

# Panasonic

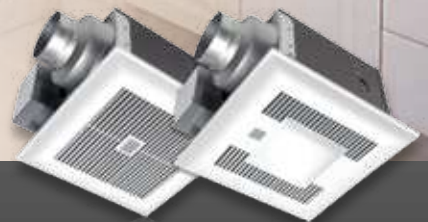


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## Ventilation Solutions



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*Design and specifications subject to change without notice.*

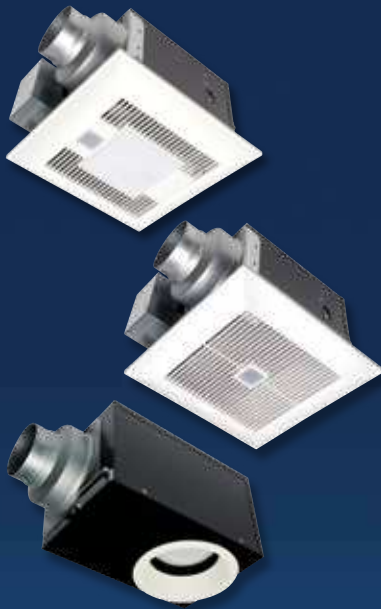


VF13269CAT





## Follow the Leader.



## Leading the Way with High-Performance Ventilation Fans and Indoor Air Quality Solutions

Panasonic is the premier manufacturer of powerful, energy-efficient ventilation fans that quietly exhaust unhealthy, unpleasant or moist air from your home or business. Contractors, builders, architects and homeowners rely on us for our quality and for the wide array of solutions we offer — from bathroom fans with both motion and humidity sensors to remote in-line fans.

Panasonic is proud to be recognized by the EPA for the fourth consecutive year, earning their most prestigious ENERGY STAR® honor, the Sustained Excellence 2013 Award. Sustained excellence is precisely what we strive for as evidenced by our legacy of providing high-performance, energy-efficient ventilation solutions. In fact, for the past two decades — highlighted by industry-leading quiet fans, revolutionary DC Motor technology, and leading-edge LED lighting — we've continued to demonstrate outstanding leadership, year after year.

Panasonic has been in the ventilation business for over 100 years and is the largest manufacturer of ventilation equipment globally. Panasonic produces the highest quality, most efficient and environmentally friendly products available in the market today. We do this by designing, engineering and manufacturing in our own facilities. Panasonic is known around the world for offering the quietest, ENERGY STAR rated fans in the industry!

### Panasonic Advanced Ventilation Solutions

### A LEGACY OF INNOVATION

1993

2003

2006

2007

2011

2012

2013

**WhisperCoiling™**  
RESOLUTION

Quiet Solution

**Whisper™**  
RESOLUTION

Retrofit Solution

**WhisperGreen™**  
RESOLUTION

ASHRAE 62.2  
Compliance Solution



**WhisperValue™**  
RESOLUTION

Multi-Family Solution

**WhisperComfort™**  
RESOLUTION

Balanced Air Solution

**WhisperSense™**  
RESOLUTION

Cal Green  
Compliance Solution

**WhisperRecessed™**  
RESOLUTION

Design Solution

**WhisperGreenLED™**  
RESOLUTION

Ultimate Energy Efficient  
Fan/Light Solution



**Panasonic**



## Panasonic Ventilation

## Fan Benefits

### Certified and Code Compliant

Panasonic ventilation fans are certified by the Home Ventilating Institute (HVI) and ENERGY STAR® qualified, where guidelines exist. Most models can be used to comply with ASHRAE 62.2, the ventilation standard required by LEED for Homes, ENERGY STAR IAP, CALGreen, NAHB Green Building Standard, EarthCraft, Washington Ventilation Code and other building programs.

### Powerful and Quiet

Fully enclosed DC and AC condenser motors ensure remarkable performance and quiet operation at industry standard, .25" w.g. (Installed Performance)

### Long Life

Permanently lubricated motors are engineered for trouble-free, continuous operation for 30,000 hours on AC motors, along with rust-proof paint and galvanized housing.

### Easy Installation

Integrated duct adaptors, adjustable mounting brackets (up to 24" o.c.), fan/motor units that easily detach from the housing and uncomplicated wiring all lend to user-friendly installation. Double-hanger bar systems allow for ideal positioning.

### Energy Savings

When it comes to energy efficiency, our wattage requirements are among the lowest in the industry ensuring low cost operation.

### Safety

WhisperGreen models are protected by UL Class 2 Power Unit while all other models are equipped with thermal fuse protection. With the exception of the ERV and heater fans, all models are UL listed for tub/shower enclosure when used with a GFCI protected circuit.

### Airflow

A built-in plastic or metal damper (depending on model #) in all ceiling-mounted models prevents backdraft. Built-in metal flange provides blocking for penetrations through drywall as an air barrier, and assists with the decrease in leakage in the building envelope during blower door testing.

### Illumination

The fan/lights have ENERGY STAR rated compact fluorescent lamps (CFL's) that can be used to comply with Title-24, and have 10,000 hours of rated life. The CFL lighted models feature >70LPW, the highest Lumens Per Watt in the industry. A 4W night light is available on most models. Some models feature an LED light engine with 1W LED night light.

### Green Manufacturing

All fan only models are RoHS Approved. Restriction of Hazardous Substances Directive (RoHS) restricts the use of the following six substances in the manufacturing process: Lead, Mercury, Cadmium, Hexavalent chromium [CR(VI)], Polybrominated biphenyls (PBB), and Polybrominated diphenyl ether (PBDE).

### Warranty

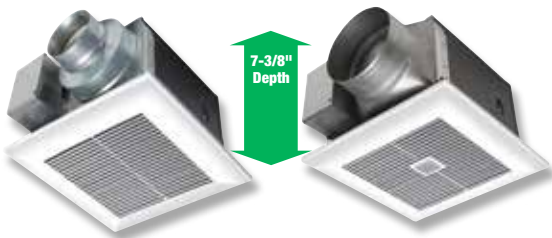
6-Year warranty on DC motor, 5-Year warranty on LED, 3 years on CFL's and 3-Year warranty on all other parts.



