

# DUAL DUCT

## Terminal Units

# PERFORMANCE DATA

## DDUQ – Standard Mixing Ultra-Quiet Model - Typical Selection Guide

Unit Size	Airflow	Minimum ΔPs Across Assembly	Min. ΔPt.	Discharge NC ΔPs Across Unit								Radiated NC ΔPs Across Unit			
				(1)		(2)		(1)		(2)		(1)		(2)	
				cfm	in.w.g	in.w.g.	in.w.g.	in.w.g.	in.w.g.						
4	75	0.01	0.06	--	--	--	--	--	--	--	--	--	--	--	--
	100	0.01	0.09	--	--	--	--	--	--	--	--	--	--	--	--
	150	0.01	0.19	--	--	--	--	20	--	23	21	--	--	--	21
	200	0.01	0.33	20	--	23	21	25	23	28	26	23	25	25	27
	225	0.01	0.42	--	25	23	27	24	30	28	26	27	28	30	30
5	150	0.02	0.09	--	--	--	--	--	--	--	--	--	--	--	--
	200	0.04	0.17	--	--	--	--	--	--	22	--	--	--	--	21
	250	0.06	0.27	--	--	20	--	22	--	26	23	--	--	22	25
	300	0.09	0.39	--	--	--	--	21	--	25	22	--	23	25	29
	350	0.13	0.53	--	--	22	--	24	21	27	25	22	26	28	31
6	200	0.12	0.18	--	--	--	--	--	--	21	--	--	--	--	--
	250	0.19	0.29	--	--	--	--	20	--	25	22	--	--	--	21
	300	0.28	0.41	--	--	--	--	--	--	24	21	--	--	--	23
	350	0.38	0.57	--	--	--	--	22	--	27	24	--	--	22	26
	400	0.50	0.74	--	--	22	--	24	22	29	26	--	21	24	28
7	200	0.06	0.09	--	--	--	--	--	--	21	--	--	--	--	--
	300	0.13	0.20	--	--	--	--	--	--	24	22	--	--	--	24
	400	0.23	0.36	--	--	21	--	24	22	30	27	--	--	23	28
	500	0.36	0.56	--	--	25	23	29	26	34	31	--	23	26	31
	550	0.44	0.68	22	--	27	25	30	28	36	33	--	24	27	33
8	350	0.11	0.16	--	--	--	--	--	--	26	23	--	--	--	23
	450	0.18	0.27	--	--	--	--	23	21	30	27	--	--	21	27
	550	0.28	0.40	--	--	23	20	26	24	33	30	--	20	24	30
	700	0.45	0.66	20	--	26	24	30	27	36	34	--	24	27	33
	750	0.52	0.76	* *	25	22	28	26	35	32	* 25	28	34		
9	400	0.08	0.13	--	--	--	--	--	--	23	--	--	--	--	--
	550	0.15	0.23	--	--	--	--	23	20	28	26	--	--	--	24
	700	0.24	0.38	--	--	24	21	27	24	32	30	--	--	22	28
	900	0.39	0.62	20	--	26	23	29	26	34	32	--	23	27	33
	1000	0.48	0.76	22	--	28	25	31	29	36	33	--	25	28	34
10	500	0.08	0.12	--	--	--	--	20	--	27	24	--	--	--	21
	700	0.16	0.24	--	--	22	--	26	23	32	30	--	--	20	27
	900	0.27	0.40	--	--	24	21	28	25	34	32	--	20	24	31
	1100	0.40	0.60	21	--	28	25	31	29	38	35	--	24	28	34
	1300	0.55	0.84	* *	30	28	34	32	41	38	* 27	31	37		
12	700	0.07	0.11	--	--	--	--	--	--	22	--	--	--	--	22
	1000	0.14	0.22	--	--	--	--	--	--	24	--	--	--	21	28
	1300	0.23	0.37	--	--	--	--	21	--	27	24	--	21	25	32
	1600	0.36	0.56	--	--	21	--	24	21	30	28	--	25	29	36
	1900	0.50	0.79	--	--	23	20	27	24	33	31	20	28	32	39
14	1000	0.09	0.13	--	--	--	--	21	--	28	--	--	--	23	31
	1475	0.18	0.28	--	--	--	--	24	--	31	24	--	23	28	37
	2100	0.36	0.55	--	--	22	--	27	24	34	31	21	28	33	42
	2425	0.47	0.73	--	--	25	22	29	26	36	33	23	30	35	44
	2900	0.67	1.04	* *	28	25	32	29	39	36	* 32	38	46		
16	1200	0.10	0.14	--	--	--	--	--	--	--	--	--	--	23	31
	1775	0.22	0.30	--	--	--	--	--	--	22	--	--	23	28	36
	2350	0.38	0.52	--	--	--	--	22	--	28	25	--	27	32	39
	2800	0.54	0.74	* *	22	--	25	23	31	29	* 29	34	41		
	3500	0.83	1.14	* *	26	23	30	27	36	33	* 32	37	44		

### Performance Notes:

- NCs are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
- NCs are derived from sound power levels which include duct end corrections per AHRI Standard 880-2017.
- Blank spaces (-) indicate NCs less than 20.
- Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
- ΔPs is the difference in static pressure from inlet to discharge of the unit.
- ΔPs for terminal units with electric coil is equal to basic unit. Resistance of the coil elements is negligible.
- ΔPt is the difference in total pressure from inlet to discharge of the unit.

