

## Automatically Adjusts To Maintain a Constant Airflow

SAM MicroSound ECM fan filter units key features include...

- **Multi-use on-board Controller with either local POT control and monitoring or via MODBUS RTU network.**
- **Factory setup and addressing to match your project specifications.**
- **An electronically commutated motor that is programmed to increase the speed as the load increases to maintain a constant airflow.**
- **Torque programming also available for ducted applications.**
- **Low power consumption.**
- **Low sound levels.**



SAM MicroSound ECM GS units feature a roomside removable filter element with a gel channel on the upstream side of the final filter which provides a leak-free seal between the filter and the filter housing.

SAM MicroSound ECM NCR units feature a low profile unit with an upstream gasket for a leakfree seal between the final filter and the SAM plenum.

Housings are fabricated from steel with a white powdercoat finish.

The ECM motor blower is a 1/3 HP, motor with a forward curved blower. Units are available in 115V (60 Hz), 208-230V (50/60Hz) and 277V (60 Hz).

SAM MicroSound Fan Filter Units include a 99.99% efficient HEPA filter, 30% ASHRAE pleated type prefilter, seismic clip suspension points.

Final filters are protected with a white epoxy diamond pattern grille and are tested according to accepted procedures as described by the Institute of Environmental Sciences (IEST) and/or ISO standards. The standard HEPA filter is 99.99% eff. and an ULPA grade 99.9995% eff. filter is available as an option.

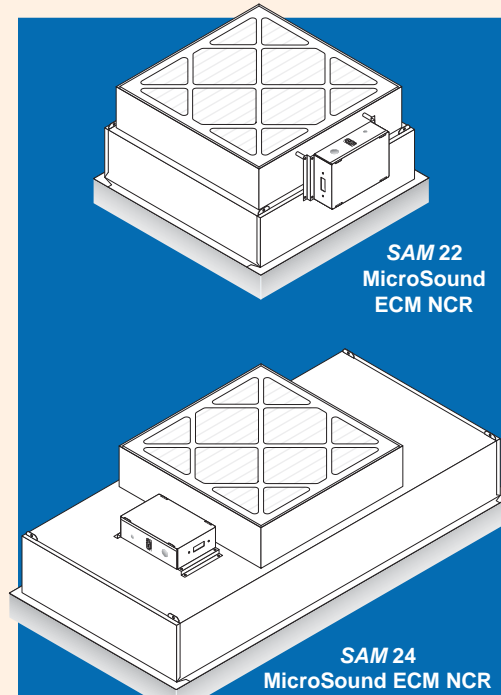
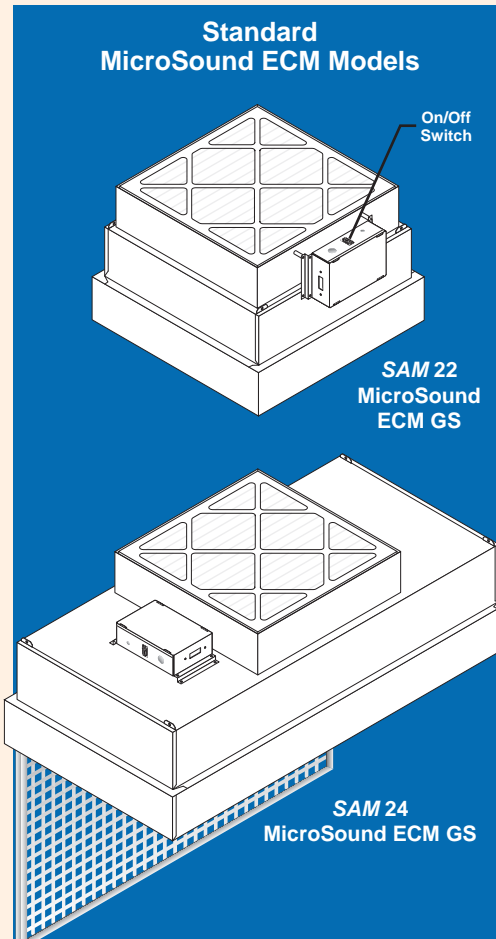
A polystyrene eggcrate grille in an anodized aluminum frame is hinged to open, permitting removal of the filter without removing the unit from the ceiling (GS models only). Optional perforated stainless steel or aluminum grilles are available.

