

Return Duct Sizing Chart

Return air duct sizes by airflow. Returns are held to a velocity limit, not just a friction rate.

- Friction rate 0.1 in. w.g. per 100 ft AND velocity at or below 700 fpm, whichever is stricter
- The velocity limit is what usually governs. Return grilles sit near people, and noise is the common callback.
- Galvanized steel, absolute roughness 0.0003 ft
- Equal friction method, ASHRAE Fundamentals Ch. 34 (Darcy-Weisbach with the Haaland friction factor).

CFM	Round duct	Velocity (fpm)	in. w.g. / 100 ft	Rectangular	Low profile
25	4"	286	0.049	4 x 4	—
50	5"	367	0.057	6 x 4	8 x 4
75	6"	382	0.049	6 x 6	12 x 4
100	6"	509	0.082	6 x 6	12 x 4
125	7"	468	0.058	8 x 8	16 x 4
150	7"	561	0.081	8 x 8	16 x 4
175	8"	501	0.056	8 x 8	16 x 4
200	8"	573	0.071	8 x 8	16 x 4
250	9"	566	0.060	10 x 10	18 x 6
300	9"	679	0.083	10 x 10	18 x 6
350	10"	642	0.066	10 x 10	24 x 6
400	12"	509	0.035	12 x 12	24 x 6
450	12"	573	0.043	12 x 12	24 x 6
500	12"	637	0.052	12 x 12	24 x 6
600	14"	561	0.034	14 x 14	30 x 8
700	14"	655	0.045	14 x 14	30 x 8
800	16"	573	0.030	16 x 16	30 x 8
900	16"	645	0.037	16 x 16	30 x 8
1000	18"	566	0.026	18 x 18	30 x 10
1200	18"	679	0.036	18 x 18	30 x 10
1400	20"	642	0.028	20 x 20	30 x 12
1600	22"	606	0.023	22 x 22	30 x 14
1800	22"	682	0.028	22 x 22	30 x 14
2000	24"	637	0.022	22 x 22	30 x 18
2500	26"	678	0.023	24 x 24	30 x 20
3000	30"	611	0.016	28 x 28	30 x 26
3500	32"	627	0.015	30 x 30	—
4000	34"	634	0.015	—	—

Reference data for everyday sizing, not an engineering design. Final duct sizing should be checked by a licensed professional against ACCA Manual D for the specific system.