8. NC values are calculated based on procedures outlined in AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets."

**Radiated NC** is based on a  $\frac{5}{8}$  in. mineral fiber tile ceiling per AHRI 885-2008, Appendix E typical attenuation values.

Total Deduction	Octave Band Mid Frequency, Hz.	125	250	500	1000	2000	4000
<300 cfm		22	22	27	28	30	22
300 – 700 cfm		25	25	30	31	33	25
> 700 cfm		27	27	32	33	35	27

All Sizes 18 19 20 26 31 36

**(1) Discharge NC** is based on environmental effect, end reflection, flex duct and sound power division. No deductions for lined duct are included. These calculations are not covered by AHRI 885-2008 Appendix E.

Total Deduction	Octave Band Mid Frequency, Hz.	125	250	500	1000	2000	4000
<300 cfm		24	28	39	53	59	40
300 – 700 cfm		27	29	40	51	53	39
> 700 cfm		29	30	41	51	52	39

(2) Discharge NC is based on environmental effect, end reflection, flex duct, sound power division and **lined duct** per AHRI 885-2008 Appendix E attenuation values.

Total Deduction	Octave Band Mid Frequency, Hz.	125	250	500	1000	2000	4000
<300 cfm		24	28	39	53	59	40
300 – 700 cfm		27	29	40	51	53	39
> 700 cfm		29	30	41	51	52	39



# DUAL DUCT

## Terminal Units

# PERFORMANCE DATA

### DDUQ – Standard Mixing Ultra-Quiet Model - Radiated Sound Data

Unit Size	Airflow	Sound Power Levels Lw dB re 10^-12 Watts																											
		0.5 in.w.g.							1.0 in.w.g.							1.5 in.w.g.							3.0 in.w.g.						
		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band									
cfm	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7										
4	75	44 30 26 -- -- --	45 33 31 23 19 --	45 34 34 26 23 20	47 37 38 31 28 26																								
	100	49 35 30 -- -- --	50 37 34 26 23 19	50 39 37 29 26 22	52 41 41 34 31 28																								
	150	56 41 34 26 22 --	57 43 39 31 27 22	57 45 41 34 30 26	59 47 46 38 36 32																								
	200	61 45 38 29 25 19	62 48 42 34 30 25	62 49 45 37 33 28	64 52 49 42 39 34																								
	225	63 47 39 30 26 20	64 50 43 35 32 26	64 51 46 38 35 29	66 53 51 43 40 35																								
5	150	48 34 29 25 21 --	51 38 34 30 25 22	52 40 37 33 28 25	55 44 42 37 33 25																								
	200	52 37 32 27 23 18	55 41 37 32 28 25	56 44 40 35 31 28	59 48 45 40 35 35																								
	250	55 40 34 29 25 20	58 44 39 34 30 27	60 46 42 36 33 31	62 50 47 41 37 38																								
	300	58 42 35 30 27 22	60 46 40 35 31 29	62 49 43 38 34 33	65 53 48 43 39 39																								
	350	60 44 37 31 28 24	63 48 42 36 33 30	64 50 45 39 36 34	67 54 50 44 40 41																								
6	200	47 34 30 26 22 18	51 39 35 31 27 24	53 42 38 34 30 27	56 47 43 39 35 35																								
	250	50 36 32 28 24 20	53 41 37 32 29 26	55 44 40 35 32 29	59 49 45 40 37 35																								
	300	52 38 34 29 25 22	55 43 39 34 30 28	57 46 42 36 33 31	61 51 47 41 38 37																								
	350	54 40 35 30 27 23	57 45 40 35 32 29	59 48 43 38 34 32	63 53 48 42 39 38																								
	400	56 41 37 31 28 24	59 46 42 36 33 30	61 49 45 38 36 34	64 54 50 43 41 40																								
7	200	46 34 29 26 -- --	50 39 34 30 24 17	52 42 37 33 27 22	56 48 42 38 33 30																								
	300	50 39 33 30 22 --	54 44 38 34 28 21	57 47 41 37 31 26	61 52 46 41 37 34																								
