



# West Virginia Purchasing Division

2019 Washington Street, East  
Charleston, WV 25305  
Telephone: 304-558-2306  
General Fax: 304-558-6026  
Bid Fax: 304-558-3970

The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.



Header

List View

General Information | Contact | Default Values | Discount | Document Information

Procurement Folder: 214313

Procurement Type: Central Purchase Order

Vendor ID: VS0000002427

Legal Name: Technology International Inc

Alias/DBA:

Total Bid: \$149,520.00

Response Date: 06/08/2016

Response Time: 13:16

SO Doc Code: CRFQ

SO Dept: 0211

SO Doc ID: GSD1600000024

Published Date: 5/27/16

Close Date: 6/8/16

Close Time: 13:30

Status: Closed

Solicitation Description: Addendum 1 - One-Time Purchase of Air Induction Units

Total of Header Attachments: 0

Total of All Attachments: 0



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder :** 214313

**Solicitation Description :** Addendum 1 - One-Time Purchase of Air Induction Units

**Proc Type :** Central Purchase Order

Date issued	Solicitation Closes	Solicitation No	Version
	2016-06-08 13:30:00	SR 0211 ESR06081600000005941	1

VENDOR
VS0000002427 Technology International Inc

**FOR INFORMATION CONTACT THE BUYER**  
 Linda Harper  
 (304) 558-0468  
 linda.b.harper@wv.gov

Signature X	FEIN #	DATE
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All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Air Induction Unit, per attached specifications	133.00000	EA	\$534.000000	\$71,022.00

Comm Code	Manufacturer	Specification	Model #
40101701			

**Extended Description :** Air Induction units W/ Left side connections per the attached specifications.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Air Induction Unit, per attached specifications	147.00000	EA	\$534.000000	\$78,498.00

Comm Code	Manufacturer	Specification	Model #
40101701			

**Extended Description :** Air Induction units W/ Right side connections per the attached specifications.





Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

State of West Virginia  
Request for Quotation  
13 – Equipment

Proc Folder: 214313

Doc Description: One-Time Purchase of Air Induction Units

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-05-11	2016-06-01 13:30:00	CRFQ 0211 GSD1600000024	1

**BID RECEIVING LOCATION**

BID CLERK  
DEPARTMENT OF ADMINISTRATION  
PURCHASING DIVISION  
2019 WASHINGTON ST E  
CHARLESTON WV 25305  
US

**VENDOR**

**Vendor Name, Address and Telephone Number:**

Technology International, Inc.  
1349 South International Pkwy, Suite 2411,  
Lake Mary, Florida 32746  
Tel: (407) 359-2373

**FOR INFORMATION CONTACT THE BUYER**

Linda Harper  
(304) 558-0468  
linda.b.harper@wv.gov

Signature X

FEIN # 650342335

DATE 06/07/2016

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION:**

The West Virginia Purchasing Division for the Agency, The West Virginia Department of Administration's, General Services Division is soliciting bids from qualified vendors to establish a "One-Time" contract for the purchase of Air Induction Units per the Specifications, Terms & Conditions and bid requirements as attached.

INVOICE TO		SHIP TO	
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 1900 KANAWHA BLVD E, BLDG 1, RM MB-68 CHARLESTON WV25305 US		STATE OF WEST VIRGINIA SEE SPECIFICATIONS FOR DELIVERY REQUIREMENTS  No City WV 99999 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Air Induction Unit, per attached specifications	133.00000	EA	\$534.00	\$71,022.00

Comm Code	Manufacturer	Specification	Model #
40101701	EB Air	MGD-88-2-L-S-W Air Induction Unit	

**Extended Description :**

Air Induction units W/ Left side connections per the attached specifications.

INVOICE TO		SHIP TO	
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 1900 KANAWHA BLVD E, BLDG 1, RM MB-68 CHARLESTON WV25305 US		STATE OF WEST VIRGINIA SEE SPECIFICATIONS FOR DELIVERY REQUIREMENTS  No City WV 99999 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Air Induction Unit, per attached specifications	147.00000	EA	\$534.00	\$78,498.00

Comm Code	Manufacturer	Specification	Model #
40101701	Model: EB Air	MGD-88-2-L-S-W Air Induction Unit	

**Extended Description :**

Air Induction units W/ Right side connections per the attached specifications.

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Question Deadline 3:00 pm	2016-05-26

**See attached TII Proposal No. TII-WV-0616-5191**

<b>GSD160000024</b>	<b>Document Phase</b> Final	<b>Document Description</b> One-Time Purchase of Air Induction Units	<b>Page 3</b> <b>of 3</b>
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**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

## INSTRUCTIONS TO VENDORS SUBMITTING BIDS

**1. REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

**2. MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

**3. PREBID MEETING:** The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening

A **NON-MANDATORY PRE-BID** meeting will be held at the following place and time:

A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

**4. VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: **Tuesday, May 26, 2016 by 3:00pm EST**

Submit Questions to: Linda B Harper, Senior Buyer  
2019 Washington Street, East  
Charleston, WV 25305  
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)  
Email: [Linda.B.Harper@wv.gov](mailto:Linda.B.Harper@wv.gov)

**5. VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

**6. BID SUBMISSION:** All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:  
Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID: Air Induction Units - Bldg. 5 & 6  
BUYER: Linda B Harper, Senior Buyer  
SOLICITATION NO.: CRFQ 0211 GSD1600000024  
BID OPENING DATE: 06/01/2016  
BID OPENING TIME: 1:30pm EST  
FAX NUMBER: 304-558-3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression or Interest or Request for Proposal is not permitted in wvOASIS.

**For Request For Proposal ("RFP") Responses Only:** In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus <sup>n/a</sup> convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)

- Technical  
 Cost

**7. BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: Wednesday, June 1, 2016 at 1:30pm EST

Bid Opening Location: Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

**8. ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**9. BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

**10. ALTERNATES:** Any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

**11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

**12. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

**13. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

**14. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

**15. PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Vendor Preference Certificate form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Vendor Preference Certificate form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.



**16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

**17. WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

**18. ELECTRONIC FILE ACCESS RESTRICTIONS:** Vendor must ensure that its submission in wvOASIS can be accessed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately opened and/or viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening if those documents are required with the bid.

**19. NON-RESPONSIBLE:** The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.”

**20. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

**21. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor’s entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.



## GENERAL TERMS AND CONDITIONS:

**1. CONTRACTUAL AGREEMENT:** Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

**2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

**2.1. "Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

**2.2. "Bid" or "Proposal"** means the vendors submitted response to this solicitation.

**2.3. "Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

**2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

**2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

**2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

**2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

**2.8. "State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

**2.9. "Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

**3. CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**Term Contract**

**Initial Contract Term:** This Contract becomes effective on \_\_\_\_\_ and extends for a period of \_\_\_\_\_ year(s).

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to \_\_\_\_\_ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed \_\_\_\_\_ months in total. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

**Delivery Order Limitations:** In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

**Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within \_\_\_\_\_ days.

**Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within \_\_\_\_\_ days.

Upon completion, the vendor agrees that maintenance, monitoring, or warranty services will be provided for one year thereafter with an additional \_\_\_\_\_ successive one year renewal periods or multiple renewal periods of less than one year provided that the multiple renewal periods do not exceed \_\_\_\_\_ months in total. Automatic renewal of this Contract is prohibited.

**One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

**Other:** See attached.

**4. NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

**5. QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

**Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

**Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

**Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

**One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

**6. EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

**7. REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

**BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

**PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of \_\_\_\_\_. The performance bond must be received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.

**LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

**MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

**INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:

**Commercial General Liability Insurance:** In the amount of \_\_\_\_\_  
\_\_\_\_\_ or more.

**Builders Risk Insurance:** In an amount equal to 100% of the amount of the Contract.

The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

**LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

**8. WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

**9. LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.

**10. LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount of

N/A

for N/A

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.

**11. ACCEPTANCE:** Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

**12. PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.

**13. PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

**14. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

**15. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

**16. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

**17. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

**18. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-6.1.e.



**19. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.

**20. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

**21. COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

**22. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

**23. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

**24. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

**25. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

**26. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.

**27. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

**28. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

**29. BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

**30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

**31. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**32. LICENSING:** In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.



**33. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

**35. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

**36. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

**37. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.

**38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

**39. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

**40. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at [purchasing.requisitions@wv.gov](mailto:purchasing.requisitions@wv.gov).

**41. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
- c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Michael J. Rosenberg, Business & Operations Manager  
(Name, Title)

Michael J. Rosenberg, Business & Operations Manager  
(Printed Name and Title)

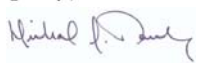
1349 South International Pkwy, Suite 2411, Lake Mary, Florida 32746  
(Address)

(407) 359-2373 / (407) 359-2372  
(Phone Number) / (Fax Number)

tii@tii-usa.com  
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Technology International, Inc.  
(Company)

  
Michael J. Rosenberg, Business & Operations Manager  
(Authorized Signature) (Representative Name, Title)

Michael J. Rosenberg, Business & Operations Manager  
(Printed Name and Title of Authorized Representative)

06/07/2016  
(Date)

(407) 359-2373 / (407) 359-2372  
(Phone Number) (Fax Number)



REQUEST FOR QUOTATION  
Air Induction Units – Buildings 5 & 6

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**SPECIFICATIONS**

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Department of Administration, General Services Division, to establish a contract for the one time purchase of vertical wall-hung air induction units, per the attached specifications. It is the intent of the Agency to receive two separate shipments of units of both types listed in the CRFQ, the first (expedited) order to a jobsite in which renovations are currently being undertake, and the second to a warehouse for storage until later usage.
  
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 **“Contract Item”** means vertical wall-hung air induction units, as more fully described by these specifications.
  
  - 2.2 **“Pricing Page”** means the pages, contained in wvOASIS or attached as Exhibit A, upon which Vendor should list its proposed price for the Contract Items.
  
  - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
  
3. **GENERAL REQUIREMENTS:**
  - 3.1 **Mandatory Contract Item Requirements:** Contract Item must meet or exceed the mandatory requirements listed below.
    - 3.1.1 Air Induction units with Left-Side Connections
      - 3.1.1.1 Must be Vertical wall Hung;
  
      - 3.1.1.2 Must include drainable condensate pan;
  
      - 3.1.1.3 Must include 4-Pipe system double stack Chilled Water coil & Hot Water coil, with Left-side connections;
  
      - 3.1.1.4 Must include 1/2" ODM flare with Vent;
  
      - 3.1.1.5 Induction nozzles must be black;

REQUEST FOR QUOTATION  
Air Induction Units – Buildings 5 & 6

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**3.1.2.8** Total 70 must be delivered within 60 days of the issuance of the Contract, to:

WV Department of Administration, GSD  
1900 Kanawha Boulevard East  
Building Seven Loading Dock  
Charleston, WV 25305

**3.1.2.9** Total Quantity of 77 units must be delivered within 120 days of the issuance of the Contract, to:

WV Department of Administration, GSD  
215 Piedmont Road  
Charleston, WV 25301

**3.1.3** Vendor must provide documentation of manufacturer's warranty to Agency representative upon delivery and acceptance of units.

**4. CONTRACT AWARD:**

**4.1 Contract Award:** The Contract is intended to provide Agencies with a purchase price for the Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

**4.2 Pricing Page:** Vendor should complete the Pricing Page by providing a unit price for each air induction unit. Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

If unable to respond online, Vendors may download the FINAL wvOASIS document (GSD1600000024) as the pricing page to submit with their bid.

**5. PAYMENT:**

**5.1 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

REQUEST FOR QUOTATION  
Air Induction Units – Buildings 5 & 6

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**6. DELIVERY AND RETURN:**

**6.1 Shipment and Delivery:** Vendor shall ship the Contract Items immediately after being awarded this Contract and receiving a purchase order. Vendor shall deliver the Contract Items within 60 calendar days for expedited delivery units and 120 days for remaining units (See Specifications 3.1.1 and 3.1.2) after receiving a purchase order. Contract Items must be delivered to Agency at two different delivery locations (see Specifications 3.1.1 and 3.1.2).

**6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if the shipment of the Contract Items will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the Contract, and/or obtaining the Contract Items from a third party.

Any Agency seeking to obtain the Contract Items from a third party under this provision must first obtain approval of the Purchasing Division.

**6.3 Delivery Payment/Risk of Loss:** Vendor shall deliver the Contract Items F.O.B. destination to the Agency's location.

**6.4 Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

**6.5 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

**7 VENDOR DEFAULT:**



REQUEST FOR QUOTATION  
Air Induction Units – Buildings 5 & 6

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7.1 The following shall be considered a vendor default under this Contract.

- 7.1.1 Failure to provide Contract Items in accordance with the requirements contained herein.
- 7.1.2 Failure to comply with other specifications and requirements contained herein.
- 7.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 7.1.4 Failure to remedy deficient performance upon request.

7.2 The following remedies shall be available to Agency upon default.

- 7.2.1 Immediate cancellation of the Contract.
- 7.2.2 Immediate cancellation of one or more release orders issued under this Contract.
- 7.2.3 Any other remedies available in law or equity.

STATE OF WEST VIRGINIA  
Purchasing Division

# PURCHASING AFFIDAVIT

**MANDATE:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.


"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: Technology International, Inc.

Authorized Signature:  Rifat Habib Date: 06/07/2016  
Business Development

State of Florida

County of Seminole, to-wit:

Taken, subscribed, and sworn to before me this 07 day of june, 2016.

My Commission expires 10/15, 2018.

AFFIX SEAL HERE

NOTARY PUBLIC 



M. SHAJI HABIB  
NOTARY PUBLIC  
STATE OF FLORIDA  
Comm# FF168782  
Expires 10/15/2018

Purchasing Affidavit (Revised 08/01/2015)

SOLICITATION NUMBER: GSD160000024

Addendum Number: 1

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The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

**Applicable Addendum Category:**

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

**Description of Modification to Solicitation:**

1. To modify the bid opening date and time to June 8, 2016, 1:30 p.m. EST
2. To publish the vendor questions and responses.

No other changes.

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

**Terms and Conditions:**

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

# ATTACHMENT A

GSD160000024  
One Time Purchase of Air Induction Units  
Vendor Question/Responses

Q.1. What is the plenum size required? It appears that the available options are 24", 32", 40", and 52". Please specify.

A.1. Plenum size is 32" (per Specification Section 3.1.1).

Q.2. Need to know if it requires a "Heater" option. It does not have to have one but the options are having a 208 volt, 240 volt, 277 volt, or No Heat. As well as the option to have 1.0kw, 1.5kw, 2.0kw, 2.5kw, 3.0kw, or No Heat. Please specify

A.2. No Heat option.

Q.3. If you could provide a model number or the CFM, MBH, or GPM and do you require the entire unit or just replacements coils?

