

USAIRE™ MODEL PH

PERFORMANCE DATA

PH AHRI CERTIFIED RATING POINTS



RADIATED SOUND

Power Levels @ 1.5" w.g. ΔPs

Unit Size	CFM	MinΔPs	Octave Band					
			2	3	4	5	6	7
4	150	0.03	48	41	32	28	24	20
5	250	0.06	54	46	42	34	31	30
6	400	0.10	58	53	49	44	41	36
7	550	0.06	59	53	46	41	34	31
8	700	0.09	62	56	49	44	36	32
9	900	0.02	58	57	51	43	38	33
10	1100	0.04	59	60	53	46	40	35
12	1600	0.08	60	56	54	46	41	40
14	2100	0.08	62	56	54	44	38	34
16	2800	0.08	64	62	56	50	48	44
20	4400	0.06	69	68	64	61	54	48
24	5300	0.10	73	70	66	63	59	52

DISCHARGE SOUND

Power Levels @ 1.5" w.g. ΔPs

Unit Size	CFM	MinΔPs	Octave Band					
			2	3	4	5	6	7
4	150	0.03	63	58	54	49	43	37
5	250	0.06	65	60	56	50	46	41
6	400	0.10	66	63	59	52	48	48
7	550	0.06	73	68	60	57	53	50
8	700	0.09	75	71	63	60	56	52
9	900	0.02	71	68	62	58	54	51
10	1100	0.04	72	70	64	59	56	52
12	1600	0.08	68	67	62	60	59	56
14	2100	0.08	65	60	60	62	61	58
16	2800	0.08	73	68	66	64	62	58
20	4400	0.06	80	77	76	76	70	64
24	5300	0.10	85	81	80	81	74	66

PERFORMANCE NOTES

- 1) Radiated sound is the noise transmitted through the unit casing
- 2) Discharge sound is noise emitted from unit discharge into downstream ductwork
- 3) Sound power levels expressed in decibels, (dB) re 10⁻¹² Watts
- 4) Min ΔPs is the min. operating pressure requirement of the unit with the damper full open and is the static pressure drop from the unit inlet to the unit discharge
- 5) Performance data based on laboratory tests conducted in accordance with ASHRAE 130-2016 and AHRI 880-2017
- 6) Discharge sound power levels include duct end reflection corrections per AHRI Standard 880-2017
- 7) Sound performance based on units lined with standard dual density fiberglass insulation

As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Performance Data - Series PH