	400	54 42 36 32 25 --	58 47 41 37 31 24	60 50 44 40 34 29	64 55 49 44 40 37																								
	500	56 45 38 35 27 18	60 50 43 39 33 26	63 53 46 42 36 31	67 58 51 46 42 39																								
	550	57 46 39 35 28 19	61 51 44 40 34 27	64 54 47 42 37 32	68 59 52 47 43 40																								
8	350	49 37 31 27 23 --	53 43 37 31 27 21	56 46 40 33 29 25	61 51 45 37 33 33																								
	450	52 40 35 31 26 17	56 45 40 34 31 24	59 49 43 37 33 29	64 54 48 40 37 36																								
	550	54 42 37 34 29 20	59 47 42 37 33 27	61 51 45 40 36 32	66 56 50 43 40 39																								
	700	57 44 40 37 33 23	61 50 45 41 37 30	64 53 48 43 39 35	69 59 53 47 43 42																								
	750	* * * * *	62 51 46 42 38 31	65 54 49 44 40 36	69 59 54 48 44 43																								
9	400	45 36 33 33 28 19	50 41 38 36 32 26	53 44 40 38 35 31	57 49 45 42 37 38																								
	550	49 40 36 36 31 22	54 45 41 39 35 29	57 48 43 41 37 33	61 53 48 44 41 37																								
	700	53 43 39 38 33 24	57 48 43 41 37 31	60 51 46 43 39 35	65 56 50 46 43 42																								
	900	56 46 41 40 35 25	61 51 46 43 39 32	63 54 48 45 41 37	68 59 53 49 46 44																								
	1000	57 47 42 41 36 26	62 52 47 44 40 33	65 55 49 46 42 37	69 61 54 49 46 44																								
10	500	45 37 34 33 29 19	51 43 38 36 32 25	54 46 41 38 35 29	59 51 46 42 38 32																								
	700	50 41 37 36 32 23	55 47 42 40 35 29	58 50 45 42 38 31	63 56 50 45 43 35																								
	900	53 44 40 38 34 25	59 50 45 42 38 31	62 53 47 44 40 35	67 59 52 48 44 40																								
	1100	56 47 42 40 36 27	61 52 47 44 40 33	64 56 49 46 42 37	69 61 54 50 45 42																								
	1300	* * * * *	63 54 48 45 41 35	66 58 51 48 43 38	72 63 56 51 47 44																								
12	700	46 38 35 32 29 21	51 43 39 36 33 27	54 46 42 38 35 30	59 51 46 42 39 36																								
	1000	50 42 39 35 32 25	56 48 43 39 36 31	59 51 46 41 39 34	62 54 49 43 41 37																								
	1300	54 46 42 37 35 28	59 51 46 41 39 34	62 53 49 42 41 36	65 56 51 45 43 40																								
	1600	56 48 45 39 37 30	62 53 49 42 41 36	65 56 51 45 43 40	71 62 56 49 47 45																								
	1900	58 50 47 40 39 32	64 56 51 44 43 38	67 59 54 46 45 42	73 64 58 50 49 47																								
14	1000	50 43 39 31 28 19	56 49 44 36 33 26	60 53 47 39 37 31	67 59 51 45 42 38																								
	1475	54 46 43 34 31 24	61 52 48 40 37 31	65 56 51 43 40 35	71 63 56 48 46 42																								
	2100	58 49 48 37 35 28	64 56 52 43 40 35	68 59 55 46 43 39	75 66 60 51 49 46																								
	2425	59 51 49 39 36 29	66 57 54 44 41 37	70 61 57 47 45 41	77 67 62 52 50 48																								
	2900	* * * * *	68 59 56 46 43 39	72 62 59 49 46 43	78 69 64 54 52 50																								
16	1200	51 43 37 32 27 17	57 50 42 36 31 24	60 53 45 39 33 27	66 60 50 43 38 33																								
	1775	55 46 41 36 31 22	61 53 46 40 35 28	64 57 49 42 38 32	70 63 54 47 42 38																								
	2350	58 48 44 38 34 26	64 55 49 43 38 32	67 59 52 45 41 35	73 65 57 49 45 42																								
	2800	* * * * *	65 56 51 44 40 34	69 60 53 47 43 38	75 67 59 51 47 44																								
	3500	* * * * *	68 58 53 46 43 37	71 62 56 49 45 40	77 68 61 53 49 47																								