A.3. The Zehnder Rittling catalog nomenclature for the required units would be:

Model: V4H

Plenum Length: 32=32"

Nozzle Style: H (Black)

Coil Side Connection: M (left-hand same-end connection) or S (right-hand same-end connection) – see quantities in CRFQ for each side

Coil Connections Style: 3 = ½" ODM flare w/vent

Drain Pan Style: 2 = Drainable

Volts: 0 = No electric heat

Watts: 0 = No electric heat

The Agency requires entire units with these characteristics; vendors bidding alternate should provide documentation to indicate meeting these specifications.

Q.4. Can you provide us a Sales Tax Exempt Form if we are the successful Vendor?

A.4. Successful Vendor can be provided a Tax Exemption Certificate if required to not charge the Agency WV State Sales Tax.

Q.5. Does the "VENDOR PREFERENCE CERTIFICATE" need to be sign, dated and submitted with the proposal if it's N/A?

A.5. Only those bidders requesting a Vendor Preference are required to submit the certificate with their bid.

Q.6. I have been on the "wvOASIS" Website and have found the Solicitation No. for this request, but I don't completely understand how I'm to submit my proposal and information as stated below through this site?

Q.6.1 Page 1 of the "Request for Quotation" at the bottom has a "Signature" requirement, "FEIN#" requirement and a "Date" requirement

A.6.1 If responding on paper, bidders should print the "Request for Quotation" form and provide their Signature, FEIN# and Date. If responding electronically in WVOasis, the form can be downloaded, completed and electronically attached to the Solicitation Response, but it is not required.

Q.6.2 Page 2 of the "Request for Quotation" has Unit Price, Total Price, Manufacturer, Specification and Model # for both Line items (1 & 2)

A.6.2 If responding on paper, bidders should print the "Request for Quotation" form and provide, as the Unit Price on the form, the lump sum cost FOR EACH air induction unit, then multiply that bid Unit Price times the indicated Quantity (Qty), to calculate and provide the Total Price for each Commodity Line. Completion of the Manufacturer, Specification, and Model # fields is optional, but bidders may provide this information. If responding electronically in WVOasis, bidders should only need to enter a Unit Price, and the calculation of Qty-times-Unit Price to arrive at Total Price is done automatically. Entry of data into the Manufacturer, Specification, and Model # fields is optional.

Q.6.3 The page asking for "DESIGNATED CONTACT" information and "CERTIFICATION AND SIGNATURE"

A.6.3 If responding on paper, bidders should print the page of the Request for Quotation which contains these fields, complete them and include them with their bid. If responding electronically in wvOASIS, bidders may download the page, complete it and attach it electronically; however, submission of an electronic solicitation response certifies the bid as being signed, per the language of the Certification and Signature Page (eg, "By signing below, or submitting documentation through wvOASIS...").

Q.6.4 The "PURCHASING AFFIDAVIT" needs to be signed and notarized. How does this get submitted electronically?

A.6.4 If responding on paper, bidders should (but are not required to) print the form and complete it (ie, sign and have notarized), and then include it with their paper bid. If responding electronically in wvOASIS, bidders may download the form, complete and attach it electronically – note that the raised seal of the Notary should be visible in any scan. **HOWEVER**, the completion and submitting of a Purchasing Affidavit is only **REQUIRED** of the successful bidder, and thus may be accomplished after bid opening and prior to award.



**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: GSD160000024**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

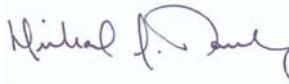
(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Technology International, Inc.

Company



Michael J. Rosenberg  
Business & Operations Manager

Authorized Signature

06/07/2016

Date

**NOTE:** This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012



**ADDITIONAL INFORMATION:**

Addendum 1 issued for the following reasons:

1. To modify the bid opening date and time to June 8, 2016, 1:30 p.m. EST
2. To publish the vendor questions and responses.

No other changes.

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 1900 KANAWHA BLVD E, BLDG 1, RM MB-68 CHARLESTON WV25305 US	STATE OF WEST VIRGINIA SEE SPECIFICATIONS FOR DELIVERY REQUIREMENTS No City WV 99999 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Air Induction Unit, per attached specifications	133.00000	EA	\$534.00	\$71,022.00

Comm Code	Manufacturer	Specification	Model #
40101701	EB Air	MGD-88-2-L-S-W Air Induction Unit	

**Extended Description :**

Air Induction units W/ Left side connections per the attached specifications.

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 1900 KANAWHA BLVD E, BLDG 1, RM MB-68 CHARLESTON WV25305 US	STATE OF WEST VIRGINIA SEE SPECIFICATIONS FOR DELIVERY REQUIREMENTS No City WV 99999 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Air Induction Unit, per attached specifications	147.00000	EA	\$534.00	\$78,498.00

Comm Code	Manufacturer	Specification	Model #
40101701	Model: EB Air	MGD-88-2-L-S-W Air Induction Unit	

**Extended Description :**

Air Induction units W/ Right side connections per the attached specifications.

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Question Deadline 3:00 pm	2016-05-26

**See attached TII Proposal No. TII-WV-0616-5191**

<b>GSD160000024</b>	<b>Document Phase</b> <b>Final</b>	<b>Document Description</b> Addendum 1 - One-Time Purchase of Air Induction Units	<b>Page 3</b> <b>of 3</b>
---------------------	---------------------------------------	---	------------------------------

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

One Time Purchase of Air Induction Units  
Vendor Question/Responses

Q.1. What is the plenum size required? It appears that the available options are 24", 32", 40", and 52". Please specify.

A.1. Plenum size is 32" (per Specification Section 3.1.1).

Q.2. Need to know if it requires a "Heater" option. It does not have to have one but the options are having a 208 volt, 240 volt, 277 volt, or No Heat. As well as the option to have 1.0kw, 1.5kw, 2.0kw, 2.5kw, 3.0kw, or No Heat. Please specify

A.2. No Heat option.

Q.3. If you could provide a model number or the CFM, MBH, or GPM and do you require the entire unit or just replacements coils?

A.3. The Zehnder Rittling catalog nomenclature for the required units would be:

Model: V4H

Plenum Length: 32=32"

Nozzle Style: H (Black)

Coil Side Connection: M (left-hand same-end connection) or S (right-hand same-end connection) – see quantities in CRFQ for each side

Coil Connections Style: 3 = ½" ODM flare w/vent

Drain Pan Style: 2 = Drainable

Volts: 0 = No electric heat

Watts: 0 = No electric heat



**Technology International, Inc.**  
 1349 South International Pkwy, Suite 2411  
 Lake Mary, FL 32746  
 Tel: (407) 359-2373  
 Fax: (407) 359-2372  
 E-mail: [tii@tii-usa.com](mailto:tii@tii-usa.com)  
 Website: [www.tii-usa.com](http://www.tii-usa.com)

## Equipment Proposal

**Title:** One-Time Purchase of Air Induction Units

**Solicitation #:** GSD1600000024

**Attention:** Bid Clerk  
 Department of Administration  
 Purchasing Division  
 2019 Washington St E  
 Charleston WV 25305  
 Tel: (304) 558-0468  
 Email: [linda.b.harper@wv.gov](mailto:linda.b.harper@wv.gov)

**Our Ref:** TII/WV/0616/5191

**Date:** 06/07/2016

In response to your quote request for One-Time Purchase of Air Induction Units, Technology International, Inc. is pleased to submit the following for consideration:

ITEM NO.	QTY	DESCRIPTION/ MODEL NO.	UNIT PRICE	EXTD. PRICE
1	133	Model: EB Air MGD-88-2-L-S-W Air Induction Unit	\$534.00	\$71,022.00
2	147	Model: EB Air MGD-88-2-L-S-W Air Induction Unit	\$534.00	\$78,498.00
See attached unit selection data, performance charts, shop and technical drawing & EB Air brochure including technical data sheets				
<b><u>Total price for all above.....\$149,520.00</u></b>				

**Note:** This proposal is for supply only. Installation is not included.

**Exclusions:** Any item not included in our offer.

**Warranty:** Manufacturer's standard warranty applies. See attached

**Delivery:**

- Estimated delivery is **12-14 WEEKS** after receipt of order from customer and approved submittal
- All delivery dates quoted are tentative
- Submittal data will be provided for approval after receipt of order

**Freight:** Freight allowed to first destination unless otherwise noted

**Payment Terms:** NET 30

**Prompt Payment discount:** 1/4 % 10 days

**Validity of Quote:** This quotation is valid for 30 days from date of quote.

**\*\*\* Note:** Quoted price is not available on a line item basis. This is an offer for a lump sum contract.

**Technology International, Inc. Corporate data:**

We are a small business and our Tax Payer Identification Number (TIN): 650342335. The price quoted does not include any sales, excise or similar taxes.

We trust that this proposal will meet your requirements and we look forward to hearing from you.

If you have any questions or need more information, please contact us by phone at 407-359-2373, fax at 407-359-2372 or email us at [tii@tii-usa.com](mailto:tii@tii-usa.com)

Respectfully submitted,



Michael J. Rosenberg  
Business & Operations Manager  
Technology International, Inc.

**“Unit Selection, Design Conditions & Calculations,  
Performance Chart”**





**Project : Charleston ,WV 25301-25305**  
**Date: 1st June , 2016**

<b>POSITION</b>	<b>EBA</b>
	<b>Vertical ( 22.87" HIGH )</b>
	<b>Model</b>
	<b>MGD-88</b>
	<b>4 Pipe 2 Row</b>
<b>TAG</b>	
<b>Quantity</b>	<b>2R4P-10 INCH</b>
Induction Unit Model No.:	MGD88-2
Primary Air quantity (cfm)	50
Static pressure	1.08
Induction Ratio	4.3
Secondary Air Quantity (cfm)	215
Outlet velocity (no grille) (fpm)	373
<b>COOLING (SUMMER)</b>	
Primary air temperature (°F)	55
<b>Primary capacity (Btuh)</b>	1,080
<b>Secondary Coil capacity (Btuh)</b>	<b>4,369</b>
<b>Total cooling capacity (Btuh)</b>	<b>5,449</b>
Chilled water quantity (GPM)	1.5
Water Inlet temperature (°F)	50
Room Temperature (°F)	75
Relative Humidity (%)	50%
<b>FORCED HEATING (WINTER)</b>	
Primary air temperature (°F)	55
Primary capacity (Btuh)	1,080
Coil capacity (Btuh)	9,918
<b>Total heating capacity (Btuh)</b>	<b>8,838</b>
Warm water quantity (GPM)	1.5
Water Inlet temperature (°F)	180
Room Temperature (°F)	75
Relative Humidity (%)	50%



**Fluid Runs**

**SALES OFFICE**

Name Luvata Eastern Canada  
 Contact Gerry Capling  
 Telephone 905-458-1757  
 Fax 905-458-4904  
 E-mail gerry.capling@luvatasaes.com

**CUSTOMER**

Name EB Air  
 Contact Viral  
 Telephone  
 Fax  
 E-mail

DESIGN CONDITIONS (INPUTS)					
Item/Description		2R4P-88 std CLG	2R4P-88-10 CLG	2R4P-88 std HTG	2R4P-88-10 HTG
Entering db	°F	75	75	75	75
Entering wb	°F	59.21	59.21	59.21	59.21
Air flow	cfm	215.0 (Std.)	215.0 (Std.)	95.6 (Std.)	86.0 (Std.)
Altitude	ft	0	0	0	0
Abs. pressure	psi				
Air flow orientation		Normal	Normal	Normal	Normal
Fluid name		Water	Water	Water	Water
Fluid state		Liquid	Liquid	Liquid	Liquid
Percent glycol					
Inlet tube pres.	psi	0	0	0	0
Entering fluid temp	°F	50	50	180	180
Tubeside flow rate	gal/min	1.5	1.5	1.5	1.5
Flow pattern		Counter	Counter	Counter	Counter
Tubeside fouling factor		0	0	0	0
CONSTRUCTION (INPUTS)					
Coil Code		14	14	14	14
Locale		0 - USA	0 - USA	0 - USA	0 - USA
Tube OD	in	3/8	3/8	3/8	3/8
Tube pattern	in	1.000 x 0.866	1.000 x 0.866	1.000 x 0.866	1.000 x 0.866
Fin style		Corrugated	Corrugated	Corrugated	Corrugated
Fin spacing	/in	12	12	12	12
Rows		2	2	2	2
Fin height	in	9	10	4	4
Finned length	in	33.5	33.5	33.5	33.5
Coils in bank		1	1	1	1
Fin material	in	0.0060 Aluminum	0.0060 Aluminum	0.0060 Aluminum	0.0060 Aluminum
Tube wall	in	0.013	0.013	0.013	0.013
Tube insert		None	None	None	None
Fin coating		None	None	None	None
Header OD	in	5/8	5/8	5/8	5/8
Conn. OD	in	5/8	5/8	5/8	5/8
Header length	in	2	2	2	2
Circuits		2	2	1	1
Qty tubes used		12	16	4	4
CALCULATIONS					
Model		3FZ1202B-9.00x33.50	3FZ1202B-10.00x33.50	3FZ1202B-4.00x33.50	3FZ1202B-4.00x33.50
Total capacity	Btu/hr	4,096.40	4,368.50	8,111.80	7,576.70
Sensible capacity	Btu/hr	4,096.40	4,368.50	8,111.80	7,576.70
Leaving db	°F	57.61	56.45	152.5	155.43
Leaving wb	°F	52.28	51.8	80.9	81.53
Leaving fluid temp.	°F	55.45	55.81	168.89	169.62
Tubeside dT	δ°F	<5.45>	<5.81>	<11.11>	<10.38>
Face velocity	ft/min	102.7	92.4	102.7	92.4
Air pressure drop	in wg	0.01	0.01	0.01	0.01
Tubeside pd	ft H2O	3.32	4.15	6.9	6.9
Tubeside velocity	ft/s	2.31	2.31	4.62	4.62
Reynolds number		5,207	5,214	35,688	35,750
Qty tubes dropped		6	4	4	4
Run Time		06/01/2016 14:33:08	06/01/2016 14:34:17	06/01/2016 14:38:20	06/01/2016 14:39:44

