CB10 & CB20 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
6x6	Eff. Area .09 ft²	CFM	77			99			121			143			154			286		
		NC	<20			<20			<20			<20			20			20		
		Throw X (ft.)	5	6	7	10	11	12	9	11	13	11	13	15	12	15	18	15	19	23
		Throw Y (ft.)	4	4	4	5	6	7	5	6	7	7	8	9	9	11	13	14	17	20
10x6	Eff. Area .16 ft²	CFM	132			165			198			231			264			330		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	10	11	12	10	11	12	11	13	15	11	17	20	15	19	23	21	26	31
		Throw Y (ft.)	5	6	7	7	8	9	7	8	9	9	11	13	12	15	18	14	17	20
8x8	Eff. Area .17 ft²	CFM	143			176			209			242			286			352		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	10	11	12	12	13	14	13	15	17	15	17	20	15	19	23	19	24	29
		Throw Y (ft.)	5	6	7	7	8	9	9	11	13	11	13	15	10	13	16	18	22	26
14x6	Eff. Area .23 ft²	CFM	187			231			275			319			374			462		
		NC	<20			<20			<20			20			25			25-30		
		Throw X (ft.)	10	11	12	12	13	14	15	17	20	16	19	22	18	22	26	22	28	34
		Throw Y (ft.)	5	6	7	7	8	9	9	11	13	11	13	15	12	15	18	15	19	23
10x10	Eff. Area .26 ft²	CFM	247			312			377			442			494			624		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	10	11	12	14	15	17	15	17	20	16	19	22	19	24	29	24	30	36
		Throw Y (ft.)	5	6	7	7	8	9	11	13	15	13	15	17	12	15	18	15	19	23
12x10	Eff. Area .31 ft²	CFM	299			377			455			520			598			754		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	12	13	14	14	15	17	16	19	22	16	22	26	21	26	31	26	32	40
		Throw Y (ft.)	7	8	9	10	11	12	11	13	15	13	15	17	14	17	20	18	22	26
12x12	Eff. Area .38 ft²	CFM	377			442			546			637			728			910		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	12	13	14	15	17	19	16	22	26	20	24	28	22	28	34	30	37	44
		Throw Y (ft.)	7	8	9	10	11	12	13	15	17	15	17	20	15	19	23	19	24	29
14x14	Eff. Area .52 ft²	CFM	494			624			754			871			1001			1248		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	14	15	17	17	19	21	20	24	28	24	28	32	28	35	42	35	44	53
		Throw Y (ft.)	10	11	12	14	15	17	16	19	22	16	19	22	19	24	29	24	30	36

CB10 & CB20 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
16x16	Eff. Area .69 ft²	CFM	650			806			975			1144			1300			1638		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	17	19	21	22	24	26	24	28	32	28	33	38	31	39	47	38	48	58
		Throw Y (ft.)	12	13	14	15	17	19	16	19	22	16	19	22	21	26	31	28	35	42
18x18	Eff. Area .88 ft²	CFM	832			1053			1287			1482			1664			2080		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	20	22	24	25	28	31	28	32	38	33	39	45	35	44	53	44	55	66
		Throw Y (ft.)	14	15	17	17	19	21	20	24	28	22	26	30	24	30	36	31	39	47
20x20	Eff. Area 1.06 ft²	CFM	988			1274			1508			1768			2028			2522		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	23	26	29	30	33	36	33	39	45	39	46	53	42	52	62	53	66	79
		Throw Y (ft.)	15	17	19	22	24	26	24	28	32	28	33	38	30	37	44	37	46	55
24x24	Eff. Area 1.54 ft²	CFM	1456			1820			2184			2548			2912			3640		
		NC	<20			<20			25			25-30			30			30-35		
		Throw X (ft.)	25	28	31	32	35	39	37	44	51	43	50	58	46	57	68	56	70	84
		Throw Y (ft.)	17	19	21	22	24	26	26	30	35	30	35	40	33	41	49	38	48	58