**Panasonic**

# Fans with Built-in Controls

## WhisperGreen® VENTILATION FAN



**FV-08VKM3** 80 CFM 4" or 6" Duct    **FV-13VKM3** 130 CFM 6" Duct  
**FV-08VKS3** 80 CFM 4" or 6" Duct    **FV-13VKS3** 130 CFM 6" Duct



### WhisperGreen Key Benefits:

- SmartFlow™ technology for optimal CFM output
- Fully enclosed DC motor for long life – rated for 60,000 hours continuous run
- SmartAction® motion sensor (FV-08VKM3, FV-13VKM3)
- Built-in variable speed controls and high/low delay timer up to 60 minutes
- Integrated dual 4" or 6" duct adaptor on 80 CFM models
- Fits in 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, CALGreen, California Title 24 and WA Ventilation Code



80 CFM  
Variable Speed  
Models Only



130 CFM  
Variable Speed  
Models Only

## WhisperSense™ VENTILATION FAN



**FV-08VQC5** 80 CFM 4" or 6" Duct  
**FV-11VQC5** 110 CFM 4" or 6" Duct



Built-in Controls

### WhisperSense Key Benefits:

- Built-in dual motion and humidity sensors with versatile functionality
- SmartAction® motion sensor automatically turns fan on when someone enters the room
- Humidity sensor detects rapid rise in Relative Humidity (RH) and automatically turns fan on to remove moisture to help prevent mold and mildew
- Auto shutoff feature helps eliminate unnecessary energy use and further reduce operating costs
- Integrated dual 4" or 6" adaptor
- Fits in 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, CALGreen and California Title 24



## WhisperWelcome™ VENTILATION FAN



INCLUDED:  
4" to 3" adaptor

**FV-05VFM2** 50 CFM 4" or 3" Duct  
**FV-08VFM2** 80 CFM 4" or 3" Duct



### WhisperWelcome Key Benefits:

- Low profile housing design - ideal for remodeling
- Built-in SmartAction motion sensor automatically activates when someone enters the room
- Built-in delay timer turns off the fan after 20 minutes
- Provides flexibility for installation in 2 x 6 and 2 x 8 construction
- Detachable 4" to 3" duct adaptor included
- Ideal for renovation since you can use the existing duct
- Easy Installation (double hanger bar system)
- Rust-proof paint treatment on galvanized housing
- Built-in damper to prevent backdraft
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, California Title 24

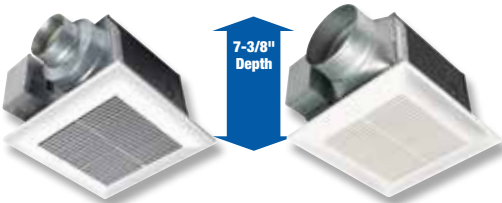
# Single Speed Fans (On/Off)



**FV-05VK3** 50 CFM 4" or 6" Duct    **FV-11VK3** 110 CFM 4" or 6" Duct  
**FV-08VK3** 80 CFM 4" or 6" Duct

## WhisperGreen Key Benefits:

- SmartFlow™ technology for optimal CFM output
- Fully enclosed DC motor for long life – rated for 60,000 hours continuous run
- Integrated dual 4" or 6" duct adaptor
- Fits 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



**FV-05VQ5** 50 CFM 4" or 6" Duct    **FV-15VQ5** 150 CFM 6" Duct  
**FV-08VQ5** 80 CFM 4" or 6" Duct  
**FV-11VQ5** 110 CFM 4" or 6" Duct

## WhisperCeiling Key Benefits:

- Quiet, yet powerful - ideal for new and remodel residential applications
- Integrated 4" or 6" duct adaptor on 50-110 CFM models
- Large volume (190-390) CFM options available for light commercial use
- Fits 2 x 8 construction
- Detachable 4" to 3" duct adaptor included
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, EarthCraft, California Title 24 and WA Ventilation Code



**FV-08VF2** 80 CFM 4" or 3" Duct  
**FV-11VF2** 110 CFM 4" or 3" Duct



INCLUDED:  
4" to 3"  
adaptor

## WhisperFit Key Benefits:

- Low profile housing design – Ideal for remodeling projects and manufactured structured homes
- Fits in 2 x 6 and 2 x 8 construction
- Detachable 4" to 3" duct adaptor included
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



**FV-05VS3** 50 CFM 4" Oval Duct  
**FV-08VS3** 80 CFM 4" Oval Duct  
**FV-10VS3** 100 CFM 4" Oval Duct

## WhisperValue Key Benefits:

- Ideal for residential construction (single and multi-family) and manufactured homes
- 3-3/8" housing depth – lowest profile ENERGY STAR fan available
- UL approved for ceiling or wall mount – actually fits in a 2 x 4 stud bay
- Wall installation eliminates the need for a radiation damper
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code

### WhisperValue U-Can Contractor Pack

Universal Housing Can	Motor/Grille Assembly	Complete Fan Unit	Master Pack
FV-05-10VSA3	FV-05VSB3	FV-05VS3	4
FV-05-10VSA3	FV-08VSB3	FV-08VS3	4
FV-05-10VSA3	FV-10VSB3	FV-10VS3	4

The Contractor Pack includes 4 complete fans. The housing and motor/grille are packaged separately for flexibility during installation.

\*Must order in quantities of 4, shipment will contain 1 box with 4 units.

Fits in nearly every ceiling cavity.

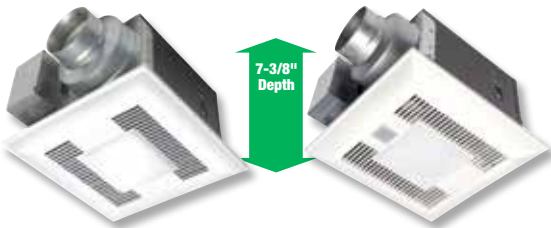
Optional 24 gauge, fire code rated 4" oval to 3" round duct adaptor, sold separately (Model # FV-VS43FR)

**Complete Specifications** on pages 28-37.

**WhisperControl Cross Reference** on pages 24-25.

# Fan/Lights with Built-in Controls

## WhisperGreen LED™



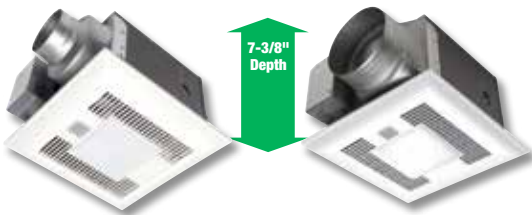
**FV-08VKSE3** 80 CFM  
**FV-08VKME3** 80 CFM



### WhisperGreen LED Key Benefits:

- Revolutionary 12W LED light engine with 1W LED nightlight
- Unequaled performance and quietest operation at .25" w.g. static pressure
- Brushless DC motor with SmartFlow™ technology
- Variable speed with built-in controls
- SmartAction® Motion Sensor — (FV-08VKME3)
- Integrated dual 4" or 6" duct adaptor
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, CALGreen, California Title 24 and WA Ventilation Code

## WhisperGreen-Lite™



**FV-08VKML4** 80 CFM 4" or 6" Duct  
**FV-08VKS4** 80 CFM 4" or 6" Duct  
**FV-13VKML4** 130 CFM 6" Duct  
**FV-13VKS4** 130 CFM 6" Duct



80 CFM  
 Variable Speed  
 Models Only



130 CFM  
 Variable Speed  
 Models Only

### WhisperGreen-Lite Key Benefits:

- SmartFlow™ technology for optimal CFM output
- Fully enclosed DC motor for long life – rated for 60,000 hours continuous run
- SmartAction® motion sensor — (FV-08VKML4, FV-13VKML4)
- Built-in variable speed controls and high/low delay timer up to 60 minutes
- Integrated dual 4" or 6" duct adaptor for 80 CFM models
- Fits in 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, CALGreen, California Title 24 and WA Ventilation Code



INCLUDES: (2) 13W ENERGY STAR rated self ballasted GU24 base CFL/lamps and a 4W night light. 3500Kelvin/ HighCRI/997 Lumens per lamp/75 Lumens Per Watt/10,000 hours, rated average life/equivalent to (2) 75W incandescent lamps.