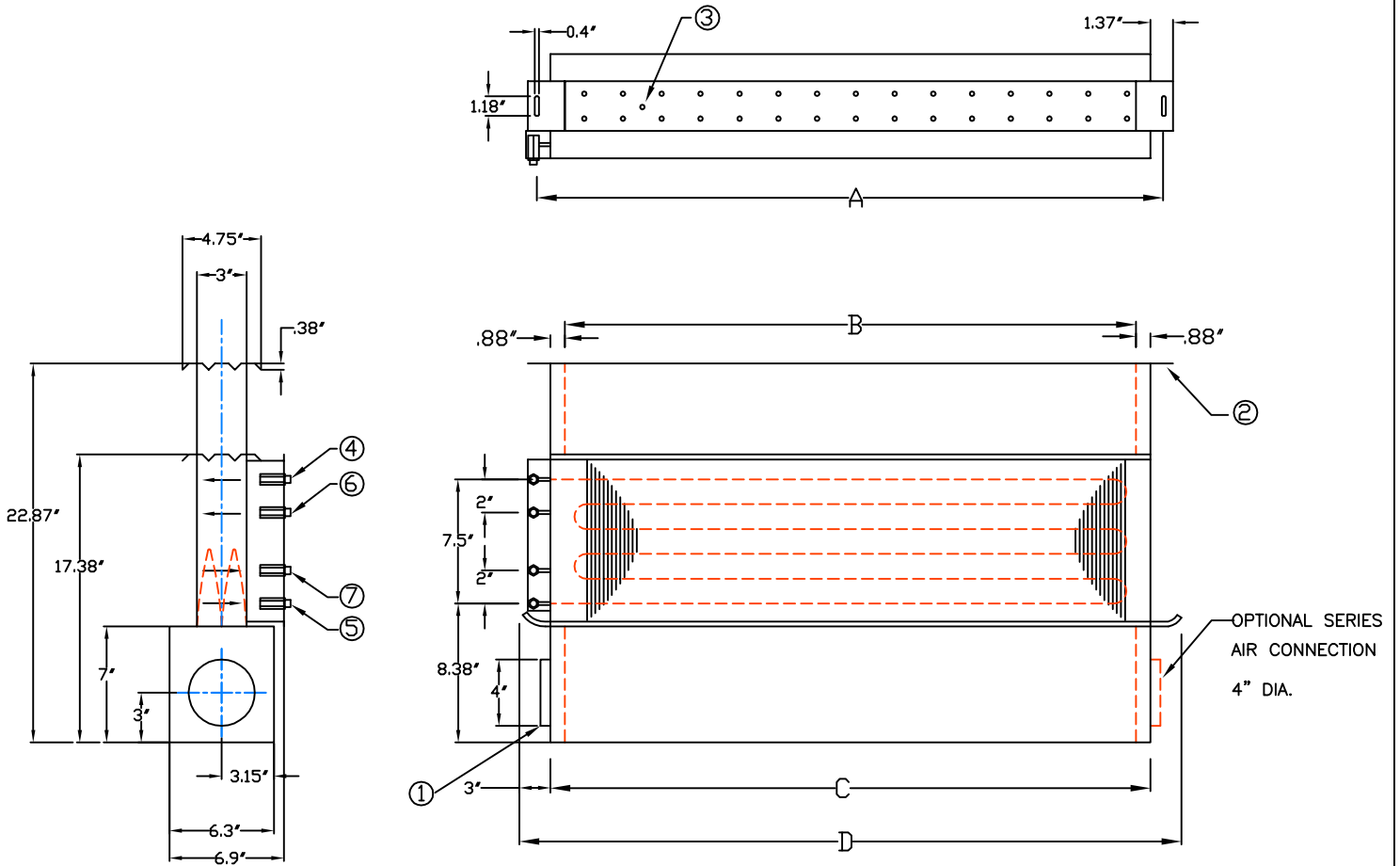
Copyright 2006 Luvata Grenada LLC Confidential and Proprietary. This design is for the exclusive and confidential use of Luvata Grenada LLC and no other party. Duplication or use of any part of the design to a competitor of Luvata Grenada LLC is in direct violation of this confidentiality. Any duplication must be approved in writing by Luvata Grenada LLC.

Capacity increase due to secondary surface:	27.77%	30.90%
Capacity:	10,364	9,918

## **“Technical Drawing”**

PROJECT: CHARLESTON

ITEM	DESCRIPTION
1	PRIMARY AIR CONNECTION (4" DIA)
2	SUSPENSION LIP
3	PRIMARY AIR ADJUSTMENT KNOB
4	WATER RETURN 1/2" NPT
5	WATER INLET 1/2" NPT
6	WATER RETURN 1/2" NPT
7	WATER INLET 1/2" NPT



DIMENSIONS

NOTE :-

STANDARD HEIGHT IS 22.87" ( X )

OPTIONAL REDUCED HEIGHT IS 17.38" ( )

MODEL	A	B	C	D	QTY
MGD-88	37.875	34.50	36.25	40.00	77

REV	DATE	BY

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ISO 9001:2000 CERTIFIED  
KTA 1401 CERTIFIED

STD TOLERANCE  
(Unless otherwise specified)

.X	.XX	.XXX
±.1"	±.05"	±.03"

**EB AIR CONTROL INC.**  
6581 Kitimat Road, Unit # 7, Mississauga, L5N 3T5

CUSTOMER : **TECHNOLOGY INTERNATIONAL**

DRAWN BY: J.R. CHKD BY: VD DATE: 26-10-09 SCALE: NTS PROJ MGR:

JOB NO. :

MODEL : MGD-88 DRAWING CONTENT: INDUCTION UNIT TYPE- 'MGD'

QTY : Nos. DRAWING NUMBER: **MGD-88 - SUBMITTAL**

MGD-UNITS

**“Brochure & Warranty”**

# EBA INDUCTION UNIT

- Suitable for retrofits or new projects
- Low noise
- Low static pressure
- Easy maintenance

**EB AIR**  
Control Inc.



**EB AIR CONTROL INC.**

MANUFACTURERS OF INNOVATIVE HVAC PRODUCTS

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ISO 9001:2000 Certified  
KTA 1401 Certified  
(Nuclear Safety Standards)



## Function

The EBA induction units are suitable for application in 2, 3 or 4 pipe systems with capacity control on the water or secondary air side.

## Features and Benefits

Low primary air pressure and extremely low noise levels as a result of:

- Efficient nozzle configuration
- Specially constructed primary air chamber with insulated guide plate (no other insulation is required in the primary air chamber)
- Aerodynamically designed primary air connection

## Wide Range of Flexibility

- Different types, varying in lengths from 24" to 53"
- 2 basic models per type, i.e. slim, vertical model or low, deep model
- 6 different nozzle plates per type, induction ratios varying from 5.50 to 2.50
- Possibility of series connection on the primary air side
- Special kit for horizontal models available
- Suitable for any application in 2, 3 or 4 pipe systems
- Possibility of capacity control on the water or secondary air side
- Various options, i.e. filters, grille and drain connection

## Units Completely Ready for Operation, Including:

- Primary air damper
- Ventcock
- Suspension lips

## Attractive dimensions

- Minimum depth of 6.3" (slim model)
- Minimum height of 11.5" (low model)

## Robust Construction

Suitable for VAV applications.

## Component Description

### Primary air chamber:

- Insulated guide plate
- Primary air adjustment damper
- Aerodynamically shaped primary air connection (4" dia.)

### Nozzle plate

- Specially designed polyethylene nozzles
- Nozzle temperature resistance 158°F
- Bronze nozzles available with some models

### Coil

- Copper tubes with aluminum fins
- Water connection 1/2" O/D complete with vent cock
- Suitable for water pressures up to 350 psi
- Drip tray included

### Air mixing chamber

- Robust construction
- Suspension lips

### Secondary air dampers (For MK & MKM models)

- Rotating in nylon bearings
- Air tightness obtained by neoprene edge strip
- Robust construction actuating mechanism

### Pneumatic motor (For MK & MKM models)

- With neoprene diaphragm
- Operating pressure from 3 to 15psi (0.2 to 1.0 kg/cm<sup>2</sup>) for MK and 8 to 15 psi (0.6 to 1.0 kg/cm<sup>2</sup>) for MKM

### Sheet metal

- All sheet metal components electrolytically zinc plated with a layer thickness 1 mil

### Scott filter

- Cleanable, polyurethane material, 1/4" thickness

### Lintscreen filter

- Cleanable woven aluminum

### Grilles

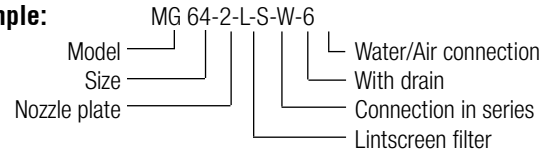
- Nylon, with curved fins, adjustable in 4 directions

## Unit Designations:

The EBA induction units are designated by model, size, nozzles, optional items and coil/air connections.

1 Model	2 Size	3 Nozzle Plate	4 Options	5 Connection Possibility
ML	48	1	F (Scott filter)	1
MLD	64	2	L (Lintscreen filter)	3
MG	88	3	H (Horizontal)	4
MGD	120	4	S (Series)	6
MK		5	W (Drain connection)	
MKM		6	R (Grille)	

### Example:



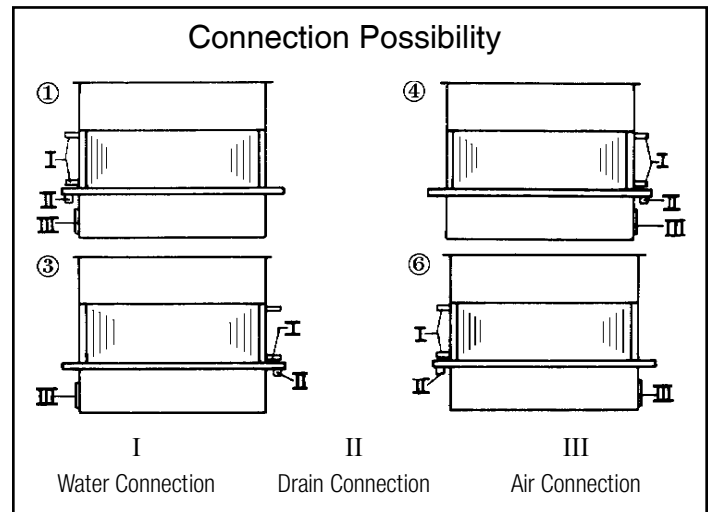
**Note:** Always follow the sequence of columns 1 to 5 when determining the unit designation.

All units (except ML and MLD models) are also available in 17<sup>3</sup>/<sub>8</sub>" (440 mm) height which is to be specified separately.

## Induction ratio

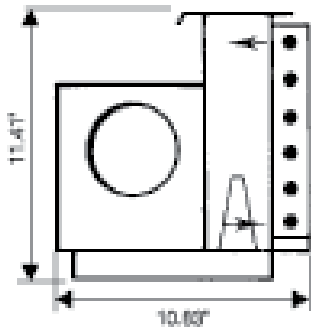
Nozzle Plate	Model			
	MG, MK MKM	MGD	ML	MLD
1	5.5	5.3	5.1	4.9
2	4.5	4.3	4.3	4.1
3	4.0	3.8	3.8	3.6
4	3.4	3.3	3.1	3.0
5	3.0	2.9	2.8	2.6
6	2.4	2.3	2.2	2.1

**Note:** Correction factor for Scott filter is 0.93

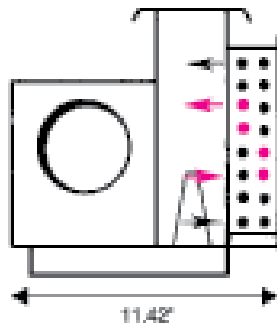


# EBA Induction Units

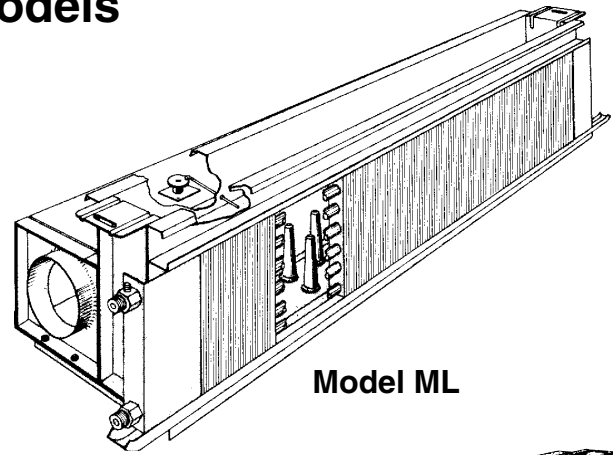
## Basic Models



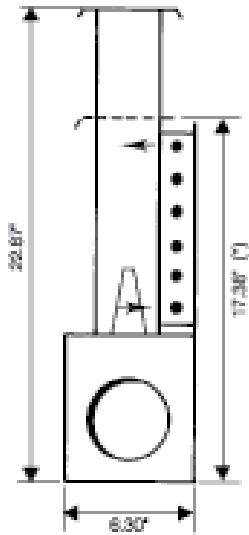
ML



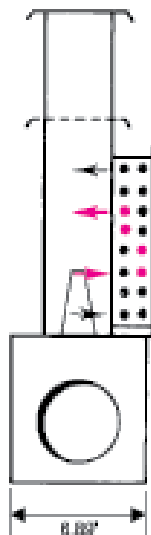
MLD



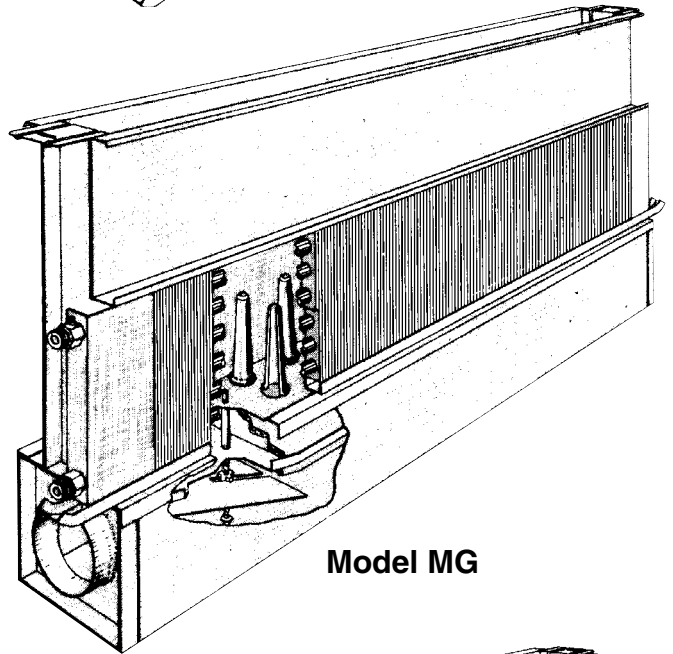
Model ML



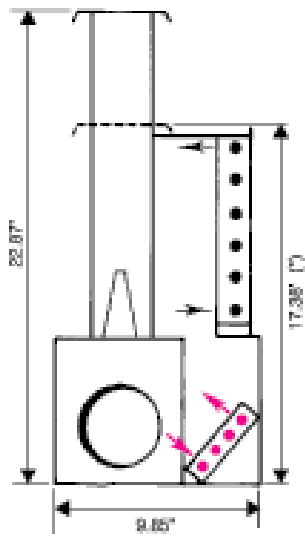
MG



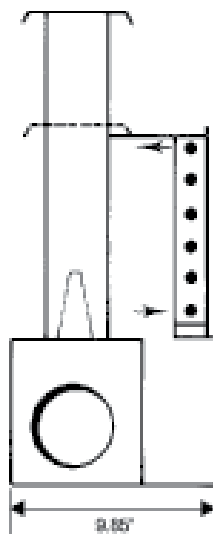
MGD



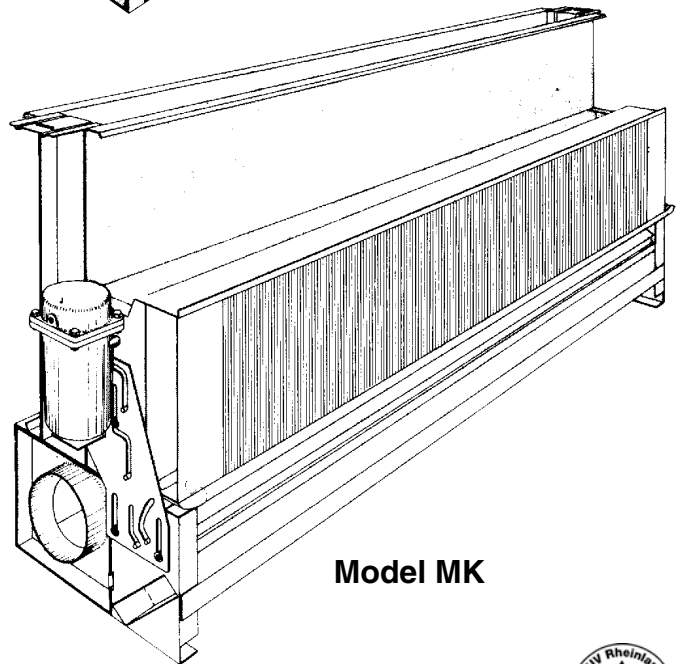
Model MG



MK



MKM



Model MK

Unit Size	Overall Length
48	24.25"
64	30.50"
88	40.00"
120	52.50"

