

CAMERON GREAT LAKES, INC.

MOLECULAR FILTRATION SPECIALISTS

REFILLABLE FILTERS

FULL RETENTION V BANK One piece filter, designed to prevent bypass of contaminated air and provide high efficiency removal. The 24 x 24 x 8 cell contains 40 pounds of activated carbon and operates at a velocity of 250 FPM. Recommended for use in heavier industrial applications.

PANELS Refillable media panels. Available in sizes to fit all carbon housings. Refill on site or ship to our facility for servicing. Numerous standard sizes of reconditioned trays in stock for advancing and minimizing down time. Call to inquire as to availability.

MRM18 V-bank design with a 1" bed depth. Filter dimensions 24" wide 6" high and 18" deep. Use in CGL 20 front access housing or custom side access housings. Servicing and advancing of filters available.

MRM12 V-Bank design with a 3" bed depth, designed for use at 250 CFM in area with heavy concentrations of contaminants. Also available in a disposable filter.

CARBON HOUSINGS

CGL 20 FRONT ACCESS HOUSING Carbon filter housing rated at 500FPM, offering high single pass efficiency. Full size 24 x 24 x 18 holds 4 MRM 18 refillable filters. Recommended in both commercial and industrial applications. Ideal where room is limited.

FRONT ACCESS 1000 Carbon filter housing rated at 250 FPM, offering high single pass efficiency. Full size 24 x 24 x 8 holds 12 carbon trays and contains 45 pounds of media. Half sizes are available. It can be installed as either front or rear access. Recommended for use in industrial applications.

FRONT ACCESS 2000 Carbon filter housing rated at 500 FPM, offering high single pass efficiency. Full size 24 x 24 x 24 holds 10 trays and contains 90 pounds of media. Half sizes are available. Recommended for use in commercial and industrial applications where heavy contaminant loads exist.

SIDE ACCESS CARBON HOUSINGS Carbon filter housing with a rated airflow of 500 FPM. Each 24 x 24 X 24 housing accommodates 10 - 1" deep trays. Trays are accessible from both sides of unit. Tracking on faces holds a 2" or 4" pre-filter. Housings to accommodate our vapor trap 12" disposable V bank can also be fabricated to accommodate any air flow.



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REFILLABLE MEDIA TRAYS

Cameron Great Lakes offers carbon trays in both standard and custom sizes. The panels are designed for the easy removal of carbon media.

A variety of construction materials are available. Typical is cold rolled steel with a baked enamel finish or C.R.S. tin plated. Epoxy coated and stainless steel trays are also available.

CGL inventories a large quantity of both new and used trays, offering quick service to the end user.



TRAY SERVICE

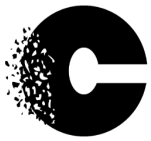
CGL offers service of used carbon trays. Trays can be shipped to our facility for emptying and re-filling, then shipped directly back to your customer.

For those customers where system down time is critical, filters may be “advanced” for quick change-out. Using our “Tray Advance” program CGL fills the required quantity and size of trays and ships them to the site for installation. Upon installation the used trays are then returned to CGL.

This information has been gathered from standard reference materials and/or test procedures and is believed to be true and accurate. It is offered solely for your consideration and verification. None of the information presented shall be construed as constituting a warranty or representation, expressed, written, or implied, for which we assume legal responsibility or that the information of goods described is fit for any particular use either alone or in combination with other goods or processes, or that its use does not conflict with existing patent rights. No license is granted to infringe on any patent rights or practice any patent inversion

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CAMERON GREAT LAKES, INC.

MOLECULAR FILTRATION SPECIALISTS

CGL- MRM18 & MRM 12 REFILLABLE MODULES

PRODUCT DESCRIPTION

The CGL-MRM18 and MRM 12 Metal Refillable modules are designed for use in both front and side access housings. The refillable design saves the end user significant cost as only the media needs to be replaced. Additionally you need not be concerned with messy on site change-outs, as your local CGL facility is prepared to empty and refill your modules. In many cases we can even advance modules for use in the system, eliminating down time.

For those who wish to change their own media, it is easily accomplished with the removal of a single end plate.



MODULE CONSTRUCTION

The module is constructed of cold rolled carbon steel black powder coated finish with 16 gauge end plates and 22 gauge perforated screens. This rigid construction ensures that the module will last through several years of service life.

SPECIFICATIONS

MRM 18

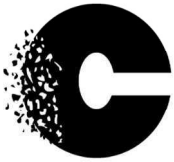
- Each 24 x 6 x 18 inch modules is rated for 500 cfm.
- Temperature ranges up to 125 F.
- Filter bed depth 1", efficiencies greater than 90%.
- Pressure drop not to exceed 0.49 inches of water gauge at 500 ft./minute.
- Each module is designed to hold 18 pounds of CGL CP48, CCS, 36 pounds of CGL ZK6, and 24 pounds of CP48/ZK6 blended media.

MRM 12

- Each 24 x 12 x 12 inch modules is rated for 500 cfm.
- Temperature ranges up to 125 F.
- Filter bed depth 3", efficiencies greater than 95%.
- Pressure drop not to exceed 1.35 inches of water gauge at 250 ft./minute.
- Each module is designed to hold 30 pounds of CGL CP48, CCS, 60 pounds of CGL ZK6, and 45 pounds of CP48/ZK6 blended media.

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CGL/FRVB FULL RETENTION V-BANK

The **CGL/FRVB** is designed to provide high efficiency contaminant removal in both commercial and industrial applications. The new design features a V-Bank configuration which prevents bypass and provides an even bed thickness. The FRVB holds approximately 40 pounds of activated carbon and may also be filled with impregnated carbons, specialty media or any combination of media depending upon your specific application. It is suitable for both front and side access installations. The FRVB filter is designed for use at a maximum air velocity of 250 fpm. It's nominal 8" depth makes it ideal for use in areas where space is limited.



Construction:

The internal panels are constructed of 24 gauge flattened diamond expanded metal, epoxy coated after fabrication. The panels are retained within a 16 gauge cold rolled steel frame which is epoxy coated after

Servicing:

The FRBV is easily serviced by removal of the one piece lid. Use of your custom filling jig* makes on-site service practical. Filters may also be sent back to Cameron Great Lakes for service at our facility.

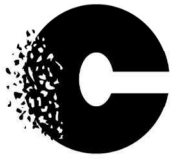
*Filling jig is available at a nominal cost

FILTER SPECIFICATIONS

MODEL	HEIGHT (A)	WIDTH (B)	DEPTH (C)	RATED AIR FLOW	PRESSURE DROP	EMPTY WEIGHT	FILLED WEIGHT*
FRVB FULL SIZE	23.5"	23.5"	8"	1000 cfm 250 fpm	.22" W.G.	45 lbs.	85 lbs.
FRVB-H HALF SIZE	11.5"	23.5"	8"	500 cfm 250 fpm	.22" W.G.	24 lbs.	44 lbs.

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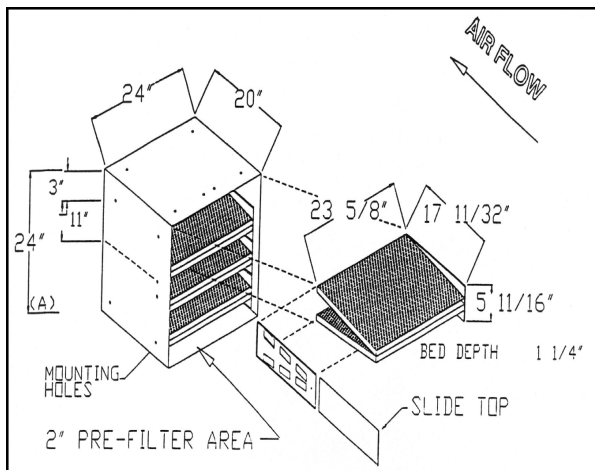


CAMERON GREAT LAKES, INC.

MOLECULAR FILTRATION SPECIALISTS

CGL/20 Front Load Housing

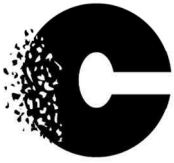
The CGL/20 Front Load Housing is designed for use in both commercial and industrial applications. It is used in conjunction with the CGL/MRM18 Modules and comes complete with a built in space for a 2 inch pre-filter. The single housing is rated for a maximum airflow of 2000 CFM and holds four of the MRM18 Modules. The modular design allows for built up banks to accommodate higher airflow. Its 20" depth makes it ideal for use in applications where space is limited.



SPECIFICATIONS	WEIGHTS
Housing: 16 gauge CRS w/ black powder finish	39 pounds
Housing with 4 MRM18 empty modules	71 pounds
Housing with 4 MRM18 modules with standard carbon	147 pounds
Housing with 4 MRM18 modules filled with ZK6 media	223 pounds

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CGL - SIDE ACCESS 18

The CGL-SA18 is a rugged factory assembled housing designed to hold the MRM18 metal re-fillable module or PDM18 plastic disposable module in both full and half sizes. It is available with a 2" or 4" pre filter track. A post filter track of up to 12" may also be accommodated. Holding up to 70 pounds of carbon per 2000 cfm, this housing design allows for good efficiency, long life, with a shorter foot print than the standard side access tray housing. It is ideal in locations where space is limited.

HOUSING FEATURES:

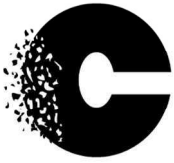
- Easy access from two sides, when required.
- All metal to metal components sealed.
- Rugged construction of 16 gauge cold rolled steel, stitch welded & caulked, with an aluminized finish.*
- .48" W. G. resistance @ 500 fpm per 24" square face opening.

* This housing can be constructed of other materials and finishes, including stainless steel for corrosive applications.

CGL warrants that these units are manufactured in accordance with the specifications disclosed herein. No warranty, expressed purpose or implied, is made relating to the suitability of the product for any particular application or purpose. Do not use dimensions for construction unless drawing is marked "Certified" by CGL.

