096	1201

Table M51-1. Operator Spring Ranges for Pneumatically Controlled Humidifiers

Armstrong C-1801		Honeywell MP953D	
Operating Range	Adjustable Start Points	Operating Range	Non-adjustable Start Points
.34 bar	.21 bar minimum	.27 bar	.21 bar
*.69 bar	.21 bar minimum	.34 bar	.55 bar
		*.48 bar	.27 bar

*Standard spring - furnished when no spring range is specified.

STEAM DISTRIBUTION MANIFOLD DATA

Table M53-1. Dimensions with Operators Installed

Mode of Control	Pneumatic Modulating			Electric Modulating			Electric On-Off
	Armstrong C-1801	Honeywell MP953D	Invensys MK4411 & MK4421	Honeywell M9182A	Belimo AF24SR	Belimo NVF24-MFT-US-E	ASCO
"B" - 90 Size	301mm	264mm	378mm	378mm	470mm	381mm	178mm
91 Size	406mm	368mm	483mm	479mm	560mm	481mm	276mm
92 Size	406mm	368mm	483mm	479mm	576mm	481mm	276mm
93 Size	495mm	454mm	563mm	562mm	665mm	565mm	368mm
94 Size	—	622mm	—	708mm	789mm	697mm	—
"H" - 1100 Size	238mm	203mm	318mm	330mm	407mm	370mm	111mm
1200 Size	243mm	208mm	319mm	335mm	413mm	375mm	116mm
1300 Size	273mm	235mm	349mm	362mm	440mm	402mm	143mm
1400 Size	—	287mm	400mm	414mm	492mm	—	—
Weight of Operator	3.5 kgs.	2.7 kgs.	2.8 kgs.	5.4 kgs.	5.9 kgs.	2 kgs.	.3 kgs.

Table M59-1 and M67-2. Cross-Section Dimensions (Millimeters)

Model	"N"	"R"	"S"	"T"	"X"	"Y"	"Z"	Steam Supply
90	137	51	25	25	32	48	46	1/2" NPT
91	145	51	25	25	32	48	46	1/2" NPT
1100	217	150	25	25	32	48	46	1/2" NPT
92 & 1200	218	51	25	25	44	67	52	3/4" NPT
93 & 1300	230	51	41	41	54	79	—	1-1/4" NPT
94 & 1400	343	51	41	41	83	108	—	2" NPT

Table M59-2 and 67-4. Manifold Lengths and Duct Widths with which they may be used

		MV-1	MV-1.5	MV-2	MV-3	MV-4	MV-5	MV-6	MV-7	MV-8	MV-9	MV-10	MV-11	MV-12
90 Size Vertical Manifold Model No.		MH-1	MH-1.5	MH-2	MH-3	MH-4	MH-5	MH-6	MH-7	MH-8	MH-9	MH-10	MH-11	MH-12
90 Size Horizontal Manifold Model No.		M-1	M-1.5	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-10	M-11	M-12
91 thru 94 Size and 1000 Manifold Model No.		M-1	M-1.5	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-10	M-11	M-12
L (Length) (Meters)		0.30	0.45	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74	3.05	3.35	3.66
W-Duct Width	(Minimum)	0.20	0.38	0.53	0.79	1.09	1.36	1.66	1.97	2.27	2.58	2.88	3.18	3.49
	(Maximum)	0.36	0.51	0.76	1.07	1.32	1.63	1.93	2.24	2.54	2.84	3.15	3.45	3.76
Shipping Weight, Kgs. Approximate	90 Size	1.8	2.3	2.7	4.0	5.0	5.9	7.2	8.2	9.5	9.8	11.3	12.7	13.6
	91 Size	1.4	1.8	2.3	2.7	3.6	4.5	5.4	6.3	6.8	7.7	8.6	9.5	10.4
	92 Size and 1200	1.8	2.3	2.7	4.0	5.0	5.9	7.2	8.2	9.5	9.8	11.3	12.7	13.6
	93 Size	2.7	3.6	4.5	5.9	7.7	9.5	10.9	13.1	14.5	16.8	18.6	19.5	20.9
	94 Size	Consult Factory				10.9	13.6	15.4	18.1	20.4	23.1	24.9	27.2	29.0