**Performance Notes:**

- Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
- Sound power levels include duct end corrections per AHRI Standard 880-2017.
- Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
- Dashes (--) indicate sound power levels below 36-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

# DUAL DUCT

Terminal Units

## PERFORMANCE DATA

### DPUQ / DDUQ – Standard Mixing Ultra-Quiet Model - Discharge Sound Power Levels

Hospital Grade Liner (CRAF/PL) - Straight Silencer

Unit Size	Airflow	Sound Power Levels Lw dB re 10 <sup>-12</sup> Watts														
		0.5 in.w.g.					1.0 in.w.g.					1.5 in.w.g.				
		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		Octave Band		
cfm	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	
4	75	50 36 34 31 24 23	51 38 37 34 24 27	52 39 41 36 24 30	51 41 48 39 28 41											
	100	54 41 38 35 24 24	55 43 44 38 24 29	55 44 46 40 25 35	56 46 51 43 34 43											
	150	60 48 43 40 24 23	61 50 47 42 26 31	61 51 50 43 32 36	63 53 54 45 41 45											
	200	65 53 45 42 22 24	66 55 50 43 28 32	66 56 53 44 33 38	67 58 57 46 42 46											
	225	67 56 47 42 22 24	68 58 50 43 29 33	68 59 54 44 35 38	68 61 58 49 43 45											
5	150	54 45 39 33 24 25	55 47 43 36 26 35	55 48 46 37 30 41	55 50 53 40 38 52											
	200	59 49 42 35 21 29	59 52 49 37 27 39	60 53 51 38 32 46	60 54 56 41 41 55											
	250	63 53 46 35 21 29	62 54 51 37 29 39	63 56 53 40 33 45	64 58 58 45 41 55											
	300	66 56 48 36 22 29	67 58 52 41 29 39	65 60 55 43 34 44	67 61 60 50 42 54											
	350	69 58 49 38 22 28	69 61 54 43 31 39	68 62 57 46 35 44	70 63 61 52 43 53											
6	200	57 51 39 33 25 22	59 53 47 37 29 35	61 54 51 39 34 43	62 57 54 42 43 56											
	250	61 55 46 36 27 27	62 57 50 40 33 39	64 58 53 43 38 45	66 60 56 48 48 55											
	300	64 59 48 38 29 28	66 60 53 43 37 39	68 62 55 47 42 45	69 64 58 51 50 55											
	350	67 61 51 40 28 28	69 63 54 46 36 39	71 65 56 48 42 44	72 67 60 53 49 55											
	400	69 64 52 41 29 28	71 66 56 46 36 39	73 66 58 49 41 44	74 70 61 54 49 55											
7	200	57 45 36 28 24 21	60 50 42 31 26 29	63 53 47 33 28 36	67 57 57 36 32 48											
	300	62 52 44 35 27 28	66 57 53 38 32 40	68 60 57 41 36 47	73 64 63 46 41 59											
	400	66 57 49 42 35 36	70 61 54 47 40 46	73 64 59 50 44 52	77 69 64 56 49 62											
	500	68 60 50 50 36 36	72 65 57 55 42 46	75 67 60 58 46 51	79 73 67 62 51 61											
	550	70 63 52 50 37 35	75 67 58 55 44 45	76 70 61 58 46 51	81 74 67 63 52 61											
8	350	61 52 38 34 29 25	66 57 46 36 30 33	69 62 48 37 31 36	75 66 56 41 33 44											
	450	63 55 43 37 31 30	68 60 49 41 34 37	73 64 52 42 36 41	78 69 60 46 38 47											
	550	67 58 46 41 35 34	71 63 52 45 38 40	74 67 56 46 39 45	79 72 64 50 42 52											
	700	69 61 50 46 40 39	74 67 57 49 42 45	77 70 60 52 44 48	82 76 68 55 46 56											
	750	* * * * *	75 68 57 51 44 46	78 71 62 53 45 50	83 77 69 57 48 56											
9	400	57 50 43 38 26 27	62 54 46 41 30 35	66 57 49 44 33 41	70 62 54 49 38 49											
	550	62 54 46 44 32 31	67 59 51 48 37 40	69 63 54 51 39 45	74 67 58 55 44 54											
	700	66 59 50 47 37 34	70 63 55 51 41 44	73 66 57 54 44 49	78 70 63 58 49 57											
	900	68 61 53 51 42 39	74 67 59 54 47 47	77 69 62 58 49 52	82 74 65 61 53 61											
	1000	70 64 56 52 44 40	76 68 60 56 48 49	78 71 62 58 51 54	83 75 68 62 56 62											
10	500	62 49 41 35 27 36	67 56 47 39 29 41	71 59 51 42 31 46	76 65 56 46 35 52											
	700	67 54 46 39 34 40	72 60 52 44 37 47	75 63 56 48 39 51	81 69 62 53 41 56											
	900	70 57 50 44 39 44	75 64 56 49 42 50	78 67 60 52 43 54	83 73 65 57 47 60											
	1100	72 61 53 47 43 47	78 67 60 53 46 53	80 70 63 55 47 57	86 77 70 59 51 63											
	1300	* * * * *	79 69 63 54 50 56	83 72 65 57 51 59	88 78 72 63 54 65											
12	700	53 50 38 30 22 35	60 56 42 34 25 41	63 58 45 35 27 45	70 63 56 45 37 54											
	1000	58 56 42 34 29 37	65 61 47 38 31 45	68 64 51 40 33 50	75 69 56 44 38 52											
	1300	61 58 46 36 33 39	68 64 51 42 36 47	71 67 54 44 38 53	81 76 61 51 46 60											
	1600	64 61 49 39 37 41	71 66 53 44 41 49	75 69 56 47 43 53	81 76 61 51 46 60											
	1900	66 64 52 42 41 42	73 69 56 46 44 51	77 73 58 49 46 55	83 79 64 53 49 61											
14	1000	56 50 42 35 36 41	62 56 47 40 40 49	66 60 50 43 42 52	72 67 54 49 47 60											
	1475	61 54 47 38 40 42	67 61 51 44 44 51	70 65 54 47 45 55	76 70 59 52 50 62											
	2100	65 59 51 41 44 44	71 64 56 46 48 53	74 68 59 49 49 56	81 74 63 55 53 63											
	2425	67 60 52 42 45 45	73 66 57 48 49 53	77 69 60 51 50 57	83 76 64 56 55 64											
	2900	* * * * *	74 67 59 50 50 53	79 72 61 52 53 58	85 78 67 58 57 66											
16	1200	53 47 39 30 23 30	58 53 45 32 25 37	61 54 48 34 25 42	66 60 51 36 27 49											
	1775	58 52 45 35 31 34	62 56 49 38 33 40	66 59 51 40 34 46	71 64 57 43 36 52											
	2350	61 54 47 40 38 36	66 59 53 43 40 43	69 63 56 44 40 48	74 67 59 47 42 55											
	2800	* * * * *	68 62 54 46 43 45	70 65 56 48 44 50	77 69 62 50 46 56											
	3500	* * * * *	71 64 56 49 47 48	74 67 59 51 49 52	79 72 65 54 51 59											

#### Performance Notes:

- Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
- All data are application ratings. Application ratings are outside the scope of the AHRI 880 Certification Program.
- Sound power levels include duct end corrections per AHRI Standard 880-2017.
- Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
- Dashes (-) indicate sound power levels below 36-29-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.