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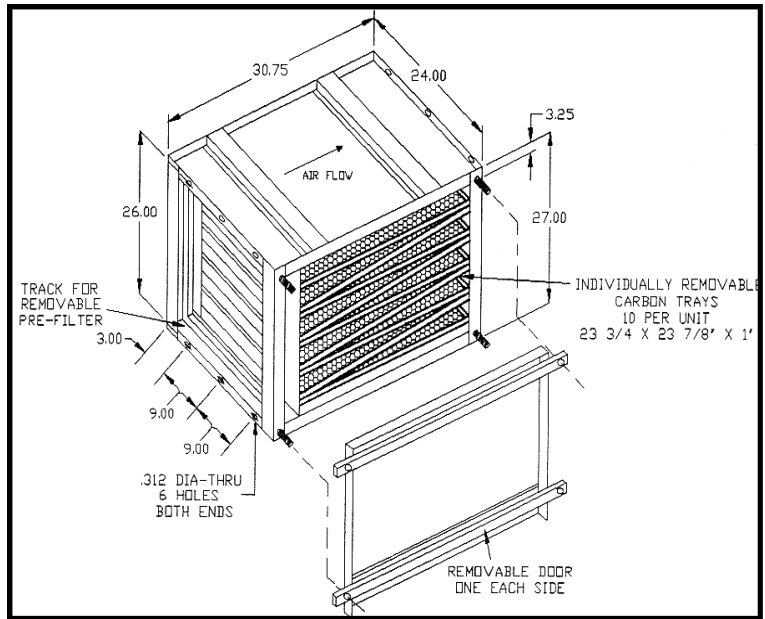
SIDE ACCESS CARBON FILTER HOUSING

This rugged factory assembled housing can be stacked to accommodate any number of carbon trays that your air flow requires. It is available with a 2" or 4" pre filter track. A final track can be added when the system design requires it. Side access housings are also available in a one piece design with both pre and post filters, including 12" deep rigid box filters.

Outward turned 1 1/2 inch flanges make installation to the duct system simple and easy.

HOUSING FEATURES:

- Easy access from two sides.
- All metal to metal components sealed.
- Rugged construction of 16 gauge cold rolled steel.
- Fully gasketed, removable or hinged doors eliminating bypass of contaminated air.
- .32" W. G. resistance @ 500 fpm per 24" square face opening.



CARBON HOUSING DIMENSIONS											
H-high W-wide Based on pre-filter actual face size 23 5/8" x 23 5/8" and ten carbon trays per one-high housing											
1/2	H	15"	1	H	27"	1 1/2	H	42"	2	H	54"
2 1/2	H	69"	3	H	81"	3 1/2	H	96"	4	H	108"
1	W	24"	1 1/2	W	38 1/2"	2	W	50 1/2"	2 1/2	W	62 1/2"
3	W	74 1/2"	3 1/2	W	86 1/2"	4	W	98 1/2"	4 1/2	W	110 1/2"
5	W	122 1/2"	5 1/2	W	134 1/2"	6	W	146 1/2"			

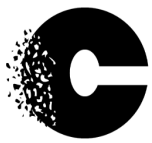
Housing depths: 2" pre-filter -30 3/4", 4" pre-filter- 34 3/4".

Note: Add 1 1/2" to W for each door.

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CGL/ ZBH — Zero Bypass Housing

Model Numbers

ZBH-SS-16 - ZBH-SS-18 - ZBH-SS-12

The ZBH housings available in 3 different depths, 12", 16" and 18". The 24" x 24" housing is rated for 1000 cfm.

The housings are constructed of 16 gauge 304 stainless steel (mild steel also available). Joints between the trays are gasketed, caulked, and covered with 20 gauge end caps to prevent bypass. The tray ends are potted (sealed) to the housing for additional prevention of bypass.

The 16" and 18" deep housings are manufactured with six, 2" deep panels. Pressure drop at the rated air flow of 1000 cfm is 1.3" of water gauge. The 16" housing holds 70 pounds of standard carbon, while the 18" housing will hold 80 pounds of standard activated carbon.

The 12" housing (11.5" actual) contains ten, 1" filter panels. Pressure drop at the rated airflow of 1000 cfm is 1.0" water gauge. The capacity is 55 pounds of standard activated carbon.

CGL offers many types of specialty activated carbon including nuclear grade carbon. Any one of these can be used in the above housings depending upon your application.

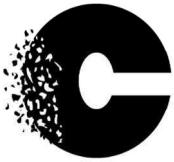
* For Mild Steel construction, change the SS in the model number to MS.

FEATURES

- Versatile, the varying depths of 12" 16" and 18" along with the different carbon capacities allows ease of for numerous different applications.
- Stainless Steel or Mild Steel* construction, depending upon your needs.
- Zero Bypass - gasketed, caulked and potted to prevent leakage
- Suitable for Bag In-Bag Out Applications.

IDEAL FOR USE IN

- *Nuclear Facilities*
- *Pharmaceuticals*
- *Laboratories*
- *Semiconductors*
- *Military Applications*



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Installation of Media Housings and Trays

CGL20 Housings, CGL Front Access Housings

Check the area where the filters are being installed for the following:

- Ceilings are level and sides are plumb.
- Floor can support the weight of the adsorber system, when adsorbent is saturated.

Installation of Housings

Apply a thin bead of caulk around housings flanges & ductwork to prevent infiltration of moisture and contaminated air. Check to make sure the housing is oriented in the proper direction for front or rear access of servicing of trays before securing to the plenum or duct. Note that trays are installed in the housing in a horizontal position. Using the pre drilled 5/16" diameter holes on top and side, secure in place and repeat for each housing in the bank until unit is complete.

Check to make sure there is no leakage between housings and around edges of the bank that will allow contaminated air to bypass carbon bed.

Installation of Trays (CGL 20 , Front Load, and Side Access Housings)

1. Rotate trays end over end to redistribute any adsorber that may have settled during transportation to the job site.
2. Insert adsorber panel into track until end of tray is even with the service end of the housing.
3. Once all trays are installed attach one piece grid retainer to provide a proper seal.

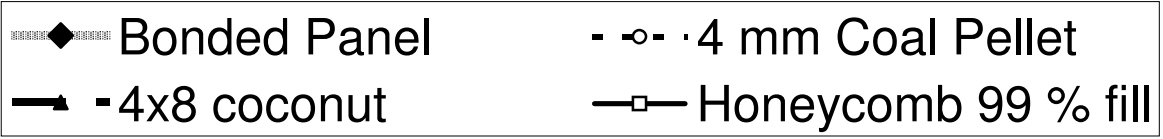
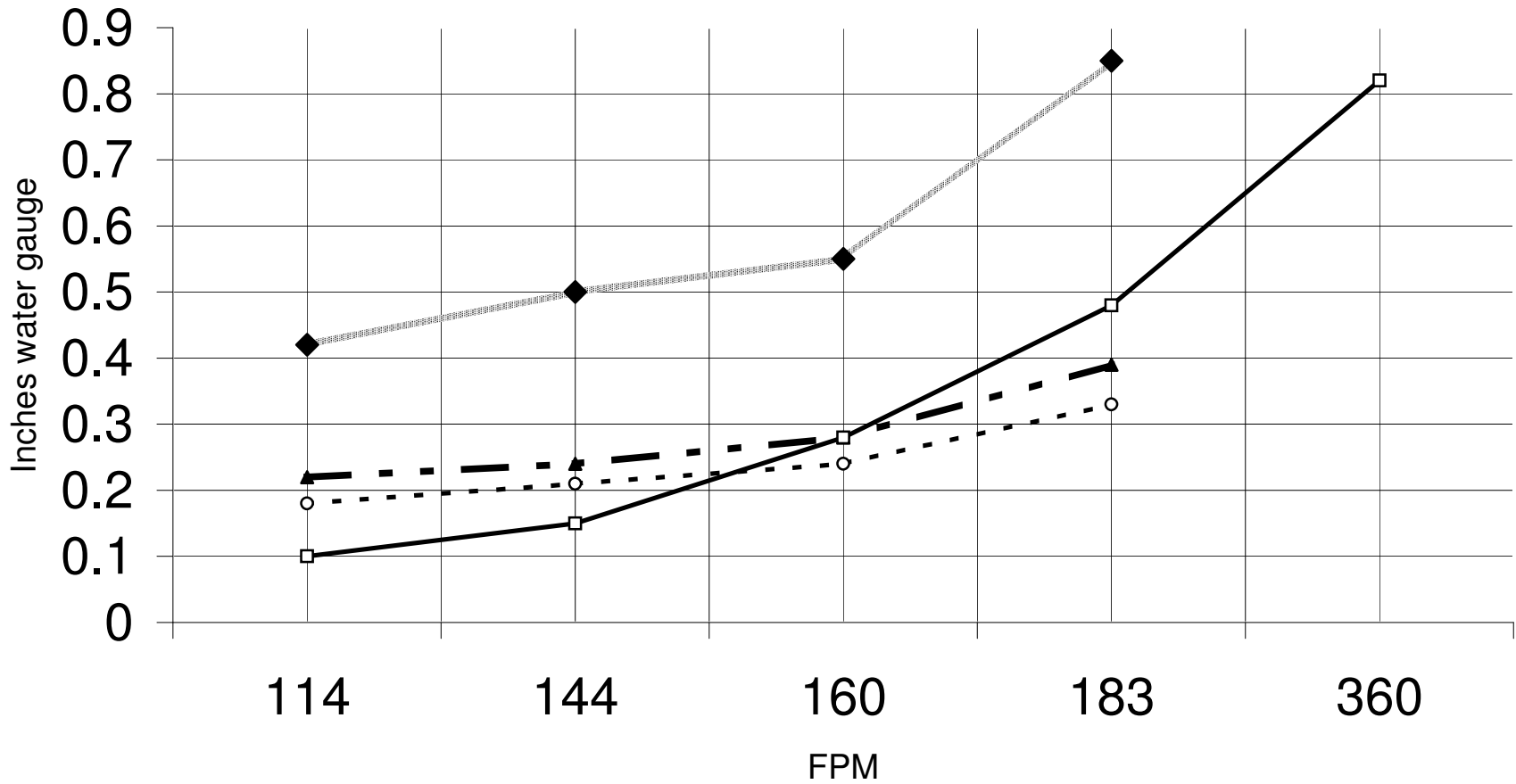
Maintenance

Call your local CGL distributor to have carbon samples tested for life remaining activity, to determine when it is time to change out the carbon in the trays. When removing carbon for testing, select a tray from the center of the system, remove tray and empty some carbon from the top, then take a 20 gram sample of carbon from the center of the tray.