## WhisperSense-Lite™



**FV-08VQCL6** 80 CFM 4" or 6" Duct  
**FV-11VQCL6** 110 CFM 4" or 6" Duct



Built-in Controls

### WhisperSense-Lite Key Benefits:

- Built-in dual motion and humidity sensors with versatile functionality
- SmartAction® motion sensor automatically turns fan on when someone enters the room
- Humidity sensor detects rapid rise in Relative Humidity (RH) and automatically turns fan on to remove moisture to help prevent mold and mildew
- Auto shutoff feature helps eliminate unnecessary energy use and further reduce operating costs
- Integrated dual 4" or 6" duct adaptor
- Fits in 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI branch circuit wire
- Can be used to comply with ASHRAE 62.2, LEED, IAP, CALGreen, California Title 24 and WA Ventilation Code



INCLUDES: (2) 13W ENERGY STAR rated self ballasted GU24 base CFL/lamps and a 4W night light. 3500Kelvin/ HighCRI/997 Lumens per lamp/75 Lumens Per Watt/10,000 hours, rated average life/equivalent to (2) 75W incandescent lamps.

# Single Speed Fans with Lights (On/Off)

## WhisperRecessed™ VENTILATION FAN

The Design Solution for Bathroom Fan/Light Combinations



**FV-08VRL1** 80 CFM 4" or 6" Duct



### WhisperRecessed Key Benefits:

- Architectural grade recessed fan/light
- Quiet and powerful 80 CFM ventilation hidden above the ceiling
- Adjustable recessed light minimizes glare
- Beautiful lighting with 6-1/2" aperture and advanced luminaire design
- Integrated dual 4" or 6" duct adaptor
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



INCLUDES: One 18W GU24 Spiral CFL/2700 Kelvin/84 lumen/75 Lumens Per Watt/1380 Lumens each/75 Lumens Per Watt/ENERGY STAR® qualified/10,000 hours rated average life/equivalent to 75W incandescent lamp/integral electronic ballast for flicker-free operation.

## WhisperGreen-Lite™ VENTILATION FAN



**FV-08VKL4** 80 CFM 4" or 6" Duct

**FV-11VKL4** 110 CFM 4" or 6" Duct



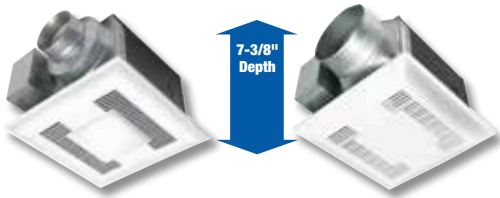
### WhisperGreen-Lite Key Benefits:

- SmartFlow™ technology for optimal CFM output
- Fully enclosed DC motor for long life – rated for 60,000 hours continuous run
- Integrated dual 4" or 6" duct adaptor
- Fits in 2 x 8 construction
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



INCLUDES: (2) 13W ENERGY STAR rated self ballasted GU24 base CFL/lamps and a 4W night light. 3500Kelvin/HighCRI/997 Lumens per lamp/75 Lumens Per Watt/10,000 hours, rated average life/equivalent to (2) 75W incandescent lamps.

# Single Speed Fans with Lights (On/Off)



**FV-08VQL6** 80 CFM 4" or 6" Duct  
**FV-11VQL6** 110 CFM 4" or 6" Duct  
**FV-15VQL6** 150 CFM 6" Duct



## WhisperLite Key Benefits:

- Quiet, yet powerful — ideal for new and remodel residential applications
- Integrated dual 4" or 6" duct adaptor on 80-110 CFM models
- Fits in 2 x 8 construction
- Large volume (190-390) CFM options available for light commercial use
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



INCLUDES: (2) 13W ENERGY STAR rated self ballasted GU24 base CFL/lamps and a 4W night light. 3500Kelvin/ HighCRI/997 Lumens per lamp/75 Lumens Per Watt/10,000 hours, rated average life/equivalent to (2) 75W incandescent lamps.



(product shown with 3" duct adaptor)



INCLUDED:  
4" to 3" adaptor



**FV-05VFL4** 50 CFM 4" or 3" Duct  
**FV-08VFL4** 80 CFM 4" or 3" Duct  
**FV-11VFL4** 110 CFM 4" or 3" Duct

## WhisperFit-Lite Key Benefits:

- Low profile housing design – Ideal for remodeling projects and manufactured structured homes
- Fits in 2 x 6 and 2 x 8 construction
- Detachable 4" to 3" duct adaptor included
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



INCLUDES: (2) 13W ENERGY STAR rated self ballasted GU24 base CFL/lamps and a 4W night light. 3500Kelvin/ HighCRI/997 Lumens per lamp/75 Lumens Per Watt/10,000 hours, rated average life/equivalent to (2) 75W incandescent lamps.



**Lowest profile,  
Actually fits  
in a 2 x 4!**



**FV-08VSL3** 80 CFM 4" Oval Duct  
**FV-10VSL3** 100 CFM 4" Oval Duct

Fits in nearly every ceiling cavity.

Optional 24 gauge, fire code rated 4" oval to 3" round duct adaptor, sold separately (Model # FV-VS43R)

## WhisperValue-Lite Key Benefits:

- Ideal for residential construction (single and multi-family) and manufactured homes
- 3-3/8" housing depth – lowest profile ENERGY STAR fan available
- L-shaped bracket simplifies installation and provides strong support
- UL approved for ceiling or wall mount – actually fits in a 2 x 4 stud bay
- Wall installation eliminates the need for a radiation damper
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code

### WhisperValue-Lite U-Can Contractor Pack

Universal Housing Can	Motor/Grille Assembly	Complete Fan Unit	Master Pack
FV-08-10VSLA3	FV-08VSLB3	FV-08VSL3	4
FV-08-10VSLA3	FV-10VSLB3	FV-10VSL3	4

The Contractor Pack includes 4 complete fans.  
 The housing and motor/grille are packaged separately for flexibility during installation.  
 \*Must order in quantities of 4, shipment will contain 1 box with 4 units.

