

**ARR**

Discharge and Radiated (NC) Noise Criteria

Inlet Size (Inches)	CFM	Minimum Pressure Drop (Damper Full Open)
		Basic Unit
5	75	.05
	100	.06
	200	.11
	300	.15
	350	.17
6	110	.01
	200	.04
	300	.08
	400	.14
	500	.22
7	140	.01
	200	.02
	400	.08
	600	.18
	700	.25
8	185	.01
	400	.04
	600	.08
	800	.14
	1000	.21
10	300	.01
	500	.02
	800	.04
	1200	.09
	1500	.14
12	430	.01
	800	.03
	1200	.05
	1800	.09
	2300	.12
14	600	.00
	1000	.01
	1600	.02
	2400	.08
	3100	.13
16	780	.00
	1600	.02
	2400	.04
	3600	.08
	4200	.10

Min. $\Delta P_s$ (Damper Full Open)		1.0" $\Delta P_s$		1.5" $\Delta P_s$		3.0" $\Delta P_s$	
Discharge NC	Rad. NC	Discharge NC	Rad. NC	Discharge NC	Rad. NC	Discharge NC	Rad. NC
Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
—	—	—	11	11	13	19	16
—	—	—	13	12	15	20	19
—	—	15	19	18	21	23	24
—	—	19	24	22	24	27	27
—	10	22	27	24	28	29	30
—	—	—	—	—	—	16	12
—	—	12	12	15	13	20	18
—	—	17	18	19	19	25	22
—	—	21	23	24	24	29	27
—	11	24	27	27	28	33	32
—	—	—	—	—	10	16	14
—	—	10	10	12	13	19	16
—	—	18	19	22	22	28	24
—	12	24	27	28	30	34	32
—	15	27	31	30	32	35	36
—	—	—	—	—	—	14	12
—	—	11	11	15	14	21	19
—	—	17	20	19	22	24	26
—	11	19	27	22	28	27	31
—	15	22	31	25	33	30	36
—	—	—	—	13	10	20	14
—	—	12	12	16	14	23	19
—	—	15	15	19	19	26	22
—	13	19	23	23	24	28	28
—	18	22	27	25	30	30	32
—	—	—	14	13	16	19	22
—	—	13	18	16	21	23	25
—	11	15	20	19	23	25	28
—	21	18	26	21	27	28	31
—	26	20	30	23	31	29	35
—	—	11	12	16	14	23	19
—	—	14	15	18	19	25	23
—	10	17	20	21	22	28	26
—	20	21	23	23	26	30	30
—	26	23	27	27	30	31	33
—	—	—	16	13	19	19	24
—	—	15	21	17	23	24	28
—	15	19	23	22	25	28	31
10	26	23	26	27	28	33	33
15	31	25	28	29	30	34	35

- NOTES:**
1.  $\Delta P_s$  static pressure difference from inlet to discharge.
  2.  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with the primary damper in wide open position.
  3.  $\Delta P_t$  is the total pressure difference from inlet to discharge.
  4. Dash (—) indicates NC level less than 10.

NC levels are derived from tests conducted in accordance with AHRI Standard 880-2008 and are calculated in accordance with AHRI Standard 885-2008 as application data based on the following:

- Discharge NC levels are based on —
- a) 5 foot rectangular duct lined with 1" fiberglass insulation.
  - b) 5 foot lined flex duct (8" diameter).
  - c) Flow division.
  - d) Space effect factor (2400 ft<sup>3</sup>) at 5 feet from outlet.
  - e) End reflection.
  - f) Environmental adjustment factor.

- Radiated NC levels are based on—
- a) Plenum / ceiling effect - 5/8" mineral fiber tile, 35 lb / ft<sup>3</sup> - 3 foot plenum.
  - b) Environmental adjustment factor.

NC is not part of the AHRI 880 Certification Program.

