

SUITE 722 67 PUBLIC SQUARE WILKES-BARRE, PA 18701
PHONE: 570/825-7760 FAX: 570/825-9001

SHOP DRAWING REVIEW

CONTRACT: HVAC	Sub Contractor: Marx Mechanical
PROJECT: VAMC Wilkes-Barre HVAC Upgrade Building 1 Phase 1, 693-07-136	
ITEM: Pharmacy HEPA Fan Filter Unit	
SUBMITTAL NO. 5	
DATE: 2-18-11	

Comments:

1. HEPA-3 Unit to be 570 cfm per drawing.
2. Verify HEPA unit fan adjustment can be accomplished either from the room side of the unit as the area will be provided with a hard ceiling.
3. Are the 30% pre-filters accessible from the room side? If not, delete these filters, since the air from the air handling unit is being filtered with 30% and 95% filters prior to entering the HEPA fan unit.

Construction Submittal Review

Arris Engineering

NO EXCEPTION TAKEN	
MAKE CORRECTIONS NOTED	X
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

Review is only for General Confirmation with the current design of the project non-conformities and any errors found are noted.

The CONTRACTOR is solely responsible for the correctness of dimensions and quantities and fitting to other work: verification of physical interrelation of elements of the work from plans and specifications and in the field fabricating, procedures, construction methods, technologies and sequences. This review does not relieve the contractor from these responsibilities.

This review does not constitute approval or acceptance of deviations from Contract Documents, such deviations must be requested in writing or clearly identified as deviations in accordance

PROJECT: 854.01 SUB: # 5
DATE: 2/18/11 BY: L. Marchetti
PE

Submittal Transmittal

Detailed, Grouped by Each Number

VAMC Bldg 1 HVAC Replacement Phase 1
Marx Sheet Metal & Mechanical, Inc.
373 High Street
Wilkes Barre, PA 18702

Project # 10/374
Tel: 570-824-4737

Marx Sheet Metal & Mechanical, Inc.
Fax: 570-824-4947

Date: 1/18/2011

Reference Number: 0005

Transmitted To: Paul Hamilton
Hamilton Pacific Revis
9475 Lottsford Rd.
Largo, MD 20774

Transmitted By: Ryan Marx
Marx Sheet Metal & Mechanical, Inc.
PO Box 890
373 High Street
Wilkes Barre, PA 18703-0890
Tel: 570-824-4737
Fax: 570-824-4947

Qty	Submittal Package No	Description	Due Date	Package Action
1	0001 - 233700 - 0	Fan Powered HEPA Diffusers	2/1/2011	

Transmitted For	Delivered Via	Tracking Number
Approval	E-Mail	

Items	Qty	Description	Notes	Item Action
1	1	FAn Powered HEPA Diffusers		

Cc:	Company Name	Contact Name	Copies	Notes
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Remarks

Submitted for Approval.

CC: 374-015



Signature

01/18/11

Signed Date

Marx Sheet Metal & Mechanical, Inc.
373 High Street, PO Box 890
Wilkes Barre, PA 18703
Ph: 570-824-4737 Fax: 570-824-4947
E-Mail: Info@MarxHVAC.com

SHOP DRAWING COVER SHEET

VAMC Bldg 1 HVAC Replacement Phase 1

1/18/2011

Submittal No.: 0001-233700-0

Contractor/Vendor:
General Aire Systems, Inc.
PO Box 712
Doylestown, PA 18901
Ph: 215-348-1497 Fax: 215-348-1582
Contact: Cory Lock

Specification Section	Description
233700	Fan Powered HEPA Diffusers

Marx Sheet Metal & Mechanical, Inc. hereby states we have reviewed the information herewith submitted for details, dimensions and schedules and unless corrected to the contrary, have been found to be in compliance with the contractual drawings and specifications as we interpret them.



For Marx Sheet Metal & Mechanical, Inc. _____

General Aire Systems, Inc.

**Air Filtration Products
Engineered Products Group
HVAC Products Group**

PO BOX 712, DOYLESTOWN, PA 18901
215-348-1497 Fax: 215-348-1582

Date of Submission: Monday, January 17, 2011

Representative: Cory Lock
Office # :215-348-1497
Office Fax # :215-348-1582
Cell Phone: 610-496-8918
E-Mail: clock@genairesys.com

Submittal Summary

Project Name: V.A. Medical Center, Pharmacy

Location: Wilkes-Barre, PA

Mechanical Engineer: Arris engineering

Location: Wilkes-Barre, PA

Contractor: **Attention:** **Ryan Marx**
Marx Sheet Metal, Inc.
373 High Street
P.O. Box 890
Wilkes-Barre, PA 18702
Phone: 570-824-4737 Ext:
Fax # : 570-824-4947

Please visit our Web Site www.genairesys.com

Representatives For:

Camfil/Farr
Camfil/Farr High Performance Products
Clean Rooms International
ESI
Fiberbond Inc.
Purafil
Steril-Aire Inc.
General Aire System, Inc. Service Division
EnviraHealth