(\* ) Optional reduced height



## Selection Tables for Two-pipe units

<b>MG 48, ML 48*, MKM 48 and MK 48 Cooling</b>																			
<b>Primary Air</b>		<b>Nozzle Plate #1</b>			<b>Nozzle Plate #2</b>			<b>Nozzle Plate #3</b>			<b>Nozzle Plate #4</b>			<b>Nozzle Plate #5</b>			<b>Nozzle Plate #6</b>		
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water
20	432	2157	20	1.52															
25	540	2465	21	2.12															
30	648	2702	26	2.9	2488	20	1.4												
35	756				2702	22	1.95	2536	20	1.32									
40	864				2820	26	2.44	2725	22	1.64	2560	20	1.26						
45	972				2963	29	3.0	2844	26	2.12	2702	21	1.52	2512	20	0.68			
50	1080							2963	29	2.6	2844	25	1.88	2607	21	0.84			
55	1188							3082	31	3.05	2963	28	2.28	2726	21	1.06	2536	20	0.6
60	1296										3081	33	2.7	2891	26	1.24	2655	20	0.76
65	1404										3152	32	3.1	2938	28	1.44	2749	22	0.9
70	1512													3010	30	1.64	2844	2.4	1.0
75	1620																2892	26	1.16
80	1728																2986	28	1.28
85	1836																3081	30	1.46
90	1944																3128	31	1.6

<b>MG 64 and ML 64*, MKM 64 and MK 64 Cooling</b>																			
<b>Primary Air</b>		<b>Nozzle Plate #1</b>			<b>Nozzle Plate #2</b>			<b>Nozzle Plate #3</b>			<b>Nozzle Plate #4</b>			<b>Nozzle Plate #5</b>			<b>Nozzle Plate #6</b>		
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water
30	648	2939	20	1.5															
35	756	3247	23	1.92															
40	864	3484	26	2.52	3247	20	1.44												
45	972	3650	32	3.2	3436	23	1.80	3318	20	1.24									
50	1080				3579	25	2.20	3413	22	1.56	3247	20	1.16						
55	1188				3745	28	2.64	3579	24	1.96	3389	21	1.40						
60	1296				3840	32	3.30	3721	27	2.36	3505	23	1.64	3271	20	0.70			
65	1404							3792	29	2.64	3602	25	1.86	3366	21	0.84	3128	20	0.51
70	1512										3745	27	2.16	3508	22	1.00	3271	20	0.56
75	1620										3816	29	2.44	3579	25	1.10	3366	21	0.64
80	1728										3887	31	2.76	3650	27	1.24	3437	22	0.74
85	1836													3769	28	1.36	3555	24	0.84
90	1944													3792	30	1.56	3650	25	1.00
95	2052													3840	31	1.80	3697	26	1.08
100	2160																3769	28	1.24
105	2268																3815	30	1.34
110	2376																3863	31	1.48
115	2484																3887	32	1.60

Notes: The coil capacities are based on:  $T_{ROOM} - T_{ENTERING WATER} = 25^{\circ}F$  (Adjust proportionately for different conditions).  
1.5 GPM water flow per coil.

(See correction factors on page 11 for water flows other than 1.5 g.p.m.)

(\*) For ML units, reduce the coil capacities shown by 6%

Standard MG, MK and MKM height is 22.8". For reduced height of 17.38", reduce coil capacity by 6%

The indicated sound pressure levels are based on fully open primary air damper.

Noise increases 1 d B (A) per 0.28" WG of damper throttling.

**Series Connection:**

- Increase noise levels by 2 d B (A)
- Primary air drop remains unaltered
- Connect maximum of 3 units in series
- Maximum air quantity supplied to first unit is 190 cfm.



<b>MG 88, ML 88*, MKM 88 and MK 88 Cooling</b>																			
<b>Primary Air</b>		<b>Nozzle Plate #1</b>			<b>Nozzle Plate #2</b>			<b>Nozzle Plate #3</b>			<b>Nozzle Plate #4</b>			<b>Nozzle Plate #5</b>			<b>Nozzle Plate #6</b>		
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water
35	756	3626	20	1.20															
40	864	3934	20	1.48															
45	972	4124	24	1.80															
50	1080	4361	26	2.20	4053	20	1.08												
55	1188	4550	30	2.72	4314	22	1.40	4077	20	1.00									
60	1296				4503	24	1.63	4243	21	1.20	3982	20	0.84						
65	1404				4645	25	1.84	4408	23	1.40	4124	20	1.04						
70	1512				4788	27	2.12	4598	25	1.60	4266	21	1.12	3958	20	0.51			
75	1620				4954	30	2.42	4740	26	1.80	4408	23	1.26	4124	21	0.58			
80	1728							4835	27	2.04	4550	24	1.44	4219	23	0.66	3911	20	0.40
85	1836							4977	29	2.16	4693	26	1.64	4314	23	0.72	4029	20	0.44
90	1944							5073	32	2.40	4788	27	1.82	4503	24	0.82	4124	21	0.51
95	2052										4953	28	2.00	4551	25	0.88	4266	22	0.56
100	2160										5025	28	2.24	4693	27	0.97	4314	23	0.60
105	2268													4788	28	1.08	4645	24	0.66
110	2376													4882	29	1.18	4527	25	0.70
115	2484													4977	30	1.28	4645	26	0.78
120	2592																4740	28	0.84
125	2700																4835	29	0.96
130	2808																4882	30	1.02
135	2916																4977	31	1.10

<b>MG 120, ML 120*, MKM 120 and MKM 120 Cooling</b>																			
<b>Primary Air</b>		<b>Nozzle Plate #1</b>			<b>Nozzle Plate #2</b>			<b>Nozzle Plate #3</b>			<b>Nozzle Plate #4</b>			<b>Nozzle Plate #5</b>			<b>Nozzle Plate #6</b>		
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	NC	APD Inches Water
45	972	4835	20	1.04															
50	1080	5025	20	1.28															
55	1188	5262	21	1.64	4977	20	0.88												
60	1296	5499	25	2.00	5167	20	1.02												
65	1404	5688	27	2.30	5333	21	1.16	5119	20	0.88									
70	1512	5830	29	2.64	5499	22	1.30	5238	20	1.02									
75	1620	5973	29	3.00	5665	24	1.48	5428	21	1.12									
80	1728				5830	26	1.68	5641	22	1.28	5214	20	0.94						
85	1836				5973	27	1.84	5736	23	1.42	5357	20	1.05						
90	1944				6162	29	2.08	5925	25	1.60	5570	21	1.16						
95	2052				6257	30	2.36	6020	26	1.76	5688	22	1.30						
100	2160				6352	31	2.52	6115	27	1.96	5783	23	1.44	5309	20	0.62			
105	2268							6210	28	2.08	5878	24	1.56	5403	20	0.68			
110	2376							6305	30	2.24	5973	25	1.68	5546	21	0.76			
115	2484							6400	31	2.44	6115	26	1.86	5688	22	0.80	5214	20	0.49
120	2592							6495	32	2.60	6210	27	1.96	5783	23	0.90	5404	20	0.52
125	2700										6305	28	2.16	5925	24	0.96	5475	21	0.58
130	2808										6400	30	2.30	6068	26	1.04	5617	22	0.62
135	2916										6494	30	2.44	6162	26	1.12	5712	22	0.70
140	3024										6589	31	2.60	6210	27	1.18	5807	23	0.76
145	3132													6305	28	1.26	5902	24	0.82
150	3240													6376	29	1.32	5972	25	0.84
155	3348													6423	29	1.36	6020	26	0.91
160	3456													6470	30	1.44	6139	27	0.96
165	3564													6588	31	1.56	6186	28	1.04
170	3672													6660	32	1.60	6233	28	1.08
175	3780																6328	29	1.11
180	3888																6399	30	1.15
185	3996																6447	31	1.22
190	4104																6494	31	1.30



## Selection Tables for Four-pipe Units

<b>MGD 48 and MLD 48*</b>																										
<b>Primary Air</b>		<b>Nozzle Plate #1</b>				<b>Nozzle Plate #2</b>				<b>Nozzle Plate #3</b>				<b>Nozzle Plate #4</b>				<b>Nozzle Plate #5</b>				<b>Nozzle Plate #6</b>				
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	
20	432	2512	5840	20	1.44																					
25	540	2844	6466	21	2.16																					
30	648	3128	7071	27	3.0	2868	6570	20	1.48																	
35	756					3081	7008	22	1.92	2963	6737	20	1.3													
40	864					3318	7404	27	2.52	3176	7091	22	1.7	3010	6737	20	1.28									
45	972					3508	7717	28	3.08	3366	7509	26	2.1	3129	7091	21	1.52	2844	6466	20	0.68					
50	1080									3531	7717	30	2.6	3318	7404	25	1.84	3033	6831	20	0.84					
55	1188									3697	8030	31	3.1	3508	7717	28	2.32	3176	7091	22	1.04	2963	6674	20	0.60	
60	1296													3650	7926	30	2.72	3318	7404	25	1.24	3105	6883	20	0.72	
65	1404													3792	8134	32	3.1	3437	7613	26	1.44	3223	7196	22	0.90	
70	1512																	3579	7821	29	1.64	3318	7404	24	1.00	
75	1620																					3436	7613	26	1.16	
80	1728																					3555	7780	28	1.32	
85	1836																					3650	7926	28	1.44	
90	1944																					3745	8072	31	1.60	

<b>MGD 64 and MLD 64*</b>																										
<b>Primary Air</b>		<b>Nozzle Plate #1</b>				<b>Nozzle Plate #2</b>				<b>Nozzle Plate #3</b>				<b>Nozzle Plate #4</b>				<b>Nozzle Plate #5</b>				<b>Nozzle Plate #6</b>				
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	
30	648	3129	7925	20	1.52																					
35	756	3437	8343	21	1.92																					
40	864	3792	8802	26	2.52	3460	8343	20	1.40																	
45	972	4053	9302	31	3.2	3745	8760	22	1.80	3484	8343	20	1.30													
50	1080					4006	9177	24	2.2	3745	8760	21	1.60	3413	8239	20	1.16									
55	1188					4266	9511	28	2.40	3982	9177	24	2.0	3650	8593	20	1.40									
60	1296					4503	9803	32	3.30	4172	9448	26	2.36	3840	8927	23	1.60	3460	8343	20	0.72					
65	1404									4408	9678	29	2.44	4029	9219	25	1.88	3650	8593	20	0.86	3271	8051	20	0.50	
70	1512													4219	9427	26	2.12	3815	8843	23	1.00	3460	8301	20	0.60	
75	1620													4408	9636	29	2.48	3934	9135	25	1.08	3602	8510	21	0.66	
80	1728													4551	9803	33	2.68	4124	9344	26	1.24	3768	8760	22	0.74	
85	1836																	4266	9490	28	1.40	3911	8969	24	0.86	
90	1944																	4408	9699	30	1.56	4077	9240	25	1.00	
95	2052																	4551	9845	31	1.76	4171	9386	27	1.10	
100	2160																					4313	9594	28	1.24	
105	2268																					4408	9657	29	1.36	
110	2376																					4503	9761	31	1.46	
115	2484																					4551	9803	32	1.52	

Notes: The cooling coil capacities are based on:  $T_{ROOM} - T_{ENTERING\ WATER} = 25^{\circ}F$  (Adjust proportionately for different conditions).  
1.5 GPM water flow per coil.

(See correction factors on page 11 for water flows other than 1.5 g.p.m.)

The heating coil capacities are based on  $T_{ROOM} - T_{ENTERING\ WATER} = 110^{\circ}F$  and 0.8 GPM

(\*) For MLD units, reduce the coil capacities shown by 6%

Standard MGD, height is 22.8". For reduced height of 17.38", reduce coil capacity by 6%

The indicated sound pressure levels are based on fully open primary air damper.

Noise increases 1 dB(A) per 0.28" WG of damper throttling.

**Series Connection:**

- Increase noise levels by 2 dB(A)
- Primary air drop remains unaltered
- Connect maximum of 3 units in series
- Maximum air quantity supplied to first unit is 190 cfm.