**Sound Data (Sound Power by Octave Band)**

**Discharge Sound Power**

Inlet Size (Inches)	CFM	Minimum $\Delta P_s$							1.0" $\Delta P_s$							1.5" $\Delta P_s$							3.0" $\Delta P_s$							
		$\Delta P_s$	Sound Power (db) by Octave Band							Sound Power (db) by Octave Band							Sound Power (db) by Octave Band							Sound Power (db) by Octave Band						
			(2)	(3)	(4)	(5)	(6)	(7)	(7)	(2)	(3)	(4)	(5)	(6)	(7)	(7)	(2)	(3)	(4)	(5)	(6)	(7)	(7)	(2)	(3)	(4)	(5)	(6)	(7)	(7)
5	75	.05	37	23	19	19	18	18	46	46	47	49	45	43	48	48	49	52	49	48	51	52	53	58	56	56	56			
	100	.06	38	28	24	23	22	20	50	50	49	50	47	44	52	52	51	53	51	49	55	55	55	59	58	57	57			
	200	.11	43	38	35	32	32	26	60	57	54	54	50	47	61	60	57	57	54	52	64	63	61	63	61	60	60			
	300	.20	45	44	42	37	38	30	65	62	57	56	52	49	67	64	60	60	56	54	70	68	64	65	63	62	62			
	350	.26	46	46	45	39	40	31	67	64	59	57	53	49	69	66	61	60	57	54	72	70	65	66	64	63	63			
6	110	.02	35	22	15	13	12	14	48	48	48	49	45	41	50	50	51	53	49	45	54	54	56	58	56	53	53			
	200	.06	39	33	28	25	25	22	56	55	53	53	50	46	58	57	56	56	54	50	62	61	60	62	60	57	57			
	300	.10	43	40	36	33	34	28	61	60	56	56	53	49	63	62	59	59	57	53	67	66	63	65	63	61	61			
	400	.16	45	45	43	38	40	32	65	63	58	58	55	51	67	66	61	61	59	55	71	70	65	67	65	63	63			
	500	.23	47	49	47	43	45	35	68	66	60	59	57	53	70	68	62	62	60	57	74	73	67	68	67	65	65			
7	140	.01	36	20	13	13	—	12	48	48	48	49	46	42	50	51	51	52	50	46	55	56	57	57	56	53	53			
	200	.02	39	26	20	20	17	17	53	53	51	52	49	45	55	55	54	55	52	49	60	60	59	60	58	56	56			
	400	.08	43	39	36	34	33	29	62	61	57	57	53	49	65	64	60	60	57	53	69	69	65	65	63	60	60			
	600	.18	46	47	45	42	42	36	68	66	60	60	56	52	70	69	63	62	60	56	75	74	68	67	66	63	63			
	700	.25	47	50	48	45	46	38	70	68	61	61	57	53	72	71	64	64	61	57	77	75	70	68	67	64	64			
8	185	.01	34	17	11	11	—	12	45	47	48	47	44	40	46	49	51	50	47	44	49	53	56	55	53	51	51			
	400	.04	42	33	29	28	27	25	57	55	53	53	50	46	59	58	56	56	54	50	62	62	61	61	59	57	57			