**Complete Specifications** on pages 28-37.

**WhisperControl Cross Reference** on pages 24-25.



# Specialty Fans

## WhisperFit-Warm™ VENTILATION FAN



**FV-07VFH3** 70 CFM

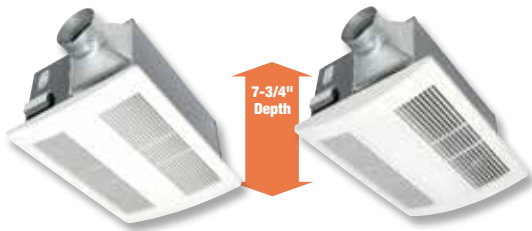


### WhisperFit-Warm Key Benefits:

- Ideal for remodeling and simple installation in small bathrooms
- Low profile housing design fits in 2 x 6 construction
- Aerodynamic fan design delivers whisper-quiet operation
- 1 minute warm-up quickly heats up a cold room
- Detachable filter removes dust and is easy to clean
- 1300W temperature regulating PTC\* heater ensures safety and reliability
- 4" duct

\*PTC (Positive Temperature Coefficient) heating elements are small ceramic stones with self-limiting temperature characteristics. PTC stones have fast heating response times and level out once a pre-defined temperature is reached.

## WhisperWarm™ VENTILATION FAN



**FV-11VH2** 110 CFM 4" Duct  
**FV-11VHL2** 110 CFM 4" Duct



### WhisperWarm Key Benefits:

- Durable 1400W stainless steel sheathed heating element
- Totally enclosed condenser motor for long life — rated 30,000 hours continuous run
- Thermal fuse protection on motor and 3-level safety device for heater
- Quick 1 minute warm-up
- Minimum 20 Amp dedicated circuit required
- For optimum performance, install heater no more than 8 feet from floor to ceiling
- Fits in 2 x 8 construction



INCLUDES: (2) 18W Panasonic CFL/3500 Kelvin/ High CRI/1200 Lumens each/ENERGY STAR® qualified/10,000 hours rated average life/equivalent to 100W incandescent lamp/electronic ballast for flicker-free operation/plus 4W night-light

## WhisperCeiling™ VENTILATION FAN



**FV-20VQ3** 190 CFM 6" Duct  
**FV-30VQ3** 290 CFM 6" Duct  
**FV-40VQ4** 390 CFM 6" Duct



### WhisperCeiling Key Benefits:

- Quiet, yet powerful, large volume exhaust fans ideal for light commercial applications
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code

## WhisperWall™ VENTILATION FAN



**FV-08WQ1** 70 CFM



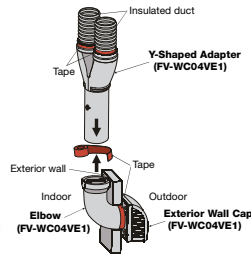
### WhisperWall Key Benefits:

- UL listed for through-the-wall application
- 10" galvanized sleeve and steel exterior hood included
- UL listed for tub/shower enclosure when used with a GFCI protected circuit
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



Exterior Hood included

## WhisperComfort™ VENTILATION FAN



Exterior wall cap and elbow used together

**FV-04VE1** 40/20 CFM or 20/10 CFM 2 4" Ducts  
**FV-WC04VE1** Optional Exterior Wall Cap  
**FV-EB04VE1** Optional Elbow



### WhisperComfort Key Benefits:

- ERV balances air pressure by supplying fresh exterior air while exhausting stale interior air
- Low-rate continuous run ideal for multi-family dwellings
- UL listed for wall mount, making it ideal for multi-family applications
- MERV 6 supply filter and damper employed
- Exchange capillary core recovers temperature and moisture
- Dual setting air volume for 40/20 or 20/10 CFM
- Ideal for new air-tight houses built to meet energy-efficiency standards
- Compact size fits in ceilings and 2 x 8 construction
- Sensible Energy Recovery 66%
- Latent Energy Recovery 33%
- Does not require a condensation line or drain
- Can be used to comply with ASHRAE 62.2, LEED, IAP, CALGreen, California Title 24 and WA Ventilation Code

## WhisperLine™ VENTILATION FAN



**FV-10NLF1** 120 CFM 4" Duct  
**FV-20NLF1** 240 CFM 6" Duct  
**FV-30NLF1** 340 CFM 6" Duct  
**FV-40NLF1** 440 CFM 8" Duct



### WhisperLine Key Benefits:

- Remote mount in-line fan for single or multiple inlets
- Insulated housing to prevent condensation and noise
- Tapered duct adaptor for easy connection
- 5 positions for installation
- Joist or truss attachment brackets included
- Suspension brackets included
- Can be used to comply with ASHRAE 62.2, LEED, IAP, California Title 24 and WA Ventilation Code



Complete Installation Kit  
Specifications on Page 37

## WhisperControl

Condensation Sensor

On/Off—

**FV-WCCS1-W** (White)

**FV-WCCS1-A** (Light Almond)

On/Off/Light—

**FV-WCCS2-W** (White)

**FV-WCCS2-A** (Light Almond)



## WhisperControl Condensation Sensor Features and Benefits:

- Humidity Control – Automatically turns on when relative humidity and temperature meet dew point
- 30-minute countdown timer
- Manual On/Off Control
- Compatible with single-speed fans or fan/lights
- Stylish design with wall plate included
- Commercial grade - 8A max load/2-year warranty
- Can be used to comply with ENERGY STAR®, LEED for Homes, ASHRAE 62.2, and CALGreen
- LED indicator

*One year additional fan warranty available when a Panasonic WhisperCeiling/Lite, WhisperValue/Lite or WhisperFit/Lite fan is controlled by a Panasonic condensation sensor.*

## WhisperControl

Switches

### 2 Function Control

**FV-WCSW21-W** (White)

**FV-WCSW21-A** (Light Almond)



## WhisperControl Switches

### Features and Benefits:

- Multi-switch combination saves space and adds convenience
- Common feed shunted internally to all switches
- Includes matching wall plate
- Commercial grade
- Elegant styling provides multiple controls in a single-gang wall box

## WhisperControl

Switches

### 3 Function Control

**FV-WCSW31-W** (White)

**FV-WCSW31-A** (Light Almond)



## WhisperControl Switches

### Features and Benefits:

- Multi-switch combination saves space and adds convenience
- Common feed shunted internally to all switches
- Commercial grade
- Includes matching wall plate
- Elegant styling provides multiple controls in a single-gang wall box

## WhisperControl Switches

### 4 Function Control

**FV-WCSW41-W** (White only)

Designed for model FV-11VHL2  
Heater/Fan/Light/Nightlight



## WhisperControl Switches Features and Benefits:

- Single pole/double throw on-off-on top switch, 2 single pole on-off switches
- Multi-switch combination saves space and adds convenience
- Common feed shunted internally to all switches
- Commercial grade
- Includes matching wall plate
- Elegant styling provides multiple controls in a single-gang wall box

