



ENGINEERING DATA

USR34 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		
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	6.5	7	8	9	9	10	11	10	12	14	12	14	16	14	16	18	16	29	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	7.5	8	9	10	11	12	13	12	14	16	14.5	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	7.5	8	9	10	11	12	13	12	14	16	14.5	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	13.5	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	15.5	18	21	17	20	23	20	23	27	23	29	35	28	35	42	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	14.5	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	16	18	20	18	21	24	21	25	29	24	28	32	29	36	43	34	43	52	40	50	60
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	14.5	16	18	20	20	22	24	22	26	30	26	31	37	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	14.5	16	18	20	20	22	24	23	27	31	26	31	37	31	36	41	35	44	53	42	53	64	53	62	74



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USR34 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																
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
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	18	20	22	24	26	26	29	32	30	35	40	35	41	47	40	47	54	47	59	71	57	71	85	66
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

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