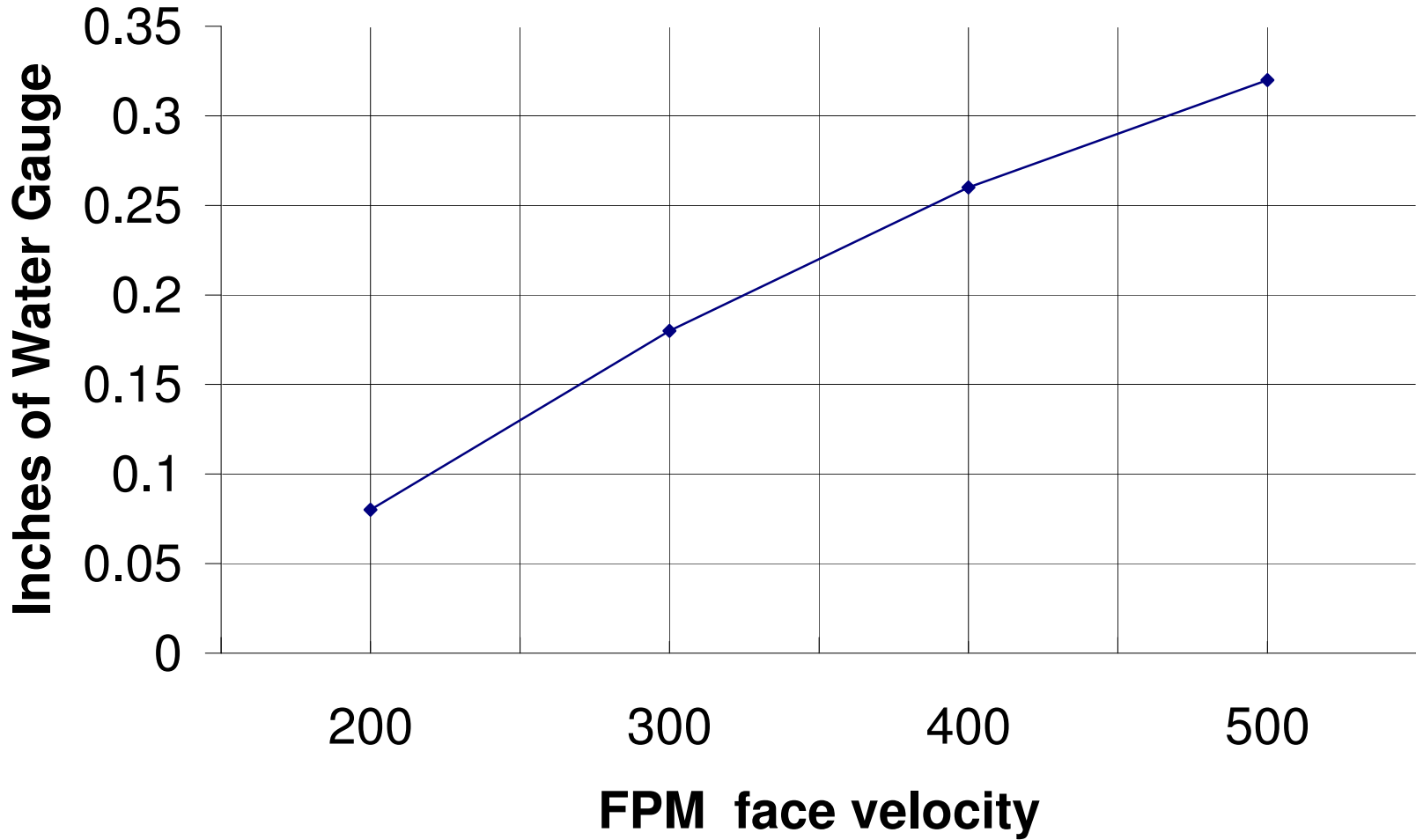
You may choose to change media on site, or you may send out to the nearest facility for service. In some cases, depending upon the filter dimension, filled trays may be advanced to the facility to minimize down time of the AHU, and existing trays are returned in exchange.

CAMERON GREAT LAKES, INC.

Pressure Drop Comparisons nominal 1" panels

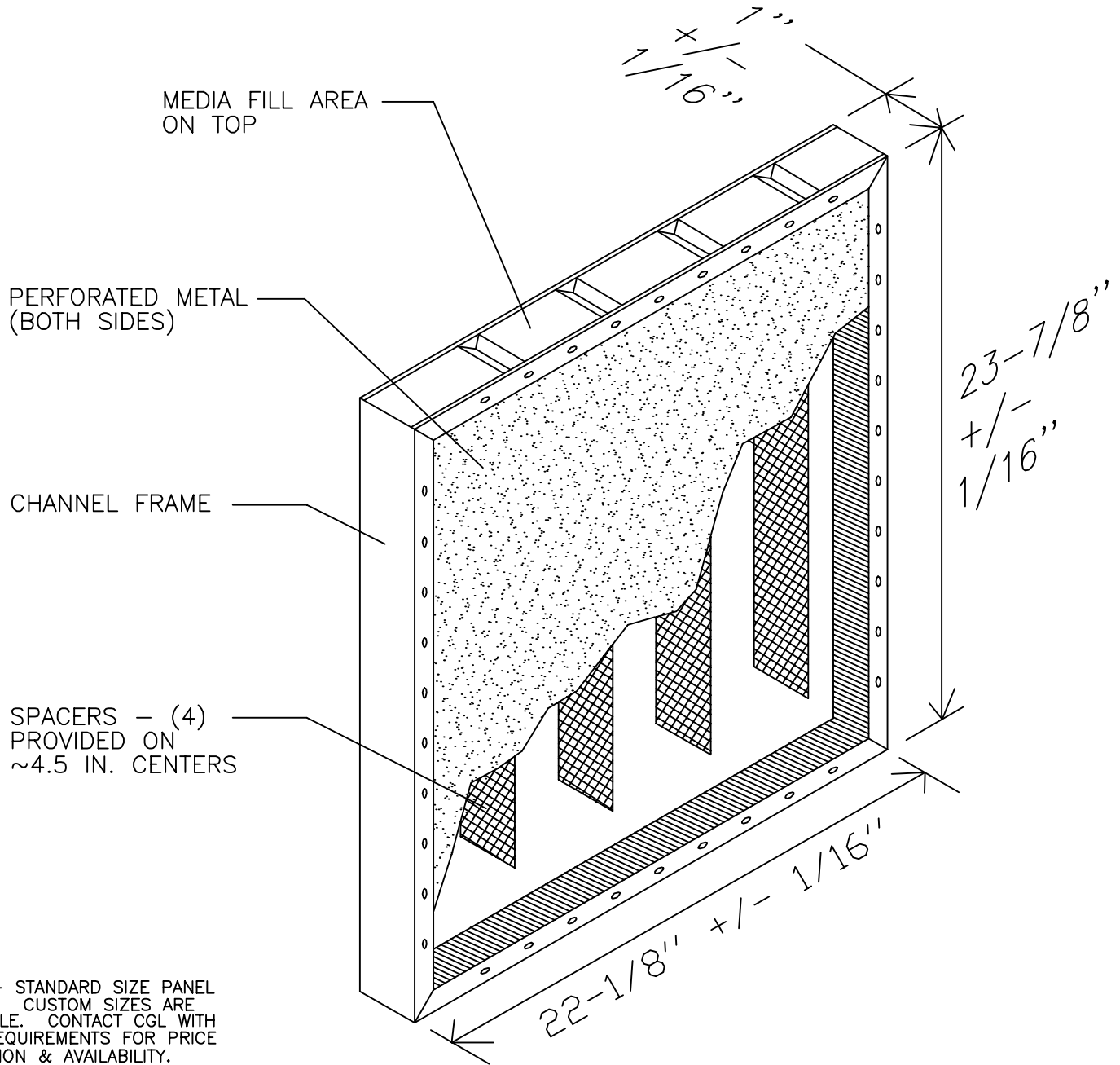


CGL Side Access Carbon Housing



SIZE 22-1/8 x 23-7/8 x 1 DEPTH PANEL

[SHOWN WITH MEDIA FILL PORT COVER REMOVED FOR CLARITY]



NOTE - STANDARD SIZE PANEL SHOWN. CUSTOM SIZES ARE AVAILABLE. CONTACT CGL WITH SIZE REQUIREMENTS FOR PRICE QUOTATION & AVAILABILITY.

PANEL FILL MEDIA	GAC	ZK6
WEIGHTS (LBS.):		
EMPTY MODULE	2	2
FILL MEDIA	7.5	15
TOTAL WEIGHT	9.5	17

MATERIALS OF CONSTRUCTION
COLD ROLLED CARBON STEEL BLACK POWDER COATED FINISH 28 GAUGE FRAME & SPACERS 28 GA. PERFORATED SCREENS WITH 0.077" DIA. HOLES ON 7/64" STAGGERED CENTERS

PROPRIETARY DRAWING			
DRAWING MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN AUTHORIZATION OF CAMERON GREAT LAKES, INC.			
DIMENSIONAL TOLERANCE AS NOTED ABOVE			
REV.	DATE	BY	REMARKS
--	8/98	JMB	ADDED MEDIA WEIGHTS
--	6/97	JMB	ORIGINAL ISSUE



