



ENGINEERING DATA

200 Series		See Footnotes A & C																								
SIZE	Velocity		300			400			500			600			700			800			900			1000		
	Duct Pt		0.006			0.01			0.015			0.021			0.029			0.038			0.048			0.065		
6x6	Eff.Area .084 ft ²	CFM	24			35			44			53			60			68			79			88		
		NC	<20			<20			20			20			25			30			30			35		
		Throw 201	4.5	5	5.5	5.5	6	6.5	7	8	9	7.5	9	11	8.5	10	12	9.5	11	13	10.5	13	15.5	11	14	17
		Throw 202	3.5	4	4.5	4.5	5	5.5	5.5	6	7	6	7	8	7	8	9	7.5	9	11	8	10	12	9	11	13
		Throw 203	2	3	3	2.5	3	3.5	3.5	4	5	4.5	5	6	5	6	7	6	7	8	6.5	8	9.5	7	9	11
	Throw 204	2	3	3	2.5	3	3.5	3.5	4	5	4.5	5	6	5	6	7	6	7	8	6.5	8	9.5	7	9	11	
8x4	Eff.Area .074 ft ²	CFM	24			30			38			42			54			58			66			76		
		NC	<20			20			20			25			30			30			35			35		
		Throw 201	3.5	4	4.5	5.5	6	6.5	6.5	7	8	7	8	9	7.5	9	11	9.5	11	13	9.5	12	14.5	11	14	17
		Throw 202	2.5	3	3.5	3.5	4	4.5	4.5	5	6	5	6	7	6	7	8	7	8	9	7	9	11	8	10	12
		Throw 203	2	2	2	2.5	3	3.5	3.5	4	5	4.5	5	6	5	6	7	6	7	8	6.5	8	9.5	7	9	11
8x6	Eff.Area .112 ft ²	CFM	33			44			56			67			82			91			100			116		
		NC	<20			20			20			25			30			30			35			40		
		Throw 201	4.5	5	5.5	6.5	7	7.5	7	8	9	8.5	10	12	10	12	14	12	14	16	12	15	18	13.5	17	20
		Throw 202	2.5	3	3.5	4.5	5	5.5	5.5	6	7	6	7	8	7.5	9	11	8.5	10	12	9	11	13	9.5	12	15
		Throw 203	2.5	3	3.5	3.5	4	4.5	4.5	5	6	5	6	7	6	7	8	7	8	9	7	9	11	8	10	12
8x8	Eff.Area .151 ft ²	CFM	42			62			76			90			105			118			133			155		
		NC	<20			20			25			25			30			35			35			40		
		Throw 201	5.5	6	6.5	7	8	9	8	9	10	9.5	11	13	12	14	16	13.5	16	18	14.4	18	22	16	20	24
		Throw 202	3.5	4	4.5	4.5	5	5.5	5.5	6	7	7	8	9	8.5	10	12	9.5	11	13	9.5	12	14.5	11.2	14	17
		Throw 203	3.5	4	4.5	4.5	5	5.5	5.5	6	7	6	7	8	7	8	9	7.5	9	11	8	10	12	9	11	13
	Throw 204	2.5	3	3.5	3.5	4	4.5	4.5	5	6	5	6	7	6	7	8	7	8	9	7	9	11	8	10	12	
10x4	Eff.Area .093 ft ²	CFM	29			38			47			57			67			76			86			95		
		NC	<20			20			25			25			30			35			35			40		
		Throw 201	4.5	5	5.5	5.5	6	6.5	7	8	9	7.5	9	11	9.5	11	13	11	13	15	12	15	18	13	16	19
		Throw 202	2.5	3	3.5	4.5	5	5.5	5.5	6	7	6	7	8	7	8	9	8.5	10	12	9	11	13	9.5	12	15
		Throw 203	2.5	3	3.5	3.5	4	4.5	4.5	5	6	5.5	6	7	6	7	8	7	8	9	6.5	8	9.5	7	9	11



