



ENGINEERING DATA

USR52 Series

SIZE	VELOCITY		300	400	500	600	700	800	1000	1200	1400
	DUCT PT.		0.004	0.008	0.013	0.018	0.025	0.033	0.051	0.074	0.1
10x4	Eff. Area 0.201 ft ²	CFM	63	79	100	121	142	163	200	242	284
		NC	<20	<20	<20	20	20-25	25	30	35	40
		Throw(ft.)	5 6 6	7 7 8	9 9 10	9 10 11	11 13 15	12 14 16	14 19 22	16 21 25	20 25 30
12x4	Eff. Area 0.241 ft ²	CFM	75	95	120	145	170	195	240	290	340
		NC	<20	<20	<20	20	25	30	35	40	45
		Throw(ft.)	5.5 6 7	7 8 9	9 10 11	10 12 14	12 14 16	14 16 18	16 20 24	18 23 28	22 27 32
16x4	Eff. Area 0.314 ft ²	CFM	95	125	155	190	220	250	315	375	440
		NC	<20	<20	<20	20	25	30	35	40	45
		Throw(ft.)	6.5 7 8	8 9 10	11 12 13	12 14 16	15 17 20	16 19 22	19 24 29	22 28 34	26 33 40
10x6	Eff. Area 0.314 ft ²	CFM	95	125	155	190	220	250	315	375	440
		NC	<20	<20	<20	20	25	30	35	40	45
		Throw(ft.)	6.5 7 8	8 9 10	11 12 13	12 14 16	15 17 20	16 19 22	19 24 29	22 28 34	26 33 40
12x6	Eff. Area 0.380 ft ²	CFM	115	150	190	230	265	305	380	455	530
		NC	<20	<20	<20	20	25	30	35	40	45-50
		Throw(ft.)	7 8 9	10 11 12	12 13 15	14 16 18	16 19 22	18 21 24	22 27 32	26 32 38	30 37 44
14x6	Eff. Area 0.449 ft ²	CFM	135	180	225	270	315	360	450	540	630
		NC	<20	<20	<20	20	25	30	35	40	45-50
		Throw(ft.)	8 9 10	11 12 13	14 15 17	16 18 21	17 20 23	20 23 27	23 29 35	28 35 42	33 41 49
14x8	Eff. Area 0.598 ft ²	CFM	180	240	299	357	416	480	589	715	838
		NC	<20	<20	<20	20	25	30	35	40	45-50
		Throw(ft.)	8 9 10	11 11 13	13 15 16	15 18 22	19 22 24	22 24 28	23 30 35	28 36 43	33 41 49
18x6	Eff. Area 0.560 ft ²	CFM	170	225	280	335	390	450	560	670	785
		NC	<20	<20	<20	20	25	30	35	40	45-50
		Throw(ft.)	8 9 10	10 11 12	13 14 16	15 17 20	17 20 23	20 23 27	22 28 34	27 34 41	31 39 47
20x8	Eff. Area 0.887 ft ²	CFM	265	355	445	530	620	710	890	1065	1240
		NC	<20	<20	<20	20	25	30	35-40	40-50	50>
		Throw(ft.)	10 11 12	13 14 16	17 18 20	18 21 24	21 25 28	24 28 32	29 36 43	34 43 52	40 50 60



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	DUCT PT.		0.004	0.008	0.013	0.018	0.025	0.033	0.051	0.074	0.1
20x10	Eff. Area 1.12 ft ²	CFM	335	450	560	670	785	895	1120	1345	1570
		NC	<20	<20	20	25	30	30-35	35-40	40-45	50>
		Throw(ft.)	11.5 13 15	16 18 20	20 22 24	22 26 30	26 31 36	30 35 40	35 44 53	42 52 62	49 61 73
18x12	Eff. Area 1.17 ft ²	CFM	350	470	585	700	820	935	1170	1405	1640
		NC	<20	<20	20	25	30	30-35	35-40	40-45	50>
		Throw(ft.)	11.5 13 15	16 18 20	20 22 24	23 27 31	26 31 36	31 36 41	35 44 53	42 53 64	50 62 75
24x12	Eff. Area 1.65 ft ²	CFM	495	660	825	990	1155	1320	1650	1980	2310
		NC	<20	<20	20	25	30	30-35	35-40	40-45	50>
		Throw(ft.)	14.5 16 18	19 21 23	23 26 29	27 32 37	32 37 43	36 42 48	42 53 64	50 63 76	59 74 89
30x12	Eff. Area 2.10 ft ²	CFM	630	840	1050	1260	1470	1680	2100	2520	2940
		NC	<20	<20	20	25	30	30-35	35-40	45-50	50>
		Throw(ft.)	16 19 20	22 24 26	26 29 32	30 35 40	35 41 47	40 47 54	47 59 71	57 71 85	66 82 98
36x12	Eff. Area 2.49 ft ²	CFM	745	995	1245	1495	1745	1990	2490	2990	3485
		NC	<20	<20	20	25	30	30-35	35-40	45-50	50>
		Throw(ft.)	17 19 21	23 26 29	29 32 35	33 39 45	38 45 52	44 52 60	52 65 78	62 78 94	73 91 109

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