Products & Services

ASHRAE, HEPA, ULPA & Carbon Filters/Filter Housings and Systems, Clean Room Products
Bag in/Bag-out Containment Systems
Clean room walls, ceilings, pass thru's, HEPA/ULPA Filtered Ceiling Modules, Laminar Flow
Cleanroom Ceiling Systems
ASHRAE Replacement Filters
Gas Phase Filtration
Germicidal Ultraviolet Lights, UVC
Duct Cleaning & Sanitizing. Indoor Air Quality Testing
IAQ & Industrial Hygiene testing services, analysis & remedies for Corporate, Educational, &
Industrial Environments

Ideal for Pharmaceutical Companies

Gel Seal Style HEPA or ULPA Filter Replaceable From Roomside

SAM MicroSound GS fan filter units are ideal for pharmaceutical companies, manufacturers of medical devices and companies in highly regulated industries. The SAM GS units feature a gel channel on the upstream side of the final filter which provides a leak-free seal between the filter and the housing.

SAM MicroSound GS units feature a HEPA or ULPA filter replaceable from roomside while the filter housing remains in place.

Housings are fabricated from steel with a white powdercoat finish and include seismic clip suspension points.

The energy efficient N310 motor blower is a low watt backward curved impeller, single phase, permanent split capacitor type motor blower assembly with thermal overload protection. Units are available in 115V (60 Hz), 208-230V (50/60 Hz) 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, safety switch which disables the unit while servicing, and solid state variable speed control with RFI suppression, allowing the airflow to be fine tuned.

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.

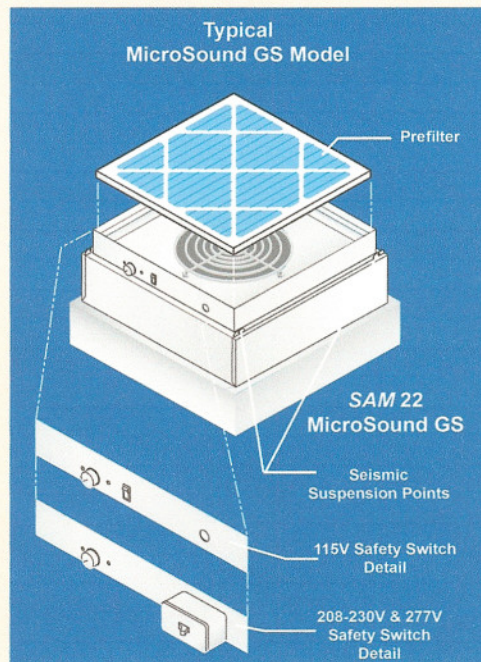
A polystyrene eggcrate grille in an anodized aluminum frame is hinged to open, permitting removal of the filter without removing the unit from the ceiling. Optional perforated stainless steel or aluminum grilles are available.

Other popular options include an 8' power cord (110 Volt only), 99.9995% eff. ULPA grade final filter, UL 900 Class 1 filters and duct collar adapters. Refer to the back of this section for more options and accessories.

For horizontal flow applications consult with one of our cleanroom experts in your area, or call the factory for more information.



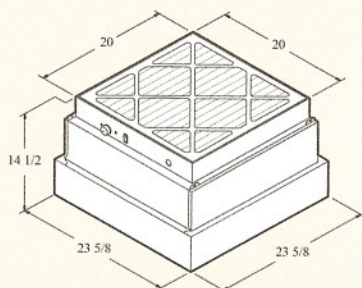
SAM is a registered trademark owned by Clean Rooms International



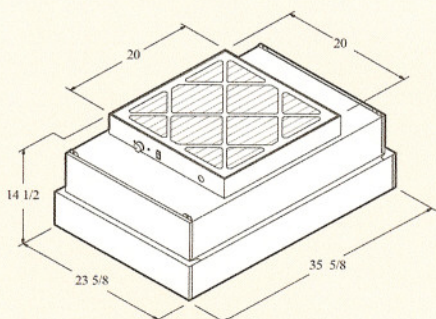
- **Energy Efficient Motor:** Operating Amps Low As .6 For 277 Volt And 1.6 For 115 Volt
- **Safety Switch:** Disables Unit While Servicing
- **Variable Speed Control:** Allows Air Flow To Be Fine Tuned For Room Requirements



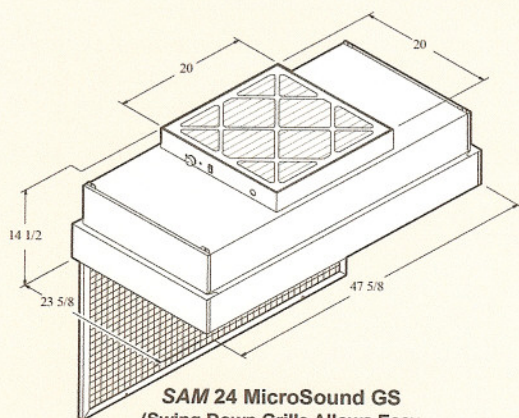
Data & Specifications for SAM® MS GS



SAM 22 MicroSound GS



SAM 23 MicroSound GS



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

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.