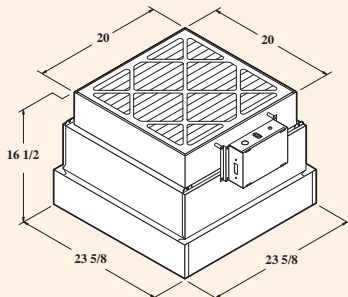
Some of the many available options include: roomside motor access and challenge ports, duct collars, ULPA filtration and stainless steel construction.

Many control options are available, including MODBUS RTU protocol networking, infrared remote control, roomside digital display, or a complete SAMlink Control System.

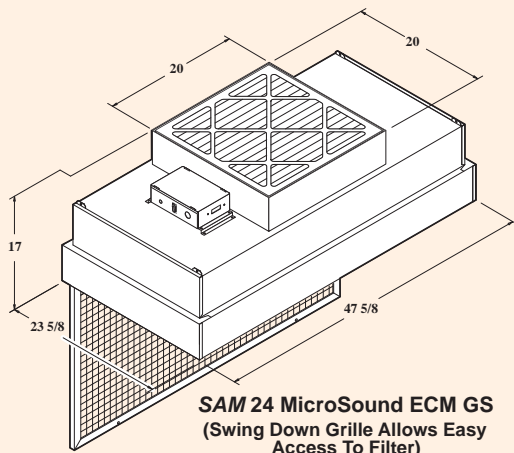
For other control options or further information please consult with your Clean Rooms International representative or contact the factory.

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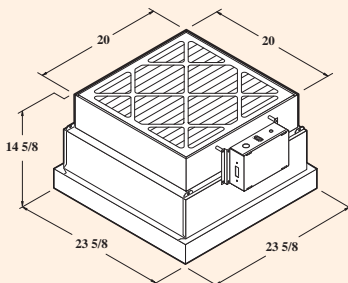




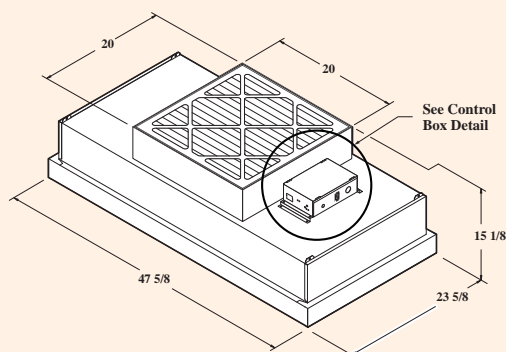
**SAM 22**  
**MicroSound ECM GS**



**SAM 24 MicroSound ECM GS**  
 (Swing Down Grille Allows Easy Access To Filter)



**SAM 22**  
**MicroSound ECM NCR**



**SAM 24 MicroSound ECM NCR**

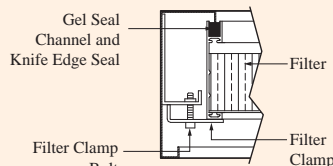
**GS Style Filter Data:** The HEPA Filter is designed for 90 FPM average face velocity @ initial 0.47 w.g. and has a rated efficiency of 99.99% @ 0.3 micron or larger. An anodized aluminum frame holds the 53mm media which is protected by a diamond pattern white epoxy coated steel grille. Final filters are replaceable from roomside.

**NCR Style Filter Data:** The HEPA Filters are designed for 90 FPM average face velocity @ initial 0.47 w.g. and have a rated efficiency of 99.99% @ 0.3 micron or larger. An anodized aluminum frame holds the 53mm media which is protected by a diamond pattern white epoxy coated steel grille. Final filters can be replaced by removing unit from ceiling, placing on a bench, removing and replacing the filter and re-installing unit in ceiling.