ENGINEERING DATA

200 Series		See Footnotes A & C																								
SIZE	Velocity		300			400			500			600			700			800			900			1000		
	Duct Pt		0.006			0.01			0.015			0.021			0.029			0.038			0.048			0.065		
10x6	Eff.Area .143 ft ²	CFM	43			58			72			81			100			114			129			144		
		NC	<20			20			25			25			30			35			40			40		
		Throw 201	4.5	5	5.5	6	7	8	8	9	10	9.5	11	13	11	13	15	13	15	17	13.5	17	20	15	19	23
		Throw 202	3.5	4	4.5	4.5	5	5.5	6	7	8	7	8	9	7.5	9	11	8.5	10	12	9.5	12	14.5	10.5	13	16
		Throw 203	2.5	3	3.5	3.5	4	4.5	3.5	4	5	4.5	5	6	6	7	8	6	7	8	7	9	2011	7	9	11
10x10	Eff.Area .241 ft ²	CFM	72			96			119			143			167			194			215			240		
		NC	<20			20			25			25			30			35			40			40		
		Throw 201	6.5	7	7.5	8	9	10	11	12	13	13	15	17	14.5	17	10	17	20	23	18	23	28	20	25	30
		Throw 202	4.5	5	5.5	6.6	6	6.5	7	8	9	10	12	14	10	12	14	11	13	15	12	15	18	13.5	17	20
		Throw 203	3.5	4	4.5	4.5	5	5.5	5.5	6	7	6	7	8	7	8	9	8.5	10	12	9	11	13	10.5	13	16
Throw 204	3.5	4	4.5	3.5	4	4.5	4.5	5	6	5	6	7	6	7	8	7.5	9	11	8	10	12	9	11	13		
12x4	Eff.Area .113 ft ²	CFM	34			43			58			68			81			91			100			114		
		NC	<20			20			25			25			30			35			40			45		
		Throw 201	4.5	5	5.5	6.5	7	7.5	8	9	10	8.5	10	12	10	12	14	12	14	16	12	15	18	14.5	18	22
		Throw 202	3.5	4	4.5	4.5	5	5.5	5.5	6	7	6	7	8	7.5	9	11	8.5	10	12	9	11	13	10.5	13	16
		Throw 203	2.5	3	3.5	3.5	4	4.5	4.5	5	6	4.5	5	6	5	6	7	6	7	8	6.5	8	9.5	7	9	11
12x6	Eff.Area .170 ft ²	CFM	54			68			87			101			119			140			154			172		
		NC	<20			20			25			30			30			35			40			45		
		Throw 201	5.5	6	6.5	7	8	9	10	11	12	10	12	14	12	14	16	14.5	17	20	14.5	18	22	17	21	25
		Throw 202	4.5	5	5.5	5.5	6	6.5	7	8	9	7	8	9	8.5	10	12	10	12	14	10.5	13	15.5	12	15	18
		Throw 203	3.5	4	4.5	4.5	5	5.55	6.5	7	8	6	7	8	7	8	9	7.5	9	11	8	10	12	9.5	12	15
12x12	Eff.Area .349 ft ²	CFM	106			139			177			212			250			276			316			357		
		NC	<20			20			25			30			35			35			40			45		
		Throw 201	8	9	10	10	11	12	13.5	15	17	15.5	18	21	18	21	24	21	24	28	22	27	32	24	30	36
		Throw 202	5.5	6	6.5	6.5	7	7.5	9	10	11	10	12	14	12	14	16	13.5	16	18	14.5	18	22	16	20	24
		Throw 203	4.5	5	5.5	5.5	6	6.5	7	8	9	8.5	10	12	9.5	11	13	11.5	13	15	11	14	17	13	16	19
Throw 204	3.5	4	4.5	4.5	5	5.5	5.5	6	7	7	8	9	7.5	9	11	8.5	10	12	8	11	13	10.5	13	16		