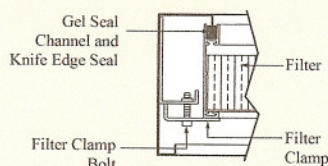
Access Port: This port is located in the center of the filter element face and is used for introducing an upstream challenge or measuring static pressure.

Standard Ceiling Size: All 2' x 4' models are designed to fit a nominal 2' x 4' ceiling grid with a 22.5" x 46.5" standard opening.

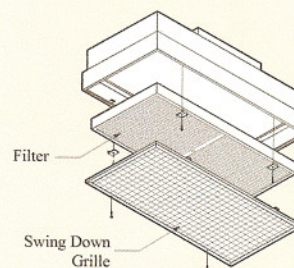
Air Flow: Airflow ranges from 340 to 640 CFM for a 2 x 4 unit and 220 to 340 CFM for a 2 x 2 unit. At 90 FPM, CFM is nominal 510 on a 2 x 4 and 220 on a 2 x 2 unit respectively. Airflow for units running at 50 Hz will be about 20% less.

Sound Level: At average face velocity of 90 FPM measured 30" from face of filter, sound level is approximately 54 dba with less than 45 dba ambient sound level. Field conditions, voltage and method of testing could produce different results.

Popular Options: Refer to next page for a list of popular options.



Filter Clamp Detail



Exploded View

Motor Data					
Motor	Voltage	Hz	Watts	Running Amps	Start-Up Amps
N310	115	60	185	1.6	4.1
N310	208-230	50/60	165	0.8-0.7 ⁽¹⁾	1.5 ⁽²⁾
N310	277	60	165	.6	1.5
(1) Running amps will be less on 50Hz					
(2) Line voltage can affect actual start-up amperage					

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
302214	2 x 3 GS Style HEPA Filter, 99.99% eff. @ 0.3 micron
302215	2 x 3 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
302190	Prefilter 20" x 20" x 1", 30% ASHRAE efficient, pleated type

Ordering Information for SAM® MS GS

Base Model (Ordering Information)

Mfg. Code	Model or Description	Style	Size	Voltage	Motor	Variable Speed Control	HEPA Filter	Weight
12800*	SAM 22 MS GS	GS	2 x 2	115	N310	703084	302201	68 lbs. (30.8 kg.)
12801	SAM 22 MS GS	GS	2 x 2	208-230	N310	703912	302201	68 lbs. (30.8 kg.)
12802*	SAM 22 MS GS	GS	2 x 2	277	N310	703915	302201	68 lbs. (30.8 kg.)
12803*	SAM 23 MS GS	GS	2 x 3	115	N310	703084	302214	76 lbs. (34.5 kg.)
12804*	SAM 23 MS GS	GS	2 x 3	277	N310	703915	302214	76 lbs. (34.5 kg.)
12805*	SAM 24 MS GS	GS	2 x 4	115	N310	703084	302200	84 lbs. (38.1 kg.)
12806	SAM 24 MS GS	GS	2 x 4	208-230	N310	703912	302200	84 lbs. (38.1 kg.)
12807*	SAM 24 MS GS	GS	2 x 4	277	N310	703915	302200	84 lbs. (38.1 kg.)

* UL Listed
Prefilter and Safety Switch are Standard on all Models

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

Final Filters:

- ☐ 302204 2 x 2 GS ULPA Filter 99.9995% eff.
- ☐ 302214 2 x 3 GS ULPA Filter 99.9995% eff.
- ☐ 302203 2 x 4 GS ULPA Filter 99.9995% eff.
- ☐ 000000 2 x 2 GS HEPA UL 900 Class 1
- ☐ 000000 2 x 4 GS HEPA UL 900 Class 1
- ☐ 000000 2 x 4 GS ULPA UL 900 Class 1
- ☐ 000000 2 x 2 GS ULPA UL 900 Class 1

Prefilters:

- ☐ 309802 Super Clean Prefilter
Suitable for Class 1-100

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
- ☐ 19955 10" Top Load Duct Collar Adapter
- ☐ 19956 12" Top Load Duct Collar Adapter

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
- ☐ 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

Roomside Variable Speed Control:

- ☐ 19933 CRF Style 110-120 Volt
- ☐ 19934 CRF Style 208-230 Volt
- ☐ 19935 CRF Style 277 Volt

Pilot Light:

- ☐ 19702 GS/CRF Style Red Pilot Light 110-120 Volt Only (Light Indicates Power to Motor Only)
- ☐ 19703 GS/CRF Style Red Pilot Light w/Pressure Switch 110-120 Volt Only (Light Indicates Power to Motor Only)

Radial Diffuser Grille:

- ☐ 19300 2 x 2 Radial Diffuser Grille
- ☐ 19301 2 x 4 Radial Diffuser Grille

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

Comments:

NOTE: Duct collar adapters, 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