



# ENGINEERING DATA

700 CB Series																				
SIZE	VELOCITY		400			500			600			700			800			1000		
	DUCT PT.		0.038			0.108			0.155			0.22			0.285			0.438		
6x6	Eff. Area .09 ft <sup>2</sup>	CFM	70			90			110			130			140			260		
		CFM x/y	13/26			19/29			24/36			28/42			30/46			39/59		
		NC	<20			<20			<20			<20			20			20		
		Throw X (ft.)	2.5	3	3.5	2.5	3	3.5	3.5	4	4.5	3.5	4	4.5	3	4	5	5	6	7
		Throw Y (ft.)	3.5	4	4.5	5.5	6	6.5	5	6	7	6.5	8	9	6.5	8	9.5	9	11	13
8x8	Eff. Area .17 ft <sup>2</sup>	CFM	130			160			190			220			260			320		
		CFM x/y	28/42			35/52			41/62			48/72			57/85			70/105		
		NC	<20			<20			<20			<20			20			25		
		Throw X (ft.)	3.5	4	4.5	3.5	4	4.5	5	6	7	5	6	7	6.5	8	9.5	8.5	11	13
		Throw Y (ft.)	3.5	4	4.5	3.5	4	4.5	5	6	7	5	6	7	6.5	8	9.5	8.5	11	13
10x10	Eff. Area .26 ft <sup>2</sup>	CFM	225			284			343			402			450			568		
		CFM x/y	49/74			62/93			75/113			88/132			98/148			124/187		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	3.5	4	4.5	5.5	6	6.5	7	8	9	6.5	8	9	6.5	8	9.5	9.5	12	14.5
		Throw Y (ft.)	3	4	4.5	5.5	6	6.5	7	8	9	9.5	11	12.5	10.5	13	14.5	12	15	18
12x12	Eff. Area .38 ft <sup>2</sup>	CFM	343			402			497			580			662			828		
		CFM x/y	75/113			88/132			109/163			127/191			145/218			182/273		
		NC	<20			<20			20			20-25			25			25-30		
		Throw X (ft.)	3.5	4	4.5	5.5	6	6.5	7	8	9	7	8	9	8.5	11	13	12	15	18
		Throw Y (ft.)	7	8	9	7	8	9	11	13	15	11	13	15	13.5	17	20	21	26	31
14x14	Eff. Area .52 ft <sup>2</sup>	CFM	450			568			686			793			911			1136		
		CFM x/y	98/148			124/187			150/226			174/261			200/300			249/374		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	3.5	4	4.5	5.5	6	6.5	7	8	9	7	8	9	9	11	13	12	15	18
		Throw Y (ft.)	7	8	9	11	12	13	13	15	18	14.5	17	20	15	19	23	21	26	31
16x16	Eff. Area .69 ft <sup>2</sup>	CFM	592			733			887			1041			1183			1491		
		CFM x/y	130/195			161/241			195/292			228/343			260/390			327/468		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	7	8	9	7	8	9	9.5	11	12.5	11	13	15	12	15	18	15	19	23
		Throw Y (ft.)	10	11	12	11.5	13	14.5	12.5	15	17	16	19	22	18	22	26	21	26	31
18x18	Eff. Area .88 ft <sup>2</sup>	CFM	756			958			1171			1349			1514			1893		
		CFM x/y	166/249			210/315			357/386			296/444			332/499			416/624		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	7	8	9	10	11	12	11	13	15	13	15	17	13.5	17	21	18	22	26
		Throw Y (ft.)	11.5	13	14.5	13.5	15	17	16	19	22	19	22	25	21	26	31	26.5	33	40
20x20	Eff. Area 1.06 ft <sup>2</sup>	CFM	899			1159			1372			1609			1845			2271		
		CFM x/y	197/296			254/382			301/452			353/530			405/608			499/748		
		NC	<20			<20			20			25			25-30			30		
		Throw X (ft.)	10	11	12	11.5	13	14.5	11	13	15	14.5	17	20	15	19	23	19	24	29
		Throw Y (ft.)	13.5	15	16.5	17	19	21	19	22	25	20	24	28	22	28	34	30	37	44

# ENGINEERING FOOTNOTES

## **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.

**FILTERVELOCITY:** 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