## SmartExhaust™ Ventilation Control Switch

**Fan/Light Switch  
Delay Timer  
Wall plate not included**

**FV-WCPT1-W**



## SmartExhaust™ Features and Benefits:

- Earn LEED and Energy Star points for enhanced exhaust ventilation
- Replaces both fan and light switches for 1 easy operation
- Microprocessor technology provides precise ventilation times
- Programmable DELAY and VENTILATION settings
- Excess manual and/or delay operation is subtracted from the next hours programmed ventilation time
- Works with ALL incandescent, CFL, fluorescent and LED lights
- Make standard bath fans ASHRAE 62.2 complaint when used with ASHRAE 62.2 complaint fans

### SmartExhaust™ Settings:

**VENTILATION** setting allows the user to set the number of minutes per hour the fan should run.

**DELAY** setting allows the user to set the number of minutes the fan should run after the bathroom light has been turned off. This setting provides additional run time for the fan to complete the remaining necessary ventilation after use. **SmartExhaust™** replaces an existing switch, there are no additional labor costs required for installation. Simple and economical fan and light operation is provided by one switch.

## Cross Reference for Applicable Combination of WhisperControl to Product

	Model	FV-WCCS1-W/A	FV-WCCS2-W/A	FV-WCSW21-W/A	FV-WCSW31-W/A	FV-WCSW41-W	FV-WCPT1-W
	Switch Type	Condensation Sensor On/Off	Condensation Sensor On/Off/Light	2 Function Control	3 Function Control	4 Function Control	SmartExhaust Fan/Light Switch
<b>WhisperGreen</b>	FV-05VK3	X					X
	FV-08VK3	X					X
	FV-11VK3	X					X
	FV-08VKL4		X	X	X		X
	FV-11VKL4		X	X	X		X
	FV-08VKSL4			X**			
	FV-08VKML4			X**			
	FV-13VKSL4			X**			
<b>WhisperGreen LED</b>	FV-08VKSE3			X**			
	FV-08VKME3			X**			
<b>WhisperRecessed</b>	FV-08VRL1		X	X			X
<b>WhisperCeiling</b>	FV-05VQ5	X					X
	FV-08VQ5	X					X
	FV-11VQ5	X					X
	FV-15VQ5	X					X
	FV-20VQ3	X					X
	FV-30VQ3	X					X
	FV-40VQ4	X					X
	FV-08VQL6		X	X	X		X
	FV-11VQL6		X	X	X		X
FV-15VQL6		X	X	X		X	
<b>WhisperSense</b>	FV-11VQCL6			X**			
	FV-11VQCL6			X**			
<b>WhisperFit</b>	FV-08VF2	X					X
	FV-11VF2	X					X
	FV-05VFL4		X	X	X		X
	FV-08VFL4		X	X	X		X
	FV-11VFL4		X	X	X		X
<b>WhisperValue</b>	FV-05VS3	X					X
	FV-08VS3	X					X
	FV-10VS3	X					X
	FV-08VSL3		X	X	X		X
	FV-10VSL3		X	X	X		X
<b>WhisperWall</b>	FV-08WQ1	X					
<b>WhisperFitWarm</b>	FV-07VFH3			X			
<b>WhisperWarm</b>	FV-11VH2*			X			
	FV-11VHL2*					X*	
<b>WhisperLine</b>	FV-10NLF1	X					X
	FV-20NLF1	X					X
	FV-30NLF1	X					X
	FV-40NLF1	X					X
<b>WhisperComfort</b>	FV-04VE1			X			

WhisperWelcome, WhisperSense, and WhisperGreen S/M3 models are not compatible with the above switches.

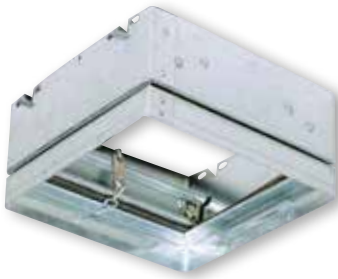
\*Needs 1 control per function; \*\* Switch is for light and nightlight only.

## Ceiling Radiation Damper

PC-RD05C4



CLASSIFIED



### Radiation Damper Features:

- UL classification (UL standard 555C) for use in 1, 2 or 3 hour fire-rated floor/ceiling and roof/ceiling designs
- Compatible with 50-150 CFM fans, fans with motion sensor and select fan/lights
- Galvanized steel frame with 165°F fusible link
- High-temperature, non-asbestos, reinforced fiber thermal fabric

Fan Model approved for:	
<b>Damper Model PC-RD05C4</b>	WhisperGreen,
	WhisperGreen-Lite,
	WhisperCeiling 50-150 CFM,
	WhisperLite, WhisperSense,
	WhisperSenseLite,
	WhisperWelcome, WhisperFit,
	WhisperValue, WhisperValue-Lite

## Passive Inlet Vent

FV-GKF32S1



### Inlet Vent Features:

Panasonic Passive Inlet provides make-up air to help balance indoor vs. outdoor air pressure.

- Foam pad reduces outdoor noise and condensation
- Insulation lining to prevent condensation
- Durable ABS and PP resin body
- 7 stainless steel installation screws included
- Sturdy open/close lever
- 2-position air delivery

	Passive Inlet	FV-GKF32S1
Specifications	Air Volume Positions	2
	CFM Settings	12 & 18
Features	Open/Close Louver Setting	Yes
	Washable Air Filter	Yes
	Bug Screen	Yes
	3" x 12" Sleeve Included	Yes
Installation	Body	ABS & PP
	Wall Opening (diameter)	3 inch
	Installation Screw Included	Yes

## Designer Grilles



FV-GL3TDA



FV-GL3TDB

### Designer Grille Features:

- Easy and affordable to change
- Change your grille to fit your room decor without compromising the performance and quality of the unit

#### Applicable Models

**WhisperGreen:** FV-13VKS3, FV-11VK3, FV-08VKS3, FV-08VK3, FV-05VK3

**WhisperCeiling:** FV-15VQ5, FV-11VQ5, FV-08VQ5, FV-05VQ5

**WhisperFit:** FV-11VF2, FV-08VF2

Characteristics	FV-GL3TDA	FV-GL3TDB
Grille Size (inches sq.)	13	14-1/5
Shipping Gross Weight (lbs)	1.1	1.3
Trend Style Category	Traditional	Traditional
Material	ABS	ABS
UL Approved <sup>1</sup>	Yes	Yes
HVI Certified <sup>1</sup>	Yes	Yes
Mfg. in ISO 9001 Certified Facility	Yes	Yes