SHOEMAKER MANUFACTURING

ENGINEERING DATA

CB30 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
6x6	Eff. Area .09 ft²	CFM	77			99			121			143			154			286		
		CFM x/y	19/28			24/37			33/44			24/52			39/57			52/72		
		NC	<20			<20			<20			<20			20			20		
		Throw X (ft.)	4	4	4	4	4	4	3	4	5	5	6	7	6	8	10	6	8	10
		Throw Y (ft.)	4	4	4	5	6	7	5	6	7	5	6	7	6	8	10	9	11	13
10x6	Eff. Area .16 ft²	CFM	132			165			198			231			264			330		
		CFM x/y	39/46			50/57			57/70			68/81			79/92			96/116		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	5	6	7	5	6	7	7	8	9	7	8	9	9	11	13	10	13	16
		Throw Y (ft.)	4	4	4	5	6	7	7	8	9	7	8	9	9	11	13	10	13	16
8x8	Eff. Area .17 ft²	CFM	143			176			209			242			286			352		
		CFM x/y	24/52			52/61			63/72			66/88			74/105			105/123		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	5	6	7	5	6	7	5	6	7	5	6	7	6	8	10	9	11	13
		Throw Y (ft.)	4	4	4	4	4	4	5	6	7	5	6	7	6	8	10	9	11	13
14x6	Eff. Area .23 ft²	CFM	187			231			275			319			374			462		
		CFM x/y	55/66			68/81			81/96			94/112			110/132			140/160		
		NC	<20			<20			<20			<20			25			25-30		
		Throw X (ft.)	4	4	4	5	6	7	5	6	7	7	8	9	9	11	13	10	13	16
		Throw Y (ft.)	5	6	7	7	8	9	9	11	13	11	13	15	10	13	16	12	15	18
10x10	Eff. Area .26 ft²	CFM	247			312			377			442			494			624		
		CFM x/y	75/85			93/109			111/132			130/156			150/171			187/218		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	4	4	4	5	6	7	5	6	7	7	8	9	9	11	13	10	13	16
		Throw Y (ft.)	5	6	7	7	8	9	9	11	13	11	13	15	10	13	16	12	15	18

CB30 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
12x10	Eff. Area .31 ft²	CFM	299			377			455			520			598			754		
		CFM x/y	91/104			111/132			132/161			156/182			182/208			189/224		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	4	4	4	4	4	4	5	6	7	7	8	9	6	8	10	10	13	16
		Throw Y (ft.)	5	6	7	5	6	7	9	11	13	11	13	15	12	15	18	15	19	23
12x12	Eff. Area .38 ft²	CFM	377			422			546			637			754			910		
		CFM x/y	111/132			130/156			166			195/221			223/265			286/312		
		NC	<20			<20			166/189			20-25			25			25-30		
		Throw X (ft.)	4	4	4	5	6	7	5	6	7	7	8	9	9	11	13	10	13	16
		Throw Y (ft.)	7	8	9	7	8	9	11	13	15	13	15	17	14	17	20	15	19	23
14x14	Eff. Area .52 ft²	CFM	494			624			754			871			1001			1248		
		CFM x/y	150/171			187/218			223/265			257/306			299/351			364/442		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	5	6	7	5	6	7	7	8	9	7	8	9	9	11	13	12	15	18
		Throw Y (ft.)	7	8	9	10	13	16	13	15	17	15	17	20	15	19	23	21	26	31
16x16	Eff. Area .69 ft²	CFM	650			806			975			1144			1300			1638		
		CFM x/y	192/228			234/286			288/343			338/403			390/455			494/572		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	7	8	9	10	11	12	11	13	15	11	13	15	12	15	18	19	24	29
		Throw Y (ft.)	10	11	12	10	13	16	13	15	17	16	19	22	18	22	26	21	26	31
18x18	Eff. Area .88 ft²	CFM	806			1079			1274			1482			1664			2080		
		CFM x/y	234/286			312/377			379/447			442/520			494/585			624/728		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	7	8	9	10	11	12	11	13	15	13	15	17	14	17	20	18	22	26
		Throw Y (ft.)	12	13	14	14	15	17	16	19	22	19	22	25	21	26	31	26	33	40