	600	.08	46	42	38	37	36	31	63	60	56	56	53	50	65	62	59	59	57	54	68	66	64	64	63	60	60			
	800	.14	49	48	45	43	43	36	68	63	58	59	56	52	70	65	61	62	59	56	73	69	66	67	65	63	63			
	1000	.21	52	52	50	48	48	39	71	65	60	60	58	54	73	68	63	63	61	58	76	72	68	68	67	65	65			
10	300	.01	37	21	13	13	11	13	47	50	49	48	48	45	49	52	52	51	51	49	53	56	57	57	57	56	56			
	500	.02	40	29	24	24	22	20	55	55	54	51	51	48	57	57	56	54	55	52	60	61	61	60	60	59	59			
	800	.04	43	37	34	35	32	28	61	59	57	54	54	50	63	62	60	57	58	55	67	66	65	63	63	62	62			
	1200	.09	45	44	43	44	41	34	67	63	61	57	57	53	69	66	64	60	60	57	72	70	68	66	66	64	64			
	1500	.14	47	48	48	49	46	37	70	65	63	58	58	54	72	68	65	62	62	58	76	72	70	67	67	65	65			
12	430	.01	38	19	14	15	14	14	49	47	49	49	48	45	50	50	52	52	52	49	54	54	56	58	57	55	55			
	800	.03	42	29	27	29	25	22	57	53	54	53	52	49	59	56	57	56	56	52	62	60	61	62	61	59	59			
	1200	.05	45	36	36	38	33	26	62	57	57	55	55	51	64	60	60	58	58	55	67	64	65	64	64	61	61			
	1800	.09	48	43	45	47	40	31	67	61	61	57	58	54	69	64	63	61	61	57	73	68	68	67	67	64	64			
	2300	.12	49	47	50	53	45	34	70	63	63	59	59	55	72	66	65	62	63	59	76	70	70	68	68	65	65			
14	600	.01	32	21	14	16	12	13	49	50	48	45	49	47	51	53	51	49	53	52	55	58	56	55	59	59	59			
	1000	.02	38	30	27	27	24	21	55	55	53	50	52	50	57	58	56	54	56	54	61	63	61	60	62	61	61			
	1600	.04	44	39	39	38	34	29	60	60	57	55	55	53	63	62	60	59	58	57	67	67	65	65	65	64	64			
	2400	.08	48	46	49	47	43	36	65	64	61	59	57	55	67	66	64	63	61	59	71	71	69	69	67	66	66			
	3100	.13	51	50	55	53	49	40	68	66	63	61	59	56	70	69	66	65	62	60	74	73	71	72	68	67	67			
16	780	.00	35	24	16	17	16	14	50	52	48	50	50	45	53	55	51	53	49	57	59	55	58	60	55	55				
	1600	.02	44	38	36	33	31	25	59	59	55	55	54	50	61	61	57	58	58	53	65	66	62	63	64	60	60			
	2400	.04	50	45	47	43	39	32	63	63	59	58	56	52	66	65	61	61	60	56	70	70	66	66	66	63	63			
	3600	.08	55	53	58	52	47	38	68	66	63	61	59	55	70	69	65	64	63	59	75	74	70	69	69	65	65			
	4200	.10	57	56	63	55	50	41	70	68	64	62	60	56	72	71	67	65	64	60	76	75	71	70	70	66	66			