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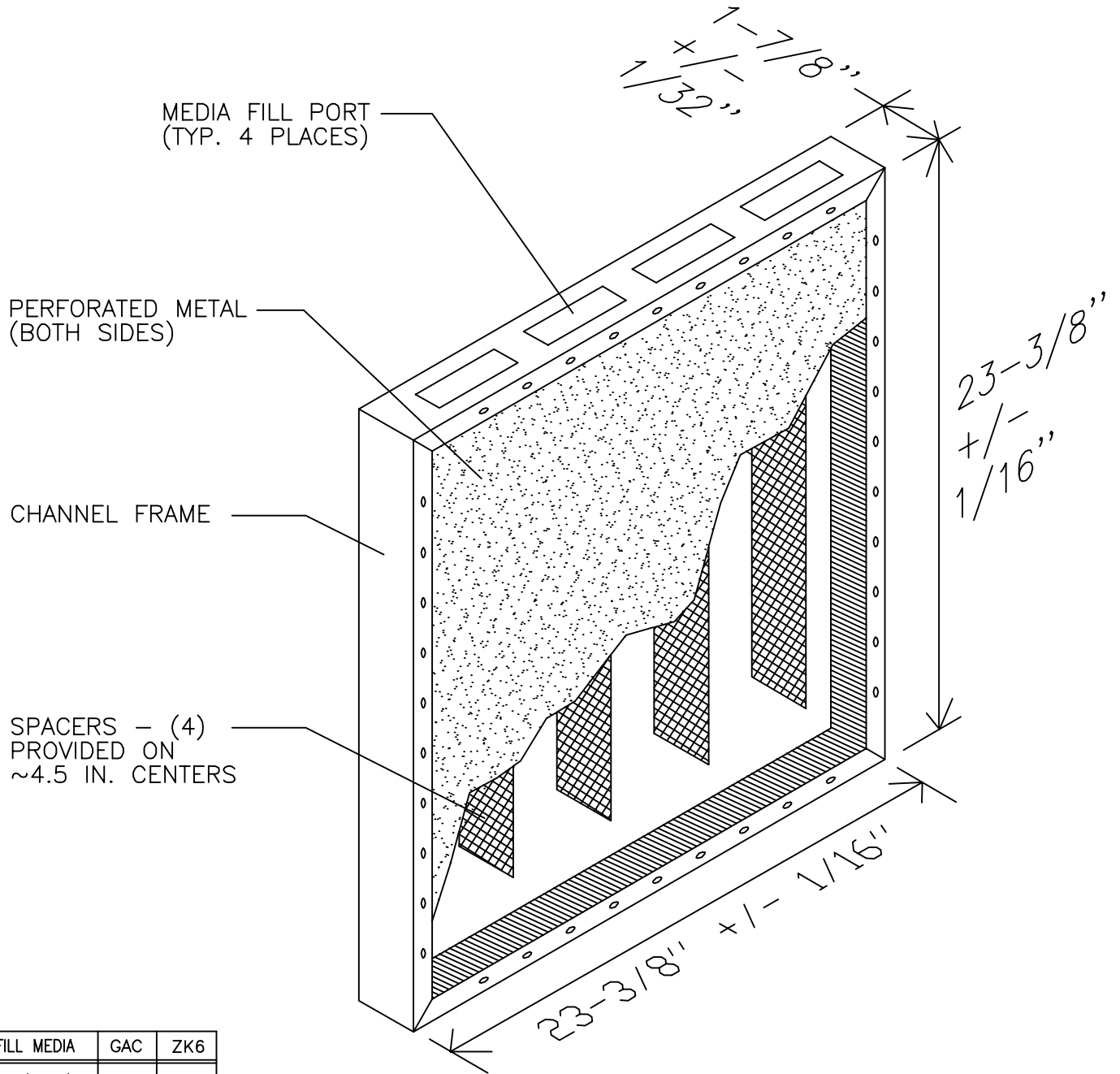
DRAWN:	JMB
CHECKED:	RAH
APPROVED:	JMB

TITLE: SIZE 22-1/8 x 23-7/8
x 1 DEPTH METAL
REFILLABLE PANEL

SCALE: N.T.S. DWG NO. 22x24x1 PANEL

SIZE 23-3/8 SQUARE x 1-7/8 DEPTH PANEL

[SHOWN WITH MEDIA FILL PORT COVER(S) REMOVED FOR CLARITY]



PANEL FILL MEDIA	GAC	ZK6
WEIGHTS (LBS.):		
EMPTY MODULE	3.0	3
FILL MEDIA	16.5	30
TOTAL WEIGHT	19.5	33

MAXIMUM FLOW - 400 CFM AT 100 FPM/SQ.FT. FACE VELOCITY

MATERIALS OF CONSTRUCTION
 COLD ROLLED CARBON STEEL
 BLACK POWDER COATED FINISH
 28 GAUGE FRAME & SPACERS
 28 GA. PERFORATED SCREENS
 WITH 0.077" DIA. HOLES ON
 7/64" STAGGERED CENTERS

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--	6/97	JMB	ORIGINAL ISSUE



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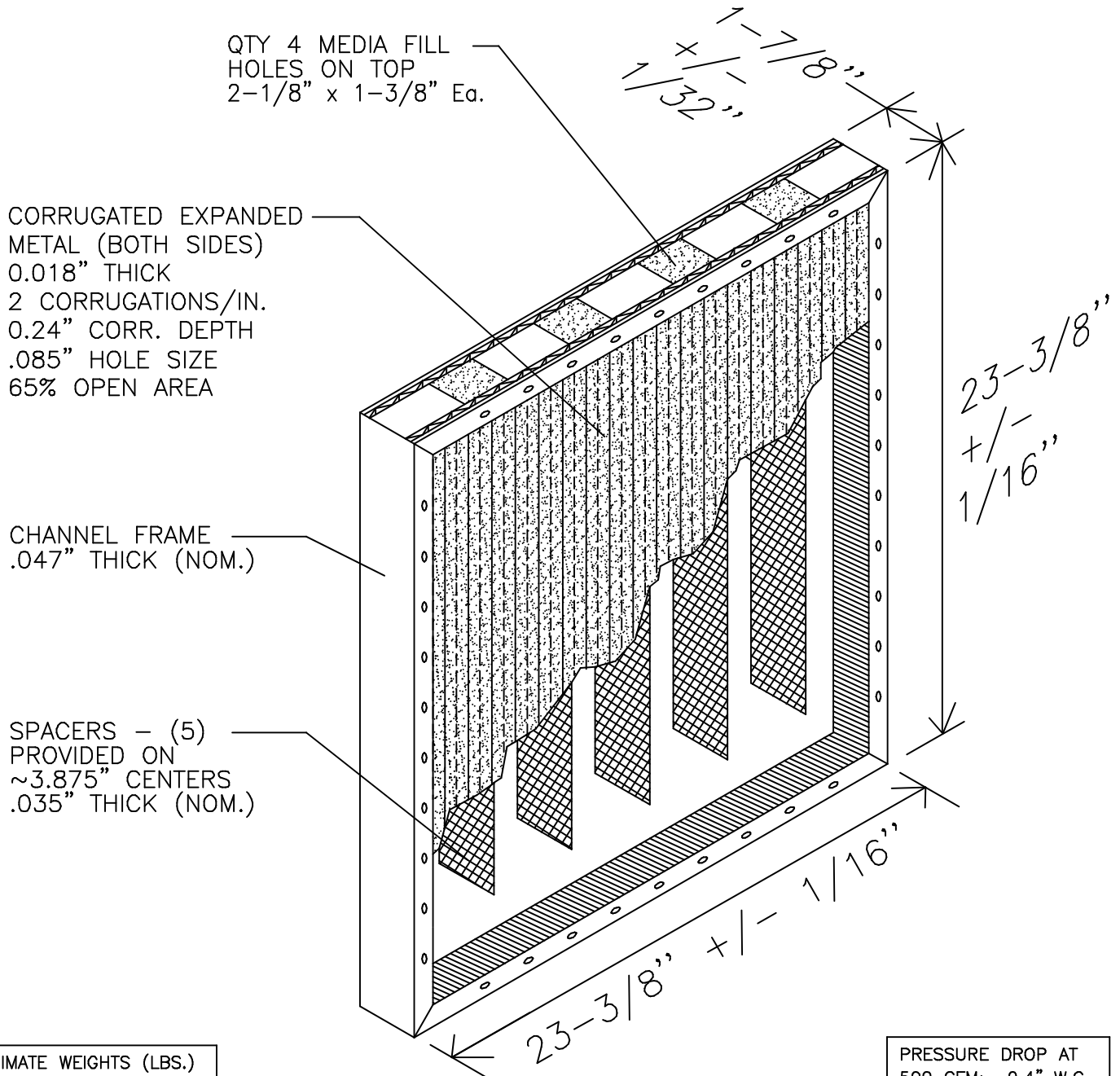
DRAWN:	JMB
CHECKED:	PJL
APPROVED:	RAH

TITLE: SIZE 23-3/8 SQUARE x 1-7/8 DEPTH METAL REFILLABLE PANEL

SCALE: N.T.S. DRAWING NO. 24x2 PANEL

SIZE 23-3/8 x 23-3/8 x 1-7/8 TYPE "SRP" SERPENTINE REFILLABLE PANEL

[SHOWN WITH MEDIA FILL PORT COVERS REMOVED FOR CLARITY.
MEDIA FILL COVERS ATTACHED TO FRAME BY RETAINING SCREWS.]



PRESSURE DROP AT
500 CFM: 0.4" W.G.

APPROXIMATE WEIGHTS (LBS.)	
EMPTY PANEL	11
STANDARD CARBON *	12
APPROX. TOTAL WEIGHT	<u>23</u>

* At 30 lb/ft³ density. Media weight will vary w/impregnated carbon or ZK6 media fill.

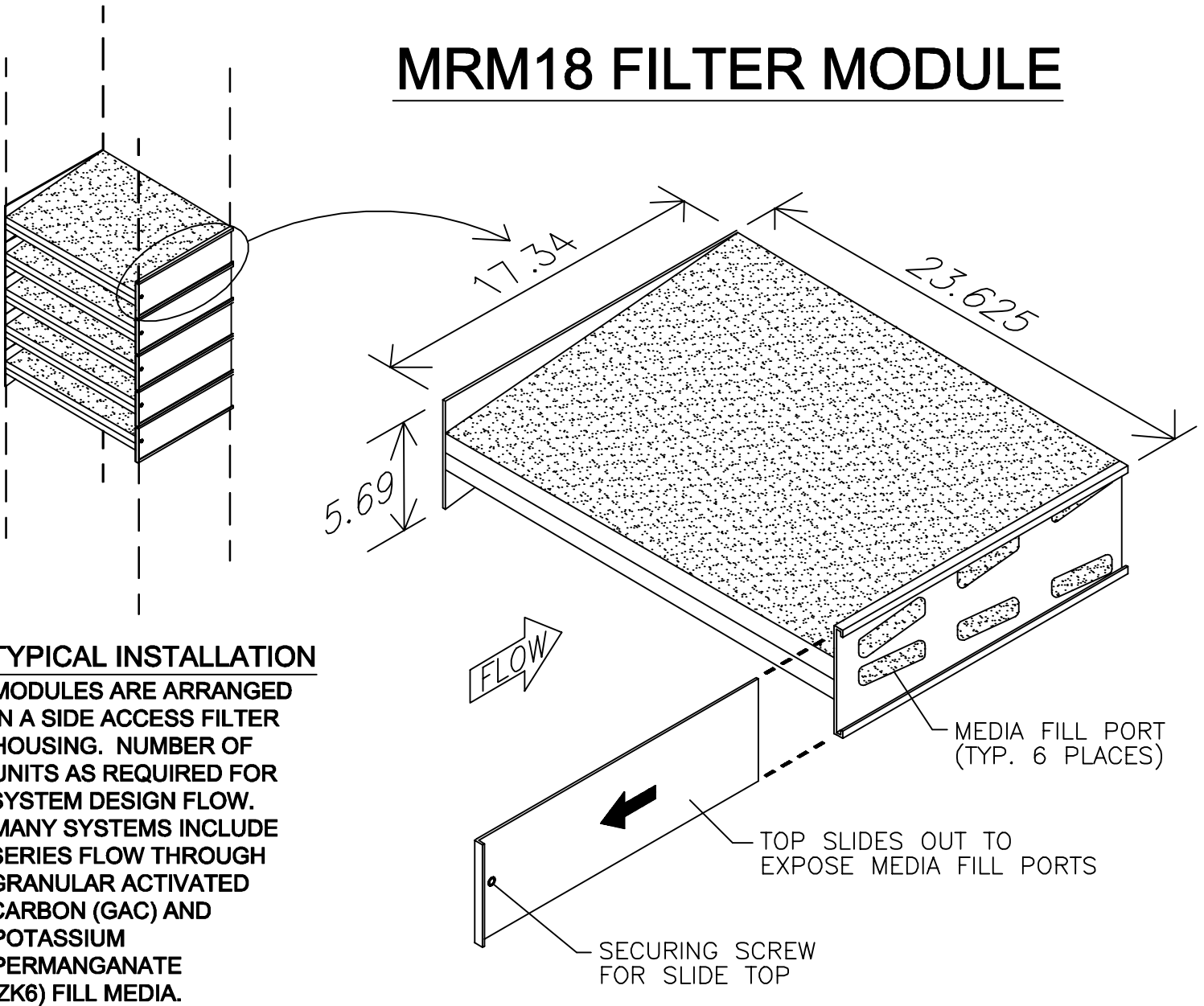
MATERIAL OF CONSTRUCTION	
COLD ROLLED CARBON STEEL	
BLACK POWDER COATED FINISH	

PROPRIETARY DRAWING			
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DRAWN: JMB	TITLE: 23-3/8 SQ. x 1-7/8 DEPTH TYPE "SRP" - SERPENTINE REFILLABLE PANEL
CHECKED: RAH	SCALE: N.T.S.
APPROVED: JMB	DWG NO. 23-3/8 SQ. x 1-7/8 SRP