### MGD 88 and MLD 88\*

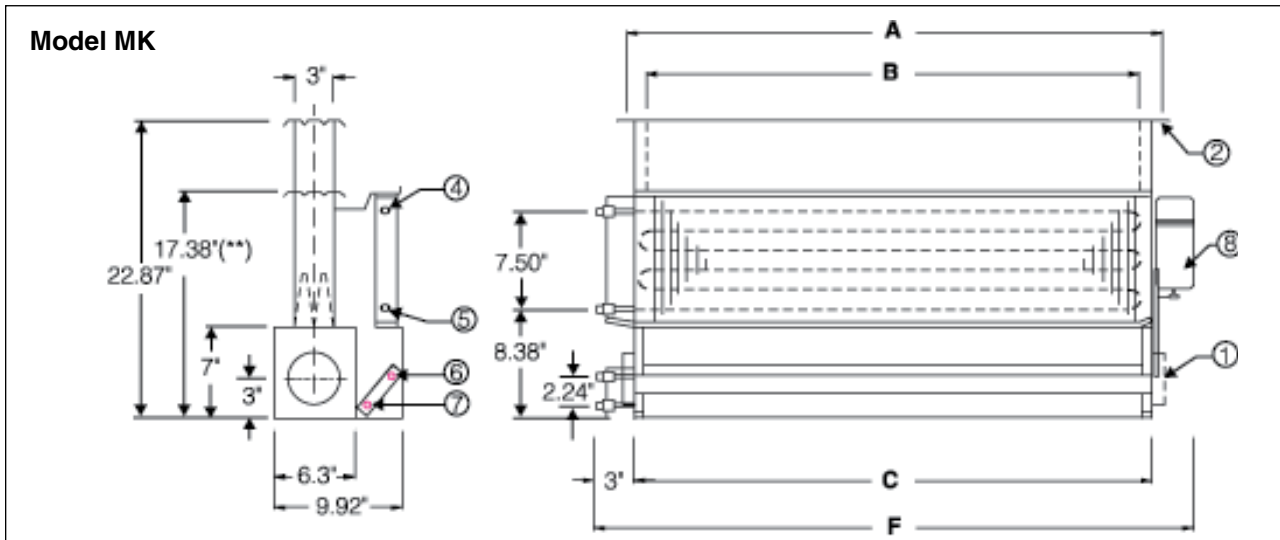
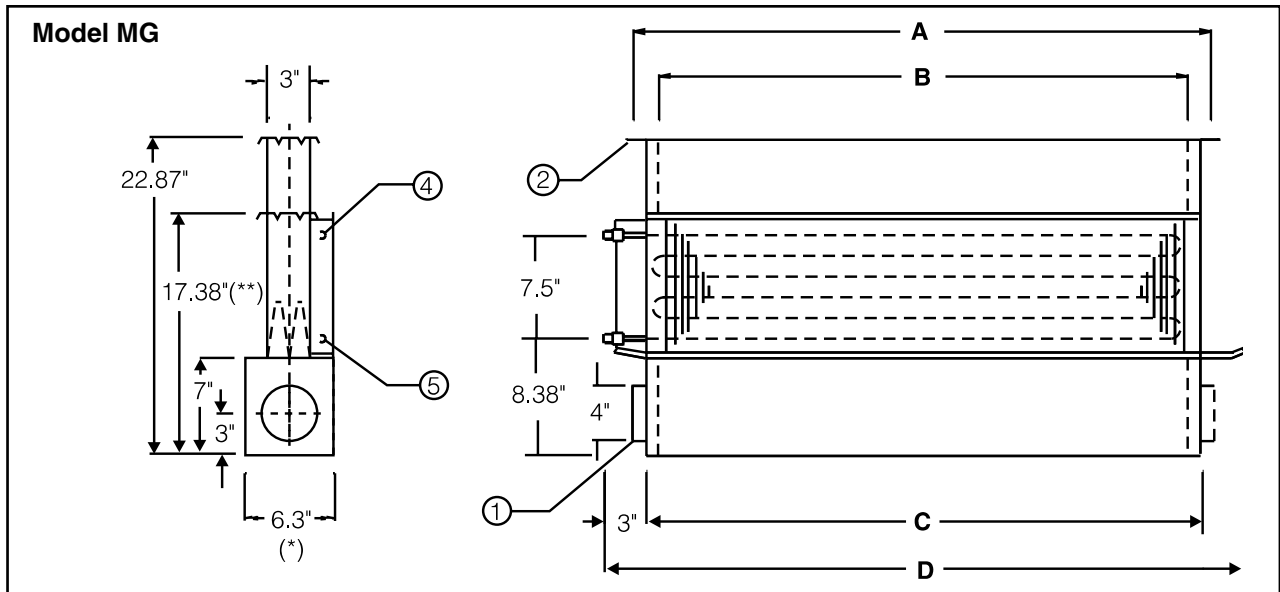
Primary Air		Nozzle Plate #1				Nozzle Plate #2				Nozzle Plate #3				Nozzle Plate #4				Nozzle Plate #5				Nozzle Plate #6			
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water
35	756	3507	9386	20	1.14																				
40	864	3863	10137	20	1.44																				
45	972	4219	10846	24	1.80																				
50	1080	4503	11304	27	2.18	4147	10679	20	1.08																
55	1188	4740	11836	29	2.68	4456	11158	22	1.40	4124	10679	20	1.00												
60	1296					4693	11638	24	1.64	4361	11054	21	1.24	3958	10220	20	0.82								
65	1404					4858	11993	25	1.88	4598	11471	23	1.40	4219	10793	20	1.00	3650	9594	20	0.44				
70	1512					5025	12149	27	2.12	4764	11888	24	1.58	4384	11106	21	1.12	3911	10220	20	0.50				
75	1620					5238	12514	32	2.44	4977	12097	26	1.80	4598	11471	22	1.24	4077	10595	20	0.58				
80	1728									5119	12306	27	2.02	4740	11836	24	1.44	4290	10950	21	0.65	3840	9970	20	0.40
85	1836									5262	12514	29	2.12	4954	12045	25	1.60	4503	11263	23	0.72	4029	10387	20	0.44
90	1944									5451	12785	31	2.60	5072	12201	27	1.84	4621	11555	24	0.82	4219	10804	21	0.48
95	2052													5451	12514	28	2.02	4788	11888	25	0.88	4314	11211	22	0.56
100	2160													5546	12671	30	2.28	4954	12045	26	0.98	4503	11304	23	0.61
105	2268																	5025	12201	28	1.06	4621	11471	24	0.66
110	2376																	5167	12410	29	1.16	4740	11742	25	0.72
115	2484																	5451	12514	30	1.26	4835	11951	26	0.78
120	2592																								
125	2700																								
130	2808																								
135	2916																								

### MGD 120 and MLD 120\*

Primary Air		Nozzle Plate #1				Nozzle Plate #2				Nozzle Plate #3				Nozzle Plate #4				Nozzle Plate #5				Nozzle Plate #6			
CFM	Cap. 20°F DT (Btuh)	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water	Coil Cap. Cooling (Btuh)	Heat Coil Cap	NC	APD Inches Water
50	1080	5214	13557	20	1.28																				
55	1188	5570	14183	23	1.68																				
60	1296	5687	14600	25	2.00	5309	14183	20	1.00																
65	1404	5925	15017	27	2.32	5570	14391	21	1.18																
70	1512	6068	15643	29	2.72	5688	14600	22	1.32	5404	14391	20	0.96												
75	1620	6255	15851	31	3.00	5878	15017	24	1.44	5665	14600	21	1.12												
80	1728					6020	15226	29	1.64	5736	15017	22	1.24	5428	14183	20	0.96								
85	1836					6186	15643	30	1.84	5924	15643	23	1.40	5593	14600	20	1.00								
90	1944					6375	16268	30	2.04	6115	15851	24	1.60	5711	14808	21	1.12								
95	2052					6446	16686	30	2.32	6210	16060	26	1.68	5854	15226	22	1.28								
100	2160									6376	16268	27	1.80	5049	15643	23	1.40	5498	14183	20	0.60				
105	2268									6447	16686	28	2.04	6162	16060	24	1.56	5665	14391	20	0.64				
110	2376									6636	16894	29	2.12	6210	16268	26	1.62	5712	14600	22	0.75				
115	2484									6707	17311	30	2.32	6280	16477	26	1.80	5880	15017	22	0.80	5310	14183	20	0.48
120	2592													6399	16686	27	1.92	5949	15434	23	0.84	5451	14600	20	0.52
125	2700													6589	16894	29	2.06	6137	15851	24	0.96	5665	14808	21	0.58
130	2808													6683	17103	30	2.16	6210	16060	26	1.02	5736	15017	22	0.62
135	2916													6778	17311	30	2.36	6257	16268	26	1.08	5901	15226	22	0.66
140	3024													6920	17520	31	2.48	6447	16477	27	1.16	5973	15434	23	0.74
145	3132																	6541	16686	28	1.24	6115	15643	24	0.80
150	3240																	6684	16790	29	1.32	6210	15851	25	0.82
155	3348																	6707	16894	29	1.36	6257	16060	26	0.90
160	3456																	6850	17103	30	1.44	6376	16268	27	0.94
165	3564																	6920	17311	31	1.48	6423	16477	27	1.00
170	3672																	7063	17530	32	1.60	6494	16686	28	1.04
175	3780																								
180	3888																								
185	3996																								
190	4104																								





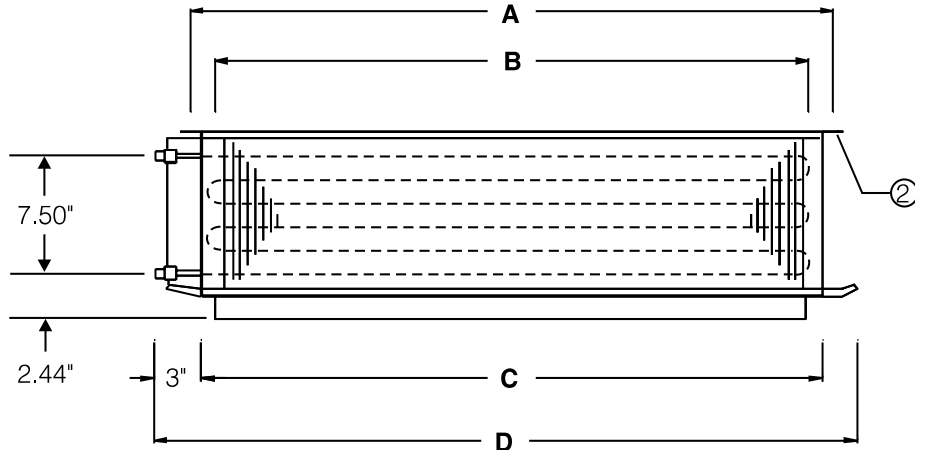
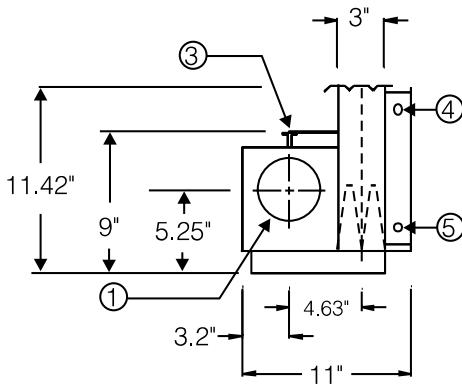


(\*) Allow 7.3" for optional two-row coil  
 (\*\*) Reduced optional height

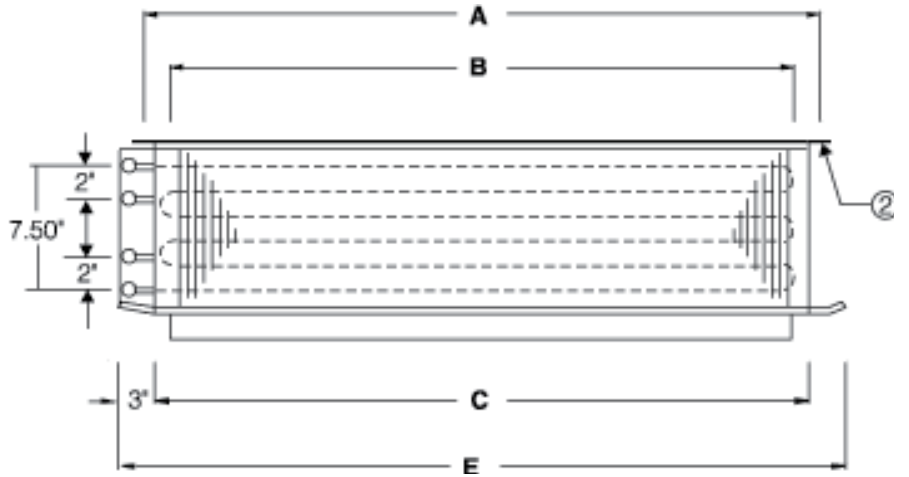
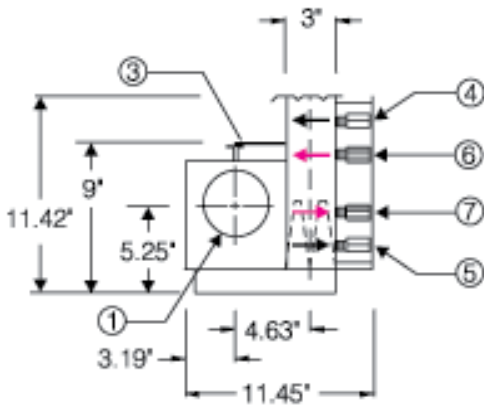
Item	Description	Item	Description
1	Primary Air Connection (4" dia.)	5	Water Inlet 1/2" NPT
2	Suspension Lip	6	Water Return 1/2" NPT
3	Primary Air Adjustment Knob	7	Water Inlet 1/2" NPT
4	Water Return 1/2" NPT	8	Pneumatic Operator



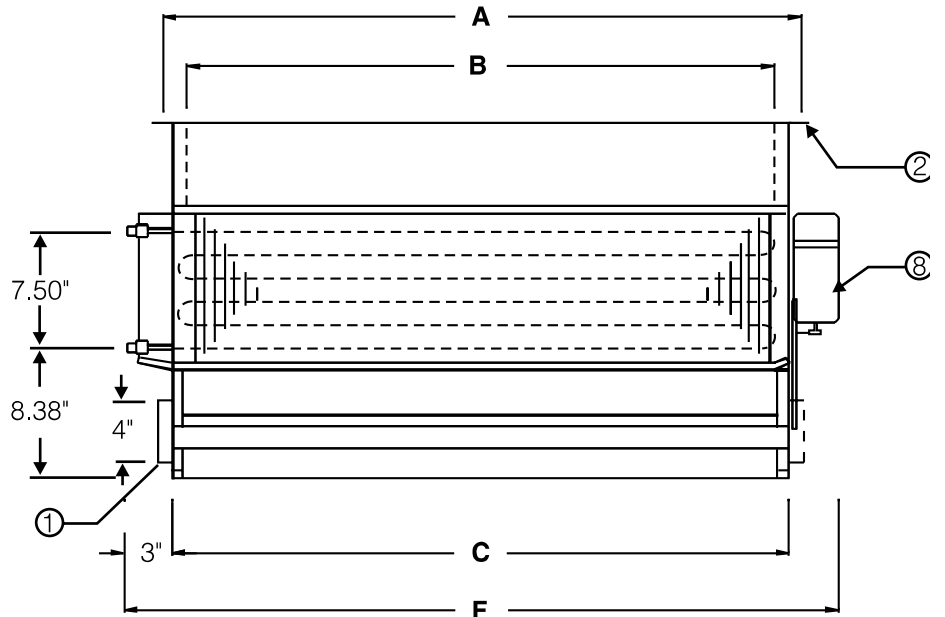
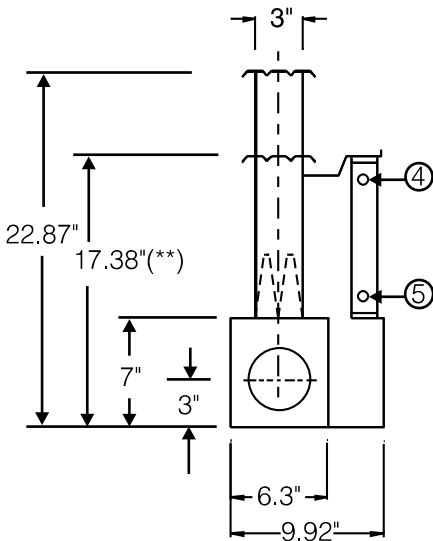
Model ML



Model MLD



Model MKM



**DIMENSIONS**

Type	A	B	C	D	E	F
48	22.13"	18.75"	20.50"	24.25"	23.25"	27.00"
64	28.50"	25.00"	26.75"	30.50"	29.63"	33.25"
88	37.87"	34.50"	36.25"	40.00"	39.00"	42.75"
120	50.50"	47.13"	48.87"	52.63"	51.63"	55.38"

(\*) Allow 7.3" for optional two-row coil

(\*\*) Reduced optional height



# EBA Induction Units

## Guide Specifications

Furnish and install EBA Induction Unit Type MG, (MGD, ML, MLD, etc.) size and arrangement as shown on the plans.