MODEL PH PERFORMANCE DATA

RADIATED SOUND MODEL PH

		OCTAVE BAND SOUND POWER, Lw, dB																												
Unit Size	CFM	MinΔPs	ΔPs = 0.50 in. wg.							ΔPs = 1.0 in. wg.							ΔPs = 1.5 in. wg.							ΔPs = 3.0 in. wg.						
			2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
4	50	0.01	41	32	19	19	15	7	<15	43	34	21	21	17	9	<15	44	35	22	22	18	11	<15	45	38	25	24	23	18	<15
	100	0.02	43	34	23	22	19	13	<15	45	36	25	24	21	15	<15	46	37	26	24	22	17	20	47	40	29	27	27	24	<15
	150	0.03	46	36	29	26	21	16	<15	48	40	31	28	23	18	<15	48	41	32	28	24	20	21	50	44	35	31	29	27	<15
	200	0.04	49	41	35	29	23	18	<15	51	43	37	31	25	20	22	52	44	38	32	26	22	31	53	47	41	34	31	29	<15
	250	0.06	51	43	39	32	28	26	<15	53	45	41	34	30	28	29	54	46	42	34	31	30	35	55	49	45	37	36	37	19
5	150	0.03	46	38	29	26	21	16	<15	48	40	31	28	23	18	<15	48	41	32	28	24	20	<15	50	44	35	31	29	27	<15
	200	0.04	49	41	35	29	23	18	<15	51	43	37	31	25	20	<15	52	44	38	32	26	22	<15	53	47	41	34	31	29	<15
	250	0.06	51	43	39	32	28	26	<15	53	45	41	34	30	28	<15	54	46	42	34	31	30	15	55	49	45	37	36	37	19
	300	0.07	53	46	43	35	32	30	16	55	48	45	37	34	32	19	56	49	46	38	35	34	20	57	52	49	40	40	41	23
	350	0.09	54	48	46	38	35	33	20	56	50	48	39	37	35	22	57	51	48	40	38	37	22	58	53	51	42	42	42	25
6	200	0.04	49	41	35	29	23	18	<15	51	43	37	31	25	20	<15	52	44	38	32	26	22	<15	53	47	41	34	31	29	<15
	300	0.07	53	46	43	35	32	30	16	55	48	45	37	34	32	19	56	49	46	38	35	34	20	57	52	49	40	40	41	23
	400	0.10	55	50	46	41	38	32	20	57	52	48	43	40	34	22	58	53	49	44	41	36	23	59	56	52	46	46	43	26
	500	0.14	57	53	48	44	40	34	22	59	55	50	46	42	36	24	60	56	51	46	43	38	25	61	59	54	49	48	45	29
	600	0.15	58	54	49	45	41	35	23	60	56	51	47	43	37	25	60	57	52	47	44	39	26	61	60	55	50	49	46	30
7	350	0.03	52	41	34	26	21	19	<15	56	47	42	36	28	24	18	56	48	43	38	32	28	18	57	49	46	43	40	38	20
	450	0.04	52	42	35	29	22	19	<15	56	49	42	37	30	25	18	57	50	45	40	34	30	19	58	53	50	46	42	40	24
	550	0.06	54	44	36	32	24	20	15	58	51	42	38	30	26	20	59	53	46	41	34	31	21	60	57	52	48	42	40	26
	650	0.08	55	45	38	34	26	20	16	60	52	44	39	32	28	22	61	55	48	43	36	32	24	62	60	55	50	44	41	30
	750	0.10	56	47	41	36	28	22	18	62	54	46	40	34	29	25	63	57	50	44	37	33	26	66	62	57	52	44	42	32
8	400	0.04	52	42	34	28	22	19	<15	56	48	42	36	29	24	18	56	49	44	39	33	29	18	58	51	48	44	41	39	22
	550	0.06	54	44	36	32	24	20	15	58	51	42	38	30	26	20	59	53	46	41	34	31	21	60	57	52	48	42	40	26
	700	0.09	56	46	40	35	27	21	18	61	53	45	40	33	28	24	62	56	49	44	36	32	25	64	61	56	51	44	41	31
	850	0.11	58	49	43	38	30	24	20	63	54	47	42	36	31	26	64	58	51	45	39	34	28	68	64	58	52	46	42	35
	1000	0.13	60	52	46	42	34	27	22	65	57	50	45	39	33	29	66	60	53	48	42	36	30	70	66	60	54	47	42	37