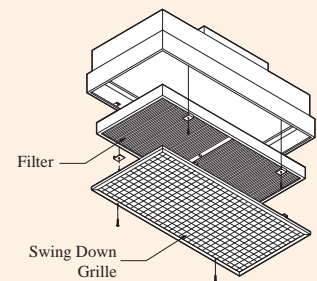
**Access Port (GS Style Only):** This port is located in the center of the filter element face and is used for introducing an upstream challenge or measuring static pressure.

**Air Flow:** Designed for 90 FPM +/- 20%. On 2x4 units at 90 FPM, the CFM is 630 for the NCR style and 520 for the GS style.

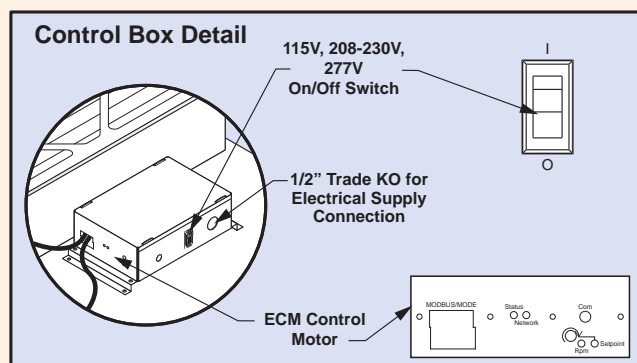
**Sound Level:** At 90 FPM with a clean unloaded HEPA filter and zero e.s.p. the sound level is 50-53 dBA.



**Filter Clamp Detail**



**Exploded View**



<b>Base Model (Ordering Information)</b>							
Mfg. Code	Model or Description	Style	Size	Voltage	Motor	HEPA Filter	Weight
12327	SAM 22 MS ECM NCR	NCR	2 x 2	115	ECM	302070	66 lbs. (29.9 kg.)
12328	SAM 22 MS ECM NCR	NCR	2 x 2	208-230	ECM	302070	66 lbs. (29.9 kg.)
12329	SAM 22 MS ECM NCR	NCR	2 x 2	277	ECM	302070	66 lbs. (29.9 kg.)
12333	SAM 24 MS ECM NCR	NCR	2 x 4	115	ECM	302090	77 lbs. (34.9 kg.)
12334	SAM 24 MS ECM NCR	NCR	2 x 4	208-230	ECM	302090	77 lbs. (34.9 kg.)
12335	SAM 24 MS ECM NCR	NCR	2 x 4	277	ECM	302090	77 lbs. (34.9 kg.)
12330	SAM 22 MS ECM GS	GS	2 x 2	115	ECM	302201	81 lbs. (36.7 kg.)
12331	SAM 22 MS ECM GS	GS	2 x 2	208-230	ECM	302201	81 lbs. (36.7 kg.)
12332	SAM 22 MS ECM GS	GS	2 x 2	277	ECM	302201	81 lbs. (36.7 kg.)
12336	SAM 24 MS ECM GS	GS	2 x 4	115	ECM	302200	101 lbs. (45.8 kg.)
12337	SAM 24 MS ECM GS	GS	2 x 4	208-230	ECM	302200	101 lbs. (45.8 kg.)
12338	SAM 24 MS ECM GS	GS	2 x 4	277	ECM	302200	101 lbs. (45.8 kg.)

<b>Performance Data* (2x4 units**)</b>						
Style	Motor	Voltage	Hz	Watts @90FPM	CFM @90FPM	Running Amps @90FPM
NCR	ECM	115	60	135	630	1.82
NCR	ECM	208-230	50/60	135	630	1.10
NCR	ECM	277	60	135	630	.79
GS	ECM	115	60	96	520	1.34
GS	ECM	208-230	50/60	96	520	.78
GS	ECM	277	60	96	520	.58

\* Based on 60Hz, without a prefilter, 0.0" ESP

\*\* Consult factory for 2x2 units

Performance testing based on Shortridge multi-point velgrid with 2" standoffs



*For more information and illustrations please refer to the back of this section*