SHOEMAKER MANUFACTURING

ENGINEERING DATA

CB30 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
20x20	Eff. Area 1.06 ft²	CFM	988			1274			1482			1768			2028			2522		
		CFM x/y	296/345			379/447			442/520			530/618			608/579			756/884		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	10	11	12	12	13	14	13	15	17	15	17	20	15	19	23	21	26	31
		Throw Y (ft.)	14	15	17	17	19	21	20	24	28	22	26	30	24	30	36	31	39	47
24x24	Eff. Area 1.54 ft²	CFM	1482			1820			2262			2522			3042			3640		
		CFM x/y	442/520			546/637			676/793			756/884			910/1066			1092/1274		
		NC	<20			20			25			25-30			30			30-35		
		Throw X (ft.)	10	11	12	12	13	14	15	17	20	16	19	22	18	22	26	22	28	34
		Throw Y (ft.)	14	15	17	17	19	21	20	24	28	24	28	32	26	33	40	33	41	49
36x36	Eff. Area 1.54 ft²	CFM	3372			4140			4970			5797			6625			8281		
		CFM x/y	936/1144			1245/1505			1515/1788			1765/2050			1960/2340			2480/2912		
		NC	<40			45-50			<55			<60			<65			65-70		
		Throw X (ft.)	15	18	19	20	24	26	24	28	32	28	32	37	30	37	42	38	46	55
		Throw Y (ft.)	21	25	27	38			34	40	46	40	46	52	42	46	58	52	64	75