# DUAL DUCT

## Terminal Units

---

# PERFORMANCE DATA

## DPUQ / DDUQ – Standard Mixing Ultra-Quiet Model - Discharge Sound Power Levels

Hospital Grade Liner (CRWF/PL) - Straight Silencer

Unit Size	Airflow	Sound Power Levels Lw dB re 10 <sup>-12</sup> Watts														
		0.5 in.w.g.					1.0 in.w.g.					1.5 in.w.g.				
		Octave Band		Octave Band			Octave Band		Octave Band			Octave Band		Octave Band		
	cfm	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4
4	75	52	36	29	25	22	19	54	39	29	25	22	19	56	41	31
	100	55	40	29	25	22	19	58	43	32	25	22	20	59	45	34
	150	61	45	32	25	22	20	63	48	36	25	24	26	64	50	38
	200	64	49	35	25	23	24	67	52	39	25	27	30	68	54	41
	225	66	51	37	25	24	26	68	54	40	25	28	31	70	56	43
5	150	55	40	29	25	22	19	58	43	29	25	24	24	59	45	30
	200	59	44	29	25	23	21	61	47	33	25	27	28	63	49	35
	250	62	47	33	25	26	24	64	50	36	25	30	31	66	52	38
	300	64	50	36	25	28	26	67	53	39	27	32	33	68	55	41
	350	66	52	38	26	30	28	69	55	42	29	34	35	70	57	44
6	200	56	44	30	25	23	20	60	47	34	25	27	27	62	49	36
	250	59	47	34	25	25	23	62	50	37	25	29	30	64	52	39
	300	61	50	36	25	27	25	65	53	40	27	31	32	67	55	42
	350	63	52	39	27	29	27	67	55	42	30	33	34	69	57	44
	400	65	54	41	29	31	29	69	57	44	31	34	35	71	59	46
7	200	54	43	29	25	22	19	58	47	30	25	24	26	60	50	32
	300	60	48	32	25	25	24	64	52	36	25	29	31	66	55	39
	400	64	52	36	27	29	27	68	56	40	29	33	34	71	59	43
	500	67	54	39	31	32	29	71	59	44	33	36	36	74	61	46
	550	69	56	41	32	33	30	73	60	45	34	38	37	75	63	48
8	350	59	44	30	25	28	23	64	50	35	25	31	30	67	53	37
	450	62	48	34	27	31	26	67	53	38	29	34	33	70	56	41
	550	65	51	37	31	34	29	69	56	41	33	37	35	72	59	45
	700	67	55	40	36	37	32	72	60	45	38	40	38	75	64	49
	750	*	*	*	*	*	*	73	61	46	39	41	39	76	64	49
9	400	58	43	29	25	27	23	62	47	31	25	31	30	65	50	33
	550	63	48	33	28	32	27	67	52	37	30	35	34	69	55	39
	700	66	52	38	32	35	30	70	56	41	34	38	37	73	59	42
	900	69	55	42	36	38	34	74	60	46	38	42	40	76	62	48
	1000	71	57	44	38	40	35	75	61	47	40	43	42	77	64	49
10	500	59	42	30	26	30	29	64	48	35	28	33	34	67	52	38
	700	64	47	35	31	35	33	69	53	40	33	38	39	72	56	43
	900	67	51	39	35	38	36	72	57	44	37	42	42	75	60	47
	1100	70	54	42	38	41	39	75	60	47	41	44	45	78	63	49
	1300	*	*	*	*	*	*	77	62	50	43	47	47	80	65	52
12	700	53	44	30	28	33	32	58	49	34	31	36	37	61	51	37
	1000	58	49	36	33	37	36	63	54	40	36	40	41	66	56	41
	1300	61	52	41	36	40	39	66	57	45	39	43	44	69	60	47
	1600	64	55	44	39	43	41	69	60	48	42	46	47	72	63	48
	1900	66	58	47	42	45	43	71	63	51	45	48	49	74	66	53
14	1000	55	44	33	31	39	35	61	50	37	35	43	43	64	53	39
	1475	61	49	40	36	42	38	66	55	44	40	46	46	69	58	46
	2100	66	54	46	40	45	41	71	59	50	44	49	49	74	63	52
	2425	68	56	48	42	46	42	73	61	52	46	50	50	76	64	54
	2900	*	*	*	*	*	*	75	63	55	48	51	51	79	67	57
16	1200	53	43	31	26	30	28	57	48	35	28	33	34	60	50	37
	1775	59	49	38	33	35	32	63	53	41	35	38	38	66	56	42
	2350	63	52	42	39	40	35	68	57	46	40	43	41	70	60	44
	2800	*	*	*	*	*	*	70	60	49	44	45	43	73	62	50
	3500	*	*	*	*	*	*	74	63	52	48	48	46	77	65	54

### Performance Notes:

- Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
- Sound power levels include duct end corrections per AHRI Standard 880-2017.
- All data are application ratings. Application ratings are outside the scope of the AHRI 880 Certification Program.
- Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
- Dashes (-) indicate sound power levels below 36-29-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