Replacement Filters	
Mfg. Code	Description
302201	2 x 2 GS Style HEPA Filter, 99.99% eff. @ 0.3 micron
302204	2 x 2 GS Style ULPA Filter, 99.9995% eff. @ 0.12 micron
302200	2 x 4 GS Style HEPA Filter, 99.99% eff. @ 0.3 micron
302203	2 x 4 GS Style ULPA Filter, 99.9995% eff. @ 0.12 micron
302070	2 x 2 NCR Style HEPA Filter, 99.99% eff. @ 0.3 micron
302071	2 x 2 NCR Style ULPA Filter, 99.9995% eff. @ 0.12 micron
302090	2 x 4 NCR Style HEPA Filter, 99.99% eff. @ 0.3 micron
302100	2 x 4 NCR Style ULPA Filter, 99.9995% eff. @ 0.12 micron
302190	Prefilter 20" x 20" x 1", 30% ASHRAE efficient, pleated type

**Popular Options:** (Please choose from the following part numbers when ordering options)

**Final Filters:**

- 302204 2 x 2 GS ULPA Filter 99.9995% eff.
- 302203 2 x 4 GS ULPA Filter 99.9995% eff.
- 302071 2 x 2 NCR ULPA Filter 99.9995% eff.
- 302100 2 x 4 NCR ULPA Filter 99.9995% eff.

**Prefilters:**

- 302197 Extended Life Prefilter 20" x 20" x 2"

**Duct Collar Adapters:**

- \*19950 10" Duct Collar Adapter
- \*19951 12" Duct Collar Adapter
- \*19952 Side Load with 10" Duct Collar
- \*19953 Side Load with 12" Duct Collar

**Grilles 1/8" Round Perforated:** (40% open area)

- 19506 2 x 2 CRF Anodized Alum. Grille and Frame
- 19507 2 x 4 CRF Anodized Alum. Grille and Frame
- 19508 2 x 2 CRF Round Perf w/1/8" Holes, White Powdercoated Grille and Frame
- 19509 2 x 4 CRF Round Perf w/1/8" Holes, White Powdercoated Grille and Frame
- 19511 2 x 4 CRF S.S. Rnd. Perf Grille w/Anodized Alum. Frame
- 19512 2 x 2 CRF S.S. Rnd. Perf Grille w/Anodized Alum. Frame
- 19525 2 x 2 CRF S.S. Perf Grille w/S.S Frame
- 19514 2 x 4 CRF S.S. Perf Grille w/S.S Frame

**Air Conditioning Mixing Box:**

- 19958 Slanted Top with 10" Duct Collar
- 19959 Slanted Top with 12" Duct Collar
- 19947 Square with (2) 10" Duct Collars
- 19948 Square with (2) 12" Duct Collars

**Control Options:**

- Roomside Speed Display/Control
- MODBUS RTU Network
- SAMlink System w/PLC
- Infrared Remote

**Pilot Light:**

- 19700 NCR Style Red Pilot Light - (w/36" lead for grid or ceiling mount) Light Indicates Power to Motor
- 19701 NCR Style Red Pilot Light w/Pressure Switch - (w/36" lead for grid or ceiling mount) Light Indicates Power to Motor and Air Flow
- 19702 GS/CRF Style Red Pilot Light - factory mounted in grille frame (Light Indicates Power to Motor)
- 19703 GS/CRF Style Red Pilot Light w/Pressure Switch - factory mounted in grille frame (Light Indicates Air Flow)

**Miscellaneous:**

- 703902 8' Power Cord 110-120V Only
- 603322 Gasket on Downstream Edge of Unit
- Magnehelic Gage: Refer to the Back of this Section
- Static Control: Refer to the Back of this Section

\* When using on house HVAC Systems, Please consult factory.

NOTE: Duct collar adapters #19950 & #19951 may be used without negating the UL listing. All other duct collars, air conditioning boxes, pilot lights, and adding other electrical components negates UL listing.

For more information and illustrations please refer to the back of this section