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

ELECTRICALLY OPERATED "ON-OFF" UNIT HUMIDIFIERS

Table M61-1. Dimensions

Model No.	B	C	D	E	F	H
FSA-91	472	86	97	154	400	78
FSA-92	472	86	97	154	400	97
FSA-93	533	117	121	229	464	121

Table M61-2. Dimensions

Model No.	B	C	D	E	F
VSA-91	276	86	97	154	78
VSA-92	276	86	97	154	97
VSA-93	368	117	121	229	121

Table M61-3. Physical Data on Armstrong Electrically Operated On-Off Humidifiers

Model Number	FSA-91	VSA-91	FSA-92	VSA-92	FSA-93	VSA-93
*Coil (watts) 120V, 50/60 Hz	10	10	10	10	10	10
*Motor (watts) 120V, 50/60 Hz	6	—	6	—	6	—
Humidistat (amps at 220V)	2.2	2.2	2.2	2.2	2.2	2.2
Shipping Weight (kg.)	13	10	15	12	31	28
Steam Inlet & Strainer	DN 20	DN 20	DN 20	DN 20	DN 32	DN 32
Drain Connection	DN 25	DN 25	DN 25	DN 25	DN 32	DN 32
Drain Trap No.	800	800	800	800	811	811

Table M61-4. Capacities, Armstrong Electrically Operated On-Off Humidifiers

		FSA-91, VSA-91, DSA-91						FSA-92, VSA-92, DSA-92						FSA-93, VSA-93, DSA-93				
Orifice Size		1/16"	3/32"	1/8"	5/32"	3/16"	7/32"	7/32"	1/4"	5/16"	3/8"	7/16"	1/2"	5/16"	3/8"	7/16"	1/2"	
Continuous discharge capacities in kgs. of steam per hour at steam pressure indicated at the humidifier.	Steam Pressure Bar (ATM)	0.15	0.7	1.4	2.5	3.7	5.7	7.5	7.3	10	15	24	34	40	20	23	35	45
		0.30	0.9	2.1	3.7	5.7	8.5	12	11	17	27	32	43	46	29	39	49	66
		0.40	1.1	2.5	4.4	6.9	10	14	16	21	32	38	49	51	36	48	59	78
		0.60	1.4	3.2	5.6	8.8	13	17	18	24	37	47	59	64	40	53	66	90
		0.70	1.5	3.5	6.2	9.7	15	19	19	25	40	52	62	68	44	59	77	98
		0.80	1.6	3.8	6.6	10	16	20	20	27	42	56	68	75	48	64	86	110
		1.00	1.9	4.2	8.2	12	17	23	22	29	45	63	72	—	53	73	97	123
		1.40	2.5	5.4	10.4	14	21	28	24	31	49	73	—	—	62	84	112	—
		1.70	3.1	6.0	11.6	16	24	31	26	39	62	—	—	—	70	96	130	—
		2.00	3.4	6.5	12.7	18	27	34	38	46	72	—	—	—	79	108	—	—
		2.50	3.8	7.8	13.6	20	29	—	41	52	85	—	—	—	86	119	—	—
		2.75	4.2	8.7	14.8	22	32	—	44	57	—	—	—	—	94	129	—	—
		3.50	5.0	10.4	18.0	27	39	—	54	69	—	—	—	—	109	—	—	—
4.00	5.6	11.1	20.0	29	—	—	61	77	—	—	—	—	122	—	—	—		

*Other voltages available. Consult factory.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

AIR OPERATED UNIT HUMIDIFIERS

Table M63-1. Dimensions

Model No.	B	C	D	E	F	H
AMAF-91A	406	86	97	154	78	370
AMAF-92A	406	86	97	154	97	389
AMAF-93	486	117	121	229	121	451

Table M63-2. Dimensions

Model No.	B	C	D	E	F
AM-91A	406	86	97	154	78
AM-92A	406	86	97	154	97
AM-93A	486	117	121	229	121

Table M63-3. Physical Data, Armstrong Air-operated Humidifiers

Model Number	AM-91A	AMAF-91A	AM-92A	AMAF-92A	AM-93A	AMAF-93A
Air Pressure Max. (bar)	1.4	1.4	1.4	1.4	1.4	1.4
Air Required for Fan @ 1.4 bar	--	2 CFM	--	2 CFM	--	2 CFM
Drain Connection	DN 25	DN 25	DN 25	DN 25	DN 32	DN 32
Drain Trap No.	800	800	800	800	811	811
Shipping Weight (kg.)	15	17	17	20	28	30
Steam Inlet & Strainer	DN 20	DN 20	DN 20	DN 20	DN 32	DN 32