# Fans with Built-in Controls



WhisperGreen Characteristics	FV-08VKS3   FV-08VKM3								FV-13VKS3   FV-13VKM3													
	Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1
Air Volume (CFM)	80	79	70	75	60	59	50	54	40	39	30	32	130	135	110	111	90	93	70	71	50	53
Noise (sones)	<0.3	0.4	<0.3	0.4	<0.3	0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.7	<0.3	0.6	<0.3	0.6	<0.3	0.4	<0.3	<0.3
Power Consumption (Watts)	7.0	11.0	5.4	10.1	5.0	8.7	4.3	7.5	3.7	6.6	3.2	5.8	11.6	21.1	8.7	15.1	6.0	12.1	4.1	9.6	2.4	5.8
Energy Efficiency (CFMs/Watt)	12.1	7.6	13.3	7.7	13.6	7.7	12.4	7.7	12.8	7.1	11.4	6.7	11.2	6.4	12.5	7.3	15.2	7.8	18.7	7.9	23.3	10.0
Speed	832	1130	791	1125	773	1106	749	1101	740	1093	745	1087	662	917	643	912	580	900	506	874	430	781
Current	0.02	0.01	0.03	0.01	0.05	0.01	0.05	0.02	0.05	0.03	0.06	0.04	0.01	0.12	0.03	0.09	0.02	0.07	0.04	0.01	0.06	0.03
Power Rating (V/Hz)	120/60												120/60									



WhisperSense Characteristics	FV-08VQC5		FV-11VQC5	
	Static pressure in inches w. g.	0.1	0.25	0.1
Air Volume (CFM)	80	59	110	91
Noise (sones)	<0.3	<0.3	0.3	0.5
Power Consumption (Watts)	15.8	15.6	24.3	24.2
Energy Efficiency (CFMs/Watt)	5.1	3.9	4.6	3.9
Speed	825	1110	957	1170
Current	0.14	0.14	0.22	0.21
Power Rating (V/Hz)	120/60		120/60	



WhisperWelcome Characteristics	FV-05VFM2				FV-08VFM2			
	4" Duct		3" Duct		4" Duct		3" Duct	
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	50	30	50	34	80	62	70	56
Noise (sones)	<0.3	0.7	0.4	0.8	0.9	1.1	0.8	1.0
Power Consumption (Watts)	16.3	16.0	16.1	16.0	24.5	24.3	24.3	24.0
Energy Efficiency (CFMs/Watt)	3.6	2.4	3.3	2.2	3.5	2.7	3.1	2.5
Speed	678	924	740	958	749	945	868	1003
Current	0.13	0.13	0.13	0.13	0.20	0.19	0.20	0.19
Power Rating (V/Hz)	120/60				120/60			

# Single Speed Fans (On/Off)



WhisperGreen	FV-05VK3		FV-08VK3		FV-11VK3	
Characteristics						
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	50	54	80	79	110	112
Noise (sones)	<0.3	0.3	<0.3	0.4	0.3	0.8
Power Consumption (Watts)	4.3	7.5	7.0	11.0	11.5	16.2
Energy Efficiency (CFMs/Watt)	12.4	7.7	12.1	7.6	9.7	7.0
Speed	749	1101	832	1130	953	1229
Current	0.05	0.02	0.02	0.01	0.21	0.30
Power Rating (V/Hz)	120/60		120/60		120/60	



WhisperCeiling	FV-05VQ5		FV-08VQ5		FV-11VQ5		FV-15VQ5	
Characteristics								
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	50	36	80	62	110	91	150	127
Noise (sones)	<0.3	0.4	<0.3	0.4	<0.3	0.5	<0.3	0.5
Power Consumption (Watts)	11.1	11.7	14.7	14.5	21.1	20.7	28.4	27.3
Energy Efficiency (CFMs/Watt)	4.7	3.2	5.8	4.5	5.3	4.5	5.3	4.7
Speed	731	1060	829	1089	950	1161	691	911
Current	0.09	0.10	0.12	0.12	0.18	0.17	0.24	0.23
Power Rating (V/Hz)	120/60		120/60		120/60		120/60	



WhisperFit	FV-08VF2				FV-11VF2			
	4" Duct		3" Duct		4" Duct		3" Duct	
Characteristics								
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	80	60	70	53	110	94	90	78
Noise (sones)	0.8	1.0	0.8	1.1	1.5	1.5	1.5	2.0
Power Consumption (Watts)	24.5	24.3	24.5	24.2	33.1	32.8	33.0	32.7
Energy Efficiency (CFMs/Watt)	3.3	2.5	2.9	2.2	3.4	2.9	2.9	2.5
Speed	757	956	845	1007	830	1000	1029	1128
Current	0.20	0.20	0.20	0.20	0.27	0.28	0.27	0.28
Power Rating (V/Hz)	120/60				120/60			



WhisperValue	FV-05VS3		FV-08VS3		FV-10VS3	
Characteristics	4" Oval Duct		4" Oval Duct		4" Oval Duct	
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	60	53	80	72	100	92
Noise (sones)	0.4	1.0	1.0	1.2	1.4	1.5
Power Consumption (Watts)	15.9	16.3	21.2	21.5	29.6	29.9
Energy Efficiency (CFMs/Watt)	3.8	3.3	3.8	3.3	3.4	3.1
Speed (RPM)	706	980	778	997	868	1056
Current (amps)	0.13	0.14	0.18	0.18	0.25	0.26
Power Rating (V/Hz)	120/60		120/60		120/60	



# Fan/Lights with Built-in Controls



WhisperGreen-Lite Characteristics	FV-08VKSL4   FV-08VKML4												FV-13VKSL4   FV-13VKML4											
	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25		
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25		
Air Volume (CFM)	80	79	70	78	60	60	50	52	40	42	30	35	130	136	110	115	90	91	70	69	50	56		
Noise (sones)	<0.3	0.6	<0.3	0.6	<0.3	0.5	<0.3	0.5	<0.3	0.5	<0.3	0.5	0.8	1.3	0.6	1.2	0.3	1.1	<0.3	0.9	<0.3	0.8		
Power Consumption (Watts)	7.4	12.4	6.0	11.6	5.3	9.0	4.2	7.8	3.8	6.7	3.5	6.2	14.4	24.7	11.0	20.0	8.0	15.3	6.1	10.8	4.2	8.7		
Energy Efficiency (CFMs/Watt)	11.2	6.6	11.9	6.8	12.1	7.2	12.5	7.0	11.1	6.6	8.8	5.8	9.0	5.5	10.1	5.8	11.5	6.1	12.0	6.7	12.3	6.7		
Speed	866	1166	815	1157	675	941	765	1106	758	1084	611	879	742	968	707	972	676	969	669	932	648	939		
Current	0.01	0.02	0.03	0.02	0.05	0.09	0.04	0.02	0.06	0.05	0.04	0.06	0.04	0.15	0.05	0.12	0.03	0.09	0.03	0.01	0.04	0.01		
Power Rating (V/Hz)	120/60												120/60											