9	500	0.01	46	45	34	28	25	21	<15	51	50	44	34	30	24	18	55	51	45	38	34	29	19	59	52	47	44	41	40	21
	700	0.01	48	47	38	32	27	22	<15	52	52	46	38	32	26	20	56	54	49	41	36	31	23	62	59	53	47	44	41	29
	900	0.02	48	48	41	35	28	23	15	54	54	48	40	34	27	22	58	57	51	43	38	33	26	64	64	58	50	46	44	35
	1100	0.04	51	50	44	38	30	24	18	55	55	49	41	35	29	24	59	60	53	46	40	35	30	65	68	61	53	48	47	39
	1300	0.06	54	54	47	41	32	26	22	58	56	50	42	36	30	25	62	61	54	47	41	37	31	68	70	62	55	50	49	41
10	700	0.01	48	47	38	32	27	22	<15	52	52	46	38	32	26	20	56	54	49	41	36	31	23	62	59	53	47	44	41	29
	900	0.02	48	48	41	35	28	23	15	54	54	48	40	34	27	22	58	57	51	43	38	33	26	64	64	58	50	46	44	35
	1100	0.04	51	50	44	38	30	24	18	55	55	49	41	35	29	24	59	60	53	46	40	35	30	65	68	61	53	48	47	39
	1300	0.06	54	54	47	41	32	26	22	58	56	50	42	36	30	25	62	61	54	47	41	37	31	68	70	62	55	50	49	41
	1500	0.08	56	56	49	42	36	20	25	61	58	51	44	38	32	28	66	62	55	48	43	39	32	72	70	63	56	50	50	41
12	800	0.02	50	42	35	28	26	29	<15	54	48	45	36	32	32	19	56	51	49	40	36	36	23	58	56	50	46	47	31	
	1200	0.04	51	46	41	34	29	30	<15	56	51	49	39	35	34	23	58	55	53	44	39	38	28	62	62	62	54	48	48	37
	1600	0.08	54	48	46	39	33	32	20	58	53	51	42	38	37	25	60	56	54	46	41	40	29	65	65	63	55	49	48	38
	2000	0.12	55	51	50	42	37	36	24	59	54	52	44	41	39	26	62	58	56	48	44	42	31	66	67	64	56	50	49	39
	2400	0.17	57	52	46	38	38	36	20	62	57	55	47	44	42	30	64	61	59	51	47	45	34	69	67	66	59	53	51	41
14	1000	0.02	53	41	39	31	27	22	<15	55	43	41	33	29	24	16	56	44	42	34	30	24	18	57	45	43	35	31	26	19
	1600	0.05	56	46	44	35	31	26	18	58	48	46	37	33	28	20	58	48	46	38	34	28	20	60	50	48	39	35	30	22
	2100	0.08	59	54	51	42	36	31	25	61	56	53	44	38	33	28	62	56	54	44	38	34	29	63	58	55	46	40	35	30
	2600	0.12	62	56	54	43	40	36	29	64	58	56	45	42	38	31	64	58	56	46	42	38	31	66	60	58	47	44	40	33
	3100	0.16	63	59	56	45	43	39	31	65	61	58	47	45	41	33	66	61	59	48	45	41	31	67	63	60	49	47	43	35
16	1400	0.02	58	50	40	34	29	24	20	58	54	45	38	34	28	22	60	56	49	44	38	34	25	62	60	56	52	47	44	31
	2100	0.05	60	52	43	38	35	31	22	60	56	48	42	38	34	25	62	60	53	47	44	40	30	66	66	62	58	55	52	37
	2800	0.08	61	54	47	42	39	35	24	62	58	51	45	42	37	28	64	62	56	50	48	44	32	69	69	65	62	61	59	40
	3500	0.11	62	56	51	46	42	38	25	64	60	54	48	44	40	30	66	64	59	54	50	47	35	71	70	67	64	63	62	42
	4200	0.14	64	60	56	50	46	42	31	66	62	56	51	48	44	32	68	65	60	55	53	49	36	72	72	68	66	64	64	44
20	2800	0.03	60	58	53	50	44	38	28	62	61	57	53	45	39	32	64	63	61	56	49	43	36	67	69	68	63	56	52	44
	3600	0.05	62	62	55	54	46	42	32	66	63	60	56	50	42	35	67	65	63	59	52	45	38	69	71	69	64	58	53	45
	4400	0.06	65	63	60	56	50	45	35	68	65	62	58	52	45	37	69	68	64	61	54	48	39	71	73	70	66	59	54	46
	5200	0.08	67	66	61	59	54	48	37	72	68	65	61	57	49	40	73													