Base unit assembly shall consist of an aerodynamic primary air connection, air plenum, aerodynamic nozzles, water coil assembly, lint screen, air transition fitting, vent cock, non-drainable condensate pan (drain connection is optional), primary air damper (manual), polyurethane insulated guide plate.

Air plenum and mixing chamber shall be constructed of electrolytically zinc plated sheet metal with a layer thickness of 1 mil. (25 micron). Suspension lips to be fitted where required. Internal areas shall be free from neoprene coated fiberglass. Primary air chamber shall be designed for single or series connection including primary air damper directly mounted behind the air inlet and to be adjusted through the outlet opening of the mixing chamber.

Induction nozzle shall be aerodynamically designed and made of bronze or polyethylene having an inlet opening of 3/4" dia. and discharge diameter of 1/4" to 3/8" for low noise levels (NC-30).

Water Coil Assembly shall consist of a single or two row coil with copper tubes, aluminium fins, and 1/2" O.D. water connections complete with vent cock. Coils shall be suitable for working pressure of up to 350 psig. The coil shall be readily accessible as well as removable through front panel. Non-drainable condensate pan shall complete the assembly (drain connection is optional).

The primary damper shall be supported on a bronze shaft rotating in nylon bearings. Spring supported damper is not acceptable.

Lintscreen shall be made of woven aluminium and shall be easily removable.

Control valves shall be supplied under Controls and Instrumentation.

Submit a working model of each type of unit completely piped up with control valve package for approval, in addition to shop drawings showing construction and installation details. After these are approved, set up one unit with enclosure in the field completely piped. Obtain approval of this installation before installing remaining units .

Induction Unit assemblies shall be complete with self supporting enclosures and frames, including removable front panel, inlet grilles and top outlet grilles, as detailed. The top outlet grille shall be the same size as the induction unit outlet opening, to avoid any air by-pass. Enclosures shall have factory applied baked enamel finish. Colours to be determined by the consultant at the time of shop drawing submittal.

Unit assemblies shall be independent of furrings and shall be fitted with approved anchoring and levelling devices. Base unit shall be hung and supported from enclosure frame work.

Accepted Manufacturer: ***EB Air Control Inc.***

### EBA Induction Units and Corresponding Units by Other Manufacturers.

EBA Model	Carrier Model	Trane Model
MG	36SC, 36SV	HPV-A
ML	36SL	HPL-A
MGD	36SP, 36SD	HPV-AA
MLD	36SM	HPL-AA
MKM	36R	-
MG-TC	36ST	HPV-H
MG-Horizontal	36SH	HPH-A
ML-Horizontal	36SH	-
MGD-Horizontal	36SJ	HPH-AA
MLD-Horizontal	36SJ	-

**Note:** This is a quick reference list for comparison only.  
Different manufacturer's units do not match exactly.



### Correction factor for coil capacity at various flow rates

Water Flow Rate (GPM)	Type 48	Type 64	Type 88	Type 120
0.90	0.88	0.87	0.86	0.85
1.20	0.95	0.94	0.94	0.93
1.50	1.00	1.00	1.00	1.00
1.80	1.05	1.05	1.05	1.04

Multiply the coil capacity by the appropriate correction factor for water flows other than 1.5 gpm

### Convection (Gravity) Capacity:

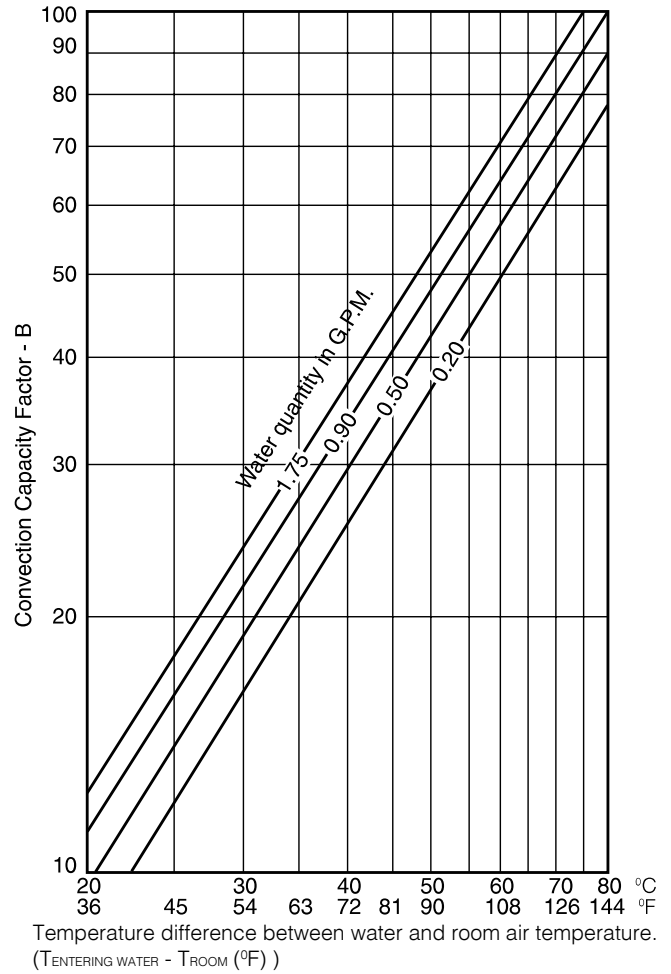
Convection capacity (Btuh) = Capacity Factor "A" x Capacity Factor "B"

For Capacity Factor "A": As per chart below

For Capacity Factor "B": As per graph, using:

- \* Temperature difference between water and room air temperature (°F)
- \* Warm water quantity (GPM)

Size	Convection Factor - A		
	MG, ML	MGD, MLD	MK
48	41.8	24.0	33.6
64	52.9	28.8	43.2
88	76.9	38.4	57.7
120	93.7	54.3	79.3



### Dimensions and weights:

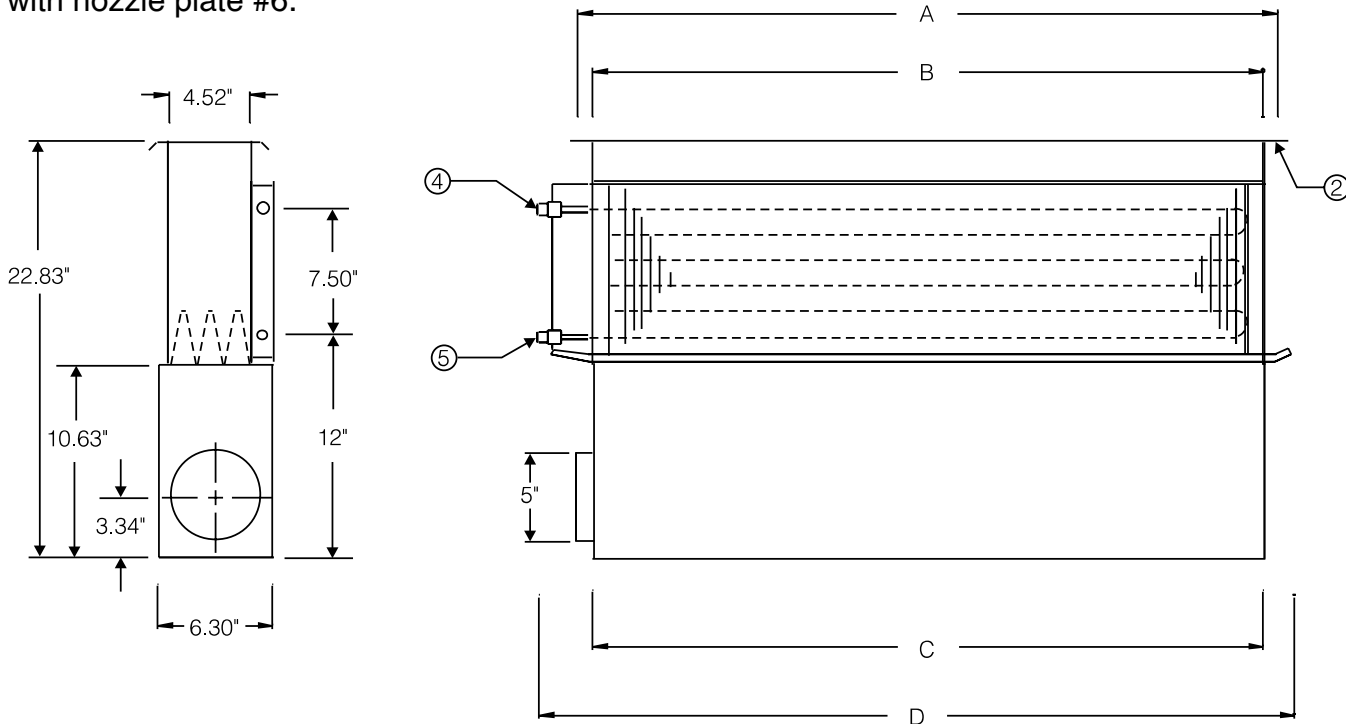
Model No.	Length (inches)	Width (inches)	Height (inches)	Weight (Lbs)	Cooling Coil Contents (inch <sup>3</sup> )	Heating Coil Contents (inch <sup>3</sup> )
<b>ML</b>						
48	24.25	11.00	11.50	22	26	-
64	30.50	11.00	11.50	31	32	-
88	40.00	11.00	11.50	35	44	-
120	52.50	11.00	11.50	46	58	-
<b>MLD</b>						
48	23.25	11.50	11.50	24	29	10
64	29.50	11.50	11.50	33	35	12
88	39.00	11.50	11.50	38	49	17
120	51.50	11.50	11.50	49	66	22
<b>MG</b>						
48	24.25	6.30	22.87/17.38	22	26	-
64	30.50	6.30	22.87/17.38	31	32	-
88	40.00	6.30	22.87/17.38	35	44	-
120	52.50	6.30	22.87/17.38	46	58	-
<b>MGD</b>						
48	23.25	6.88	22.87/17.38	24	29	10
64	29.50	6.88	22.87/17.38	33	35	12
88	39.00	6.88	22.87/17.38	38	49	17
120	55.38	6.88	22.87/17.38	49	66	22
<b>MK</b>						
48	27.00	9.92	22.87/17.38	31	26	9
64	33.25	9.92	22.87/17.38	40	32	12
88	42.75	9.92	22.87/17.38	44	44	16
120	55.38	9.92	22.87/17.38	62	58	21
<b>MKM</b>						
48	27.00	9.92	22.87/17.38	27	26	-
64	33.25	9.92	22.87/17.38	35	32	-
88	42.75	9.92	22.87/17.38	40	44	-
120	55.38	9.92	22.87/17.38	57	58	-

All water connections 1/2" NPT (1/2" flare connection is optional).

# EBA's HIGH CAPACITY AND SPECIALTY INDUCTION UNITS

## High primary volume capacity units: Model HV-MG

EBA's High Primary Volume Capacity units are designed to provide higher primary airflow capacities than provided with the standard model MG units while operating at low nozzle static pressure (less than 0.9" WG). These units are available in two sizes, HV-MG 88-6 and HV-MG 120-6. Both with nozzle plate #6.



### Selection Data:

Induction ratio: 1.0

Refer to page 8 for nomenclature

Refer to page 9 for dimensions

Primary Air		HV-MG 88-6			HV-MG 120-6		
CFM	Cap. 20°ΔT Btuh	Coil Capacity	NC	APD Inches Water	Coil Capacity	NC	APD Inches Water
175	3780	2603	29	0.28	2848	26	0.16
200	4320	2752	29	0.37	3029	29	0.18
235	5076	2901	32	0.50	3157	30	0.28
265	5724	3050	36	0.60	3243	33	0.32
295	6372	3200	39	0.72	3370	35	0.40
325	7020	3285	42	0.88	3477	38	0.52
385	8316				3690	43	0.78
500					Special design available		

**Notes:** The cooling coil capacities are based on:  $T_{ROOM} - T_{ENTERING\ WATER} = 25^{\circ} F.$   
 (Adjust proportionately for different conditions)  
 1.5 gpm water flow per coil.  
 (See correction factors on page 11 for water flows other than 1.5 gpm).

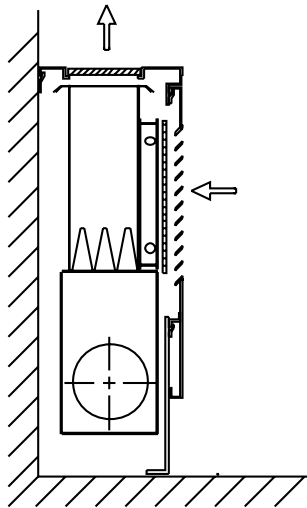
#### Unit Description:

- Enlarged primary air chamber (cross section 6.30" x 10.63") complete with acoustically lined guide vanes for even distribution over nozzles.
- Primary air balancing damper, accessible through air discharge opening.
- Primary air connection, 5" diameter.
- Air mixing chamber, complete with suspension lips.
- Nozzle plate with fitted polyethylene nozzles, specially suited for high volume primary air at low noise levels and low nozzle static pressures.
- Coil: aluminum fins and copper tubes, complete with 1/2" O.D. water connections and vent cocks.
- Drip tray underneath coil (optional drain connection).