WhisperSense-Lite Characteristics	FV-08VQCL6		FV-11VQCL6	
	0.1	0.25	0.1	0.25
Static pressure in inches w. g.	0.1	0.25	0.1	0.25
Air Volume (CFM)	80	62	110	89
Noise (sones)	<0.3	0.4	0.7	0.7
Power Consumption (Watts)	17.5	17.6	26.0	25.7
Energy Efficiency (CFMs/Watt)	4.7	3.6	4.3	3.5
Speed	881	1128	1017	1202
Current	0.16	0.15	0.23	0.22
Power Rating (V/Hz)	120/60		120/60	

# Single Speed Fans with Lights (On/Off)



WhisperGreen LED		FV-08VKSE3				FV-08VKME3						
Characteristics												
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	80	86	70	73	60	61	50	54	40	44	30	39
Noise (sones)	<0.3	0.7	<0.3	0.5	<0.3	0.4	<0.3	0.4	<0.3	0.4	<0.3	0.4
Power Consumption (Watts)	7.5	13.3	5.8	11	5.1	9.5	4.3	8.4	4.1	7.1	3.4	6.5
Energy Efficiency (CFMs/Watt)	11.1	6.2	12.3	7.2	12.5	6.8	12.3	6.5	10.3	6.2	9.1	5.5
Speed	878	1200	830	1159	797	1149	770	1136	793	1120	740	1111
Current	0.07	0.11	0.06	0.10	0.05	0.09	0.05	0.08	0.05	0.07	0.04	0.06
Power Rating (V/Hz)	120/60		120/60		120/60		120/60		120/60		120/60	



WhisperGreen-Lite		FV-08VKL4		FV-11VKL4		
Characteristics						
Static pressure in inches w. g.	0.1	0.25	0.1	0.25		
Air Volume (CFM)	80	79	110	108		
Noise (sones)	<0.3	0.6	0.7	1.1		
Power Consumption (Watts)	7.4	12.4	12.5	18.0		
Energy Efficiency (CFMs/Watt)	11.2	6.6	8.9	6.0		
Speed	866	1166	1019	1256		
Current	0.01	0.02	0.25	0.34		
Power Rating (V/Hz)	120/60		120/60			



WhisperLite		FV-08VQL6		FV-11VQL6		FV-15VQL6		
Characteristics								
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25		
Air Volume (CFM)	80	62	110	90	150	128		
Noise (sones)	<0.3	0.4	0.5	0.6	0.9	1.0		
Power Consumption (Watts)	14.9	14.7	23.4	23.0	31.8	30.9		
Energy Efficiency (CFMs/Watt)	5.5	4.3	4.7	3.9	4.8	4.2		
Speed	863	1117	1006	1193	800	988		
Current	0.12	0.12	0.20	0.19	0.27	0.26		
Power Rating (V/Hz)	120/60		120/60		120/60			



WhisperFit-Lite		FV-05VFL4				FV-08VFL4				FV-11VFL4			
Characteristics	4" Duct		3" Duct		4" Duct		3" Duct		4" Duct		3" Duct		
	Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	50	34	50	35	80	67	70	60	110	95	90	78	
Noise (sones)	<0.3	0.4	<0.3	0.5	0.5	0.8	0.6	0.8	1.3	1.4	1.5	1.5	
Power Consumption (Watts)	14.8	14.7	14.8	14.6	28.4	28.1	28.3	28.0	32.6	32.1	32.1	31.6	
Energy Efficiency (CFMs/Watt)	3.6	2.4	3.4	2.4	2.8	2.4	2.6	2.3	3.4	3.0	3.0	2.7	
Speed	692	962	747	983	803	1005	908	1064	897	1068	1077	1177	
Current	0.12	0.12	0.12	0.12	0.24	0.24	0.24	0.24	0.27	0.27	0.27	0.27	
Power Rating (V/Hz)	120/60				120/60				120/60				



WhisperValue-Lite		FV-08VSL3		FV-10VSL3		
Characteristics	4" Oval Duct		4" Oval Duct			
Static pressure in inches w. g.	0.1	0.25	0.1	0.25		
Air Volume (CFM)	80	72	100	91		
Noise (sones)	1.0	1.2	1.4	1.5		
Power Consumption (Watts)	22.5	22.9	30.2	30.3		
Energy Efficiency (CFMs/Watt)	3.6	3.1	3.3	3.0		
Speed (RPM)	825	1021	918	1087		
Current (amps)	0.19	0.19	0.26	0.26		
Power Rating (V/Hz)	120/60		120/60			



WhisperRecessed		FV-08VRL1		
Characteristics				
Static pressure in inches w. g.	0.1	0.25		
Air Volume (CFM)	80	66		
Noise (sones)	0.8	0.7		
Power Consumption (Watts)	20.5	19.5		
Energy Efficiency (CFMs/Watt)	4.0	3.4		
Speed	1378	1501		
Current	0.17	0.17		
Power Rating (V/Hz)	120/60			

# Specialty Fans



WhisperFit-Warm	FV-07VFH3	
Characteristics		
Static pressure in inches w. g.	0.1	0.25
Air Volume (CFM)	70	59
Noise (sones)	1.5	2.2
Power Consumption (Watts)	26.2	26.1
Energy Efficiency (CFMs/Watt)	2.7	2.3
Speed	1135	1305
Current	0.17	0.17
Power Rating (V/Hz)	120/60	120/60



WhisperWarm	FV-11VH2		FV-11VHL2	
Characteristics				
Static pressure in inches w. g.	0.1	0.25	0.1	0.25
Air Volume (CFM)	110	89	110	89
Noise (sones)	0.6	1.0	0.7	1.0
Power Consumption (Watts)	30.7	30.5	30.6	30.5
Energy Efficiency (CFMs/Watt)	3.6	2.9	3.6	2.9
Speed	778	935	812	956
Current	0.25	0.25	0.25	0.25
Power Rating (V/Hz)	120/60		120/60	



WhisperCeiling	FV-20VQ3		FV-30VQ3		FV-40VQ4	
Characteristics						
Static pressure in inches w. g.	0.1	0.25	0.1	0.25	0.1	0.25
Air Volume (CFM)	190	145	290	257	390	356
Noise (sones)	0.8	1.4	2	N/A	3	3
Power Consumption (Watts)	43.7	42.9	64	62	111.4	109.6
Energy Efficiency (CFMs/Watt)	4.6	3.6	4.5	4.1	3.5	3.3
Speed	761	949	877	990	793	874
Current	0.34	0.33	0.53	0.52	0.99	0.98
Power Rating (V/Hz)	120/60		120/60		120/60	