USAIRE™ MODEL PH

PERFORMANCE DATA

DISCHARGE SOUND MODEL PH

		OCTAVE BAND SOUND POWER, Lw, dB																												
Unit Size	CFM	MinΔPs	ΔPs = 0.50 in. wg.							ΔPs = 1.0 in. wg.							ΔPs = 1.5 in. wg.							ΔPs = 3.0 in. wg.						
			2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
4	50	0.01	59	47	39	35	29	22	<15	60	55	50	47	39	31	<15	61	56	51	48	40	32	16	64	59	52	51	43	35	20
	100	0.02	60	49	39	34	30	26	<15	61	56	52	47	40	34	16	62	57	53	48	41	35	18	65	60	54	51	44	38	21
	150	0.03	61	51	42	37	32	27	16	62	57	53	48	42	36	18	63	58	54	49	43	37	19	66	61	55	52	46	40	22
	200	0.04	62	52	45	40	34	28	18	63	58	53	49	44	37	19	64	59	54	50	45	38	20	67	62	55	53	48	41	24
	250	0.06	63	54	47	42	36	32	19	64	59	55	49	45	40	20	65	60	56	50	46	41	21	68	63	59	53	49	44	25
5	150	0.03	61	51	42	37	32	27	16	62	57	53	48	42	36	18	63	58	54	49	43	37	19	66	61	55	52	46	40	22
	200	0.04	62	52	45	40	34	28	18	63	58	53	49	44	37	19	64	59	54	50	45	38	20	67	62	55	53	48	41	24
	250	0.06	63	54	47	42	36	32	19	64	59	55	49	45	40	20	65	60	56	50	46	41	21	68	63	59	53	49	44	25
	300	0.07	64	56	51	45	38	34	16	64	61	57	50	46	43	19	65	62	58	51	47	44	20	68	65	61	54	50	47	24
350	0.09	63	57	52	46	40	37	15	63	61	58	50	47	44	19	64	62	58	51	48	45	20	67	64	61	53	50	48	22	
6	200	0.04	62	52	45	40	34	28	18	63	58	53	49	44	37	19	64	59	54	50	45	38	20	67	62	55	53	48	41	24
	300	0.07	64	56	51	45	38	34	16	64	61	57	50	46	43	19	65	62	58	51	47	44	20	68	65	61	54	50	47	24
	400	0.10	65	60	55	49	42	40	20	65	62	58	51	47	47	20	66	63	59	52	48	48	21	69	67	62	55	51	51	26
	500	0.14	68	64	59	54	48	45	22	68	66	62	56	52	50	25	69	67	63	57	53	51	26	72	70	66	60	56	54	30
600	0.15	68	66	60	56	50	47	25	68	67	63	58	54	50	26	70	68	64	59	54	52	28	72	71	67	62	57	54	31	
7	350	0.03	65	58	49	44	39	34	18	69	65	58	54	50	46	24	69	65	58	54	50	48	24	70	66	58	54	52	25	
	450	0.04	66	60	51	47	40	36	19	71	66	60	55	51	46	25	71	66	60	56	52	50	25	72	68	60	58	54	54	28
	550	0.06	68	62	53	50	42	38	21	72	68	60	57	52	48	28	73	68	60	57	53	50	28	74	69	60	56	55	29	
	650	0.08	70	64	55	52	44	40	24	74	70	62	59	54	49	30	74	70	62	59	55	52	30	76	72	62	61	58	56	32
750	0.10	72	66	57	55	46	42	24	75	70	64	60	54	50	29	76	72	64	61	56	53	31	78	74	64	63	60	58	34	
8	400	0.04	66	59	50	46	40	35	19	70	66	59	54	50	46	25	70	66	59	55	51	49	25	71	67	59	54	53	26	
	550	0.06	68	62	53	50	42	38	21	72	68	60	57	52	48	28	73	68	60	57	53	50	28	74	69	60	56	55	29	
	700	0.09	71	65	56	54	45	40	22	74	70	63	60	54	50	29	75	71	63	60	56	52	30	77	73	64	62	59	32	
	850	0.11	73	67	59	57	48	44	25	77	72	65	62	56	51	31	78	73	65	63	58	55	32	80	75	66	62	60	35	
1000	0.13	75	70	62	60	52	47	29	79	74	67	65	58	53	34	80	75	68	66	60	56	35	82	77	69	70	65	37		
9	500	0.01	60	58	48	45	36	34	15	65	64	56	53	48	44	22	66	64	58	54	49	46	22	68	66	60	58	54	25	