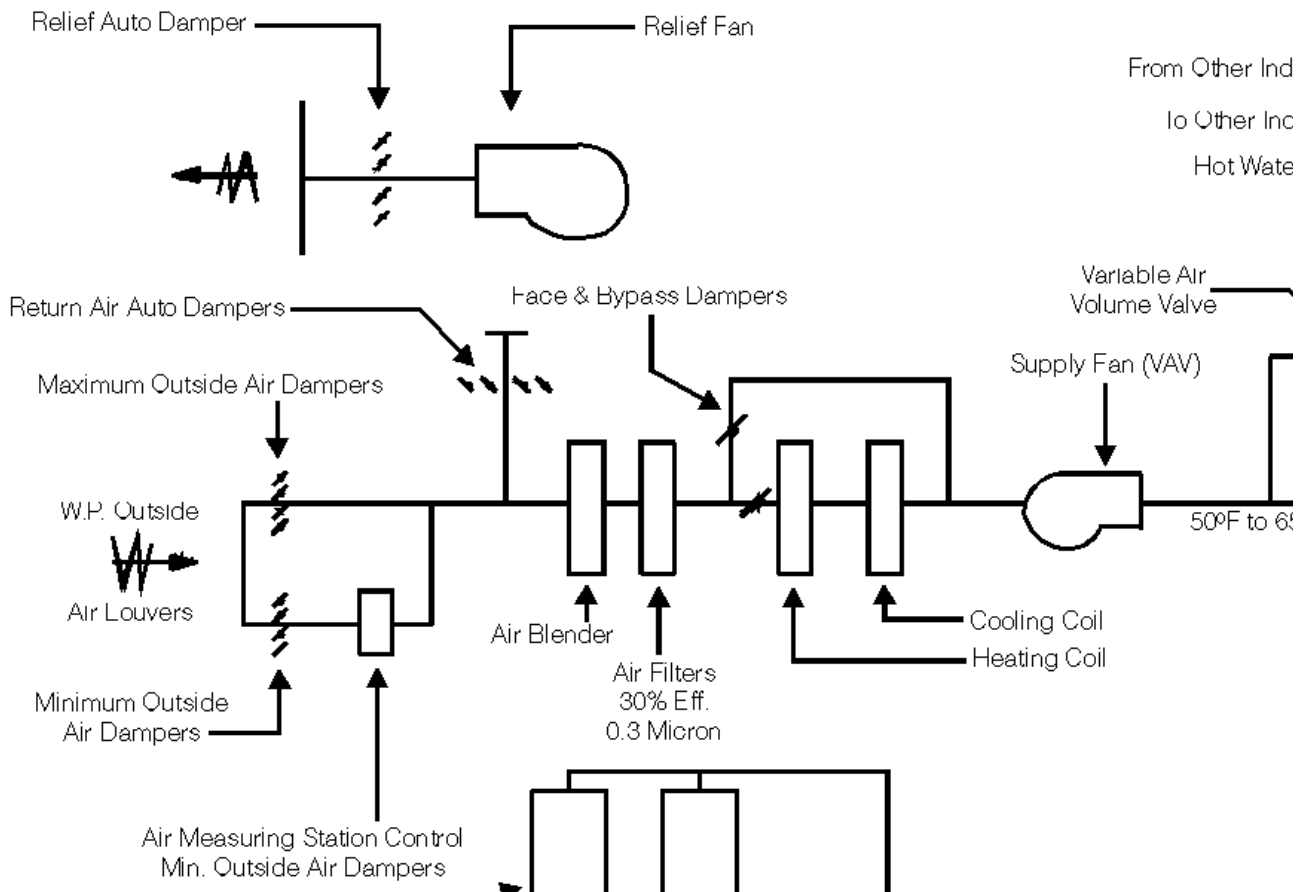
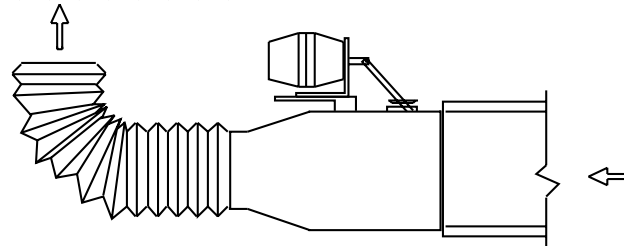


## EBA's HIGH CAPACITY AND SPECIALTY INDUCTION UNITS

EBA's Model HV-MG induction units can be used in conjunction with EBA's pressure independent VAV air valves as shown on the drawing. This system can be used to replace the unit ventilators (e.g. for schools or university classrooms) while offering the following advantages:



- Low system static pressure (less than 0.90" WG).
- Less floor space.
- Quiet, maintenance-free operation (no fans or motors).
- Smaller distribution duct and smaller air handling unit (primary air volume is 50% of total air delivered) with lower BHP.
- Less complicated control system.
- Lower installed first cost.
- Quick response to high heating/cooling load requirement.
- High (50%) outside air content.
- VAV valve (6" or 8" dia.) with max 3" S.P. for accurate air volume control.
- No wall openings/no coil freeze-up.
- Gravity heating during unoccupied periods if under window mounting.



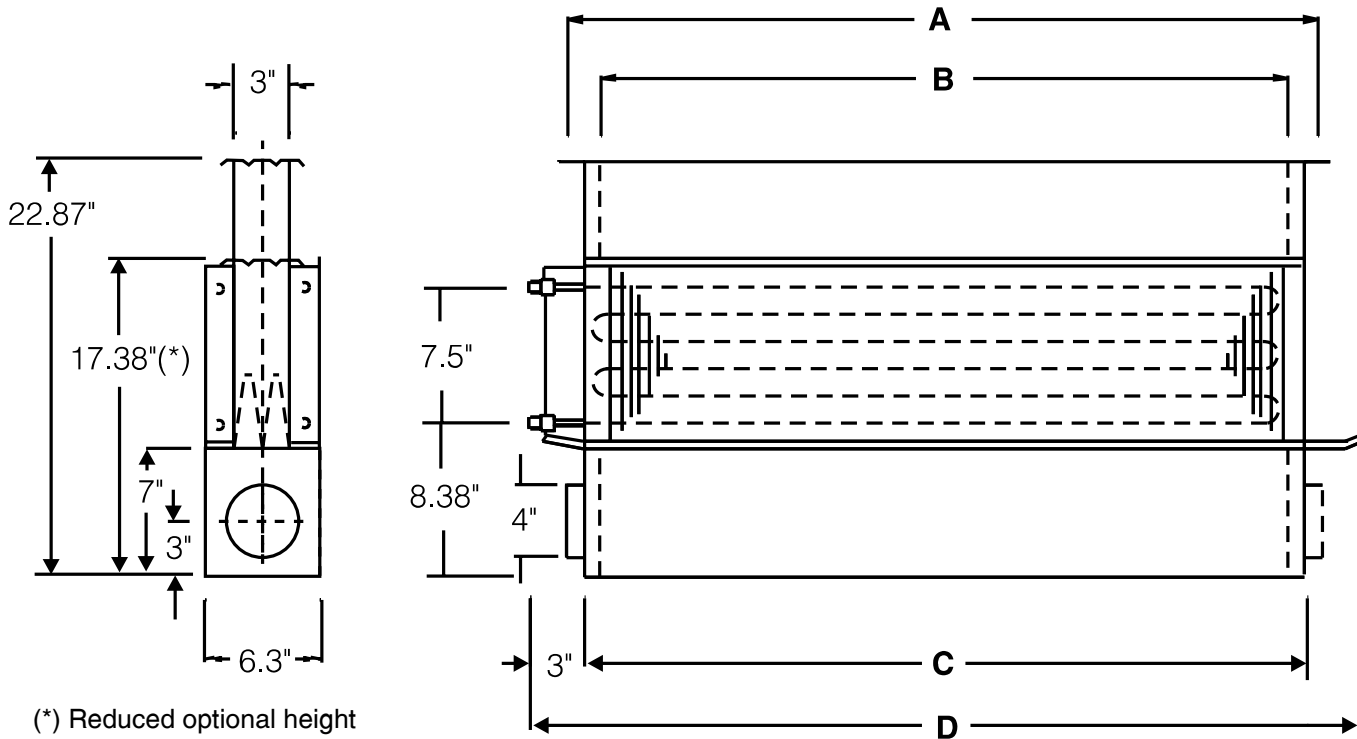
**Special designs:** Some customization of the basic induction unit models are available to suit the project requirements. Consult factory for details.



# EBA's HIGH CAPACITY AND SPECIALTY INDUCTION UNITS

## High Coil Capacity Units: Model MG-TC

This is the twin coil version (i.e. two identical one-row coils fitted on either side of the air mixing chamber) of the MG models with 22.83" or 17.32" height.



Dimensions				
Model	A	B	C	D
MG 48	22.13"	18.75"	20.50"	24.25"
MG 64	28.50"	25.00"	26.75"	30.50"
MG 88	37.87"	34.50"	36.25"	40.00"
MG 120	50.50"	47.13"	48.87"	52.63"

### Selection Data:

i) Induction ratio of MG-TC units with 22.83" height.

Nozzle plate	1	2	3	4	5	6
Induction ratio	6.3	5.2	4.6	3.9	3.4	2.7

Correction factor for Scott filter: 0.93

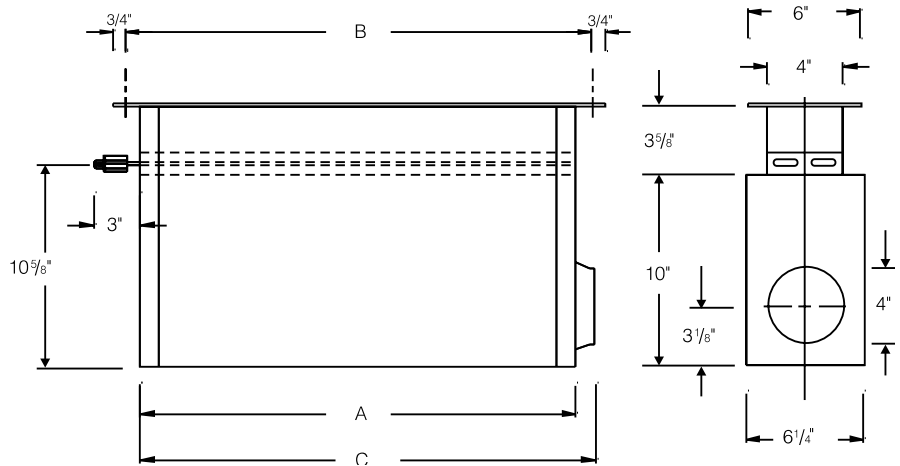
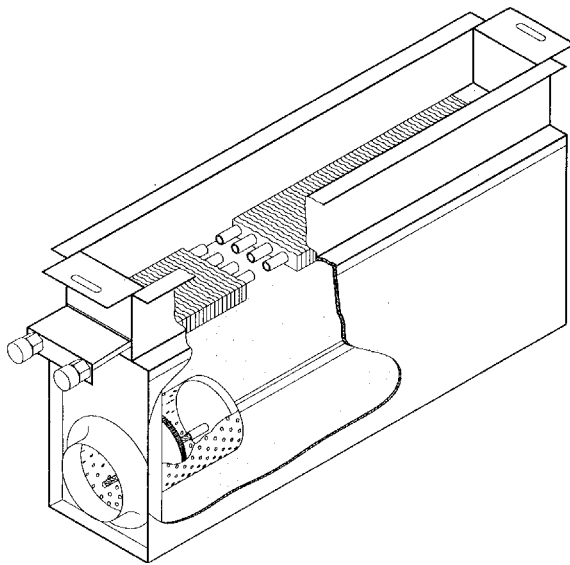
Correction factor for 17.38" height: 0.94

ii) Capacity: Use coil capacities for standard MG models (see pages 4 & 5) and correct by multiplying with a factor of 1.48 for the MG-TC version. Water flow rates must be corrected with a factor of 2.0.





# EBA HOSPITAIR TERMINAL REHEAT UNIT

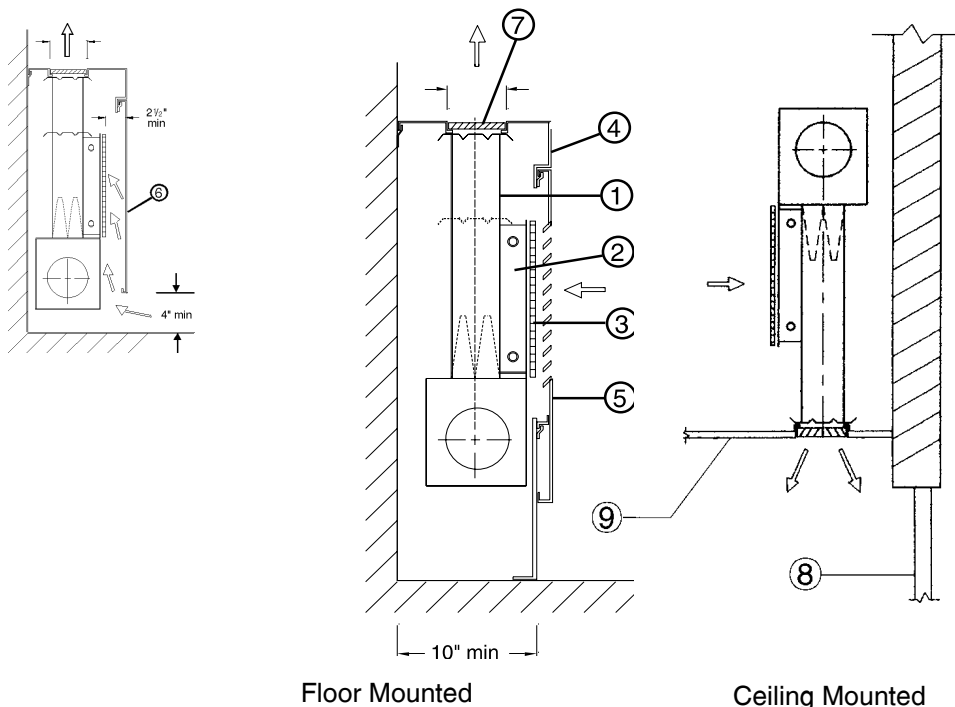


EBA Hospitair System is a complete air conditioning system with the following features:

- Extremely "low noise" level
- Particularly suitable for hospital application as return air (if incorporated) is not in contact with the coil
- Equipped with air damper balancing device
- Cooling provided using pre-conditioned primary air only
- Heating provided using hot water reheat coil
- Can be operated in conjunction with high pressure as well as low pressure duct systems.
- Diffuser nozzles can be incorporated above the heating coil to provide induction of room air.
- Optional bottom connection to primary air
- Available in three sizes