WhisperWall	FV-08WQ1
Characteristics	
Static pressure in inches w. g.	0.03
Air Volume (CFM)	70
Noise (sones)	1.1
Power Consumption (Watts)	18.0
Energy Efficiency (CFMs/Watt)	4.3
Speed	660
Current	0.20
Power Rating (V/Hz)	120/60



WhisperComfort	FV-04VE1		
Characteristics	40 CFM	20 CFM	10 CFM
Static pressure in inches w. g.	0.1	0.1	0.1
Air Volume Exhaust (CFM)	40	20	10
Air Volume Supply (CFM)	30	20	10
Noise (sones)	0.8	<0.3	N/A
Power Consumption (Watts)	23	21	17
Speed	1479	1292	1095
Current	0.15	0.10	0.09
Power Rating (V/Hz)	120/60		



WhisperLine	FV-10NLF1			FV-20NLF1			FV-30NLF1			FV-40NLF1		
Characteristics												
Static pressure in inches w.g.	0.2	0.3	0.4	0.2	0.3	0.4	0.2	0.3	0.4	0.2	0.3	0.4
Air Volume (CFM)	120	105	82	240	225	200	340	322	302	440	421	407
Power Consumption (Watts)	36.2	35.0	33.5	55.5	53.5	51.1	95.2	93.5	91.5	136	132	130
Energy Efficiency (CFMs/Watt)	3.5			4.1			3.2			3.2		
Speed	1590			1260			1337			1150		
Current	0.31			0.46			0.86			1.10		
Power Rating (V/Hz)	120/60			120/60			120/60			120/60		

## WhisperLine Installation Kits

Model No.	Description	Inlet Grille	Backdraft Damper	Clamp	Y-Adaptor
FV-NLF04G	4" Inlet Grille + Metal Plate	1 (4")	-	-	-
FV-NLF06G	6" Inlet Grille + Metal Plate	1 (6")	-	-	-
PC-NLF04S	4" Single Inlet Kit	1 (4")	1 (4")	6	-
PC-NLF06S	6" Single Inlet Kit	1 (6")	1 (6")	6	-
PC-NLF04D	4" Double Inlet Kit	2 (4")	2 (4")	12	1 (4" - 4"x 2)
PC-NLF06D	6" Double Inlet Kit	2 (6")	2 (6")	12	1 (6" - 6"x 2)
PC-NLF64D	6"-4" Double Inlet Kit	2 (4")	2 (4")	12	1 (6" - 4"x 2)
PC-NLF86Y	8"-6" Y-Adaptor	-	-	-	1 (8" - 6"x 2)

# Sizing

## Information and Instructions

### Fan Selection Guide

- What is the size of the bathroom?
  - Need 1 CFM (cubic foot per minute) per square foot
  - Length x Width = CFM  
(length) x (width) = (Total CFM needed)
  - Example: 8 ft length x 10 ft wide = 80 CFM is needed to properly ventilate the bathroom
- What features are needed/wanted?  
Fan only? Light? Heat? Variable speed? Motion? Humidity? Time delay?
- What type of construction is available?  
Truss size is necessary if it is smaller than 2 x 8 construction so the selected fan housing size will fit the installation.
  - 2 x 8 construction – can use any fan combination
  - 2 x 6 construction – can use fan combinations that fit 2 x 6 or 2 x 4 construction
  - 2 x 4 construction – can use fan combinations that fit 2 x 4 construction
- Now that you know the CFM needed, the features wanted and the construction size, you are ready to find your fan combination.

### Equivalent Duct Length (EDL)

The Equivalent Duct Length Table (Figure B) shows you how to calculate the equivalent straight duct length in order to overcome static pressure. The EDL chart helps ensure fan performs as expected under the airflow resistance caused by the listed components.

A ventilating fan's performance is plotted on a graph called a performance curve. The performance curve shows airflow in cubic feet per minute (CFM) along the horizontal axis and static pressure (resistance) along the vertical axis. Figure A shows how a performance curve works. The fan with a "Closed Duct" has high-static pressure and no airflow; and the fan with "No Duct" has low static pressure and high airflow. In reality, an installed fan will be somewhere in between these two points.

### Sizing and Selecting a Ceiling Mounted Fan:

Proper sizing requires that you determine the needed CFM, the square footage of the room or home, and the length and type of duct.

Example: Sizing for an 8 x 10 x 8 ceiling bathroom using 12 ft long, 4 in diameter aluminum flex duct, 1 elbow, 1 wall cap.

**Step 1:** Determine application

$$\text{Bathroom} = 1 \text{ CFM/square foot}$$

**Step 2:** Calculate the area to be ventilated in square feet.

Assuming an 8 ft ceiling: room length x width = area in square feet

$$8 \text{ ft} \times 10 \text{ ft} = 80 \text{ sq ft}$$

**Step 3:** Calculate your required CFM

$$1 \text{ CFM} \times 80 \text{ sq ft} = 80 \text{ CFM}$$

**Step 4:** Use the Equivalent Duct Length chart above to calculate duct run.

4a. 12 ft aluminum flex duct x 1.25 = 15 ft

4b. One elbow = 15 ft EDL

4c. One wall cap = 30 ft EDL

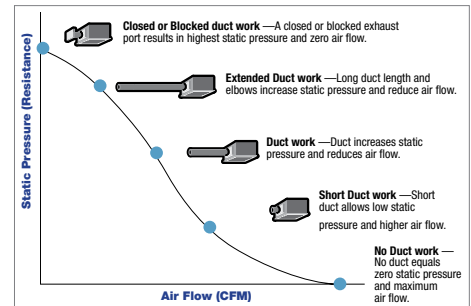
$$15 \text{ ft} + 15 \text{ ft} + 30 \text{ ft} = 60 \text{ ft EDL}$$

This is the equivalent duct length (or resistance) the fan must overcome to move air through the duct to the outside.

**Step 5:** Review models in catalog pages to find a model with desired features. Features may include light fixture, heater or low-profile housing.

**Note:** Check with your local building inspector to confirm that these methods are accepted in your area.

FIG. A



		Equivalent Duct Length			
		Duct Diameter			
		3"	4"	6"	8"
Duct	Smooth Metal	Same as measured duct length			
Material	Flex Aluminum	1.25 x duct length	1.25 x duct length	1.5 x duct length	1.5 x duct length
	Insulated Flex	1.5 x duct length	1.5 x duct length	1.75 x duct length	1.75 x duct length
Terminal	Wall Cap	30 ft	30 ft	40 ft	40 ft
Device	Roof Jack	30 ft	30 ft	40 ft	40 ft
Elbow	Adjustable	15 ft	15 ft	20 ft	20 ft

FIG. B