	700	0.01	64	60	52	48	40	38	16	68	66	59	55	50	47	24	69	67	61	56	51	49	25	71	69	64	60	56	53	28
	900	0.02	66	62	54	50	41	40	19	70	68	61	57	53	50	26	71	68	62	58	54	51	26	73	70	66	61	57	54	29
	1100	0.04	68	64	57	53	45	43	21	72	69	63	58	55	52	28	72	70	64	59	56	52	29	74	72	68	62	59	55	31
1300	0.06	70	68	60	57	50	48	26	74	72	66	62	56	54	31	75	72	67	62	58	54	31	78	74	70	64	62	59	34	
10	700	0.01	64	60	52	48	40	38	16	68	66	59	55	50	47	24	69	67	61	56	51	49	25	71	69	64	60	56	53	28
	900	0.02	66	62	54	50	41	40	19	70	68	61	57	53	50	26	71	68	62	58	54	51	26	73	70	66	61	57	54	29
	1100	0.04	68	64	57	53	45	43	21	72	69	63	58	55	52	28	72	70	64	59	56	52	29	74	72	68	62	59	55	31
	1300	0.06	70	68	60	57	50	48	26	74	72	66	62	56	54	31	75	72	67	62	58	54	31	78	74	70	64	62	59	34
1500	0.08	73	71	62	60	54	52	30	77	75	68	66	60	56	35	77	75	68	66	60	57	35	80	78	72	68	64	61	38	
12	800	0.02	57	55	52	50	46	40	<15	62	59	54	53	51	48	15	63	59	54	54	51	49	15	66	61	55	56	53	21	
	1200	0.04	60	58	57	53	48	43	<15	64	63	59	56	54	51	20	65	64	58	56	55	52	21	68	66	60	59	58	24	
	1600	0.08	62	60	59	55	51	46	16	67	66	62	59	58	55	24	68	67	62	60	59	56	25	71	70	65	63	62	30	
	2000	0.12	64	61	59	56	52	48	18	70	68	64	62	61	59	26	72	70	66	64	63	62	29	76	74	69	68	67	34	
2400	0.17	65	62	61	57	53	49	19	72	70	66	64	63	61	29	74	72	67	66	65	63	31	78	76	71	70	70	68	36	
14	1000	0.02	46	39	39	37	31	24	<15	57	52	51	51	48	43	<15	61	56	55	56	53	48	<15	68	64	62	63	61	57	21
	1600	0.05	49	43	43	42	37	32	<15	60	55	54	55	52	48	<15	64	59	58	59	56	53	17	70	66	65	66	64	61	25
	2100	0.08	53	48	49	48	44	41	<15	62	57	57	58	57	54	18	65	60	60	62	61	58	22	71	67	66	68	65	28	
	2600	0.12	58	52	52	51	48	47	<15	65	59	59	60	59	57	21	68	62	62	63	62	60	24	73	68	67	69	67	30	
3100	0.16	63	56	53	53	51	53	17	67	61	60	61	60	59	23	69	64	62	64	64	62	26	74	69	68	70	70	68	31	
16	1400	0.02	52	47	44	40	35	20	<15	64	58	55	52	50	46	<15	66	62	58	56	55	52	19	72	66	64	62	62	58	24
	2100	0.05	58	52	50	48	42	38	<15	66	62	60	56	54	51	19	69	64	62	60	58	55	21	74	69	66	65	64	61	28
	2800	0.08	64	58	58	55	49	44	<15	71	66	64	61	59	55	24	73	68	66	64	62	58	26	77	72	69	68	64	31	
	3500	0.11	68	62	63	60	54	49	19	74	68	66	64	62	58	26	76	70	68	66	66	61	29	79	74	71	70	70	66	34
4200	0.14	72	66	66	64	56	52	24	76	70	68	66	64	60	29	77	71	69	68	66	63	30	80	74	72	72	71	68	34	
20	2800	0.03	67	65	62	58	55	49	22	70	68	65	63	60	57	26	72	70	67	66	63	60	29	76	73	71	70	67	65	32
	3600	0.05	72	69	67	65	59	53	28	75	72	70	69	64	59	31	77	74	72	72	67	62	34	80	77	76	76	71	66	37
	4400	0.06	76	73	71	69	63	55	32	78	75	74	73	67	61	35	80	77	76	76	70	64	37	84	80	79	80	74	68	40
	5200	0.08	79	76	75	73	66	57	36	82	79	78	78	71	63	39	85	81	80	81	73	66	41	88	84	83	84	77	70	45
6000	0.10	82	78	77	78	68	58	38	85																					