# DUAL DUCT

## Terminal Units

# PERFORMANCE DATA

## DPUQ / DDUQ – Standard Mixing Ultra-Quiet Model - Radiated Sound Power Levels

Hospital Grade Liner (CRWF/PL) - Straight Silencer

Unit Size	Airflow	Sound Power Levels Lw dB re 10 <sup>-12</sup> Watts													
		0.5 in.w.g.							1.0 in.w.g.						
		Octave Band							Octave Band						
cfm	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7	2 3 4 5 6 7
4	75	44 30 26 -- -- --	45 33 31 23 19 --	45 34 34 26 23 20	47 37 38 31 28 26										
	100	49 35 30 -- -- --	50 37 34 26 23 19	50 39 37 29 26 22	52 41 41 34 31 28										
	150	56 41 34 26 22 --	57 43 39 31 27 22	57 45 41 34 30 26	59 47 46 38 36 32										
	200	61 45 38 29 25 19	62 48 42 34 30 25	62 49 45 37 33 28	64 52 49 42 39 34										
	225	63 47 39 30 26 20	64 50 43 35 32 26	64 51 46 38 35 29	66 53 51 43 40 35										
5	150	48 34 29 25 21 --	51 38 34 30 25 22	52 40 37 33 28 25	55 44 40 35 31 28										
	200	52 37 32 27 23 18	55 41 37 32 28 25	56 44 40 35 31 28	59 48 45 40 35 35										
	250	55 40 34 29 25 20	58 44 39 34 30 27	60 46 42 36 33 31	62 50 47 41 37 38										
	300	58 42 35 30 27 22	60 46 40 35 31 29	62 49 43 38 34 33	65 53 48 43 39 39										
	350	60 44 37 31 28 24	63 48 42 36 33 30	64 50 45 39 36 34	67 54 50 44 40 41										
6	200	47 34 30 26 22 18	51 39 35 31 27 24	53 42 38 34 30 27	56 47 43 39 35 33										
	250	50 36 32 28 24 20	53 41 37 32 29 26	55 44 40 35 32 29	59 49 45 40 37 35										
	300	52 38 34 29 25 22	55 43 39 34 30 28	57 46 42 36 33 31	61 51 47 41 38 37										
	350	54 40 35 30 27 23	57 45 40 35 32 29	59 48 43 38 34 32	63 53 48 42 39 38										
	400	56 41 37 31 28 24	59 46 42 36 33 30	61 49 45 38 36 34	64 54 50 43 41 40										
7	200	46 34 29 26 -- --	50 39 34 30 24 17	52 42 37 33 27 22	56 48 42 38 33 30										
	300	50 39 33 30 22 --	54 44 38 34 28 21	57 47 41 37 31 26	61 52 46 41 37 34										
	400	54 42 36 32 25 --	58 47 41 37 31 24	60 50 44 40 34 29	64 55 49 44 40 37										
	500	56 45 38 35 27 18	60 50 43 39 33 26	63 53 46 42 36 31	67 58 51 46 42 39										
	550	57 46 39 35 28 19	61 51 44 40 34 27	64 54 47 42 37 32	68 59 52 47 43 40										
8	350	49 37 31 27 23 --	53 43 37 31 27 21	56 46 40 33 29 25	61 51 45 37 33 33										
	450	52 40 35 31 26 17	56 45 40 34 31 24	59 49 43 37 33 29	64 54 48 40 37 36										
	550	54 42 37 34 29 20	59 47 42 37 33 27	61 51 45 40 36 32	66 56 50 43 40 39										
	700	57 44 40 37 33 23	61 50 45 41 37 30	64 53 48 43 39 35	69 59 53 47 43 42										
	750	* * * * *	62 51 46 42 38 31	65 54 49 44 40 36	69 59 54 48 44 43										
9	400	45 36 33 33 28 19	50 41 38 36 32 26	53 44 40 38 35 31	57 49 45 42 39 38										
	550	49 40 36 36 31 22	54 45 41 39 35 29	57 48 43 41 37 33	61 53 48 44 41 40										
	700	53 43 39 38 33 24	57 48 43 41 37 31	60 51 46 43 39 35	65 56 50 46 43 42										
	900	56 46 41 40 35 25	61 51 46 43 39 32	63 54 48 45 41 37	68 59 53 49 46 44										
	1000	57 47 42 41 36 26	62 52 47 44 40 33	65 55 49 46 42 37	69 61 54 49 46 44										
10	500	45 37 34 33 29 19	51 43 38 36 32 25	54 46 41 38 35 29	59 51 46 42 38 32										
	700	50 41 37 36 32 23	55 47 42 40 35 29	58 50 45 42 38 31	63 55 47 44 40 35										
	900	53 44 40 38 34 25	59 50 45 42 38 31	62 53 47 44 40 35	67 59 52 48 44 40										
	1100	56 47 42 40 36 27	61 52 47 44 40 33	64 56 49 46 42 37	69 61 54 46 43 42										
	1300	* * * * *	63 54 48 45 41 35	66 58 51 48 43 38	72 63 56 47 44 44										
12	700	46 38 35 32 29 21	51 43 39 36 33 27	54 46 42 38 35 30	59 51 46 42 39 36										
	1000	50 42 39 35 32 25	56 48 43 39 36 31	59 51 46 43 39 34	65 56 50 45 43 41										
	1300	54 46 42 37 35 28	59 51 46 41 39 34	62 54 49 43 41 36	68 59 53 47 45 40										
	1600	56 48 45 39 37 30	62 53 49 42 41 36	65 56 51 45 43 40	71 62 56 49 47 45										
	1900	58 50 47 40 39 32	64 56 51 44 43 38	67 59 54 46 45 42	73 64 58 50 49 47										
14	1000	50 43 39 31 28 19	56 49 44 36 33 26	60 53 47 39 37 31	67 59 51 45 42 38										
	1475	54 46 43 34 31 24	61 52 48 40 37 31	65 56 51 43 40 35	71 63 56 48 46 42										
	2100	58 49 48 37 35 28	64 56 52 43 40 35	68 59 55 46 43 39	75 66 60 51 49 46										
	2425	59 51 49 39 36 29	66 57 54 44 41 37	70 61 57 47 45 41	77 67 62 52 50 48										
	2900	* * * * *	68 59 56 46 43 39	72 62 59 49 46 43	78 69 64 54 52 50										
16	1200	51 43 37 32 27 17	57 50 42 36 31 24	60 53 45 39 33 27	66 60 50 43 38 33										
	1775	55 46 41 36 31 22	61 53 46 40 35 28	64 57 49 42 38 32	70 63 54 47 42 38										
	2350	58 48 44 38 34 26	64 55 49 43 38 32	67 59 52 45 41 35	73 65 57 49 45 42										
	2800	* * * * *	65 56 51 44 40 34	69 60 53 47 43 38	75 67 59 51 47 44										
	3500	* * * * *	68 58 53 46 43 37	71 62 56 49 45 40	77 68 61 53 49 47										