Model #	ZH250	ZH375	ZH500
Capacity (cfm)	120	165	210
A	26 <sup>3</sup> / <sub>4</sub>	36 <sup>1</sup> / <sub>4</sub>	45 <sup>5</sup> / <sub>8</sub>
B	28 <sup>1</sup> / <sub>2</sub>	37 <sup>7</sup> / <sub>8</sub>	47 <sup>3</sup> / <sub>8</sub>
C	27 <sup>5</sup> / <sub>8</sub>	37 <sup>1</sup> / <sub>8</sub>	46 <sup>1</sup> / <sub>2</sub>

## INSTALLATION EXAMPLES FOR ALL INDUCTION UNIT MODELS



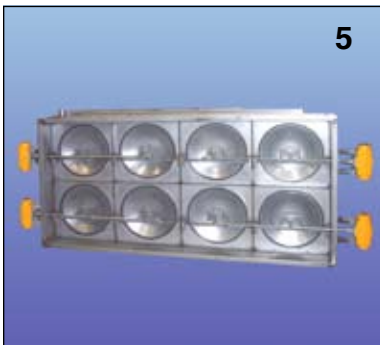
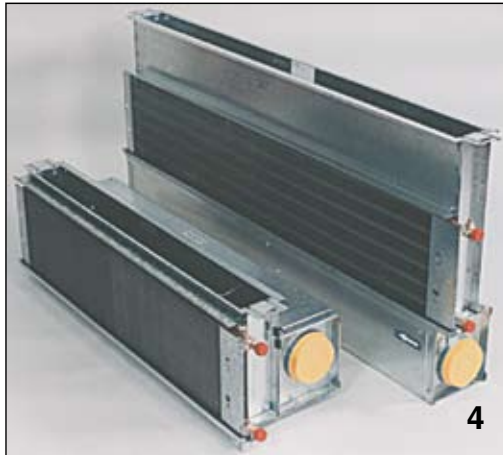
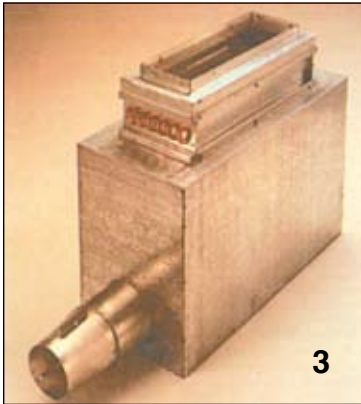
Item	Description
1	Discharge stack on induction unit
2	Coil
3	Lintscreen
4	Enclosure (16 ga.)
5	Removable front panel with louvre
6	Removable front panel with kickspace
7	Discharge grille
8	Window
9	Ceiling

Due to EBA's policy of continuous design improvements, enclosed data is subject to change without notice.



## OUR INNOVATIVE QUALITY PRODUCTS

1. Circular Positive Seal Valves
2. VAV Air Valve
3. Under the Window Terminal Reheat Unit
4. EBA Induction Unit
5. Damper Bank
6. EBA Ceiling Mounted Induction Unit Based System



**EB AIR**  
Control Inc.

## EB AIR CONTROL INC.

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Mississauga, ON L5N 3T5

**Phone:** (905) 812-2201

**Fax:** (905) 812-2210

**E-mail:** enquiry@ebaircontrol.com

**Website:** www.ebaircontrol.com



ISO 9001:2000 Certified  
KTA 1401 Certified  
(Nuclear Safety Standards)

Your local representative:

## **EBA PRODUCT WARRANTY**

EB Air Control Inc (EBA) warrants its products to the original owner to be free from defects in material and workmanship for a period of 18 months from the shipment date or 12 months from the date of startup whichever occurs earlier.

EBA warranty covers material components only and excludes field labor, rigging expense or incidental costs should such be necessary for component repair or replacement.

EBA is not liable for any contingent or consequential damage to buildings, property, equipment or personnel due to the use or misuse of its products.

This limited warranty is exclusive and is in lieu of any other warranty or guarantee implied or expressed. This limited warranty may be voided if said products are subject to abnormal conditions, misuse, improper installation, improper maintenance, incorrect voltage conditions or if EBA has not been paid in full for said products.

**“ Advantages ”**



**Some of the distinct Advantages of EBA Induction units for your ready reference:**

- 1) *Low noise levels achieved due to Efficient Nozzle Configuration & aerodynamically designed primary air chambers & Nozzles. Resulting in units are able to operate with relatively lower pressure & more induction ratio is achieved ( In a retrofit situation units are generally operating with high pressure & lower induction ratio )*
- 2) *No clogging of nozzles as nozzles are minimum 5/16" diameter. No cleaning required on nozzles. No clogging of nozzles results in to no whistling sound from nozzles.*
- 3) *No fiberglass lining on the primary air chamber walls. ( No health Hazard ) ( Old Induction units were layered with Fiberglass insulation in the plenum chambers for getting low noise levels , over a period of time fiberglass particles starts to erode & getting mixed with primary air. This could mean potential health hazard )*
- 4) *Lint Screen Filters are washable to prevent coils from clogging*
- 5) *Rugged construction of primary air damper mechanism ( never breaks )*

**In terms of replacing old units to EBA from the building point of view**

*Units Efficiency could be determined from the below factors:*

- 1) *Induction ratio: Getting more Induction ratio from units : means more air : results in to more efficient unit.*
- 2) *Ability of unit to generate more Induction ratio with less pressure means more energy efficient ( Less Horse power is required overall to run these units. (Less load on the Air Handling units motor ( No over loading of motor ) results More life of motor )*
- 3) *No maintenance crew required, once balanced (Apart from regular cleaning of lint screen) ( No breaking of primary air balancing damper ever ). More efficient from maintenance point of view.*

**LEED Building advantages with new EBA units:**

- 1) *No Fiberglass insulation, No health Hazard: more eco friendly materials used inside unit*
- 2) *Noise level low*
- 3) *No continuous Whistling sound*
- 4) *More energy efficient operation in terms of operating*
- 5) *No Moving parts*

**“Customers List & Installations List”**



## EBA INDUCTION UNIT PARTIAL INSTALLATION LIST

1. Project: CIBC Commerce Court, Toronto, ON  
Engineer: The ECE Group, Toronto, ON
2. Project: U.S. Custom House Renovation, Philadelphia, PA  
Engineer: The Energy Consortium, Philadelphia, PA
3. Project: Winchester Medical Center, Winchester, VA  
Engineer: Glassman Assoc., VA
4. Project: Queen Street Mental Health Centre, Toronto, ON  
Engineer: MGS, Toronto, ON
5. Project: Mercy Medical Center, Baltimore, MD  
Engineer: Plant Operations, Baltimore, MD
6. Project: Canadian Foreign Services, Bisson Centre, Ottawa, ON  
Engineer: Public Works Canada, Hull, QC
7. Project: Veteran's Administration, Wilmington, DE  
Engineer: Veteran's Administration & R.O. Center, Wilmington, DE
8. Project: National Geographic, New York, NY  
Engineer: J.T. Falk, NY
9. Project: PME Corp. Headquarters, 1725 DeSalle St. Washington, DC  
Engineer: SME Consulting Engineers, Rockville, MD
10. Project: RCMP Headquarters, Ottawa, ON  
Engineer: Public Works Canada, Ottawa, ON
11. Project: NYS HFA, New York, NY  
Engineer:
12. Project: 1330 6<sup>th</sup> Avenue, New York, NY  
Engineer: Cosentini Associates
13. Project: Metropolitan Life, New York, NY  
Engineer:
14. Project: Merrill Lynch, NY
15. Project: Sterling Winthrop, 96 Park Avenue, NY
16. Project: Viacom, NY
17. Project: Aexander Re., NY
18. Project: Teachers Insurance, AA Bldg., NY





**EBA INDUCTION UNIT**  
**PARTIAL INSTALLATION LIST**

19. Project: Rizik Bldg., WA, DC
20. Project: Leapley Co., 1225 Conn. Ave., NW, WA, DC
21. Project: British Consulate, New York, NY
22. Project: 100 Church Street, New York, NY
23. Project: 1515 Broadway, New York, NY
24. Project: Health & Welfare Canada, 440 Coventry Road, Ottawa, ON
25. Project: 277 Park Avenue, New York, NY
26. Project: National Institute of Health, Bethesda, MD
27. Project: J.P. Mogan Stanley, New York, NY
28. Project: New York Life, New York, NY
29. Project: Warren Barr Pavillion, IL
30. Project: One Gateway Center, Pittsburgh, PA
31. Project: One Market Plaza, San Francisco, CA
32. Project: Pfizer, New York, NY
33. Project: One Embarcadero Center, San Francisco, CA
34. Project: Alexian Bros. Hospital, San Francisco, CA
35. Project: 1290 Avenue of Americas, New York, NY
36. Project: National Institute of Health, MD
37. Project: Coopers & Lybrand, New York, NY
38. Project: Harris Bank, Chicago, IL
39. Project: Irvine Foundation, San Francisco, CA
40. Project: 260 Madison Avenue, New York, NY
41. Project: Goldman Sachs, New York, NY
42. Project: J.P. Morgan , 26<sup>th</sup> Floor, New York, NY

**EBA INDUCTION UNIT**  
**PARTIAL INSTALLATION LIST**

- 43. Project: Morrison Foerster, 29<sup>th</sup> Floor, San Francisco, CA
- 44. Project: NCBH – PCU, Winston-Salem, NC
- 45. Project: Wisconsin Gas, Milwaukee, WI
- 46. Project: Banker’s Hall P-II, Calgary, AB
- 47. Project: Teacher’s Insurance, New York, NY
- 48. Project: Orrich, 6665<sup>th</sup> – 2<sup>nd</sup> Fl, New York, NY
- 49. Project: PG&E, One Market Plaza, San Francisco, CA
- 50. Project: George Comfort, New York, NY
- 51. Project: NASA Bldg. # 16, MD
- 52. Project: Mt. Sinai, 1450 Madison Ave., New York, NY
- 53. Project: 140 Broadway, New York, NY
- 54. Project: NYU Medical Centre, New York, NY
- 55. Project: R.M. Thorton Inc. Capital Heights, MD
- 56. Project: Baptist East – West Bed Tower, Memphis, TN
- 57. Project: Vanderbilt – Nephrology, Nashville, TN
- 58. Project: Alexian Brothers, Chicago, IL
- 59. Project: Toenishoetter Inc., One Market Plaza, San Francisco, CA
- 60. Project: Philadelphia Police Headquarters, Philadelphia, PA
- 61. Project: Wilson – Sonsini, One Market Plaza, San Francisco, CA
- 62. Project: 682 Morgan Avenue, New York, NY
- 63. Project: One Gateway Centre, Pittsburgh, PA
- 64. Project: 299 Park Avenue – 16<sup>th</sup> Floor, New York, NY
- 65. Project: 1 Post Street – 2<sup>nd</sup> floor, San Francisco, CA

**EBA INDUCTION UNIT**  
**PARTIAL INSTALLATION LIST**

- 66. Project: Atlantic Building – 206 south Broad St., Philadelphia, PA
- 67. Project: 45 West 25<sup>th</sup> Street, New York, NY
- 68. Project: 34-02 Review Avenue, Long Island City, NY
- 69. Project: 969 Folsom St., San Francisco, CA
- 70. Project: University of Maryland, College Park, MD
- 71. Project: Greenwood Leflore Hospital, Greenwood, MS
- 72. Project: 80 Maiden Lane, New York, NY
- 73. Project: 811 Whittler Street, New York, NY
- 74. Project: 110 Wall Street, New York, NY
- 75. Project: Connaught Bldg., Sussex Drive, Ottawa, ON
- 76. Project: 47-58<sup>th</sup> Street, New York, NY
- 77. Project: 60 Broad Street, New York, NY
- 78. Project: University of Texas, SW Medical Center, Dallas, TX
- 79. Project: NYU Medical Center, New York, NY
- 80. Project: Travelers Insurance, New York, NY
- 81. Project: Cadillac Fairview, Pacific Center South, Vancouver, BC
- 82. Project: One Embarcadero Center, San Francisco, CA
- 83. Project: NIH Bldg. 35, Bethesda, MD
- 84. Project: TD Tower, Vancouver, BC
- 85. Project: Bankers Hall, Calgary, AL
- 86. Project: 2450 Lancaster Road, Ottawa, ON
- 87. Project: NIH - Building, TR46F, Bethesda, MD
- 88. Project: 25-55 St. Clair Ave, Toronto, ON
- 89. Project: Richard Eisner, Long Island, NY



**EBA INDUCTION UNIT**  
**PARTIAL INSTALLATION LIST**

90. Project: Glenmeads Trust, PA
91. Project: NIH - Building 31A, 8<sup>th</sup> Floor, Bethesda, MD
92. Project: NIH - Building 31P, 6<sup>th</sup> Floor, Bethesda, MD
93. Project: Time Life Building, NY, NY
94. Project: Fisher Brothers, NJ
95. Project: Tisch Hospital, NY, NY
96. Project: One Market Plaza, San Francisco, CA
97. Project: NYU-Ernst Lab, New York, NY
98. Project: UTSW Medical Center, Dallas, TX
99. Project: 60 Broad Street, New York, NY
100. Project: One Gateway Center, Pittsburgh, PA
101. Project: 1345 Avenue of True America
102. Project: NIH Bldg. 31A-8A, Bethesda, MD
103. Project: 1553 Broad Street, Atlanta, GA
104. Project: Lennox Hill Hospital, New York, NY
105. Project: John's Hopkins University, MD
106. Project: NIH Bldg. 31A, 5<sup>th</sup> floor, Bethesda, MD
107. Project: N.Y.U. School of Medicine, New York, NY
108. Project: HUP Founders, PA
109. Project: 580 Booth Street, Ottawa, ON
110. Project: TD Tower, Toronto, ON
111. Project: Royal Bank Plaza, Toronto, ON
112. Project: 255 St. Clair Ave. East, Toronto, ON



**EBA INDUCTION UNIT**  
**PARTIAL INSTALLATION LIST**

- 113. Project: Clarkson Hospital, Omaha, NB
- 114. Project: St. Mary's Hospital, Chicago, IL
- 115. Project: Columbia University, Biomedical Center, NY
- 116. Project: 69 West Washington, Chicago, IL
- 117. Project: NHS-7<sup>th</sup> Floor, Omaha, NB
- 118. Project: SMU, Dallas TX
- 119. Project: 10-27 Jackson Avenue, Long Island, NY
- 120. Project: 10 Cross Street, New York, NY
- 121. Project: Arundale Center, Baltimore, MD
- 122. Project: 1<sup>st</sup> Canadian Place, Toronto, ON
- 123. Project: OMRF – Research Tower, Midwest City, OK
- 124. Project: Sr. Charles Tupper Building, Ottawa, ON
- 125. Project: Madigan Army Medical Center, Tacoma, WA