CB40 Series

SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.220			0.285			0.438		
6x6	Eff. Area .09 ft²	CFM	77			99			121			143			154			286		
		CFM x/y	13/26			19/29			24/36			28			30/46			39/59		
		NC	<20			<20			<20			<20			20			20		
		Throw X (ft.)	2.5	3	3.5	2.5	3	3.5	3	4	5	3	4	5	3	4	5	5	6	7
		Throw Y (ft.)	3	4	5	5	6	7	5	6	7	6.5	8	9.5	6.5	8	9.5	8.5	11	13
8x8	Eff. Area .17 ft²	CFM	143			176			209			242			286			352		
		CFM x/y	28/42			35/52			41/62			48			57/85			70/105		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	3	4	5	3	4	5	5	6	7	5	6	7	6.5	8	9.5	8.5	11	13
		Throw Y (ft.)	3	4	5	3	4	5	5	6	7	5	6	7	6.5	8	9.5	8.5	11	13
14x6	Eff. Area .23 ft²	CFM	247			312			377			442			494			624		
		CFM x/y	49/74			62/93			75/113			88			98/148			124/187		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	3	4	5	5	6	7	6.5	8	9.5	6.5	8	9.5	6.5	8	9.5	9.5	12	14.5
		Throw Y (ft.)	3	4	5	5	6	7	6.5	8	9.5	8.5	11	13	10.5	13	15.5	12	15	18
12x12	Eff. Area .38 ft²	CFM	377			442			546			637			728			910		
		CFM x/y	75/113			88/132			109/163			127			145/218			182/273		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	3	4	5	5	6	7	6.5	8	9.5	6.5	8	9.5	8.5	11	13	12	15	18
		Throw Y (ft.)	6.5	8	9.5	6.5	8	9.5	10.5	13	15.5	10.5	13	15.5	13.5	17	20.5	20.5	26	31
14x14	Eff. Area .52 ft²	CFM	494			624			754			871			1001			1248		
		CFM x/y	98/148			124/187			150/226			174			200/300			249/374		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	3	4	5	5	6	7	6.5	8	9.5	6.5	8	9.5	8.5	11	13	12	15	18
		Throw Y (ft.)	6.5	8	9.5	9.5	12	14.5	12	15	18	13.5	17	20.5	15	19	23	20.5	26	31
16x16	Eff. Area .69 ft²	CFM	650			806			975			1144			1300			1638		
		CFM x/y	130/195			161/241			195/292			228			260/390			327/468		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	6.5	8	9.5	6.5	8	9.5	8.5	11	13	10.5	13	15.5	12	15	18	15	19	23
		Throw Y (ft.)	8.5	11	13	10.5	13	15.5	12	15	18	15	19	23	17.5	22	26.5	20.5	26	31
18x18	Eff. Area .88 ft²	CFM	832			1053			1287			1482			1664			2080		
		CFM x/y	166/249			210/315			357/386			296			332/499			416/624		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	6.5	8	9.5	8.5	11	13	10.5	13	15.5	12	15	18	13.5	17	20.5	17.5	22	26.5
		Throw Y (ft.)	10.5	13	15.5	12	15	18	15	19	23	17.5	22	26.5	20.5	26	31	26.5	33	39.5
20x20	Eff. Area 1.06 ft²	CFM	988			1274			1508			1768			2028			2496		
		CFM x/y	197/296			254/382			301/452			353			405/608			499/748		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	8.5	11	13	10.5	13	15.5	10.5	13	15.5	13.5	17	20.5	15	19	23	19	24	29
		Throw Y (ft.)	12	15	18	15	19	23	17.5	22	26.5	19	24	29	22.5	28	33.5	29.5	37	44.5
24x24	Eff. Area 1.54 ft²	CFM	1482			1820			2184			2548			2912			3640		
		CFM x/y	296/444			364/546			436/655			509/764			582/873			728/1092		
		NC	<20			<20			20			25-30			30			30-35		
		Throw X (ft.)	8.5	11	13	10.5	13	15.5	13.5	17	20.5	15	19	23	17.5	22	26.5	28	35	42
		Throw Y (ft.)	12	15	18	15	19	23	19	24	29	22.5	28	33.5	26.5	33	39.5	40	50	60
36x36	Eff. Area 1.54 ft²	CFM	3372			4140			4970			5797			6625			8281		
		CFM x/y	647/971			819/1228			1390/1505			1154/1731			1294/1946			1662/2443		
		NC	<40			45-50			<55			<60			<65			65-70		
		Throw X (ft.)	11	14	16.5	15	19	23	18.5	23	27	21	26.5	31.5	23.5	30	36	30.5	39	46
		Throw Y (ft.)	15	19	23	21	26.5	32	26	32	37.5	29	37	44	33	42	50	42.5	54	64

ENGINEERING FOOTNOTES FOR SHOEMAKER DIFFUSERS & GRILLES:

SIZE: Nominal size or the duct opening / neck size.

EFFECTIVE AREA: The space between the blades actually utilized by the air.

VELOCITY: The actual velocity of the air through the blades measured with a velometer in at least 4 places.

FILTER VELOCITY: Some velocities higher than 500 FPM will decrease filter effectiveness and possibly blow off agglomerates.

Special Note: *The 920FG table gives the air flow for different filter grilles at 2 CFM per square inch of filter with allowance for the blockage caused by the grille.*

DUCT PT: The total pressure behind the diffuser in the duct forcing that air through the diffuser.

DUCT PS: The static pressure in the duct directly behind the grille or neck of the T-Bar grille. The static load on the fan chargeable against that grille. Velometer readings are taken between grille vanes giving actual velocity.

THROW: The throws noted in the tables are the distances from the diffuser 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.

NOISE CRITERIA addition for RD series:
The NC values are based on a room absorption of 18 db, re 10-13 watts.

NOISE CRITERIA addition for OBR – Damper Throttling:
¼ Closed – 5
⅓ Closed – 10
½ Closed – 15