**Performance Notes:**

- Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
- Sound power levels include duct end corrections per AHRI Standard 880-2017.
- All data are application ratings. Application ratings are outside the scope of the AHRI 880 Certification Program.
- Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
- Dashes (-) indicate sound power levels below 36-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

# PERFORMANCE DATA

## DPM / DDM – High-Mixing Model - Typical Selection Guide

Unit Size	Airflow	Minimum ΔPs	Min. ΔPt.	Discharge NC ΔPs Across Unit				Radiated NC ΔPs Across Unit			
				0.5 in.w.g.	1.0 in.w.g.	1.5 in.w.g.	3.0 in.w.g.	0.5 in.w.g.	1.0 in.w.g.	1.5 in.w.g.	3.0 in.w.g.
	cfm	in.w.g.	in.w.g.								
4	75	0.06	0.10	--	--	--	--	--	--	--	--
	100	0.10	0.18	--	--	--	--	--	--	--	--
	150	0.21	0.39	--	--	--	--	--	--	--	24
	200	0.35	0.67	--	20	21	24	--	21	24	28
	225	0.43	0.84	--	22	24	26	--	23	26	30
5	150	0.08	0.15	--	--	--	--	--	--	--	--
	200	0.13	0.26	--	--	--	21	--	--	--	20
	250	0.19	0.39	--	20	22	25	--	--	--	23
	300	0.25	0.55	--	21	25	--	--	--	--	26
	350	0.33	0.73	--	22	24	27	--	--	22	28
6	200	0.12	0.18	--	--	--	21	--	--	--	21
	250	0.18	0.27	--	--	20	24	--	--	--	23
	300	0.25	0.38	--	--	--	23	--	--	--	26
	350	0.33	0.51	--	--	21	25	--	--	22	28
	400	0.41	0.65	--	21	23	27	--	--	23	30
7	200	0.06	0.09	--	--	--	--	--	--	--	--
	300	0.13	0.20	--	--	--	21	--	--	--	23
	400	0.24	0.36	--	--	21	26	--	--	22	28
	500	0.37	0.57	--	23	25	30	--	21	25	32
	550	0.45	0.68	--	24	27	32	--	23	27	33
8	350	0.12	0.17	--	--	20	26	--	--	--	24
	450	0.20	0.28	--	21	24	29	--	--	21	28
	550	0.30	0.42	--	24	27	32	--	--	24	31
	700	0.48	0.69	23	28	31	36	--	24	28	35
	750	0.55	0.79	*	26	29	35	*	25	29	36
9	400	0.08	0.12	--	--	--	23	--	--	--	25
	550	0.15	0.23	--	--	22	28	--	--	--	28
	700	0.24	0.38	--	23	26	31	--	--	23	30
	900	0.40	0.62	--	24	27	33	--	21	25	32
	1000	0.49	0.77	20	25	29	34	--	22	26	34
10	500	0.11	0.15	--	--	--	25	--	--	--	26
	700	0.22	0.31	--	20	24	30	--	--	21	29
	900	0.37	0.51	--	22	25	31	--	--	23	31
	1100	0.56	0.76	*	25	28	35	*	21	25	33
	1300	0.78	1.07	*	27	31	37	*	23	27	35
12	700	0.08	0.12	--	--	21	28	--	--	--	30
	1000	0.17	0.24	--	--	23	31	--	--	23	33
	1300	0.28	0.41	--	23	27	35	--	20	26	36
	1600	0.42	0.62	--	26	30	38	--	22	28	38
	1900	0.59	0.87	*	28	33	40	*	24	30	39
14	1000	0.13	0.18	--	--	--	27	--	--	25	35
	1475	0.29	0.38	--	21	26	33	--	25	31	41
	2100	0.58	0.77	*	27	31	39	*	30	36	46
	2425	0.77	1.03	*	29	34	41	*	32	38	48
	2900	1.10	1.47	*	*	37	44	*	*	40	51
16	1200	0.08	0.12	--	--	--	23	--	--	24	32
	1775	0.18	0.26	--	--	22	29	--	24	29	37
	2350	0.31	0.44	--	22	26	33	--	28	33	41
	2800	0.43	0.63	--	25	29	36	22	30	35	43
	3500	0.66	0.97	*	28	32	39	*	33	38	46

### Performance Notes:

1. NCs are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
2. NCs are derived from sound power levels which include duct end corrections per AHRI Standard 880-2016.
3. Blank spaces (--) indicate NCs less than 20.
4. Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
5. ΔPs is the difference in static pressure from inlet to discharge of the unit.
6. ΔPs for terminal units with electric coil is equal to basic unit. Resistance of the coil elements is negligible.
7. ΔPt is the difference in total pressure from inlet to discharge of the unit.
8. NC values are calculated based on typical attenuation values outlined in Appendix E, AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets."