MRM18 FILTER MODULE



TYPICAL INSTALLATION

MODULES ARE ARRANGED IN A SIDE ACCESS FILTER HOUSING. NUMBER OF UNITS AS REQUIRED FOR SYSTEM DESIGN FLOW. MANY SYSTEMS INCLUDE SERIES FLOW THROUGH GRANULAR ACTIVATED CARBON (GAC) AND POTASSIUM PERMANGANATE (ZK6) FILL MEDIA.

MODULE FILL MEDIA	GAC	ZK6
NO. OF FILTER BEDS	2	2
MAXIMUM FLOW (CFM)	500	500
WEIGHTS (LBS.):		
EMPTY MODULE	8	8
FILL MEDIA	18	36
TOTAL WEIGHT	26	44

MATERIALS OF CONSTRUCTION	
COLD ROLLED CARBON STEEL	
BLACK POWDER COATED FINISH	
16 GAUGE END PLATES	
22 GA. PERFORATED SCREENS	

DIMENSIONS ARE FOR REFERENCE ONLY. DO NOT USE FOR CONSTRUCTION UNLESS MARKED "CERTIFIED" BY CGL.

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TOLERANCES: LENGTH: +/- 0.125 IN.			
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A	11/99	JMB	REVISE FLOW & ADDRESS
--	6/97	JMB	ORIGINAL ISSUE
REV.	DATE	BY	REMARKS

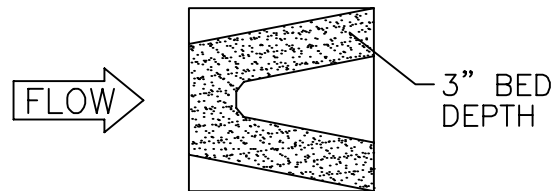
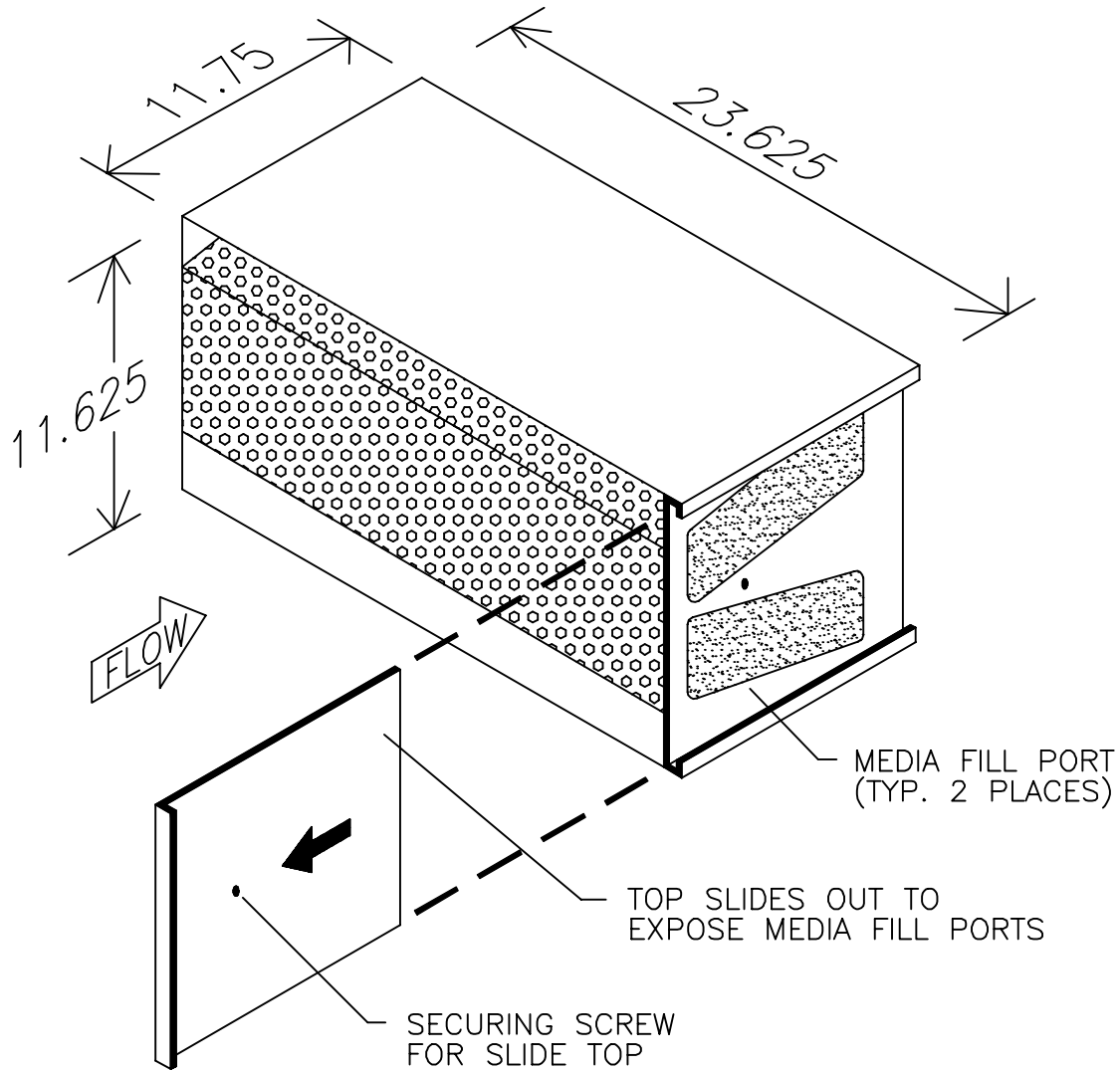


CAMERON GREAT LAKES, INC.

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 TEL: 800-777-4044 FAX: 503-225-0137

TITLE: GENERAL ARRANGEMENT MRM18 METAL REFILLABLE MODULE	
SCALE: N.T.S.	DRAWING NO. MRM18

MRM12 FILTER MODULE



INTERNAL VIEW SHOWING "V" SHAPE BED ARRANGEMENT

MODULE FILL MEDIA	GAC	ZK6
NO. OF FILTER BEDS	2	2
MAXIMUM FLOW (CFM)	250	250
WEIGHTS (LBS.):		
EMPTY MODULE	12	12
FILL MEDIA	30	60
TOTAL WEIGHT	42	72

MATERIALS OF CONSTRUCTION	
COLD ROLLED CARBON STEEL	
BLACK POWDER COATED FINISH	
16 GAUGE END PLATES	
22 GA. PERFORATED SCREENS (0.077" HOLES ON 7/64" STAGGERED CENTERS)	

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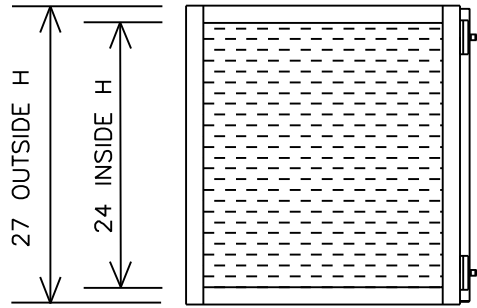
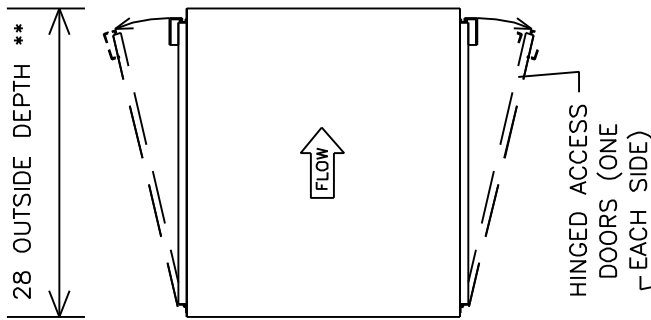
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DRAWN:	JMB
CHECKED:	PJL
APPROVED:	RAH

TITLE: GENERAL ARRANGEMENT MRM12 METAL REFILLABLE MODULE	
SCALE: N.T.S.	DRAWING NO. MRM12

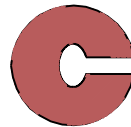
** ADD 4" to depth for 4" depth pre & post filter panels; change model no. to SA1H1W-4P-18-4F



END VIEW FACING OUTLET

PROPRIETARY DRAWING			
DRAWING MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN AUTHORIZATION OF CGL, INC.			
DIMENSIONS ARE FOR REFERENCE ONLY. DO NOT USE FOR CONSTRUCTION UNLESS MARKED "CERTIFIED" BY CGL.			
REV.	DATE	BY	REMARKS
A	04/11/11	JMB	Add depth options for 4" pre & post filter panels
--	08/08/06	JMB	ORIGINAL ISSUE

DRAWN: JMB
CHECKED: PJJ
APPROVED: JMB



CAMERON GREAT LAKES, INC.
2336 NW 29th AVE. TEL. 800-777-4044
PORTLAND, OR 97210 FAX 503-225-0137

TITLE: GENERAL ARRANGEMENT
MODEL NO. SA1H1W-2P-18-2F
SIDE ACCESS FILTER HOUSING
SCALE: N.T.S. DWG NO. SA1H1W-2P-18-2F

MODEL NO. SA1H1W-2P-18-2F	
SA	- SIDE ACCESS HOUSING
1H	- 1 MODULE HIGH
1W	- 1 MODULE WIDE
2P	- 2 IN. DEPTH PREFILTER *
18	- MRM-18 CARBON MODULES
2F	- 2 IN. DEPTH FINAL FILTER *

- 4 MRM18s @ 24 LB. GAC-ZK6 BLEND
- EACH = TOTAL MEDIA WEIGHT (LBS.) 96
- + 4 EMPTY 18s @ 8 LB. EACH 32
- + APPROX. EMPTY HOUSING WEIGHT 183
- + 2" DEPTH PRE & FINAL FILTERS * 4
- TOTAL APPROX. OPERATING WEIGHT 315

MRM18 FILTER MODULES-SIZE 23.63 WIDTH x 5.69 HEIGHT x 17.34 DEPTH CAPACITY: 24 LBS. GAC-ZK6 BLEND

PRE-FILTER TRACK * - NOMINAL SIZE 24 x 24 x 2" DEPTH
(*) PREFILTER AND FINAL FILTER PANELS PROVIDED BY OTHERS

MATERIALS - HOUSING: 16 GA. CR CARBON STEEL, STITCH WELDED & CAULKED. ALUMINIZED FINISH IS STANDARD. ENAMEL PAINT FINISH IS AN EXTRA COST OPTION.