ENGINEERING DATA

200 Series		See Footnotes A & C																									
SIZE	Velocity		300			400			500			600			700			800			900			1000			
	Duct Pt		0.006			0.01			0.015			0.021			0.029			0.038			0.048			0.065			
14x4	Eff.Area .133 ft ²	CFM		38			54			67			81			96			106			116			134		
		NC		<20			20			25			30			35			40			40			45		
		Throw 201		4.5	5	5.5	6.5	7	7.5	9	10	11	9.5	11	13	11	13	15	13	15	17	13	16	19	15	19	23
		Throw 202		3.5	4	4.5	4.5	5	5.5	6.5	7	8	7	8	9	8.5	10	12	9.5	11	13	9.5	12	14.5	11	14	17
		Throw 203		2.5	3	3.5	3.5	4	4.5	5.5	6	7	5	6	7	6	7	8	6.5	8	9	6.5	8	9.5	8	10	12
14x6	Eff.Area .200 ft ²	CFM		62			82			101			119			139			163			182			200		
		NC		<20			20			25			30			35			40			45			45		
		Throw 201		6.5	7	7.5	8	9	10	9	10	11	11	13	15	13.5	16	19	15	18	21	16	20	24	18	22	26
		Throw 202		4.5	5	5.5	5.5	6	6.5	6.5	7	8	7.5	9	11	9.5	11	13	10	12	14	11	14	17	13	16	19
		Throw 203		3.5	4	4.5	4.5	5	5.5	5.5	6	7	6	7	8	7	8	9	7.5	9	11	8	10	12	9.5	12	15
14x8	Eff.Area .265 ft ²	CFM		82			106			135			157			188			216			242			270		
		NC		<20			20			25			30			35			40			45			<45		
		Throw 201		7	8	9	9	10	11	11.5	13	15	13	15	17	14.5	17	20	17	20	23	18	23	28	20	25	30
		Throw 202		5.5	6	6.5	6.5	7	7.5	8	9	10	9.5	11	13	10	12	14	12	14	16	13	16	19	13.5	17	20
		Throw 203		4.5	5	5.5	5.5	6	6.5	6.5	7	8	7	8	9	7.5	9	11	8.5	10	12	10.5	13	15.5	11	14	17
14x14	Eff.Area .481 ft ²	CFM		144			191			242			288			338			387			447			494		
		NC		,20			25			30			30			35			40			<45			<45		
		Throw 201		10	11	12	12.5	14	15.5	16	18	20	18	21	24	21	25	29	23	27	31	26	32	38	29	36	43
		Throw 202		7	8	9	8	9	10	11	12	13	12	14	16	13.5	16	18	15.5	18	21	18	22	24	19	24	29
		Throw 203		5.5	6	6.5	6.5	7	7.6	8	9	10	9.5	11	13	11	13	15	12	14	16	13.5	17	20	14.5	18	22
Throw 204		4.5	5	5.5	5.5	6	6.5	7	8	9	7.5	9	11	9.5	11	13	10	12	14	11	14	17	13	16	20		

ENGINEERING FOOTNOTES

Footnote A:

Size: Nominal size or the duct opening.

Effective Area: The space between the vanes actually utilized by the air.

Velocity: The actual velocity of the air through the vanes measured with a velometer or similar device.

Duct Pt: The total pressure behind the register in the duct forcing that air through the register.

Throw: The throws noted in the tables are the distance from the register to where the air stream velocity has dropped to not under 100/75/50 F.P.M.

Footnote B:

Size: Nominal size or the duct opening.

Effective Area: The space between the vanes actually utilized by the air.

Velocity: The actual velocity of the air through the vanes measured with a velometer or similar device.

Duct Ps: The static pressure in the duct behind the grille. The static load on the fan chargeable against that grille. Velometer readings are taken between grille vanes giving actual velocity.

Footnote C:

Noise Criteria: NC "A" scale. (1) Below NC25 extremely quiet. (2) Below NC30 Quiet Office.

(3) Below NC35 Conference Rooms; normal voice 10-30 ft. (4) Below NC40 Conference Rooms; 6-12 ft. normal voice.

(5) NC45 Conference Rooms; 3-6 ft. normal voice.

Footnote D:

1) Tested without filters. Typical disposable 1" capacity is 2 cfm per square inch of gross filter area. Recommended velocity is 300-400 fpm. Velocities higher than 500 fpm will decrease filter performance. Increase flow resistance, and possibly blow off agglomerates of collected dirt. Velocity measured 1" from face.

2) Generally the more surface area of media you have in an air filter the lower pressure drop you will have across the filter.

3) Lower face velocities (the air speed at the face of the filter) will also produce less pressure drop across the filter while higher return air velocities cause higher pressure drop and can cause the filter to blow off agglomerates. Ashrae calls out for 300 FPM face velocity across the filter face. This is the ideal return air velocity. Actual face velocities will vary depending on the system design."

Example: 20x25 filter = 3.47 SF x 300 FPM face velocity = 1041 CFM

20x25 filter = 3.47 SF x 500 FPM face velocity = 1736 CFM

Footnote E:

Size: Nominal size or the duct opening.

Effective Area: The space between the vanes actually utilized by the air.

Velocity: The actual velocity of the air through the vanes measured with a velometer or similar device.

Duct Pt: The total pressure behind the register in the duct forcing that air through the register.

Throw: The throws noted in the tables are the distance from the register to where the air stream velocity has dropped to not under 100/75/50 F.P.M.

Noise Criteria: NC "A" scale. (1) Below NC25 extremely quiet. (2) Below NC30 Quiet Office. (3) Below NC35 Conference Rooms; normal voice 10-30 ft. (4) Below NC40 Conference Rooms; 6-12 ft. normal voice. (5) NC45 Conference Rooms; 3-6 ft. normal voice.