

Fantech Fan Sizing Guidelines

Bathroom Ventilation Rates

These are only recommendations, always check local codes first.

Bathrooms under 100 square feet

For a bathroom size under 100 sq. ft. the standard rule of thumb is one (1) cfm per square foot of bathroom

Example #1

8' x 10' bath with one toilet and one shower/tub

Calculation #1

$$8' \times 10' = 80 \text{ square feet}$$

Calculation #2

$$80 \text{ ft}^2 \times 1 \text{ cfm/ft}^2 = 80 \text{ cfm}$$

(Note: $\text{ft}^2 = \text{square feet}$)

Bathrooms over 100 square feet

In bathrooms over 100 sq. ft. the cfm is calculated based on the fixtures in the bath. Toilets, showers, standard tubs and steam showers¹ are allowed 50cfm for each fixture. Hot tubs are calculated at 100cfm.

Example #2

11' x 14' bath with his & her toilets and a shower

Calculation #1

$$11' \times 14' = 154 \text{ square feet}$$

Calculation #2

$$50 \text{ cfm (his toilet)} + 50 \text{ cfm (her toilet)} + 50 \text{ cfm (shower)} = 150 \text{ cfm}$$

Example #3

18' x 22' bath with his & her toilets, shower, and hot tub

Calculation #1

$$18' \times 22' = 396 \text{ square feet}$$

Calculation #2

$$50 \text{ cfm (his toilet)} + 50 \text{ cfm (her toilet)} + 50 \text{ cfm (shower)} + 100 \text{ cfm (hot tub)} = 250 \text{ cfm}$$

¹Note: We recommend that steam showers be vented using a separate fan on a timer so that fan may be shut off during shower use and then run afterward to dry the shower stall.

Bathroom Vent Locations

Locate the vent intake as close to the bath fixtures (toilets, showers, and hot tubs) as possible. Try to keep the vent as far from doors, operable windows and air supply registers as possible. The intent is to make the air flow across the room and remove moist, humid air from the appliance location. Remote fans allow the use of multiple intakes with a single fan so that systems may be more closely tailored to the individual room.

Additional Questions? Problems?
Please call our ventilation experts at:
800-747-1762

Bathroom Ventilation Sound Levels

Remote mounted fans have the potential to be extremely quiet provided they are mounted properly.

We recommend the following:

- Use of insulated flexible duct for the exhaust system.
- Placing at least 8 feet of duct between intake grill and fan. (insulated flexible duct allows sound from fan to dissipate gradually so that it can not be heard in the bathroom.)
- If applicable use multiple intake points.
- Use low sound generation grills (such as the ones supplied in our bath ventilation kits).

Kitchen Ventilation Rates

Before selecting your kitchen ventilation fan check with local residential codes. This will typically give you a minimum ventilation rate. Additionally, check the range manufacturer's recommendations for ventilation. If range manufacturer's recommendations are not available use these figures in calculating fan size.

Wall Mount Hood:

- 100 cfm per foot of width

Example #4

Range Hood Dimensions

36" wide by 18" deep

Conversion#1

$$36" = 3'$$

Calculation #1

$$3' \times 100 \text{ cfm per foot} = 300 \text{ cfm}$$

Island Mount Hood:

- 150 cfm per foot of width

Example #5

Range Hood Dimensions

36" wide by 24" deep

Conversion#1

$$36" = 3'$$

Calculation #1

$$3' \times 150 \text{ cfm per foot} = 450 \text{ cfm}$$

Kitchen Ventilation Sound Levels:

Fantech inline fans tend to be very quiet for range hood installation, however to optimize this, please consider the following suggestions.

- Install a duct silencer. This will act like a muffler to prevent sound generated by the fan from coming down the duct to the range.
- Install a speed controller. Often a smaller amount of ventilation will be sufficient, and by running the fan slower it is possible to reduce the sound.