MODEL PH PERFORMANCE DATA

PH STANDARD CONSTRUCTION CASING AND DAMPER LEAKAGE

Standard Construction				
Inlet Diameter	Static Pressure " w.g.	Maximum Airflow	Max Casing Leakage	Max Damper Leakage
4	3	300	5	5
5	3	375	5	5
6	3	540	5	5
7	3	760	7	7
8	3	990	9	9
9	3	1250	12	12
10	3	1640	16	16
12	3	2350	22	22
14	3	3250	32	32
16	3	4100	41	41
20	3	6430	64	64
24	3	7270	72	72

PERFORMANCE NOTES

- 1) Leakage testing conducted in accordance with ASHRAE 130-2016
- 2) Per ASHRAE Standard 130-2016 "terminal casing leakage: the amount of the air in ft 3/min (L/s) leaking from the terminal unit at a given inlet pressure with the outlet(s) and inlet(s) blocked and with the damper/valve fully opened"
- 3) Per ASHRAE Standard 130-2016 "terminal damper leakage: the amount of air in ft 3/min (L/s) leaking through a fully closed damper/valve of a supply/exhaust terminal unit at a given inlet pressure"opened"
- 4) Casing and Damper leakage shall not exceed 1% of the maximum rated airflow at 3" w.g.
- 5) 4" and 5" inlets are built with 6" casings

PH RECOMMENDED MIN/MAX AIRFLOW RANGES

Unit Size	Pneumatic / Analog		Digital Controls - DDC			
			Transducer Min ΔP / Min CFM		Transducer Max ΔP / Max CFM	
	Min CFM	Max CFM	0.01	0.03	1	1.5
4	50	300	30	50	300	370
5	65	375	40	65	375	460
6	95	540	55	95	540	660
7	130	760	75	130	760	930
8	170	990	100	170	990	1210
9	220	1250	125	220	1250	1530
10	285	1640	165	285	1640	2010
12	410	2350	235	410	2350	2880
14	565	3250	325	565	3250	3980
16	710	4100	410	710	4100	5020
20	1115	6430	645	1115	6430	7870
24	1260	7270	725	1260	7270	8900

PERFORMANCE NOTES

- 1) Actual minimum and maximum airflow ranges depend on the transducer differential pressure range and accuracy.
- 2) Contact the manufacturer of installed DDC equipment for transducer minimum and maximum differential pressure, ΔP, limits.
- 3) Minimum CFM for Pneumatic and Analog controls are based on a sensor differential pressure of 0.03 in. w.g.
- 4) Maximum CFM for Pneumatic and Analog controls are based on a sensor differential pressure of 1.00 in. w.g.
- 5) $CFM = (\sqrt{\Delta P}) * K$ Factor
- 6) K Factor is the airflow at 1" ΔP
- 7) Recommendations are for pressure independent units.
- 8) Pressure dependent units minimum CFM is always zero and there is no maximum.

As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Performance Data - Series PH