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2.  $\Delta P_s$  static pressure difference from inlet to discharge.
  3.  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.

**Sound Data (Sound Power by Octave Band)**

**Radiated Sound Power**

Inlet Size (Inches)	CFM	Minimum $\Delta P_s$							1.0" $\Delta P_s$							1.5" $\Delta P_s$							3.0" $\Delta P_s$							
		$\Delta P_s$	Sound Power (db) by Octave Band							Sound Power (db) by Octave Band							Sound Power (db) by Octave Band							Sound Power (db) by Octave Band						
			(2)	(3)	(4)	(5)	(6)	(7)	(2)	(3)	(4)	(5)	(6)	(7)	(2)	(3)	(4)	(5)	(6)	(7)	(2)	(3)	(4)	(5)	(6)	(7)				
5	75	.05	22	29	24	16	15	17	42	35	38	34	32	26	42	37	40	37	36	31	44	40	43	42	43	40				
	100	.06	27	31	26	19	16	17	46	39	40	36	33	27	47	40	42	39	37	32	48	43	45	44	44	41				
	200	.11	40	36	32	25	18	17	56	46	45	40	35	29	57	48	47	43	39	34	58	51	50	48	47	43				
	300	.20	48	40	35	28	20	18	62	51	48	43	36	30	62	52	50	46	41	35	64	55	52	51	48	44				
	350	.26	51	41	36	29	20	18	64	52	49	44	37	31	65	54	51	47	41	36	66	57	54	51	49	44				
6	110	.02	38	23	15	13	13	17	42	34	34	28	27	24	43	36	35	31	32	28	45	40	39	35	39	36				
	200	.06	39	31	24	21	17	17	51	42	39	33	31	26	52	44	40	36	35	31	54	48	44	40	42	39				
	300	.10	40	35	30	26	20	18	57	47	42	37	33	28	58	50	44	39	37	32	60	54	47	43	44	40				
	400	.16	41	39	34	30	22	18	61	51	44	39	34	29	62	54	46	42	38	34	64	57	50	46	46	42				
	500	.23	41	41	38	33	23	18	64	54	46	41	35	30	65	57	48	43	40	34	68	60	51	48	47	43				
7	140	.01	33	17	11	—	11	16	42	35	35	30	28	25	43	37	37	32	32	30	46	42	41	37	39	38				
	200	.02	36	22	18	15	14	17	48	40	37	32	30	26	49	42	40	35	34	31	51	47	43	39	41	39				
	400	.08	41	33	31	27	21	18	58	49	42	37	33	29	60	52	45	39	37	33	62	56	48	44	44	41				
	600	.18	44	39	39	33	24	19	64	54	45	39	35	30	66	57	48	42	39	35	68	62	51	46	46	42				
	700	.25	45	41	42	36	26	20	67	56	46	40	36	30	68	59	49	43	40	35	71	64	53	47	47	43				
8	185	.01	39	24	13	10	10	15	44	36	34	30	30	29	46	39	36	33	34	33	49	43	41	38	41	41				
	400	.04	44	33	26	22	19	19	53	43	38	34	33	30	54	45	41	37	37	35	57	49	45	42	44	43				
	600	.08	47	37	33	29	24	20	57	46	40	36	34	31	59	48	43	39	39	36	62	53	47	44	46	44				
	800	.14	48	40	38	33	27	22	60	48	42	37	35	32	62	51	44	40	40	36	65	55	49	45	47	45				
	1000	.21	50	43	42	37	30	23	63	50	43	39	36	32	64	52	45	41	40	37	67	57	50	47	47	45				
10	300	.01	33	21	13	12	11	15	41	36	35	33	31	29	43	38	37	36	35	33	46	41	41	41	41	40				
	500	.02	38	27	23	19	17	18	48	41	39	37	35	32	50	43	41	40	39	36	53	46	45	45	45	43				
	800	.04	42	32	32	26	22	20	55	46	42	39	38	34	57	48	45	42	42	38	60	51	48	48	48	46				
	1200	.09	46	37	40	33	26	22	61	50	46	42	41	36	62	52	48	45	45	40	65	55	51	50	51	48				
	1500	.14	48	40	44	36	29	23	64	52	47	43	43	37	66	54	49	46	47	42	68	58	53	51	53	49				
12	430	.01	38	21	15	12	12	15	44	39	41	38	34	31	46	42	43	42	39	35	49	47	48	47	46	43				
	800	.03	42	29	29	21	18	18	52	43	44	41	37	34	54	46	47	45	41	39	57	52	51	50	49	46				
	1200	.05	44	34	38	27	23	20	57	46	46	43	39	36	59	49	49	47	43	41	62	55	54	52	51	48				
	1800	.09	47	39	47	33	27	21	63	49	48	46	41	38	64	52	51	49	45	43	67	58	56	54	52	50				
	2300	.12	49	42	52	36	29	22	66	51	50	47	42	40	67	54	52	50	46	44	70	59	57	56	54	52				
14	600	.01	39	24	15	10	10	14	43	38	39	39	36	32	45	40	41	42	40	36	48	45	45	47	46	43				
	1000	.02	42	30	26	19	17	18	50	42	42	42	38	34	51	45	45	45	42	39	55	49	49	50	49	45				
	1600	.04	46	36	37	27	23	21	56	46	46	45	40	37	57	49	48	48	44	41	61	53	52	52	51	48				
	2400	.08	49	42	46	33	28	23	61	50	48	47	42	38	63	52	50	50	46	42	66	57	54	55	52	49				
	3100	.13	51	45	52	37	31	25	64	52	50	48	43	39	66	55	52	51	47	44	69	59	56	56	54	50				
16	780	.00	14	21	12	10	—	14	43	42	43	40	34	29	45	45	43	37	33	48	49	50	48	43	39					
	1600	.02	34	33	31	23	20	19	52	47	47	44	38	33	54	50	49	47	42	37	57	54	54	52	48	44				
	2400	.04	45	40	42	30	26	22	57	50	49	46	41	36	59	52	51	49	44	40	62	57	56	54	50	46				
	3600	.08	56	46	52	37	32	25	63	52	51	48	43	38	64	55	54	51	47	42	68	60	58	56	53	49				
	4200	.10	60	49	56	40	34	26	65	53	52	49	44	39	66	56	54	52	48	43	70	61	59	57	54	50				

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2.  $\Delta P_s$  static pressure difference from inlet to discharge.
  3.  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.