



# ENGINEERING DATA

HVD/FTD Series		VELOCITY	400	500	600	700	800	900	1000	1200	1400	1600
SIZE	DUCT PT.		0.02	0.035	0.044	0.061	0.078	0.095	0.119	0.175	0.201	0.256
6x6	Eff. Area .195 ft <sup>2</sup>	CFM	84	102	124	140	160	180	200	240	280	320
		NC	<20	<20	<20	<20	20	20-25	25	30-35	35	40
		Throw (ft.)	2   2   2	2.5   3   3.5	2   3   3.5	3   3.5   4	3.5   4   4.5	4   4.5   5	4   5   6	5   6   7	5.5   7   8.5	6.5   8   9.5
7x7	Eff. Area .270 ft <sup>2</sup>	CFM	112	140	160	195	220	245	275	325	380	420
		NC	<20	<20	<20	<20	20	20-25	25	30-35	35-40	40-45
		Throw (ft.)	2.5   3   3.5	3.5   4   4.5	4   4.5   5	4.5   5   6	5   6   7	6   7   8	6.5   8   9.5	7   9   11	9   11   13	10.5   13   15.5
8x8	Eff. Area .344 ft <sup>2</sup>	CFM	145	180	215	250	290	325	365	425	495	570
		NC	<20	<20	<20	20	20	25	30-35	35-40	40	45
		Throw (ft.)	3.5   4   4.5	4.5   5   5.5	5.5   6   6.5	6   7   8	7   8   9	7.5   9   10.5	8   10   12	9   11.5   13.5	10.5   13   15.5	12   15   18
9x9	Eff. Area .441 ft <sup>2</sup>	CFM	185	225	270	320	360	395	445	530	620	715
		NC	<20	<20	20	25	30	30-35	35	40	40	45
		Throw (ft.)	4.5   5   5.5	5.5   6   6.5	6.5   7   7.5	7   8   9	7.5   9   10.5	8.5   10   11.5	9   11   13	10.5   13   15.5	12   15   18	13.5   17   20
10x10	Eff. Area .540 ft <sup>2</sup>	CFM	225	275	335	390	445	495	560	670	760	865
		NC	<20	<20	20	25	30	30-35	35	40	40-45	45-50
		Throw (ft.)	5.5   6   6.5	6.5   7   7.5	7   8   9	7.5   9   10.5	8.5   10   11.5	9.5   11   12.5	10   12.5   15	11.5   14.5   17	13   17   20	15   19   23
12x12	Eff. Area .788 ft <sup>2</sup>	CFM	320	395	465	545	620	700	775	935	1050	1250
		NC	<20	<20	20-25	25-30	30-35	35	35-40	40-45	45-50	50>
		Throw (ft.)	5.5   6   6.5	6.5   7   7.5	7   8   9	7.5   9   10.5	8.5   10   11.5	9.5   11   12.5	10   12.5   15	12.5   15.5   19	14.5   18   22	17   21   25
14x14	Eff. Area 1.06 ft <sup>2</sup>	CFM	440	550	650	775	880	985	1100	1300	1550	1750
		NC	<20	25	30	30-35	35-40	40	40-45	45-50	50>	50>
		Throw (ft.)	6.5   7   7.5	7   8   9	8   9   10	9.5   11   12.5	10   12   14	12   14   15	12   15   18	13.5   17   20	16   20   24	18   23   28
16x16	Eff. Area 1.48 ft <sup>2</sup>	CFM	620	770	910	1090	1250	1380	1550	1820	2175	2450
		NC	<20	25	30-35	35	35-40	40-45	50	50>	50>	50>
		Throw (ft.)	7   9   11s	8   9   12	9   11   13	10   12   14	11   13   15	12   14   15	14   17   20	15   18   21	17   21   26	20   25   30

# 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