MODULES: 16 GA. CR STEEL WITH 26 GA. PERF. SCREENS (.077" HOLES ON 7/64" STAGGERED CENTERS), BLACK POWDER FINISH

APPROX. PRESSURE DROP WITH CLEAN 2" FILTER PANELS: 1.1" W.G. AT MAXIMUM 2000 CFM AIR FLOW

** ADD 2" to depth for 4" depth prefilter panel; change model number to SA1H1W-4P-18

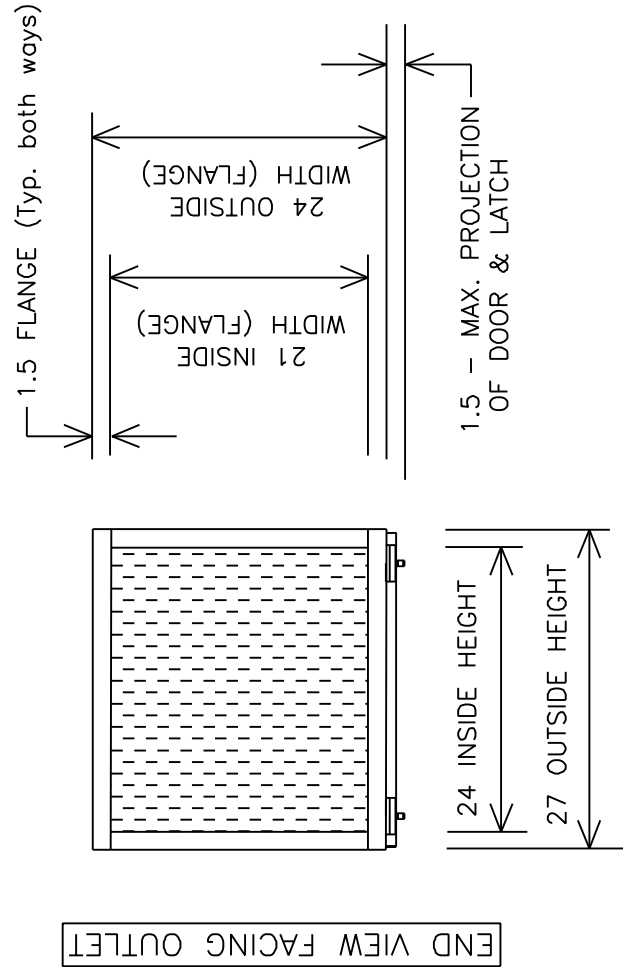
PROPRIETARY DRAWING			
DRAWING MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN AUTHORIZATION OF CGL, INC.			
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REV.	DATE	BY	REMARKS
A	04/11/11	JMB	Revise 4" prefilter option note
--	02/23/04	JMB	ORIGINAL ISSUE



CAMERON GREAT LAKES, INC.

2336 NW 29th AVE. TEL. 800-777-4044
 PORTLAND, OR 97210 FAX 503-225-0137

DRAWN: JMB	TITLE: GENERAL ARRANGEMENT MODEL NO. SA1H1W-2P-18 SIDE ACCESS FILTER HOUSING
CHECKED: PJL	
APPROVED: JMB	
SCALE: N.T.S.	DWG NO. SA1H1W-2P-18



END VIEW FACING OUTLET

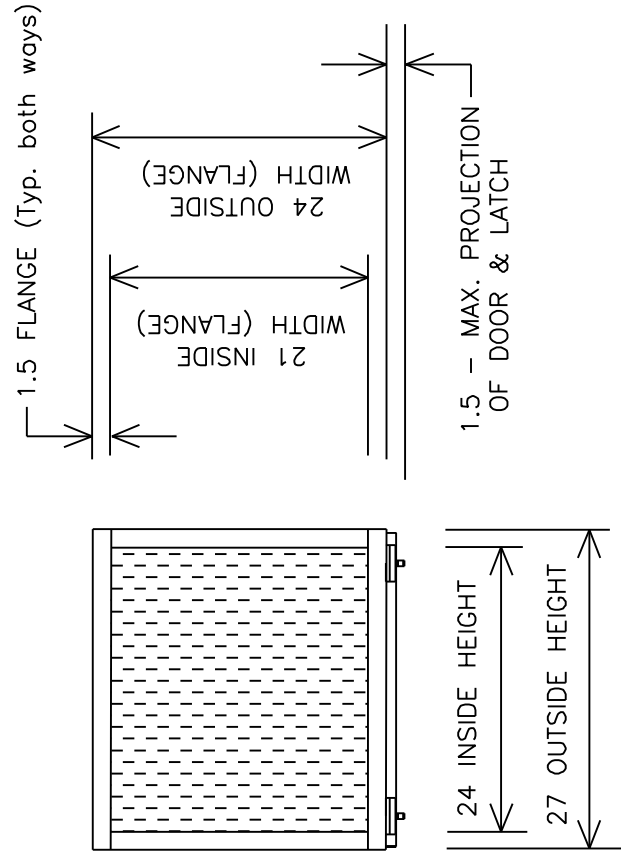
MODEL NO. SA1H1W-2P-18	
SA	- SIDE ACCESS HOUSING
1H	- 1 MODULE HIGH
1W	- 1 MODULE WIDE
2P	- 2 IN. DEPTH PREFILTER *
18	- MRM-18 CARBON MODULES

- 4 MRM18s @ 24 LB. GAC-ZK6 BLEND
- EACH = TOTAL MEDIA WEIGHT (LBS.) 96
- + 4 EMPTY 18s @ 8 LB. EACH 32
- + APPROX. EMPTY HOUSING WEIGHT 165
- + 2" DEPTH PREFILTER * 2
- TOTAL APPROX. OPERATING WEIGHT 295

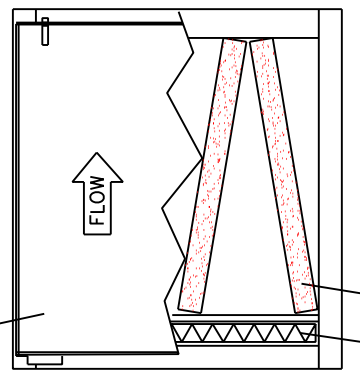
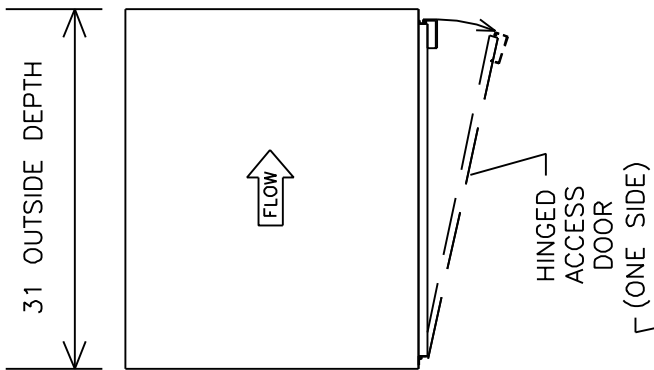
MRM18 FILTER MODULES-SIZE 23.63 WIDTH x 5.69 HEIGHT x 17.34 DEPTH CAPACITY: 24 LBS. GAC-ZK6 BLEND
 PRE-FILTER TRACK - NOMINAL SIZE 24 x 24 x 2" DEPTH
 (*) PREFILTER PROVIDED BY OTHERS

MATERIALS - HOUSING: 16 GA. CR CARBON STEEL WITH GREY COLOR URETHANE ENAMEL FINISH
MODULES: 16 GA. CR STEEL WITH 26 GA. PERF. SCREENS (.077" HOLES ON 7/64" STAGGERED CENTERS), BLACK POWDER FINISH

2000 CFM
 MAXIMUM
 AIR FLOW



END VIEW FACING OUTLET



"SRP" - SERPENTINE REFILLABLE PANEL.
 SIZE 23.375 SQUARE x 1.875 DEPTH.
 CAPACITY: 12 LBS. STD 4X8 GAC EA.