Table M63-4. Capacities, Armstrong Air-operated Humidifiers

		AM-91A, AMAF-91A						AM-92A, AMAF-92A					AM-93A, AMAF-93A			
Continuous discharge capacities in kgs. of steam per hour at steam pressure indicated at the humidifier.	Orifice Size	1/16"	3/32"	5/32"	7/32"	9/32"	3/8"	3/16"	1/4"	5/16"	3/8"	1/2"	13/32"	15/32"	9/16"	3/4"
	0.15	0.7	1.4	3.7	7.5	12	19	5.4	10	15	22	36	32	38	47	62
	0.30	0.9	2.1	5.7	12	17	25	8.2	15	23	34	45	45	59	72	100
	0.40	1.1	2.5	6.8	14	21	31	10	19	29	42	56	55	68	89	122
	0.60	1.4	3.2	8.8	17	25	—	12	22	35	49	65	63	76	102	—
	0.70	1.5	3.5	9.7	19	28	—	14	25	39	55	73	69	88	117	—
	0.80	1.6	3.8	10	20	29	—	16	28	44	62	82	77	96	123	—
	1.00	1.9	4.2	12	23	33	—	18	31	49	70	94	84	108	141	—
	1.40	2.5	5.4	14	28	—	—	21	37	58	82	—	96	128	—	—
	1.70	3.1	6.0	16	31	—	—	23	41	65	—	—	112	—	—	—
	2.00	3.4	6.5	18	34	—	—	26	46	72	—	—	122	—	—	—
	2.50	3.8	7.8	20	—	—	—	28	49	—	—	—	135	—	—	—
	2.75	4.2	8.7	22	—	—	—	30	53	—	—	—	—	—	—	—
	3.50	5.0	10.4	27	—	—	—	34	61	—	—	—	—	—	—	—
	4.00	5.6	11.1	29	—	—	—	38	67	—	—	—	—	—	—	—

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

STEAM SHOWER HUMIDIFIERS

Table M65-1. Physical Data and Capacities, Steam Shower Bodies and Operators

Model No.	Electrically Controlled†		Pneumatically Controlled	
	DSA-91-SM*	DSA-92-SM*	AM-91-SM*	AM-92-SM*
Shipping Wt., kg. (less manifold)	11	18	12	19
Inlet & Strainer Size	DN 15	DN 20	DN 15	DN 20
Drain Connection Size	DN 25	DN 25	DN 25	DN 25
Drain Trap No.	800	800	800	800
Trap Connection Size	DN 20	DN 20	DN 20	DN 20

*Full nomenclature includes length of manifold in feet as a suffix to the Model No.

†Specify voltage required. Various voltages available – consult factory.

Note: For larger sizes and capacities, consult factory.

Table M65-2. Manifold Lengths and Weights, Armstrong Steam Showers

Manifold Model No.	SM-1	SM-1.5	SM-2	SM-3	SM-4	SM-5	SM-6	SM-7	SM-8	SM-9	SM-10	SM-11	SM-12
L (Length) (Meters)	0.30	0.45	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74	3.05	3.35	3.66
Shipping	91 Size	1	2	2	3	4	5	5	—	—	—	—	—
Wt., Kgs.	92 Size	3	3	4	5	6	7	8	9	10	11	12	13

Table M59-3. Number of Manifolds to be Stacked for Duct Heights Exceeding 900 mm

Duct Height	No. of Manifolds
900 mm -1500 mm	2
1500 mm -2000 mm	3
2000 mm -2500 mm	4
2500 mm - Up	5 or more

If you have specific vapor trail considerations, please contact the Armstrong HVAC Application Engineering Department.

Table M59-4. Multiple Manifold Pipe Sizes and Adapter Numbers

Humidifier Size	Manifold Pipe Adapter No.	Pipe Connection Size
91	A-4967-B	DN 15
92	A-4967	DN 20
93	A-4967-L	DN 25*
94	A-5002	DN 50
1100	A-4967-5	DN15
1200	A-4967-P	DN 20
1300	A-4967-R	DN 25*
1400	A-5002-C	DN 50

*Manifold tube is 1". Jacket connections are 1-1/4".

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.