### Typical Attenuation Values: Radiated Sound

Total Deduction	Octave Band Mid Frequency, Hz
120	250
500	1000
2000	4000

### Discharge Sound

Total Deduction	Octave Band Mid Frequency, Hz
120	250
500	1000
2000	4000

< 300 cfm 24 28 39 53 59 40

300-700 cfm 27 29 40 51 53 39

> 700 cfm 29 30 41 51 52 39

# DUAL DUCT

## Terminal Units

### PERFORMANCE DATA

#### DPM / DDM – High-Mixing Model - Discharge Sound Data

Unit Size	Airflow	Sound Power Levels Lw dB re 10 <sup>-12</sup> Watts																	
		0.5 in.w.g.					1.0 in.w.g.					1.5 in.w.g.							
		Octave Band		Octave Band			Octave Band		Octave Band			Octave Band		Octave Band					
	cfm	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
4	75	48	30	--	--	--	--	50	32	--	--	--	--	51	33	--	--	--	--
	100	52	35	27	26	--	--	54	37	29	27	20	--	55	38	30	27	21	18
	150	58	42	34	35	30	23	60	44	36	36	32	26	61	45	37	37	32	28
	200	62	47	39	42	38	30	64	49	41	43	40	33	65	50	42	43	40	35
5	225	64	49	41	44	41	33	66	51	43	45	43	36	67	52	44	46	44	38
	150	55	37	28	26	19	--	57	40	30	27	20	--	59	41	31	28	21	--
	200	59	41	33	33	27	20	61	44	35	33	28	22	63	46	36	34	29	24
	250	62	45	36	37	33	26	64	47	38	38	35	28	66	49	39	39	35	29
	300	64	47	39	41	38	30	67	50	41	42	40	32	68	52	43	43	40	34
6	350	66	50	42	45	43	34	69	53	44	46	44	36	70	54	45	46	45	37
	200	57	41	30	28	22	26	60	45	32	29	24	29	62	47	34	30	25	31
	250	59	45	34	33	28	29	63	48	36	34	30	32	64	50	38	35	31	34
	300	62	47	37	37	33	32	65	51	39	38	35	35	67	53	41	39	36	36
	350	63	49	39	41	37	34	67	53	42	42	39	37	68	55	43	43	40	38
7	400	65	51	42	44	40	36	68	55	44	45	42	39	70	57	46	46	43	40
	200	53	41	32	25	--	--	56	44	33	25	--	--	59	46	33	25	--	--
	300	58	47	39	36	30	21	62	50	40	35	29	22	64	51	41	35	29	22
	400	62	51	44	43	38	32	66	54	46	43	38	33	68	56	46	43	38	33
	500	66	55	49	49	45	41	69	57	50	49	45	41	71	59	50	49	45	42
8	550	67	56	50	51	48	45	71	59	51	51	48	45	73	60	52	51	48	45
	350	61	48	39	37	32	26	65	53	42	38	34	28	67	55	44	39	34	29
	450	64	51	43	42	38	32	68	55	46	43	40	34	70	58	48	44	41	35
	550	66	53	45	46	43	37	70	58	49	47	45	39	73	61	50	48	45	43
	700	69	56	49	50	49	43	73	61	52	52	50	45	76	63	54	53	51	46
9	750	*	*	*	*	*	*	74	62	53	53	52	47	76	64	55	54	53	48
	400	59	45	38	33	31	24	63	49	41	34	31	25	65	51	43	34	31	26
	550	62	48	42	39	38	31	67	52	45	40	39	33	69	55	47	41	39	35
	700	65	51	46	44	44	37	69	55	49	45	44	39	72	57	51	46	45	41
	900	68	54	50	49	50	44	72	58	53	50	50	45	75	60	55	51	51	47
10	1000	69	55	51	51	52	46	73	59	54	52	53	48	76	61	56	53	53	48
	500	58	44	38	31	30	22	63	49	42	32	30	24	66	52	44	33	31	25
	700	62	48	44	38	38	33	67	53	47	40	39	34	70	56	49	40	39	35
	900	66	51	48	44	44	41	70	56	51	45	45	42	73	59	53	46	45	43
	1100	*	*	*	*	*	*	73	58	54	50	50	48	76	61	56	51	50	49
12	1300	*	*	*	*	*	*	75	60	57	54	54	53	78	63	59	54	54	54
	700	58	44	35	32	26	23	64	50	39	32	27	24	68	53	41	33	28	24
	1000	63	48	40	39	35	30	68	53	44	40	36	31	72	57	46	41	37	32
	1300	66	51	44	45	41	36	71	56	48	46	43	37	75	59	50	46	44	45
	1600	68	53	47	49	47	40	74	58	51	50	48	41	77	62	53	51	49	42
14	1900	*	*	*	*	*	*	76	60	53	54	52	45	79	63	55	55	53	45
	1000	59	46	41	36	32	26	65	52	45	38	34	28	69	55	46	39	35	32
	1475	64	51	49	45	41	36	70	56	52	47	43	38	74	60	54	47	44	39
	2100	*	*	*	*	*	*	75	60	59	55	51	47	78	64	60	55	53	49
	2425	*	*	*	*	*	*	76	62	61	58	55	51	80	65	63	59	56	52
16	2900	*	*	*	*	*	*	*	*	*	*	*	*	82	67	67	63	60	57
	1200	57	47	40	36	30	23	63	52	42	37	32	27	66	55	43	38	33	29
	1775	62	51	48	43	38	32	68	56	50	45	41	36	71	59	51	46	42	42
	2350	65	54	53	48	44	39	71	60	56	50	47	42	74	63	57	51	50	48
	2800	67	56	57	52	48	43	73	61	59	53	51	46	76	64	60	54	52	50
	3500	*	*	*	*	*	*	76	64	64	58	56	52	79	67	65	58	57	54

**Performance Notes:**

1. Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.  
 2. Sound power levels include duct end corrections per AHRI Standard 880-2017.

3. Asterisks (\*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.

4. Dashes (--) indicate sound power levels below 36-29-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