PRE-FILTER TRACK - NOMINAL
 SIZE 24 x 24 x 2" DEPTH
 (*) PREFILTER PROVIDED BY OTHERS

MODEL NO. SA1H1W-2P-(4)SRP	
SA	- SIDE ACCESS HOUSING
1H	- 1 MODULE HIGH
1W	- 1 MODULE WIDE
2P	- 2 IN. DEPTH PREFILTER *
(4)SRP	- Qty 4 x SRP FILTER PANELS

- 4 SRP PANELS @ 12 LB. GAC
- EACH = TOTAL MEDIA WEIGHT (LBS.) 48
- + 4 EMPTY SRPs @ 11 LB. EACH 44
- + APPROX. EMPTY HOUSING WEIGHT 166
- + 2" DEPTH PREFILTER * 2
- TOTAL APPROX. OPERATING WEIGHT 260

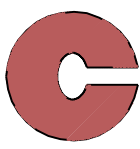
MATERIALS - HOUSING: 16 GA. CR CARBON STEEL WITH ALUMINIZED FINISH or BLACK COLOR POWDER COAT EPOXY PAINT FINISH

MODULES: 16 GA. CR STEEL WITH 26 GA. PERF. SCREENS (.077" HOLES ON 7/64" STAGGERED CENTERS), BLACK POWDER FINISH

2000 CFM
 MAXIMUM
 AIR FLOW

PROPRIETARY DRAWING
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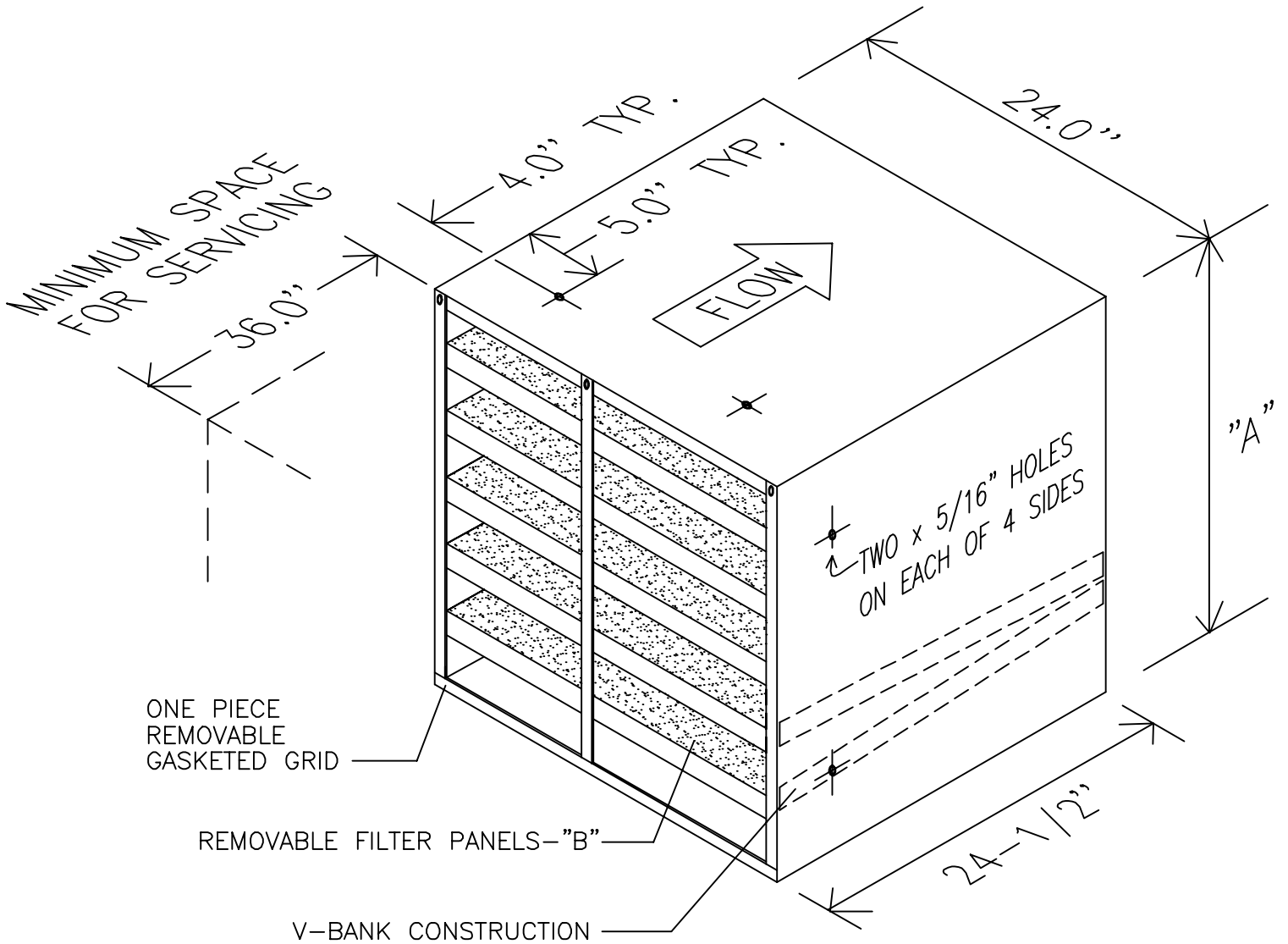
CAMERON GREAT LAKES, INC.
 2336 NW 29th AVE. TEL. 800-777-4044
 PORTLAND, OR 97210 FAX 503-225-0137

REV.	DATE	BY	REMARKS
--	07/27/10	JMB	ORIGINAL ISSUE

DRAWN:	JMB
CHECKED:	PJL
APPROVED:	JMB

TITLE:	GENERAL ARRANGEMENT MODEL NO. SA1H1W-2P-(4)SRP SIDE ACCESS FILTER HOUSING		
SCALE:	N.T.S.	DWG NO.	SA1H1W-2P-(4)SRP

2000 CFM FRONT ACCESS FILTER HOUSING



MODEL NO.	"A"	"B"	CARBON	FLOW @ 0.22" W.G. ΔP*
FA-2000	24	10	90 lbs.	2000 CFM*
FA-2000H	12	5	45 lbs.	1000 CFM*

* AT 500 FPM DESIGN VELOCITY

FEATURES

- Can be installed as front or rear access
- Units bolt together to form banks of any capacity; will fit many existing holding frames.

WEIGHTS FOR MODEL 2000-FA

PANEL FILL MEDIA	GAC	CI	ZK6
WEIGHTS (LBS.):			
EMPTY HOUSING	110	110	110
QTY. 10 TRAYS AND MEDIA	140	152	215
TOTAL WEIGHT	250	262	325

MATERIALS OF CONSTRUCTION

HOUSING - 14 GAUGE
COLD ROLLED CARBON STEEL
BLACK POWDER COATED FINISH

PROPRIETARY DRAWING

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DIMENSIONAL TOLERANCE = +/- 0.030 IN.



CAMERON GREAT LAKES, INC.

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TEL: 800-777-4044 FAX: 503-225-0137

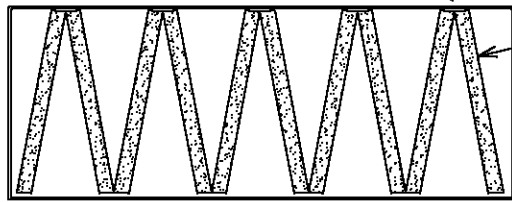
REV.	DATE	BY	REMARKS	DRAWN:	JMB
				CHECKED:	PJL
--	05/23/00	JMB	ORIGINAL ISSUE	APPROVED:	RAH

TITLE: CGL MODEL FA-2000
FRONT ACCESS CARBON
FILTER TRAY HOUSING

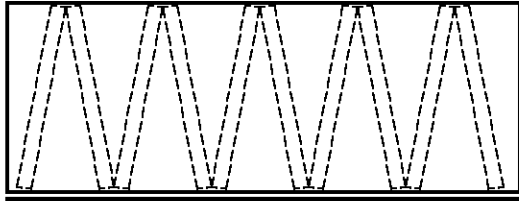
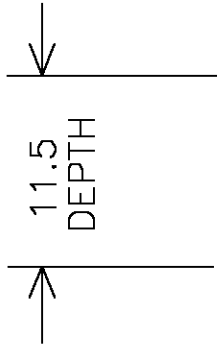
SCALE: N.T.S. DWG NO. FA-2000

INTERNAL VIEW
SHOWING "V" BANK
PANEL ARRANGEMENT

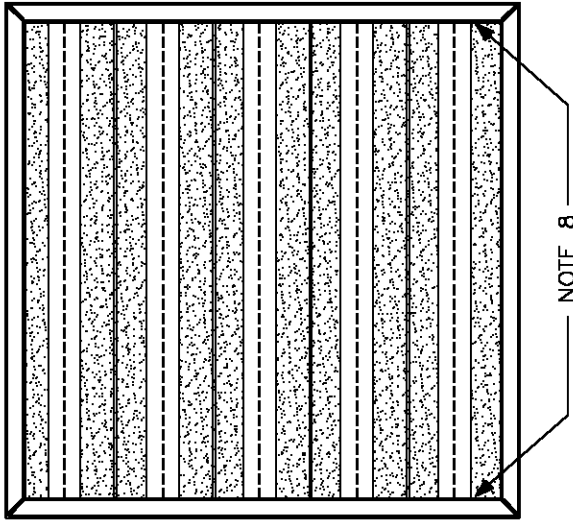
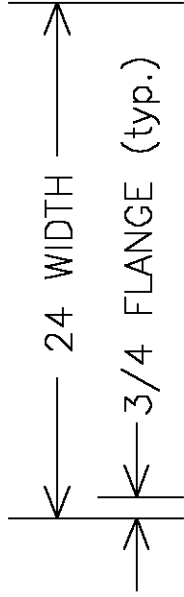
HOUSING
FRAME



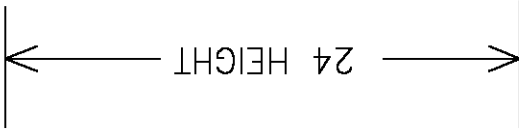
TEN (10) FILTER PANELS,
NOMINAL 1" DEPTH.
26 GAUGE FRAME WITH
26 GA. PERF. SCREENS (.045"
HOLES, 37% OPEN AREA)



SIDE VIEW



RIGHT END VIEW
FACING AIR OUTLET



NOTES

1. MATERIAL: 304 SS, 16 GA. FRAME, 20 GA. END CAPS
2. RATED FLOW: 1000 GFM AT 250 FPM FACE VELOCITY
3. PRESSURE DROP AT RATED FLOW: 1.0" W.G.
4. CARBON CAPACITY @ 100% FILL:
STANDARD CARBON @ 30 LB./FT3: 55 LBS.
IMPREGNATED CARBON @ 34 LB./FT3: 60 LBS.
5. EMPTY HOUSING WEIGHT: 62 LBS.
6. JOINTS BETWEEN TRAYS ARE GASKETED, CAULKED,
AND COVERED WITH END CAPS TO PREVENT BYPASS.
7. GASKET ON UPSTREAM FACE OF FILTER:
3/4" X 1/4" CLOSED CELL EDPM MATERIAL
8. TRAY ENDS ARE POTTED (SEALED) TO HOUSING
FRAME TO PREVENT BYPASS.
9. SUITABLE FOR USE IN "BAG IN-BAG OUT" APPLICATIONS.

PROPRIETARY DRAWING
DRAWING MAY NOT BE USED OR REPRODUCED
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TOLERANCES: LENGTH +/- 0.125 IN.

REV.	DATE	BY	REMARKS
-	02/01/00	JMB	ORIGINAL ISSUE

DRAWN: JMB
CHECKED: PJJ
APPROVED: RAH

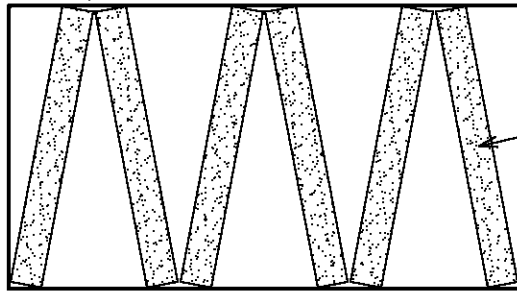
TITLE: GENERAL ARRANGEMENT
MODEL ZBH-SS-12 - 304SS
ZERO BYPASS FILTER HOUSING
SCALE: N.T.S. DWG. NO. ZBH-SS-12



CAMERON GREAT LAKES, INC.
2385 NW 29th AVE. PORTLAND, OR 97210
TEL. 800-777-4044 FAX 503-225-0137

INTERNAL VIEW
SHOWING "V" BANK
PANEL ARRANGEMENT

HOUSING FRAME

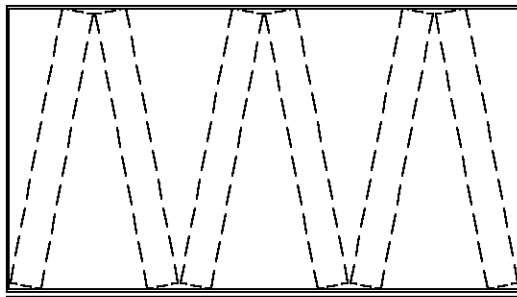
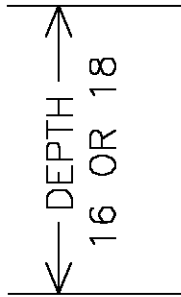


SIX (6) FILTER PANELS,
NOMINAL 2" DEPTH.
26 GAUGE FRAME WITH
26 GA. PERF. SCREENS (.045"
HOLES, 37% OPEN AREA)

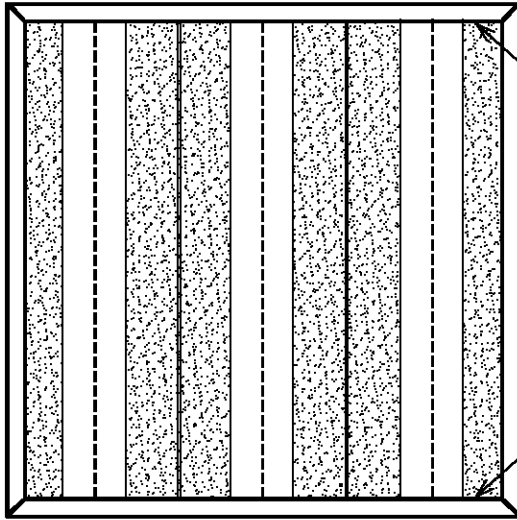
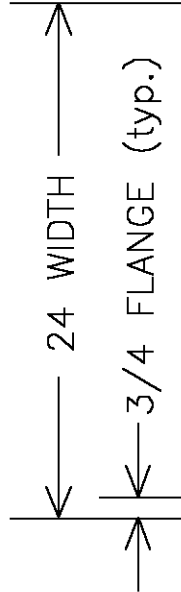


NOTE 4

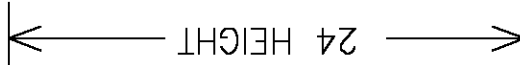
NOTE 5



SIDE VIEW



RIGHT END VIEW
FACING AIR OUTLET




NOTES

1. MATERIAL: 304 SS, 16 GA. FRAME, 20 GA. END CAPS
2. RATED FLOW: 1000 CFM AT 250 FPM FACE VELOCITY
3. PRESSURE DROP AT RATED FLOW: 1.3" W.G.
4. JOINTS BETWEEN TRAYS ARE GASKETED, CAULKED,
AND COVERED WITH END CAPS TO PREVENT BYPASS.
5. GASKET ON UPSTREAM FACE OF FILTER:
3/4" X 1/4" CLOSED CELL EDPM MATERIAL
6. TRAY ENDS ARE POTTED (SEALED) TO HOUSING
FRAME TO PREVENT BYPASS.
7. SUITABLE FOR USE IN "BAG IN-BAG OUT" APPLICATIONS.

APPROXIMATE WEIGHTS (LBS).	16" DEPTH	18" DEPTH
EMPTY HOUSING	76	90
STANDARD CARBON @ 30 LB./FT ³ :	70	80
IMPREGNATED GAC @ 34 LB./FT ³ :	80	90

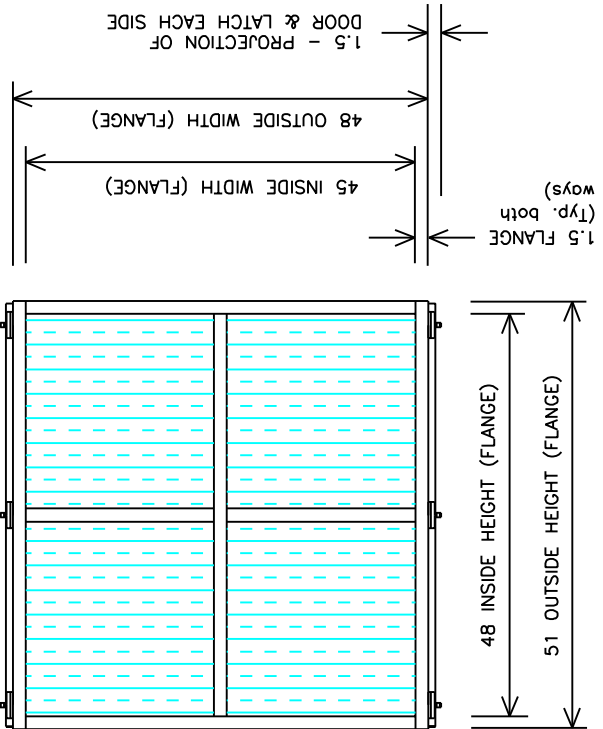
PROPRIETARY DRAWING
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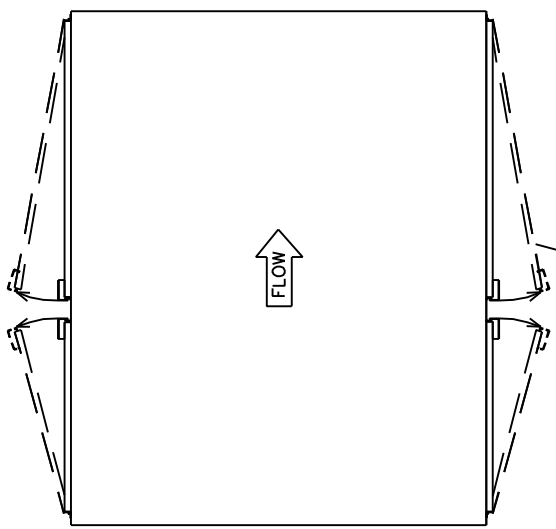
CAMERON GREAT LAKES, INC.
2335 NW 29th AVE. PORTLAND, OR 97210
TEL. 800-777-4044 FAX 503-225-0137

DRAWN: JMB	TITLE: GENERAL ARRANGEMENT
CHECKED: PUL	ZBH-SS-16 & ZBH-SS-18 304SS
APPROVED: RAH	ZERO BYPASS FILTER HOUSING
REV. DATE BY	SCALE: N.T.S. DIM. NO. ZBH-SS-16/18
- 02/01/00 JMB	ORIGINAL ISSUE
REMARKS	

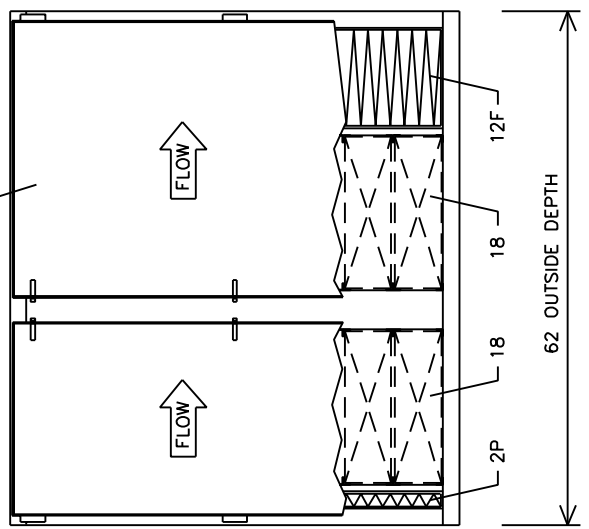
TOLERANCES: LENGTH +/- 0.125 IN.



END VIEW FACING OUTLET



HINGED ACCESS DOORS (EACH SIDE)



MODEL NO. SA2H2W-2P-18DP-12F
SA - SIDE ACCESS HOUSING
2H - 2 MODULES HIGH
2W - 2 MODULES WIDE
2P - 2" DEPTH PREFILTERERS *
18 - MRM-18 CARBON MODULES
DP - DUAL PASS DESIGN
12F - 12 IN. DEPTH FINAL FILTERS *
* PREFILTERERS & FINAL FILTERS SUPPLIED BY OTHERS
APPROX. EMPTY HOUSING WEIGHT - 1130 LBS.
MATERIAL OF CONSTRUCTION: (STANDARD) STITCH WELDED & CAULKED 16 GAUGE COLD ROLLED CARBON STEEL WITH ALUMINIZED FINISH INSIDE & OUT. (OPTIONAL) PAINTED C.S. OR 304/316 STAINLESS STEEL

PROPRIETARY DRAWING			
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DIMENSIONS ARE FOR REFERENCE ONLY. DO NOT USE FOR CONSTRUCTION UNLESS MARKED "CERTIFIED" BY CGL.			
REV.	DATE	BY	REMARKS
B	06/27/13	JMB	REV. TO 12" FINAL FLTR
A	08/22/05	JMB	ADD 6" FINAL FILTER
--	05/07/01	JMB	ORIGINAL ISSUE

CAMERON GREAT LAKES, INC.
 2336 NW 29th AVE. TEL. 800-777-4044
 PORTLAND, OR 97210 FAX 503-225-0137

DRAWN:	JMB	TITLE:	GENERAL ARRANGEMENT
CHECKED:	PJL		MODEL SA2H2W-2P-18DP-12F
APPROVED:	JMB		SIDE ACCESS FILTER HOUSING
SCALE:	N.T.S.	DWG NO:	SA2H2W-2P-18DP-12F